

An Ecology of Land Use:

The study of the interaction between people and natural processes based upon case studies of Newcastle upon Tyne, UK and Hagi, Japan

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Abstract

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This thesis discusses the continuity, change and impact of people's daily interactions with natural processes in historic built environments over time. It aims to investigate the relationship between people's collective actions and their interactions with natural processes. A literature review of social capital and collective action theories informed the framework used to develop the methodology.

A case study approach was used, examining Newcastle upon Tyne in the UK and Hagi in Japan. The thesis aims to investigate the way in which people have interacted with natural processes as each city has grown and changed. In particular the case studies investigate the collective actions of the Newcastle allotment garden communities and the volunteer groups of Hagi in relation to the protection and enhancement of local environmental characteristics. The findings indicate that the collective actions of these communities and groups can be seen as a significant example of community participation in local environmental concerns. Daily interactions with natural processes have created local distinctiveness in the landscapes. This is reflected in the character of the physical places, as well as the local traditions and cultures that have evolved over time.

The thesis concludes that people's collective actions in interaction with natural processes over time can create a variety of benefits and values for society and the environment. This can be described as an ecology of land use in historic built environments.

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Glossary

Glossary of Terms

This research uses the normally accepted definitions for terminology in the field. The following terms are used extensively and are defined as follows:

An ecology of land use;

A study of the way in which local people, who live in built environments, make connections and relationships with natural processes, contributing ecological benefits to the area and people.

Collective action

Action or actions taken by a group of people based on shared interests.

Environmental characteristics

The particular qualities or identities of environmental elements, such as rivers, water courses, beaches, valleys, forests, hills and open land including grassland, allotment gardens.

Historic built environments

Environments constructed by human activities which can be understood to be culturally valued, such as historic cities and towns.

Natural processes

The processes existing in or produced by nature rather than by the intent or action of human beings.

Social capital,

The links, shared values and understandings in society that enable individuals and groups to trust each other and so work together.

Chapter 1:

Introduction

Chapter 1: Introduction

1.1 Study Context

1.1.1 *Genesis*

This study is about the interaction between people and natural processes in historic built environments. It investigates the effectiveness of such interactions on society and the environment over time and the present day. Particular attention is given to continuity, change, impact and the tendency of the interaction to urbanize historic built environments. Today, people are increasingly becoming urban inhabitants, and in many aspects are increasingly disconnected from natural processes in their daily lives. Nevertheless, there is a long history of urban living in respect of the interactions between people and natural processes that can be examined.

This research contextualizes the concept of such interactions through the use of case studies in two very different historic cities; Newcastle upon Tyne in the UK and Hagi in Japan. It particularly examines the forms of growth of each city in relation to these interactions, and closely investigate urban dwellers' daily interactions with natural processes today.

Historic built environments in different places have experienced diverse behaviors concerning interactions between people and natural processes. They reflect spatially the inherent distinctiveness of the natural processes of the area, such as geographic, topographic and climatic conditions and elements that together form the characteristics of the places. However, due to urbanization, which has taken place in particular since the Industrial Revolution, urban dwellers have interacted less with natural processes than in the former more agrarian context.

Urbanism has been seen as a typical but powerful modern social tendency, creating both positive and negative consequences. The negatives have been identified in various aspects. For instance, a growing urban population, the reduction of the natural environment, and people's diverse ways of urban life are all said to have contributed to many social and environmental concerns, including social well-being and the ecosystem of cities and towns (Marzluff et al., 2008). The increasing disconnection of urban life has generated negative effects on people and society as well as on the wider community, such as health and safety worries (Kendle and Forbes, 1997; Louv, 2009; RSPB, 2012). Ecological deterioration has resulted in serious concerns, such as climate change. Langton (1998, cited in Dodson, 1998, p. 26) considers that the deterioration lies within human culture, and so understanding the links

between culture, economics and ecology can help to devise better strategies for conserving and restoring nature.

Nonetheless, in historic built environments such as Newcastle and Hagi, long-term existing environmental features and characteristics have been retained, including rivers, beaches, valleys, hills, forests and grassland. These urban settings and environmental features allow people to get close to or interact with natural processes. In some cases urban dwellers have protected or enhanced these significant environmental characteristics for long periods of time. The study of such interactions can be described as an ecology of land use in historic built environments.

An in-depth study of the interaction between people and natural processes in historic built environments could provide interesting and useful understandings of the development and importance of these long-term interactions in urban areas. The findings of this study may contribute to the body of literature seeking to examine local environmental issues.

1.1.2 Motivation

My experience has given me a great interest in the contextual variables of historic places, in different countries, in particular to appreciate the values of environmental characteristics of place with a socio-ecological view. This has led me to study for a PhD at Newcastle University, after my retirement from the Japanese Government in 2012.

This research is my second academic postgraduate study in the UK. The first was a conservation study for the garden village of New Earswick: a diploma thesis and MPhil for the Institute of Advanced Architectural Studies, University of York, in 1979 and 1987, respectively. I worked for the Ministry of Foreign Affairs in Japan for over 31 years after I left York. During this period, I was based at the Japanese Embassy in Riyadh, Moscow and London as a diplomat and architect for over 16 years in total, which involved many visits to historic cities throughout the world. This experience has generated my motivation to pursue my interest in the conservation of historic built environments; in particular, to study local cultures, traditions and the long-term existence of environmental characteristics of places, in relation to the interactions between people and natural processes over time and in the present day.

1.2 Key Subject Areas and Existing Knowledge

1.2.1 Key subject areas

This research requires a cross-disciplinary approach and consists of the following three different areas of study focus. The first is concerned with people's connection with nature, in particular, the relationship or the interaction between people and natural processes in historic built environments. It includes cultural landscapes, urban ecology and urban nature conservation. The second is about social capital and collective action in relation to people's interaction with natural processes in urbanized environments. This is to form a theoretical framework of the research, in particular carrying out the case studies. The third concerns the relevant written texts and literature about the case study areas, such as local history, tradition and culture, in regard to this research subject.

Existing knowledge will be examined in detail in Chapter 2: *Literature Review and Theoretical Development*. Some of the existing work and thinking in these areas of knowledge are shown in Sections 1.2.3, 1.2.4 and 1.2.5 below.

1.2.2 Terminology

In this research, a number of terms are used to define the scope and strategy for the study. The following terms are particularly important to clarify.

The term *ecology of land use* in this research refers to a study of the way in which local people, who live in built environments, make connections and relationships with natural processes, contributing ecological benefits to the area and people.

Interaction between people and natural processes over time refers to (1) *People*: local residents who live in historic built environments: (2) *Natural processes*: the processes existing in or produced by nature rather than by the intent or action of human beings. It includes natural processes of environmental features, such as rivers, water courses, beaches, valleys, forests, hills and grassland. People interact with natural processes by using, manipulating, cultivating, etc. these features. People therefore change the natural processes that create features naturally through management and use. The features can be seen as the products of the combined human and natural interactions. Of course some features have much less influence from humans and many natural processes cannot be controlled by humans – although climate change has shown us how humans can have really significant and large scale impact on natural processes. In towns and cities, the natural processes are very much influenced by humans – so parks allotment etc. are the products of natural processes that are highly manipulated by people and are the product of both humans and natural processes together. Thus, the term *interaction* refers to the way in which the local residents and the

natural processes of the area have effects or influences on each other. In the text, the term over time, continuously or continuous interactions are used, which have the same meaning.

Long-term existence of environmental characteristics: this refers to the state of environmental elements, described above, such as rivers, beaches, forests and valleys or combination of such element that have been maintained for a long time and become environmental characteristics of the areas. *Context* refers to the situation in which something happens and that helps people to understand it. *Contextual variables* include both social and spatial aspects of contexts, such as history, society, cultures, traditions, as well as environmental conditions of the place, such as distinctive characteristics of the land, including geographic, topographic and climatic conditions.

The term *collective action* refers to action or actions taken by a group of people based on shared interests. In this research, it refers in particular to the involvement of local residents living in historic built environments, and how they act together in accordance with their shared interests aiming at their common targets.

1.2.3 *Relationship between humans and natural processes*

The relationship between humans and natural processes is generally recognized as one of the fundamental actions of human beings for their continuous existence (Hough, 2004; Govorushko, 2012). Yet, this relationship may be seen as most difficult to conceptualize, as it has been continuous along with the growth of civilization. In particular, for the last 200-300 years, this relationship has been seen as quite complex and problematic (Hough, 2004).

Bourdeau (2004) stated that the people-nature relationship has always been ambiguous, nature being seen as both provider and enemy of humankind. He notes that, on the one hand, in the Western religious tradition (Judeo-Christianity), humankind is set apart from nature and called to dominate it, yet this attitude has been revised more recently to become one of stewardship. On the other hand, Eastern religions (e.g. Hinduism, Buddhism, Taoism, and Shintoism) have a more holistic view and consider the human as an integral part of nature. Between the many views on this there are many varying ideas. So, the spectrum is perhaps:

- Humans as ecologically dominant over plant animal communities
- Humans as simply another animal affecting and being affected by the environment
- Humans as fundamentally different to other species, i.e. a ‘human being’.

In 1969, a Scottish landscape architect, McHarg, pioneered the concept of ecological planning

in *Design with Nature* (1969). He expressed his naturalist-oriented view about the relationship with nature and humankind's role. Thompson (2000, p. 150) describes that McHarg introduces the idea of symbiosis, co-operative arrangement which play an essential part in sustaining the biosphere.

The terms *nature*, *environment* and *natural processes* are not synonymous, but this thesis uses *natural processes* instead of *nature*, specifically in terms of humans' interaction. This is because historic built environments may be viewed as a result of the interaction between people and natural processes over time, and in the future; in other words, the way the relationship is reflected spatially within cities and the importance of looking at it over time. As mentioned earlier, this thesis will examine people's interaction with natural processes in historic built environments over time and in the present day. In this respect, long-term existing environmental characteristics or urban cultural landscapes in historic cities and towns may demonstrate the ongoing relationship between people and natural processes (Roe and Taylor, 2014, p. 242). Section 2.2.1 follows this relationship in detail.

Why this relationship matters and why disconnection is seen to be an issue – particularly for urban dwellers – that may create values and attitudes as well as health and well-being, and also policies related to this subject, may be described in Sections 1.2.4 and 1.2.5.

1.2.4 Impact of disconnection with nature and importance of the connection

Today, a large number of people, including children, spend distinctly less time outdoors than in previous generations (Louv, 2009). The RSPB (2012, p. 5) suggested:

That is one of the biggest threats to UK nature: without the opportunity and encouragement to get outdoors and connect with nature, children are missing out on so many benefits that previous generations have enjoyed, and it is putting the future of our wildlife and natural environment at risk.

It may be said that people's connection with nature or natural processes is universally important; it is also important that people learn about the behavior of nature and natural processes. Perhaps both are necessary for the continued existence of humankind as well as social well-being. It is certain that built environments offer far fewer opportunities for people living in these areas to interact daily with natural processes than those in the countryside. This is chiefly because most of the cities and towns in the world have undergone a process of development, with altered land surface use in and around the built environments. This destruction can be seen in elements of natural processes, such as forests, hills, rivers and open land. These elements seem to have been neglected or abandoned without due consideration of the values and benefits they offer, or without practicing appropriate use and maintenance.

During the process of urbanization, the forces of natural processes are hidden or removed (for instance, river are culverted, green areas are built upon) and access to such areas is made difficult or forbidden.

1.2.5 *Protection of the settings of natural processes*

Preventing the disappearance of natural landscape is an important agenda for many countries. For example, the European Landscape Convention (March 2004) covered not only the protection of ‘special’ landscapes but noted that all landscapes matter, particularly those where most people live most of the time (Roe and Taylor 2014; Bell et al., 2012).

In this regard, the protection of environmental characteristics or urban cultural landscapes in historic built environments is an important issue, as these characteristics offer value to wider communities, including biodiversity and ecosystem improvements of the particular place (Kendle and Forbes, 1997; Marzluff et al., c.2008). It should also be realized that their retention could only have been achieved by previous generations’ awareness of the environment as a place to live, as well as their efforts for its protection over a long period of time. Many historic built environments throughout the world still retain long-term existing environmental characteristic as historic urban cultural landscapes of the area. As described earlier, these environmental characteristics resulted from the interactions between people and natural processes over centuries, associated with the natural elements in that location, such as rivers, streams, beaches, hills, valleys, forests, fields of plants and other kinds of open land. This is related to the primary function of the settlement, as people selected places in which to live together, where they used the advantages of the location, including geographic and topographical settings (e.g. rivers, coastal features, valleys and hills) for their survival. Evidences for this can be found, for instance, historic as well as industrial cities of Newcastle upon Tyne in England, Glasgow in Scotland, and the internationally important cites of York and Edinburgh in the UK.

Regarding the consensus of the conservation of historic built environments, it has been broadened to include monumental architecture, historic housing estates and industrial heritage (Pendlebury 2009). This has been recognized as a significant step towards appreciating the historic distinction of each place. However, people’s daily interaction with natural processes in historic cities and towns has not been given enough credence, or rather not been included in the debate of historic built environment issues. The significance of retaining historic urban cultural landscapes should be considered as part and parcel of the distinctive characteristic of

each historic built environment and they should be protected.

Urban conservationists today have at their disposal a rich and diversified toolkit; a system of internationally accepted principles of conservation is in place, which is reflected in important international legal instruments such as the 1972 World Heritage Convention (Bandarin and Oers 2012). In addition, a culture-based appreciation of conservation diversity around the world has been recognized since the Nara Document on Authenticity was produced in 1994 (Larsen, 1995).

It is, therefore, important to study for local environmental distinctive, values and issues together with local contextual variables. In particular, it is important to examine the interactions between people and natural processes in historic built environments over time; a socio-ecological view may offer an insight into the theme of the research.

1.3 Research Aim and Objectives

1.3.1 Research Aim

The research has a central aim:

To explore a concept of an ecology of land use in historic built environments through an examination of relationships between people and natural processes.

1.3.2 Specific objectives of the research

The research specifically looks into people's daily interactions with natural processes in historical built environments, examining in depth the values and issues regarding such interactions over time and in the present day, including changes, continuities, impacts and tendencies. It also scrutinizes the way in which groups of people undertake collective actions regarding local environmental issues, including the protection and enhancement of long-term existing environmental characteristics.

In order to achieve this, the research carries out "thick" case studies in Newcastle upon Tyne, UK, and Hagi, Japan. The case studies seek to investigate the relationship between people and natural processes using historic perspectives, and people's daily interaction with natural processes today, particularly their collective actions regarding local environmental concerns. Both cities have provided significant materials for the research in order to look at this relationship over the past two to three centuries and onwards into the future. An important aspect of the case studies is that the sample cities have provided different contexts, historically as well as more recently, to examine the relationship between humans and natural

processes in depth. The different contexts include society, history, culture, tradition, climate, geography and topography.

1.4 Research Questions and Research Strategy

1.4.1 Research questions and sub-research questions

The research has two main questions that may identify the implications of people's connections or interactions with specific natural processes in their daily lives that may discover a key to an ecology of land use for historic built environments. These questions emerged from a review of the literature (see chapter 2) in response to the aim and objectives of the research. Chapter 2 explains development of and background to the research questions.

Main Research Question 1

In Newcastle and Hagi, have the interactions between people and natural processes affected the forms of growth of historic built environments?

Sub-Research Question 1

- (a) What forms of growth have occurred in the historic built environments in Newcastle and Hagi?
- (b) How has the growth been affected by interactions between people and natural processes?

Main Research Question 2

Using the examples of Newcastle and Hagi, can people's connections/interactions with natural processes be socially and environmentally beneficial?

Sub-Research Question 2

- (a) Have people worked to protect the long-term existing environmental characteristics of the place where they live?
- (b) How do contemporary citizens understand and evaluate their interactions with natural processes?
- (c) What evidence is there to indicate that the long-term interactions of people with natural processes have a beneficial impact?

1.4.2 Research approach

The research develops a framework to scrutinize the interaction between people and natural processes. The detail of the approach is shown in Chapter 3. The research uses a qualitative methodology based on case studies. The case studies obtain an evaluative account of people's daily interaction with natural processes and their views, opinions and concerns in relation to

the environmental issues of the place in depth.

The case studies focus on two historic cities, one in the UK, and the other in Japan, in order to examine the interactions between people and natural processes in quite different contexts. These cities were developed well before the advance of the Industrial Revolution, which allows the studies to look at the changes and continuities in people's interactions with long-term existing environmental characteristics and also in their values and other issues related to the research theme. The cities are appropriate places for the researcher to carry out the field surveys in terms of languages, time scheduling, feasible budget, and general knowledge of the places.

Method of data collection:

In this study, it was important to use an effective and appropriate method of collecting data, in particular to capture the views and concerns of people about interactions with natural processes in their daily life. The following strategies were adopted:

- Preliminary studies including pilot interviews
- Participating in various collective actions with people for a period of over two years
- Field surveys via questionnaire
- Face-to-face interviews with both individuals and groups.

1.5 Thesis Structure

The thesis consists of nine chapters.

Chapter 1 is the introduction.

Chapter 2 is the literature review and theoretical development. The research requires cross-disciplinary studies and a need for appropriate literature mapping to focus on the main topics. Thus, the chapter is structured into three parts. The first part addresses the topics from people's connection/interaction with natural processes in historic built environments including cultures and traditions, urban cultural landscapes, and urban ecology. The second and third parts portray the theoretical development. The research considers that forms of social capital: i.e. a network of individuals, groups and rules, linked to collective actions (Ostrom and Ahn 2003) may support the argument of the thesis. People's collective actions to protect local environmental features may be considered as the theoretical framework of this research.

Chapter 3 reports on the methodology of the research and is divided into three sections. The first section describes the research strategy, qualitative case study approach and case study

justification. The second section describes the research development process: how the research should proceed from preliminary studies and pilot interviews, actual field surveys in the two cities to analysis, discussion and conclusion. The third section shows the research methods and techniques, including participation of the community in activities, collection of data, information and face-to-face interviews, and their validity, reliability and limitations.

Chapter 4 reports the findings from the case study investigation in Newcastle. It describes the context of natural processes from a historic perspective; in particular, in relation to changes of land use and geographic and topographic characteristics. The topics focused on are the cultural landscapes including the Town Moor, Jesmond Dene and the allotment gardens.

Chapter 5 discusses the findings and analysis of the field survey in Newcastle. Specific topics are the allotment gardens and the works of the allotment associations. These are examined through the views and opinions of the plot-holders, obtained through participating in their activities and via survey and face-to-face interviews of individuals and groups.

Chapter 6 consists of the case study investigation in Hagi, Japan. It shows the context of natural processes in historic resources in the city, with particular reference to the castle town during the period of the 16th to 19th centuries, as this has provided fundamental and important contexts of the present city in a variety of aspects, including the relationship between humans and natural processes. This is because Hagi castle town faced difficulties of its delta area along with other geographical and topographical characteristics. The main topic concerns preventative measures to alleviate flooding problems with the cooperation of the townspeople and administrators.

Chapter 7 explains in detail the findings and analysis of the field survey in Hagi. It shows the outcomes of the field survey in the city, including the work of various volunteer groups of residents for the protection of the cultural landscapes, including respondents' opinions, views and concerns. It reveals both positives and negatives in depth.

Chapter 8 discusses the findings of the literature review and the case studies in Newcastle and Hagi. It argues for the importance and values of people's daily interactions with natural processes through the answer to the main research questions and sub-research questions. Also, it demonstrates an important aspect of the collective actions of the groups of residents for the protection of the historic cultural landscapes in the case study locations.

Chapter 9 provides the key points of the overall conclusion to reinforce the answer to the research questions in Chapter 8, reflects on the research and suggests prospects for future research.

Chapter 2:

Literature Review and Theoretical Development

Chapter 2: Literature Review and Theoretical Development

2.1 Introduction

2.1.1 *Scope of the literature*

This research examines the relationships and influences between people's actions and the long-term existence of environmental characteristics, such as rivers, valleys, forests and grassland, in specific historic cities. This chapter reports on an examination of a multidisciplinary literature to form a theoretical framework. However, there is a lot of literature relevant to this study. Environmental studies in relation to society could be the key disciplinary area of the literature; for instance, culture and tradition in relation to urban landscapes. It may be necessary to look at early theory of the relationship between people and natural processes, including the early 20th century. This will clarify what this research is about.

The key current debates in this field include the way in which urban dwellers make connection or interaction with the natural environment of the area where they live. It may require a more research to see in detail how particular urban dwellers interact with natural processes daily in order to contribute to urban ecosystems and social well-being of the area.

This research aims to inform an ecology of land use in historic built environments with particular reference to the interaction between people and natural processes. It does not attempt to reconceptualise the relationship, but rather to examine their connection/interaction in two quite different contexts. This is to better understand how the relationships function and evolve; for instance, changes, impacts and trends in relation to people's life, society and the environments where they live. Understanding the interaction with historic cities is important to understand urban dynamics and ecology, particularly as it is claimed that the interaction is closely related to current environmental and social concerns, such as urban ecosystems and social well-being.

This chapter provides the basis of the argument that is developed in the following chapters. It aims, then, to examine literature relating to the aim and objectives of the research. The scope of literature consists of the following three genres, and Figure 2-1 shows the three literatures' mapping to attempt to conceptualise the structure of the literature reviews. It illustrates the relationships between the different genres, which are topics for methodological development.

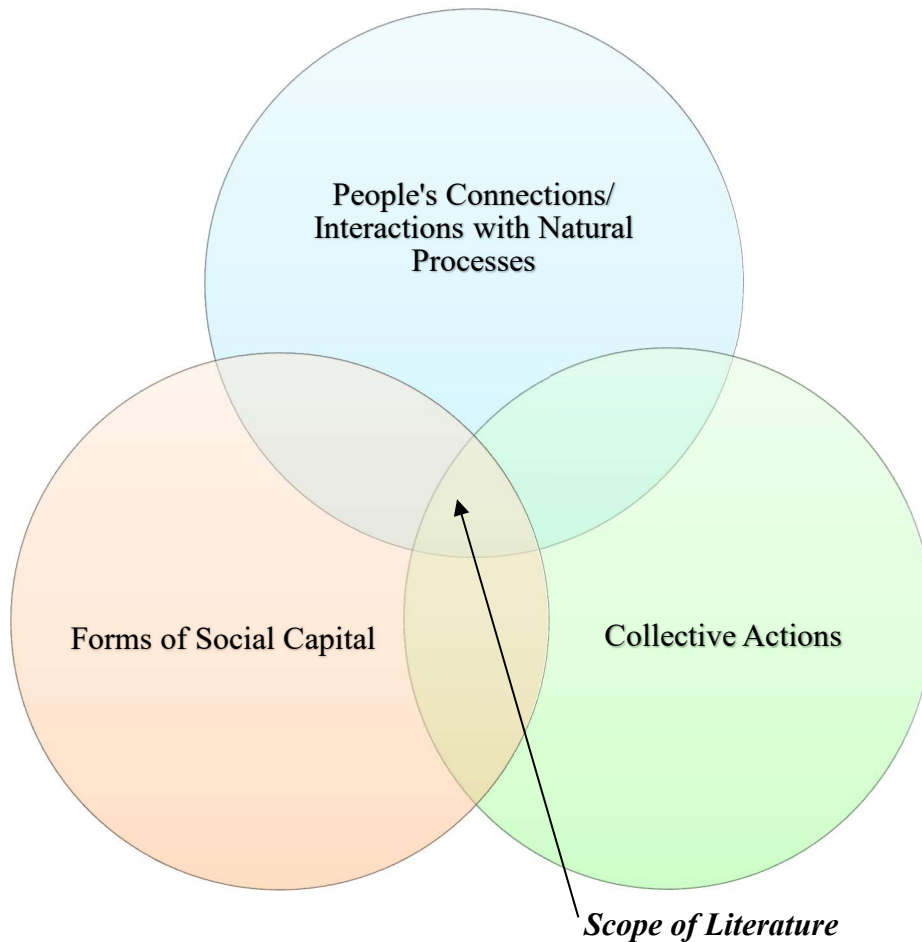


Figure 2-1: Conceptual basis for literature mapping

Literature genres

(1) People's connections/interactions with natural processes

This examines three major aspects of such interactions:

- (i) The dimensions of humans' interactions with natural processes, such as the development of the theory of the relationship between people and natural processes or people's interaction with environmental characteristics;
- (ii) The relationships with natural products, cultures, traditions and institutions; and
- (iii) The evolution of the urban ecological emphasis in urban landscape management. This requires examination of the literatures of urban landscapes, urban ecology and urban nature conservation.

(2) Forms of social capital

The second genre is the literature on the theory of social capital, and its environmental issues. This is to identify how people – i.e. individuals and groups – can collaborate in the context of institutional constraints to engage in various actions.

(3) Collective action

The third genre is the literature on collective action. This is how the people involved can engage in common actions to pursue their shared interests. The characteristics and the role of social capital for collective actions.

2.2 People's Connections/Interactions with Natural Processes

2.2.1 Relationships between people and natural processes

Thompson (2000, pp. 142–143) makes a helpful summary of the people–environment relationship in general, that:

There are two broad divisions in humanity's relationship to its environments, the anthropocentric and the non-anthropocentric, each of which may be subdivided. Anthropocentric theories include both egocentric and homocentric varieties, while non-anthropocentric theories can be classified as either bio-centric or eco-centric. Anthropocentric theories place the human species at the center of the moral universe. They are described in detail as a typology of theories within environmental ethics.

Recent theory developed by Keller et al. (2010) describes the subject of the people–nature relationship from the environmental ethical point of view in that it concerns how humans, 'as moral agents, best live their lives in their earthly home' (ibid, p. 10). It includes the study of human beings, the study of the environment and the study of relationships between the two within the context of ecological systems. Concerning such relationships, Keller shows a conceptual shift from a positive anthropocentric view, such as indicated the French philosopher Descartes (1596–1650), to human's moral duties to non-humans, from the German philosopher Kant (1724–1804). Keller suggests that the development of environmental ethics can be illustrated by a series of wondening concentric spheres of inclusion of membership in the moral community (Figure 2-2).

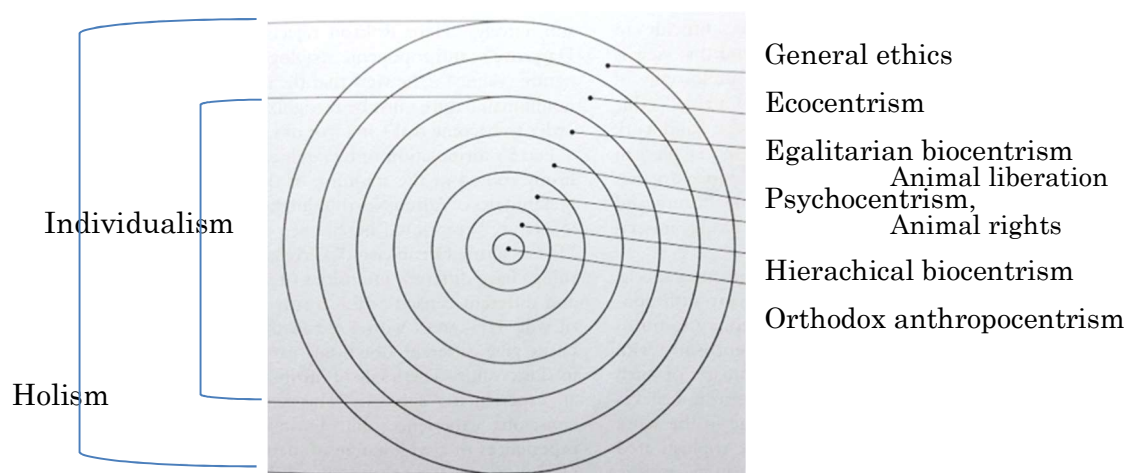


Figure 2-2: Spheres of moral consideration, (Source: Keller, 2010, p. 11)

Recent theoretical discourse over the issue of the relationship between people and nature has made efforts to reconceptualise the discussion. The areas in the literature concerning this relationship have been transformed in such ways as people to society, city to urban nature to environment, ecology or ecosystem. This can be seen in the work of a number of other authors in the discussion about the relationship between city and ecosystem and between city and socio-environment (Heynen, Kaika and Swyngedouw, 2006; Schroeder, 2007; Hiller and Healey, 2010). Other recent literature combines the words of the human/nature relationship into 'the natural city' (Stefanovic and Schrper, 2012) and 'Urban ecology' (Marzluff et al., 2008).

The reasons for this shift may imply an emerging importance of socio-environmental or socio-ecological interactions between people and natural processes in urban environments. They may be related to the need for an urgent response to deteriorating environmental conditions: the global ecology, climate change, the importance of nature/natural processes relationship along with the growing urban population throughout the world affecting the ecosystem of the earth, globally and regionally.

Heynen et al. (2006, p. 4) argue the importance of the realisation that the creation of urban environments, like cities, are specific historical results of socio-environmental processes, simply stating that cities are built out of natural resources through socially mediated natural processes. Schroeder (2007, p. 293) argues that human–nature relationships reflect and are reflected in people's experience of the places and environments they encounter in their lives.

It is notable that more recent research on the subject has been about the connections between ecosystems and people (for instance, Hawkes and Acott, 2013; Russell et al., 2013). These have shown the value of human connectedness to nature. Russell et al. (2013, p. 494) identify the need for further studies to extend the boundaries of existing scholarship to new approaches to knowledge synthesis, including to clarify the benefits of living in nature, on learning and inspiration, and the links between identity, self-sufficiency and belonging with nature.

Everts, Mitten and Overholt (2014, p. 10) describe the connection with nature, which may share the meaning of 'connection' in this research:

Humans are innately connected with nature evolutionarily, biologically, emotionally, spiritually and socially. This connection is reciprocal; we are influenced by nature and we influence nature. Connected means that we are attached or united, we are joined; we are related as family ties. In a state of connection there is a link or bond: there are

causes and effects. We are connected to nature; meaning that we are in relationship with other living beings and these relationships impact our lives.

The connection/interaction with natural processes can be looked at through people's attitudes and perceptions of natural processes. In the real world, the relationship has been seen as a highly controversial characteristic of urban environments along with growing urbanism and dynamics.

The literature relating to connections between humans and natural processes also discusses disconnections. Today, a significant proportion of the population are disconnected from natural processes to a large extent in daily life, particularly people who live in urban areas. It is clear that this tendency of disconnection has been drastically increasing for the last two decades or so (Louv, 2005). This can be related to the characteristics of modern urban life, such as capitalism, materialism and competitiveness. The disconnection is also concerned with health and safety issues in relation to deteriorating urban environments; for instance, increasing car ownership. It has created the fossil fuel energy and CO₂ emission issues, as well as risk issues for vulnerable people. However, it should be realised that the disconnection seems to have begun much earlier than modern technological development with the advance of the Industrial Revolution (Douglas, 2013).

Heynen, Kaika and Swyngedouw (2006) claim that it is capitalism which ardently defines the inherited separation of nature and society, and with pride rather than shame. Selman argues (2012, pp. 5–6) that 'many of the environmental problems around the world have been attributed to a profound disconnection between humankind and nature'.

The current proliferation of information technologies has created changes to the urban lifestyle; for instance, children are kept indoors, as IT offers greater opportunities for them to access the outside world as well as to enjoy diverse amusements than does the real outdoors. Louv (2005) describes the negative effects to children of disconnection with nature as 'nature-deficit disorder', the human costs of alienation from nature, including diminished use of the senses, attention difficulties, and higher rates of emotional and physical illnesses.

It is important to examine the values of the interaction between people and natural processes from the point of view of urban ecology. This may present people with the life of other species in relation to urban nature conservation, such as the protection of plant and wildlife. Wilson's (1984) 'biophilia hypothesis' suggests that about human beings have an innate need to affiliate with other forms of life such as plants and animals. In relation to plants and other species, this study looks at the interaction between natural processes and

cultural development; in other words, at the natural characteristics of places in relation to local vernacular characters and food identities, such as allotment gardens.

2.2.2 Regional characteristics of natural processes in relation to tradition and culture

Historically, perhaps until the emergence of the Industrial Revolution, people connected with natural processes for almost everything in daily life, whether they lived in the town or the countryside. Living conditions before the Industrial Revolution were very much dependent on regional characteristics of natural processes and the surrounding natural environment, including climate, soil, vegetation, geography and topography. People had to find a way to live along with natural processes distinctive to their neighbourhood and region. Human culture developed as a result of these interactions (Hough, 2004; Govorushko, 2012).

The term *culture* is extremely difficult to generalise about or define. The Oxford English living dictionary (Oxford Dictionary, 2016) suggests ‘the arts and other manifestations of human intellectual achievement regarded collectively’. In looking at this place by place, there are diverse traditional local cultures in existence in different places in the world. Many studies exist that demonstrate indigenous and local cultural development, and relationships with specific contexts, such as Thayer Jr (1994) and Taylor, (2014). The local cultures seem to be born of the interactions between human and natural processes over time within very limited areas, resulting in the interaction of cultures. Also, regional natural products were the results of the interaction between people and natural processes. Local and regional character and conditions are therefore important in developing cultural character.

Geographical and geological characteristics

Geographical and geological characteristics of area play an important role of regional cultures and traditions. An example is the vernacular houses in England, which were distinctive in each region, as they were built with locally available materials taken directly out of the soil and vegetation of the land. This has resulted in locally identifiable characteristics in style, such as different coloured bricks, different kinds of trees and different types and colours of stones, e.g. lime, sand, among others. Clifton-Taylor (1972) described the pattern of the materials traditionally used for the house in England and Wales in relation to the different regions with regard to geographical and geological characteristics.

Another example can be seen in Japan: traditional houses were built nearly entirely of wood wherever the house was located in the countryside or a town. Kohara (1972) describes Japan as the country of wood culture, as the land produces abundant trees of a variety of species. But, the house styles for both the inside and the outside were rather different and characteristic from region to region, reflecting the regional climates which vary considerably with geographical location (Kawashima, 1963; Ito, 1965; Morse, 1972).

Wylie (2007, p. 9) takes another step and suggests how human societies, in turn, have an effect on the character of the landscape. He outlines a clear definition of culture–nature relationships:

Culture/nature relationships have often been taken to constitute the very heart of landscape studies in cultural geography, and in linked subjects such as anthropology and archaeology. Traditionally, landscapes have been defined by geographers as the product of interactions between sets of natural conditions – weather, terrain, soil type, resources, etc. – and sets of cultural practices – agricultural practices, religious or spiritual beliefs, shared values and behavioral norms, the organization of society vis-à-vis gender roles, property ownership and so on. Nature plus culture equals landscape in this account.

In the early 20th century, Tetsuro Watsuji, a philosopher in Japan, ardently expressed his theory about the issue of nature and man in relation to climate in his book *FU-Do* (1935). *Fo-Do* means, literally ‘wind and earth’, as a general term for the natural environment of a given land, its climate, its weather, the geological and productive nature of soil, its topographic and scenic features. Watsuji looked at three types of climates: monsoon, desert, and meadow; and noted that the characteristic of nature of each climate determined human basics, from the way of life to policy in each zone (Watsuji, 1935, p. 1).

Climate characteristics

The UK and Japan are island nation surrounded by seas but located quite different positions of the north latitude, providing quite different climatic conditions.

The climate of the UK is moderate as the warm current runs from the Gulf of Mexican to the North, in spite of the position of the island, located approximately latitude of 50°N to 60°. The temperatures are relatively mild in summers and not too cold in winters and do not show great differences in regions at the north and south, probably due to a lack of high mountains. Fogs occur often especially autumn and winter. In this climate, plants grow well in the spring to the early summer and grass remains green throughout the year, providing the characteristics scenery of the countryside. Coupled with the regional geographic and geological distinctive characteristics, shown earlier, people are aware of esthetic significance of the countryside landscapes.

Whereas in Japan, these characteristics of the vernacular associated with cultural geography can be seen very differently to the UK, in particular, regional cultures and traditions. These are closely related to the climatic and geographical conditions of the place with which people interact.

Japan has a unique climate, explained by the form and the location of the Japanese archipelago. It stretches from the north-east to the south-west (latitude approx. 23°20'N to 45°30'N, longitude approx. 130°E to 145°E for the main four islands and Okinawa). The main islands face the Sea of Japan to the west and the Pacific Ocean to the east. In the main, the climate of Japan belongs to the temperate zone, but Hokkaido is in the subarctic and Okinawa in the subtropics. In addition, there is a chain of approximately 3,000 metre high mountains located continuously through the central part of the main island, Honsyu. Therefore, the climate is clearly defined in places with four distinctive seasons. Moreover, because of the characteristic monsoon, particularly in Honsyu and Kyusyu, this generates considerably different climates for the western and eastern sides of the archipelago. For instance, for about two-thirds of the year, very hot humid air comes from the south – from the Pacific Ocean – and it often brings typhoons. During the rest of the year, winds from completely the opposite direction – Siberia – bring colder air. At the peak of winter, as the very cold air passes over the Sea of Japan, it contains a great deal of moisture. When it hits the high mountains, a tremendous amount of snow falls and accumulates on not only the mountains but also on the flat land (Japan Meteorological Agency, 2016).

The characteristics of the Japanese climate, *Fu-Do*, in different regions has given rise to people's way of daily life as well as regional specialities from natural products. For instance, each region has a long-established high quality and quantity of fruits and vegetables as a result of the interaction between the people and natural processes of the area. Certain fruits and vegetables are often used to describe the identity of the area; a fruit, flower or tree are seen to represent the city or the prefecture. Examples are: the apple in Aomori prefecture, producing more than half of the national total; the cherry in Yamagata prefecture, accounting for 76.5%; apricots in Wakayama (61%), peaches (70%) from Yamanashi, Fukushima and Nagano, and 100% of pine apples in Okinawa (Regional Economy Laboratory 2011). As a result, this demonstrates the distinctive cultural landscape of each region throughout the country.

Bruno Taut, an exiled German architect in the Weimar period, observed the lifestyle and houses of Japanese society (Shinoda, 2008, p. 161) through his experiences of living in the Takasaki, Gunma prefecture area of Japan for three years. He observed a positive side of

Japanese culture in relation to nature. He noted Japanese culture and architecture had significant connections to their preference for the beauty of nature (environment) and materials from natural products. The structure and tones of Japanese architecture were significantly influenced.

2.2.3 Natural processes in relation to culture

Natural processes in relation to culture over time can be seen as the reflection of the development of science and technology, as there have been multiple interactions between people's activities and natural processes since the beginning of human existence. For instance, people learned their survival methods empirically through coping with nature or learning from natural processes, such as the use of fire in prehistoric times. Humans had started to work with the land and soil and they lived together in villages and towns during the Neolithic age. As a result, people's connection with nature has given rise to tremendous developments in living environments, notably in cities and towns. At the same time, however, a variety of environmental concerns emerged, and as interactions intensified the issues expanded. This was particularly acute as surface land use changed drastically (Stefanovic and Scharper, 2012; Govorushko, 2012).

In Japan

Traditional Japanese culture was grown out of the interaction between people and natural processes. This distinctiveness has been determined by the characteristic position of the Japanese archipelago on the earth and its geographical settings, such as the most active seismic zone in the world. One of the distinctive examples can be explained by the fact that the Japanese nation has always been in a position to face the behaviour and threat of natural processes (e.g. typhoon, earthquake and tsunami) and to survive.

One of the significant points of the Japanese culture in relation to the behaviour of natural processes can be found in the resilient methods against such behaviours developed in historic Japanese wooden architecture. For example, the pagoda in the *Horyuji* temple precinct in the city of Nara has provided a unique structure and method of assembly to resist earthquake tremors. The pagoda, which was built in the late 7th century entirely from Japanese cypress, stands to this day, despite a significant number of earthquake and typhoon experiences (Asano, 1970; Nishioka, 2003). The nation has sacrificed a great deal to these natural behaviours. Yet, through these experiences, the country has gained many generations of wisdom as the people have had to endeavour to work together with the

distinctive natural processes over a long period of time; for instance, traditional wooden houses and the Japanese way of life (Taut, 2008).

As a result, it may be observed that the Japanese people's awareness of natural processes has been embedded in the nation as a cognitive norm with which to live, at least before rapid economic growth took place after World War II. This cognitive norm can still be found within the way of life among many Japanese in many historic towns and cities throughout the country, which has provided the benchmark for the protection of the cultural landscapes of Japan (Architectural Institute of Japan, 2011). This can be identified in the natural products from various regions as well as in the natural processes existing in those places. For instance, local people have created regional cultures and traditions in relation to the seasonal vegetables, fruits and plants of the particular region as well as climatic characteristics. These can be seen at annual events and festivals in the different places as an example of the interaction between people and natural processes, such as cherry blossom viewings and events (Sugiura and Gillespei, 1993).

It is interesting to note that, in a Japanese sense, working together with natural processes is commonly understood among the Japanese nation as the ethical basis for the appreciation of the land's care management (Ministry of the Environment, 2016; Japan Policy Institute, 2016; Itonaga, K. et al., 2010). This has particularly been seen in the traditional primary industries such as agriculture, forestry and fishing, if not in any other field. In fact, it is clearly marked by the Japanese philosopher Umehara (1996) when he describes 'symbiosis with nature' or 'work together with nature' as the Japanese environmental ethic that has originated from the long-lasting rice harvest culture in Japan.

Rice agriculture requires certain weather conditions to occur in sequence during the growing season; this begins with a rainy season in June to early July to provide a paddy field, a lush summer to follow for rapid growth and then more temperate days in early autumn to mature; finally, the harvest takes place in late September to early October. This requires an appropriate and constant amount of irrigation-facilitated water supply to the fields in each of the different stages (Chikuzen Asakura Agriculture Cooperative, 2015). The oldest rice paddy field found in Japan is at the Fukuoka plain field, near other excavation sites which indicate that the rice cultivation culture existed in the areas some 2,500–2,900 years ago (Sasaki, 1988). Japan has established its own way of rice farming across this long period of history to meet land requirements, and natural processes and characteristics of each region, for over 2,000 years.

In today's Japanese rice cultivation method, no significant changes have appeared in relation to the rice growing process and the seasonal climatic characteristics, which have still given rise to distinctive sceneries at each stage of the process, representing the characteristic local landscapes of the particular place. However, the development of modern agricultural science and technologies have provided significant changes to the farming culture as well as the farmers' lives. In terms of the interaction between people and natural processes, recent developments in science and technology have contributed significant reductions to the labour force. At the same time, they have caused changes to ecosystems and biodiversity, as well as significant transformations to wildlife (Ministry of the Environment, 2016).

In England

During the course of the Industrial Revolution, the relationship between humanity and natural processes became increasingly complex and problematic. As a result, built environments, as in England, experienced both a great deal of prosperity and significant social problems in the lead up to the Industrial Revolution (Atkins et al., 1998; Bandarin and Oers, 2012; Douglas, 2013).

For example, in the UK, a vast number of migrants moved away from life on the land in the countryside towards newly flourishing towns where a variety of expanding new industries were rapidly establishing themselves; small towns became large and active industrialised cities. The period produced a wealth of opportunities along with the dynamism of technology and science. However, at the same time, it also created overcrowded living conditions for the working classes in particular, generating environmental and social problems within an extremely short period of time (Tarn, 1969). From this period onwards, urbanisation increased rapidly, creating a transformation in the environment and a great many changes in people's lives, creating an urban culture, as well as changes to urban ecology and ecosystems (Marzluff et al., 2008).

Williams (2011, p. 163) emphasised the impact of the Industrial Revolution, expressing the human perception of the social and cultural viewpoint on relations between the country and city through his learning from his own life and English literature. Attitudes were decisively transformed. He notes the significance of the change.

The railway is at once the 'life's blood' and 'the triumphant monster, Death'. And in this dramatic enactment Dickens is responding to the real contradictions – the power of life or death; for disintegration, order and false order – of the new social and economic forces of his time. His concern is always to keep human recognition and

human kindness alive, through these unprecedented changes and within this unrecognizably altered landscape.

It is important to note here that in the UK, the consequences of the Industrial Revolution founded new social movements that gave rise to the emergence of modern society, which forms a base for society today. These movements had a great deal of influence on other countries that followed the British example of the Industrial Revolution. These influences have covered the arts, social life and social consciousness from industrialised England.

For example, John Ruskin's critique of arts, life and the environment in Victorian times led to the founding of the Arts and Crafts movement (Brooks, 1989). The Socialist League of William Morris and Edward Carpenter provided the next movement for architects and artists to address social concerns (Parry, 1996), which influenced the next generation of architects such as Barry Parker and Raymond Unwin (Jackson, 1985). Parker and Unwin worked for the first garden city, Letchworth. The garden city movement was inspired by Ebenezer Howard's idea of creating a reformed community where each positive characteristic of town and countryside could be married and enhanced, such as the beauty of nature and social opportunity (Howard, 1965). These movements led to the emergence of conservation of urban nature (Kendle and Forbes, 1997; Evert, Mitten and Overholt, 2014), and will be referred to in Section 2.3.2.

It may be realised that the recent rapid urbanisations throughout the world have raised up a kind of recurring problem that advanced countries have already experienced; in particular, the urban environmental conditions in developing countries, such as air pollution, overcrowding, a widening socio-economic gap in society and, also, concerns about the relationship between humans and natural processes, including people's divorce from nature.

Nonetheless, for the last 20 years or so in particular, new movements have emerged that are concerned with environmental issues throughout the world, although many would claim these are not yet effective enough. A movement could be seen as a sort of sense of the socio-ecological consciousness which emerged as the consequence of the Industrial Revolution through people's interactions with natural processes in their everyday lives. The following examples were found from traditions or experiences, and also resulted from careful considerations and appreciations for the existing settings of natural processes.

For instance, various collective actions of the International Federation of Organic Agriculture Movement (IFOAM) have been significant worldwide. In the UK, allotment gardening has regained its popularity, not only for retired people, but also younger generations and both genders (Hawkes and Scott, 2013), and movements for community

gardens and guerrilla gardens have sprung up in many countries including Australia and the USA (Guitart, Byrne and Pickering, 2013; Palamar, 2010). Also, notable *satoumi* schemes have been found by Japanese scientists and fishermen, initially through human interactions concerning the relationship between fish and natural processes. These have given rise to increased biological productivity and biodiversity in coastal areas (*Satoumi* Net Ministry of the Environment in Japan, 2015). These cooperative mechanisms have provided a variety of benefits and values for individuals and communities, as well as for ecology and biodiversity (Duraiappah et al., 2012). This will be shown in Section 2.3.4.

2.2.4 *Evolution of the urban cultural landscape*

Cultural landscapes may be seen as the result of the interaction between people's activities and natural processes over time. Roe and Taylor (2014, p. 3) extended the notion of cultural landscapes from heritage study areas. They explained that 'on layers of activity in the past that build up present-day landscapes, cultural landscapes are seen as living landscapes that reflect a range of relationships between humans and natural cycles'; for example, the beautiful countryside scenery of the North Yorkshire Moors in England.

The World Heritage Commission (1992) was the first international body to recognise and offer protection of cultural landscapes of outstanding universal value. Roe pointed out (2014, p. 242, Figure 14.1) three aspects of cultural landscapes in a wider sense as follows:

Natural culture dominates – landscapes where the impact of humans may apparently be small or hidden or non-human processes dominate, e.g. Antarctica.

Symbiosis relationship – Landscapes created by the intertwining of human and natural processes in some kind of harmony or symbiosis relationship.

Human Culture dominates – landscapes that are dominated by human artefacts, buildings and where natural processes have been severely modified by human control, e.g. large cities.

Cultural landscapes in historic built environments can be seen as a symbiotic relationship retained since medieval or ancient times. These landscapes have resulted from the interaction between people's activities and natural processes in various ways, such as water courses, beaches, grasslands and hill forests. One example is the historic core of the city of Durham in the north of England, where an ancient geographical setting has provided the position of the magnificent 11th century cathedral, standing on the top of a hill forest, along the area of the inner part of the U-shaped widening River Wear. It can be seen that the geographic and topographic characteristics of Durham are the important point that people

took as the advantage of a natural site that afforded them a defensive position. (The area has been designated as a UNESCO World Heritage Site.)

This long-term existence of environmental characteristics may have played a significant part in the scenery of each historic built environment. They could be called traditional historic cultural landscapes in urban settings, because they have provided some kind of harmony with the traditions, cultures, historic buildings and characteristic geographic conditions of the particular areas. The contexts of each place have resulted in the characteristics of the traditional cultural landscapes of the individual area, including people, communities, traditions, cultures, histories, politics and economies and different natural elements such as water, air, climate, wind, soil, vegetation, geography and topography. Thus, each historic place has given rise to its own characteristic traditional cultural landscape.

The word ‘traditional’ may imply that past, present and future values in these places are linked together. In other words, traditional cultural landscapes have created local values, both tangible and intangible, including people’s actions to protect the local cultural landscapes over a long period. Therefore, traditional local cultural landscapes should be recognised to be as important as historic buildings as they have provided values and contributions to the community, socially as well as environmentally, including social well-being. Furthermore, their role in environmental functions should be emphasised, such as urban ecology, the ecosystem and biodiversity, as well as urban nature conservation; for instance, *satoyama* and *satoumi* in Japan (Kosaka et al., 2013), and allotment gardens in England (Crouch and Ward, 1997).

2.2.5 Allotment gardens in England

Allotment gardens are important cultural landscapes in England (Crouch and Ward, 1997; Crouch and Wildshire, 2005). Their uniqueness is closely related to the country’s modern social and political history. An examination of the historical development of allotment garden communities, as well as the present day, is useful in providing evidence that is highly important in delivering material for arguments about the interaction between people and natural processes.

The origins of allotments are described by the report of the Select Committee on Environment, Transport and Regional Affairs (1998).

Allotments derive from the enclosure legislation of the 18th and 19th century and the word ‘allotment’ originates from land being allotted to an individual under an

enclosure award. The most important of the acts was the General Enclosure Act 1845 which required that provision should be made for the landless poor in the form of 'field garden' limited to a quarter of an acre. At this time, Allotments were largely confined to rural area although during the latter part of the 19th century, parcels of land in urban area began to be used as allotments and the value of such plots for the urban working class was starting to be recognized. The spread of urban allotments was intensified by the growth of high-density housing, often without gardens.

After the Industrial Revolution, the 1840s was the time of the most radical social movements in England, concerned with working men's rights, land and voting reform with the population's move to industrial towns and cities. On the one hand, there was the latter stages of the Enclosure movement (1750–1850), which was a reaction to the landowners' enclosure of the commons. On the other, this period was the high point of the Chartist movement, which was concerned with men's rights to land and votes; in April 1848, the third and final petition was presented and rejected, and would have to wait for another 20–40 years to pass through Parliament (Tod and Wheeler, 1978, pp. 73–79).

The present legislative provisions for allotment gardens developed along with various improvement schemes for the condition of working-class people during the first half of the 19th century. They were included in the Small Holdings and Allotment Act 1908 and the Allotment Acts 1922–1950, so that labourers and industrial workers moving to the town might have the opportunity to grow food. Other notable legislation for concerns about urban living in this period were the Housing and Town Planning Acts of 1909 and 1919, and the Town Planning Act of 1925.

The Allotment Act of 1925 made it obligatory for local authorities to give special attention to the matter of open spaces and allotments in preparing their schemes. The Ministry of Health urged more land to be reserved for these purposes (Cherry, 1974, p. 87). An 'allotment garden' is what people commonly mean by the term *allotment*, defined in the Allotment Act 1922, that is, a plot let out to an individual within a larger allotment field. The legislation enabled people to grow their own produce such as vegetables or fruits, regardless of whether they had access to a private garden or not (House of Commons Select Committee on Environment, Transport and Regional Affairs, 1998).

Table 2-1 shows the process of the main legislation for holding an allotment and the development of the allotment garden rules, as well as the relationship between allotment-holders and the local authorities.

1887:	Councils required to provide allotments when four or more local people requested them – as long as they could show they have been unable to obtain any privately; for the labouring poor.
1908:	<i>Small Holdings and Allotment Act</i> (Ministry of Justice 2008b); consolidated all previous legislation and laid down basis for all subsequent legislation. Councils obliged to provide plots to meet demand, i.e. at least four local people requesting them, and to a ‘sufficient number’; by compulsory purchase if necessary.
1919:	Everybody eligible for allotments.
1922:	<i>Allotment Act</i> ; limited the size of an allotment to one-quarter of an acre and specified that it should be used mostly for growing fruit and vegetables. Also protected tenants by laying down periods of notice, ensuring compensation for termination of tenancies and compelled most allotment authorities to set up allotment committees. Security of tenure introduced, plus consultation, notice-to-quit periods and compensation on termination of the tenancy.
1925:	<i>Allotment Act</i> ; required local authorities to recognise the need for allotments in any town planning development. Established ‘statutory’ allotments which a local authority could not sell or convert to other purpose without ministerial consent,
1950:	<i>Allotment Act</i> ; made improved provisions for compensation and tenancy rights. Also confined local authorities’ obligation to ‘allotment gardens’ only.

Table 2-1: Main legislation for holding an allotment

(Select Committee on Environment, Transport and Regional Affairs, 1998; Crouch and Ward, 1977)

Trends in supply and demand for allotment

The number of allotment plots expanded rapidly during World Wars I and II, and made a significant contribution towards food production during the wartime food shortage in the country. However, the number of plots from 1950 onwards showed a gradual decline. The reason for this shrinking of demand for allotments after World War II has a variety of economic and social drivers. These include the large number of new homes built after the war with an increase in private gardens, alternative forms of food supply and diversification of leisure activities (Select Committee on Environment, Transport and Regional Affairs, 1998). Figure 2-3 shows trends in supply and demand for allotments.

One of the most interesting points that can be seen in the trend is the fluctuation from the beginning of World War I in 1914 to the end of World War II. The highest increase was made during World War I as a result of the provision of temporary plots to respond to the large demand for food; 1.5 million plots in 1918. However, it dropped sharply by 50% in the following 10 years, down to 800,000 just before the next world war. After that, it then

increased drastically again. The latter expansion was seen in the period of World War II, in the ‘Dig for Victory’ campaign and additional land requisition (Select Committee on Environment, Transport and Regional Affairs, 1998).

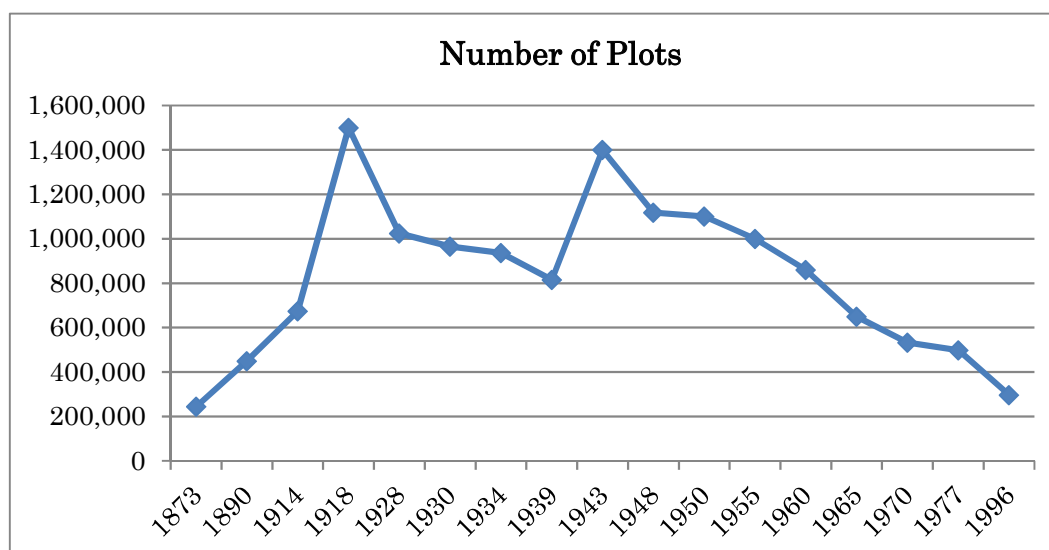


Figure 2-3: Trends in supply and demand for allotments
(Source: Select Committee on Environment, Transport and Regional Affairs, 1998; Newcastle City Council, 2010)

The reason for the decline in allotment numbers between the wars was said to be that temporarily used plots were returned to other uses. The 1969 Thorpe Inquiry reviewed the reasons for the decline that took place after World War II. This inquiry suggested that, although allotment land was taken over for other purposes, factors such as increasing prosperity and the popularity of other spare-time activities also played a part. The inquiry recognised the importance of allotments for recreational use and suggested a wholesale revision of allotment legislation, but these recommendations were not acted upon (Select Committee on Environment, Transport and Regional Affairs, 1998; Crouch and Ward, 1977).

However, it should be noted that there may have been some other reasons for the trend in the decline of the number of allotment plots. It was the time for another radical social movement, the garden city movement, which emerged at the turn of the 20th century through the early part of the century. It was inspired by a book by Ebenezer Howard: *Tomorrow, a Peaceful Path to Real Reform* published in 1898, renamed as *Garden Cities of Tomorrow* in 1902. This created a new direction for social reform together with a strategy for solving the deteriorating environmental conditions of the industrial cities and towns in

England (Howard, 1965; MacFadyen, 1970). Then, the second reason occurred in the interwar period, with council housing provisions. This created a substantial expansion of housing with new changes in tenure structure. One in ten of the four million dwellings built between 1919 and 1939 were local authority houses. Private ownership also increased, greatly assisted by the rapidly expanding building societies (Cherry, 1974, p. 81); this also provided a radical departure in housing designs and layouts from those of the 19th century by-laws (Unwin, 1909).

These new approaches to the provision of living conditions in industrialised England could be seen as an influence on the declining trend in supply and demand for allotment gardens in the interwar period. This is because of the implementations of the garden city schemes, as well as the supply of housing, particularly for working-class people; not only decent houses, but also open spaces and individual gardens for each dwelling. These could be offered as places for the passing of spare time; for gardening, recreational and social activities. These designs and layouts were led by the architects and town planners of the first garden city of Letchworth, Barry Parker and Raymond Unwin.

It is notable that Parker and Unwin set out their design and layout with the concept of a low density of housing for the estate, with a slogan for '12 houses an acre', quite different from the conventional terraced houses in the late Victorian period, in terms of the cooperation of the estate with open spaces. This enabled the provision of a separate garden for each household and communal greens for communities. Unwin explained the enclosure of each individual garden and playground for children, as well as allotment gardens (Unwin, 1909). It was a remarkable provision as a council housing to create a healthy living environment with plenty of open land for communal use. Parker and Unwin are recognised as the key figures of 20th-century housing and town planning development in England. Their concept of and works on garden cities and suburbs, as well as town planning, have allowed people to be able to interact with natural processes in their daily life without going to the countryside. Their works have had a significant influence across the world, including Japan (Creese, 1966; Jackson, 1985).

2.2.6 Evolution of an urban ecological emphasis in urban landscape management

It has been suggested that an increasing urban population and human impacts on the environment have brought with them a need for a new ethic concerned with the relationship between human preferences and urban ecology. Marzulff et al. (2008, p. viii) considered that urban ecology is the study of ecosystems that include humans living in cities and

urbanising landscapes. Hough (2004, p. 5) suggested that the concept of urban ecology could be useful as a basis for shaping cities, saying that ‘there are inseparable links between nature, cities and sustainability’. The ecological footprint of Wackernagel and Rees (1996) indicate that every facet of human activities has profound implications for the survival of ecological processes as we understand them.

Humans cannot be excluded from a community of organisms and their ecosystem on the earth, as Vitousek et al. (2008, p. 4) stated:

Human use of land alters the structure and functioning of ecosystems, and it alters how ecosystems interact with atmosphere, with aquatic systems, and with surrounding land. Moreover, land transformation interacts strongly with most other components of global environmental changes.

An example of this socio-ecological approach can be seen in Finnish contexts: Yli-Pelkonen and Niemela (2004, p. 1947) looked at existing urban nature at the local context and summarised:

The loss of urban green spaces as a result of urbanization threatens the overall biodiversity of urban areas, and prompts us to consider the importance of existing urban nature more carefully. Because urban ecological systems are in intense interaction with human-social systems, it is fruitful to create an interdisciplinary research and planning framework to ensure the maintenance of biodiversity in urban areas. We adapted a suitable theoretical and conceptual scheme for the setting of Finnish urban development, which provides an example of a situation where a lot of nature has so far remained inside and around urban area.

This notion suggests an important point for urban ecological systems, where environmental characteristics have existed in the long term in a particular site in terms of the functioning of the ecological richness of species. This can be recognised by using the Ratcliffe (1977) criteria for the evaluation of nature sites. The criteria include size, diversity, naturalness, rarity, fragility, typicality, and recorded history, the position in an ecological and geographical unit, potential value and intrinsic appeal. The London Ecology Unit (1985) further emphasised that most of those sites have significance for biodiversity conservation *per se* (Kendle and Forbes, 1997, p. 132). Next, this section will look at how the relevant literature of urban nature conservation points out urban landscape management.

Urban nature conservation

Generally, it is widely recognised that sustaining urban ecosystems provides a better living environment for people (Kendle and Forbes, 1997; Marzluff et al., 2008). It is also understood that as the connection of urban inhabitants with natural processes increases, people tend to appreciate natural characteristics and are enabled to receive diverse positive

effects that nature offers, such as health, social well-being and other environmental values (Brook, 2010; Dinnie, Brown and Morris, 2013; Hawkes and Acott, 2013; Russell et al., 2013). However, if people do not care about urban nature or treat it badly, daily living conditions and urban ecology and ecosystems will deteriorate; for instance, excess consumption of fossil fuel increases CO₂ emission problems, a lack of maintenance of street trees and parks invite hazards, threatening health and safety. As a result, people disconnect with nature, or vice versa (Alberti, 2008; Louv, 2005). In other words, urban living conditions depend on the interaction of human and natural processes.

Urban environment issues cannot be tackled without the consideration of social, economic, political and ecological aspects together with environmental sustainability and cultural landscape (Heynen, Kaika and Swyngedouw, 2006; Keller, 2010; Stefanovic and Scharper, 2012). It is a matter of multidisciplinary concern for society as a whole.

The issue of nature conservation in urban settings plays an important role in tackling the concerns of human-dominated urban environments and ecosystems (Marzulff et al., 2008). Provisions for urban nature conservation can be attributed to the improvement of the living environment for urban residents as well as for the urban ecosystem services (Kendle and Forbes, 1997; Spangenberg et al., 2014).

Urban nature conservation movements have emerged since the consequences of the Industrial Revolution generated rapid and significant devaluation of urban environments. Following the garden city movement, allotment gardens, food production, parks, health, welfare, and people's awareness of nature were given to people as values (Crouch and Ward, 1997). The other urban nature movements included the establishment of urban wildlife groups from the 1960s, community group actions from the 1980s, followed by urban agriculture, food concerns, and recent ecosystem services, and so forth (Kendle and Forbes, 1997; Evert, Mitten and Overholt, 2014; Spangenberg et al., 2014). The movement can be seen as a consciousness of people of the time; it is interesting to see the expansion from individuals to groups and wider communities in the interaction between people and natural processes in particular on the urban land. It is important for this research to consider what urban nature means to people, and how the interaction between people and urban land can possibly be addressed with regard to the importance of urban ecology and urban landscape management.

Kendle and Forbes (1997, p. xi) provide a description of urban nature and a definition of urban nature conservation. It shows that the very concept of urban nature conservation can

be seen as an oxymoron. They define urban nature conservation as urban countryside, saying that ‘it allows for interesting parallels with the rural landscape’ (Kendle and Forbes, 1977, p. xii).

This is an arguable notion and it may not be appropriate to express urban nature conservation as ‘urban countryside’. Such a definition fails to give it its real meaning and is perhaps confusing, because the conservation of urban nature concerns not just nature or natural processes but also the interaction between natural processes and urban people. Their interaction may be different in urban settings and the countryside. The definition of nature conservation in urban settings needs to show the inclusion of aspects of the past, present and future roles and values of these involvements. It may be better just to describe it as a symbiotic relationship between people and natural processes in urban settings.

Kendle and Forbes (1997, pp. 115–116) portray the fundamental purposes and reasons for biodiversity protection for nature conservation in built environments in respect to the following five points (note: ‘health consciousness’ can also be included as an important concern):

- Resource protection
- Ecosystem balance
- Education/scientific
- Human preference: this is important to note in detail (p. 116) for this research:

The human emotional, spiritual or aesthetic wish to protect a species or area of landscape has been one of the most powerful forces in determining *de facto* conservation policy and designation of reserves for much of the site. The negative side of this motivation is that it can be obstructive to a more objective evaluation of conservation priorities, directing resources or concern to high-profile or attractive species which are not necessarily endangered and away from some ‘less cute’ groups such as invertebrates or micro-organisms which are more likely to be vulnerable, more likely contain biochemical resources and arguably cumulatively more integral to ecosystem balance.

- Moral imperative: another important aspect for the research is this:

All of the above arguments are ultimately human centered. They place a focus on the value of biodiversity for our own survival, development or pleasure. However, there is also a moral argument that says that all species have the right to exist and complete their evolution regardless of human concerns.

The last two points above are significant common phenomena. If human desires/needs are central to the urban environment issues, environmental ethics can be important. It is a

significant question and extremely difficult to address, and not the main subject in this section. Yet, it may be useful to see a fundamental point of environmental ethics.

Rolston (2010) (cited in Keller, 2010, p. 41) stated:

Environmental ethics is vital because the survival of life on Earth depends on it. The main concerns on the world agenda for the new millennium are: war and peace, escalating populations, escalating consumption, degrading environment. They are all interrelated. For the first time in the history of the planet, one species jeopardizes the welfare of the community of life on Earth, as we global warming and extinction of species. Ecology is about living at home. Figure out this home planet.

It is important to note here that Leopold's highly influential 'land ethic' (Leopold, 1948, pp.243-244), surprisingly almost 70 years ago, commented on conservation in the ecological conscience. He wrote:

Conservation is a state of harmony between men and land. The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals or collectively the land. A land ethic changes the role of Homo sapiens from conqueror of land community to plain member and citizen of it.

The concepts of Rolston and Leopold above can be seen as a fundamental understanding of the interaction between people and natural processes, it may provide a base of this study.

As Section 2.2 described, there are negative effects on children of disconnection with nature, and the value of children's connection with nature can be seen as it provides a great deal of positive effects for their growth. It should be realised that children's perceptions of nature are rather different to those of adults. For children, nature is located close to homes and schools; there is no need for it to be far away such as in the countryside or the botanic gardens, even just the back yard is sufficient (Hough, 2004, p. 20). This may also be applied to anyone coming across nature. In fact, there are many features and elements of nature seen in cities and towns, such as streams, ditches, groves, wetlands, a variety of fishes, wild flowers, butterflies, birds, and insects so on. Seasonal changes can be observed easily, not just from the weather, but trees, blossoms, bushes and migrant species. Understanding or knowing nature is a matter of consciousness of and connectedness with nature and its embedded experiences over time in daily urban life.

Florgard and Forsberg (2006, p. 91) also support this view:

Even small areas of remnant vegetation are important to preserve, and the proximity today nurseries, schools and residential houses is more important than uniqueness or other vegetation qualities for these small remnant areas. This is important for everyone, but especially for people with limited reach, such as children and adolescents, disabled people and old people.

Standish et al. (2012, p. 1213) express that ‘there is a chance to broaden traditional conservation and restoration goals for urban settings reflecting people’s preferences for nature in their backyards, and in doing so, offer people multiple ways in which to engage with nature’.

These views suggest that urban nature conservation needs to be considered in relation to social aspects, in particular the interaction between people and natural processes in their urban lives. This leads to an important point of this study: in the next sub-section, it looks at people’s involvement in local environmental issues.

2.2.7 *Community participation in urban nature conservation*

International understanding for the importance of community participation in urban nature conservation has been addressed in different places and literature in the past few years; for instance, in the international conference in Durban, South Africa (D’Moss, 1994).

It stated (p. 2) that:

Lack of contact with nature in urban areas, and other barriers to the right of enjoyment of aspects of nature is a basic issue for an environmental movement that wishes to release the huge missing contribution of local urban communities. Links must be built within the urban environment to enable contact with nature, both symbolically and concretely in the quality of its spaces.

It shows earlier recognition of the importance of community involvement in the environment, suggesting a necessity for interactions between people and natural processes in their daily urban lives. Kendle and Forbes (1997, p. 306) state that ‘urban nature conservation is more about process than it is about product’. They describe in detail the importance of community participation in urban land management; one of their notable points is related to the three principles of the community involvement of outlined below (ibid, p. 309):

- People willingly take responsibility for their environment and participate both individually and collectively in its creation and management.
- A creative working partnership is established with specialists from one or more disciplines.
- All aspects of people’s environmental needs are considered simultaneously and on a continuing evolutionary basis (Wates and Knevitt, 1987, cited in Kendle and Forbes, 1997, p. 309).

This concept has developed further towards people’s collective action concerning the environmental issues of the place where they live. A number of community-led nature

enhancement and conservation programmes have been taking place in many places in the UK.

For example, McPhee (2007, p. 183) shows that the actions of the Plumstead Common Environment Group in Greater London have exemplified positive local action for the improvement of one's immediate environment. It progressed from a small grass-roots local environmental initiative for cleaning up some waste land behind people's homes in 1991 to 50 ha of public open space. This has been implemented working closely with the local borough council.

Another example is in the city of Leeds. Goddard et al. (2011, p. 258) shows the outcome of a quantitative and mixed-method approach study for residential landscapes with private gardens in six wards in Leeds. It is worth noting that the study focuses on the values of urban residential ecosystems for biodiversity conservation, exploring the social and ecological factors that influence wildlife-friendly garden management. It stresses the value gained from community-driven initiatives rather than top-down financial initiatives. It concludes that 'mechanisms for increasing the uptake of wild-life gardening would benefit from harnessing existing social norms whereby ecological practices are spread by a process of neighbourhood diffusion' (p. 268).

The examples above may suggest that local environmental improvement schemes of individuals and groups as they carry out collective action may contribute to community enhancement also. In this respect, the Keep Scotland Beautiful schemes can be seen as a notable example of community participation in local environment concerns, because they have created both community enhancement and environmental enhancement via floral arrangements. Their continuous collective actions have developed into a variety of landscape improvement works throughout the area, establishing a network of projects forming a framework for a Beautiful Scotland application (Kirkcaldy, 2014).

These studies may suggest an insight into considering the way in which people and communities can create their own motivations for working together to face local environmental issues. In fact, community-led environmental action is not just a recent movement; it has probably existed since very early times on the earth as a sort of cognitive norm for people to work together on the land, forest and sea to tackle natural characteristics. The next section looks at examples of these in the case of Japan.

2.2.8 *Satoyama and satoumi concept in urban nature conservation in Japan*

Urban nature conservation in Japan has become an ever more important issue among many other concerns in cities and towns for the last two decades in particular (Itonaga et al., 2010; Duraipappa et al., 2012; Kohsaka et al., 2013). It has resulted from the rapid and intensive growth of industries and economies of the country which brought them tremendous changes in the diverse fields and faces of Japanese society and the environment. Most notably, changes in land use and land covering have led to consequences which have generated some serious environmental concerns including decreased biodiversity and ecosystem changes; these have resulted from mainly the conversion of farmland to urban land, not only along the coastline but forests and inland areas as well.

For instance, the forest cover in the Tokyo metropolitan area (including seven adjoining prefectures) decreased by 4.3% (618 km²) in the 1960s until the 1980s; in particular, in Kanagawa prefecture by 12.5%. Changes from woodland to urban functions have continued to date, though the rate has been slightly reduced, but the changes of species are said to be significant (Saito, 2004). It has resulted in urban dwellers having far less contact with nature in their daily lives than ever before.

The concept of *satoyama* and *satoumi* is the traditional knowledge and methods of nature conservation management in Japan. It is recognised (Duraipooah et al., 2012) as a socio-ecological production landscape in the country. The concepts are a traditional basis of Japanese perception of nature, and have always existed on the periphery of rural settlement. Saito et al. (2012, p. 26) provide a definition of *satoyama* and *satoumi* that also includes advances made in the literature on ecosystems and their services, due to their close relationship with *satoyama* and *satoumi*, as follows.

- Ecosystem types
- Ecosystem goods and services
- Human–ecological interactions
- Management of ecosystems
- Landscapes

Kohsaka et al. (2013, p. 94) describe *satoyama* and *satoumi* as landscape types and management approaches to land and coastal areas that build on a mosaic composition of ecosystem types and their inherent interlinkages. Saito et al. (2012) made a current assessment of *satoyama* and *satoumi* including the role of governance and institution, historic significance and local distinctiveness, and points in relation to culture–nature relationships.

Knight produces a more useful analysis (2010, p. 421), saying:

Satoyama is appealing as a concept because it represents a sphere in which nature and culture intersect, and is reminiscent of a more idyllic rural lifestyle of the past, when the Japanese ‘lived in harmony with nature’.

However, Duraiappah et al. (2012) point out that while the *satoyama* and *satoumi* concept is unique, the actual practice is not, and Knight (2010, p. 425) adds that, historically, spheres similar to *satoyama* and *satoumi* of a semi-managed, semi-cultivated nature on the periphery of human settlements concerning human–nature interaction can be found in many other countries, including the UK; for instance, the long history of coppice woodlands.

Regarding urban nature conservation, Kosahka et al. (2013, p. 99) describe that the Japanese national biodiversity strategies and action plan have clearly stated that biodiversity conservation is a national goal, and the concept of *satoyama* and *satoumi* should be taken into account wherever possible in rural or urban nature conservation strategies. However, in practice, the ideals have not yet been implemented effectively in urban contexts, due to the fact that their methodologies are still treated as separate from the idea of urban nature and the lack of conceptual alignment in landscape and nature conservation policies. Also, regulations and policies at a local level favour the economic growth and city development rather than protecting existing *satoyama* and *satoumi* strategies in local urban settings.

Kohsaka et al. (2013, p. 102) emphasise that:

As human activities play a vital role in the management of *Satoyama* and *Satoumi*, participation from citizens, local non-profit organisations (NPOs) and nongovernmental organisations (NGOs) should be acknowledged by decision makers and in planning as a key component for achieving sustainable management of urban *Satoyama* and *Satoumi*. Involving a wide range of partners, such as government agencies, academia, and conservation groups, local businesses, amateur naturalists and private corporations, can play a key role.

This notion indicates that the involvement of people’s collective actions in local environmental issues is a significant role to gain a successful outcome of the environmental management.

Henocque (2012, p. 66) states that:

Social capital constitutes the cultural component of modern societies. Building social capital has typically been seen as a task for ‘second generation’ economic reform, but unlike economic policies and institutions, social capital is not created or shaped by public policy but is inherited throughout local communities’ successive generations. Enhancing social capital therefore is about promoting local knowledge deeply rooted into local communities’ practices on land and at sea. In Japan, the culturally specific

interaction of humans with nature has led to the emergence of specific socio-ecosystems called ‘satoyama’ on the land side and ‘satoumi’ on the coast and sea side.

Satoyama and *satoumi* knowledge has been developed over centuries through the people’s daily practices of working with the distinctive nature of the particular area, and the intergenerational passing on of knowledge and tradition (Henocque, 2012, p. 66). Social capital is an important concept for this research, as it forms people’s network for collective actions; this will be shown in detail in Section 2.4.

As these experiences suggest, to investigate the optimal people–natural processes relationships in historic urban settings requires the study of local contextual variables in any given area, including the characteristics of nature (such as climate and geography), history, culture, tradition, community, cooperation, participation and other social characteristics. There is, in addition, a need to consider both continuities and changes.

2.2.9 *Example of socio-ecological interactions for landscape restoration project*

An interesting example of the interaction between people/culture and natural processes occurs in the centre of Seoul, South Korea. The Cheong-Gye-Cheona project demonstrates the reintroduction of natural processes, through restoring the river by dismantling the highway (Seoul Metropolitan Government, 2006). The achievement of this project is significant: a particular aspect for this research is not just the restoration of the river, but that of the identity of the place. In other words, people can connect with natural processes in their urban daily lives, but their appreciation of its historic contexts may also emerge.

Grenville (2007, p. 458) considered that the Cheong-Gye-Cheona project demonstrated the importance of the heritage aspect as a means of reconnecting Seoulites with their past, and, by implication, reinvigorating their contemporary sense of identity. She argues that (p. 458):

We must look to individual and social psychology, and understanding the ontological (in) securities of the societies involved in our case studies we can better understand how decisions have been made. In societies that have been subject to rapid or violent change, a return to ‘routine’, such as in Warsaw or Seoul, may provide a mechanism for social cohesion.

Ontological security could be seen as an interesting concept, as it may underpin the importance of people’s interaction with land or natural processes in historic built environments.

Grenville (2007, p. 448) supported the view of Giddens (1991) in relation to the latter's consideration of modernism. Grenville notes:

Giddens argues that humans require social structures in order to give them a sense of order and continuity which in turn allows them a measure of confidence about who they are and how to behave in any given situation, a process to which he ascribes the term ontological security.

Grenville also suggests (p. 448) that

The Giddens' term may be very close to in its intellectual components to Bourdieu's idea of *habitus*.... *Habitus* is more concerned with understanding the differences between social groups while ontological security with the construction of an individual universe. Giddens argues (Giddens, 1990 p. 92) that ontological security is 'the confidence that most human beings have in the continuity of their self-identity and the constancy of the surrounding social and material environment of action'.

These views of 'differences between social groups' and an 'individual universe of ontological security' could be seen as extremely useful views in the discussion of people's connection with natural processes. For instance, people's interaction with land in urban settings, such as allotment gardens and their communities, may imply these views for plot-holders for their 'ontological security' and different characteristics of each allotment groups. This will be studied in detail in the case study chapters.

Regarding the socio-ecological view in people's interaction with nature, the argument of Harrison and Burgess (2003, p. 482) could also support the formation of a theoretical framework of this research, as follows:

Working with contextualist conceptions of society mean accepting that individuals are socially engaged actors whose environmental understanding and behavior is contingent on where they live, the history of events, their social networks and moral points. These approaches also recognize that the way society 'works' depends upon a reflexive process of mutual trust through which individuals and structures (e.g., organizations, legal process, right and responsibilities) come to constitute each other.

Their conclusion (p. 483) was that 'a shared understanding of the interrelationships between lifestyles and environment', giving their points as follows:

- Heterogeneous in nature and content
- Localised rather than universal in the scale of their delivery
- Action-led rather than based on exhortation
- Support of new public forums and arenas which encourage participatory democracy rather than reliant existing structures and processes of representative democracy
- Inclusive rather than exclusive in terms of the range of knowledges, experiences, and understandings they respect and accommodate

This section has depicted a range of literature and examples that demonstrate the importance of the interaction between people and natural processes, and various theories based on this idea of close relationship between people and natural processes in the environment. The interactions have created distinctive and local cultures and traditions in specific places over time. The evolution of the interactions between people and natural processes reflects the changes in society's interests and needs, such as the concepts and policies of emergence of urban ecology, urban nature conservation and community participation in local environment issues. This also suggests the recognition of the importance of socio-ecological interactions in historic built environments. The next two sections focus on how people, groups and rules can work in relation to local environmental concerns.

2.3 Forms of Social Capital

The current environmental and social concerns, as described earlier in Section 2.1 such as urban ecosystems and social well-being, are closely related to how people interact with natural processes in their daily lives. In this regard, people as individuals alone cannot work for environmental and social issues; however, people belong to one or more groups, such as family, school or workplace, and are recognised as a part of the society to which they belong. To deal with the issues of environment and social concerns, people should get together to cooperate and create an effective system. In this respect, the theory of social capital is worth examining for this research; firstly, a brief development of the concept of social capital.

2.3.1 *Theory of social capital*

The term *social capital* is defined by the Oxford English Dictionary (2016) as 'the networks of relationships among people who live and work in a particular society, enabling that society to function effectively'. Academically, social capital is a concept within the social sciences; the term encourages many definitions from many different scholars in different fields. While certain disciplines emphasise different aspects of social capital in their definition, they tend to share the core idea that community ties and social networks have values, though both also have various interpretations.

The World Bank (1999, p. 2) summarises the early development of the notion of social capital. It first appeared in Hanifan's (1916) discussions of rural community centres, in which the author was particularly concerned with the cultivation of goodwill, fellowship,

sympathy and social intercourse among those that ‘make up [the] social unit’ (p. 130). Then, it took some time for the term to come into widespread usage from the 1960s onwards. For instance, Jacobs (1961) in relation to urban life and neighbourliness, Bourdieu (1983) with regard to social theory, and Coleman (1988, pp. 103–104) made the first systematic conceptualisation of the idea of social capital in the creation of human capital.

Later, Putman (1993) proposed research on social capital in its current widespread and lively phase of development. He defines social capital as ‘networks, norms and trust that enable participants to act together more effectively to pursue shared objectives’ (Baron et al., 2000).

Fukuyama (1995) is well known for his integration of social capital, trust and working within an economic framework, rather than a sociological one like Coleman or with a political science perspective like Putman. Ostrom and Ahn (2003, p. xxxviii) state the Fukuyama places social capital firmly in the context of collective action.

The World Bank (1999) suggests:

Social capital refers to the institutions, relationships, and norms that shape the quality and quantity of a society’s social interactions. Increasing evidence shows that social cohesion is critical for societies to prosper economically and for development to be sustainable. Social capital is not just the sum of the institutions which underpin a society – it is the glue that holds them together.

Putman and Woolcock (2000) share a ‘lean and mean’ approach which focuses on social networks. Another difference between Putman and his predecessors is that whereas Coleman and Bourdieu consider social capital an attribute of the individual, Putman has developed it as an attribute of communities. Putman also suggests that the more people work together, the more social capital is produced and that the less people work together, the more community stocks of social capital will deplete (Cooper et al., 1999). Baron et al. (2000, p.10) note that:

Putman gives considerable emphasis to the tension between bridging and bonding forms of social capital. Bonding social capital refers to the links between like-minded people, or the reinforcement of homogeneity. It builds strong ties, but can also result in higher walls excluding those who do not qualify. Bridging social capital, by contrast, refers to the building of connections between heterogeneous groups; these are likely to be more fragile, but more likely also to foster social inclusion. Putman argues that there may well be trade-off, or tensions, between the two forms.

Ostrom and Ahn (2003) summarise the rapid growth of social capital literature, and identified (p. xii) the reason for the spread of the social capital that ‘it concerns trust and norms of reciprocity, networks and forms of civic engagement, and both formal and

informal institutions which were not considered before. The social capital approach takes these factors seriously as causes of behavior and collective social outcomes'. They explain:

The concept of social capital has been developed not in pure theory but primarily in the context of addressing political and economic problems that real-world communities face. Social capital in this sense is a core theoretical concept that helps to synthesize how culture, social, and institutional aspects of communities jointly affect their capacity to deal with collective action problems (2003, p xvi).

Recent literature indicates further complex ideas relating to the concept of social capital with more criticisms than before. Halpem (2005, pp. 1–2) has argued that the popularity of social capital for policymakers is linked to the concept's duality, because 'it has a hard nosed economic feel while restating the importance of the social'.

Bjornskov and Sonderskov (2012) comprehensively analysed the concept of social capital both quantitatively and qualitatively. They consider the simple question, 'Is social capital a good concept?' Dumbach (2014) examined the perspective of preceding studies of social capital in 'establishing corporate innovation communities' and noted that the term and concept of social capital has appeared in multiple dimensions and levels.

Definitional diversity is a problematic nature of social capital. Baron et al. (2000, pp. 23–26) point out that 'it is certain that there have been diverse criticisms upon the concept of social capital perhaps because it has gained rapid popularity and spread to wide range of social science fields in a very short period of time'.

2.3.2 Criticism of the concept of social capital

Woolcock (2001) cited in National Statistics (2001, p. 12) mentions criticisms of the concept. Some of his points should be noted:

Social capital is nothing new, that it is the latest buzz word meaning all things to all people, it lacks empirical specificity, and it neglects considerations of power. It has aroused suspicion because of the huge range of social issues on which it has been used. The concept has tended to be exported wholesale from America to the UK which ignores the cultural context of its conceptualization for the vast majority of research studies.

It is important for the concept of social capital to include the cultural concept, which can define the meaning and importance of social capital; in particular, to see the community development of particular places where people live.

Ostrom and Ahn (2003, pp. xxx) acknowledge that 'studies using the concept of social capital have faced extensive criticism. Many of the efforts to explain existing puzzles using a social capital approach have been stimulated by a prior lack of attention to concepts like

trust, norms of reciprocity, and institutions in much of the economic literature'. They explain (ibid) three of the criticisms made against the use of social capital: the lack of self-conscious choice, the inability to alienate these relationships, and the problem of measurement. They sum up (p. xxxiv):

Social capital, with only a decade of history of empirical applications and attempts at measurement, does exhibit serious problems of measurement. But the concept is firmly placed in the context of major empirical and theoretical puzzles related to economic and political development. It would not be wise at all to dismiss the concept on the grounds that it is difficult to measure.

Baron et al. (2000, p. 38) suggest an interesting summary for the conceptual definition in *Social Capital: Critical perspectives* that 'Social capital is not something that is to be accepted or rejected on a yes/no basis. We should avoid overblown claims for the concept as one which can override conflicts of perspective or interest and address all social issues within one framework'.

Schafft and Brown (2003) emphasis an important aspect of the historic social context for the social capital approach; they focus on historically developed social conditions. They continue by considering a challenge relevant to this research (p. 338):

A fundamental challenge for social science is to understand how basic, historically embedded social processes affect communal outcomes both directly and through the intervening or proximate structures identified in much current research as social capital. In other words, we are saying that 'social capital' is not a basic cause of variability in collective action, but if anything is a *proximate* determinant produced and reproduced by more fundamental social processes.

This view is one of the points around which this research seeks to draw attention: from the notion of social capital to the discussion of the people–nature relationship. The research considers that the norm of social capital seems to have developed in social processes over time as people worked together for the growth of the community to which they belong. For instance, people have worked together for the irrigation distribution for their rice cultivations, and fishermen have taken action to collaborate at sea, as they share and work together using rules to deal with natural processes. This is an important point for the study of the interaction between people and natural processes. Therefore, this research is to look at the idea of social capital as a conceptual vehicle, from a mere concept to an empirical lesson.

2.3.3 *Social capital and environmental issues*

Regarding the literature on social capital and environmental issues, there have been a large number of studies carried out on rural/agricultural and forestry concerns (Pretty and Ward,

2001). A rather small number of studies have looked at urban environmental issues in relation to the theory of social capital; this requires more in-depth studies, as urban dwellers face numerous environmental issues or dilemmas, many spurred by industrial pollution, such as acid rain, surface and groundwater contamination, and the disposal of solid and hazard waste.

Historically, people were involved in primary industries, and engaged in social ties and collective action to a greater or lesser degree. For instance, in the case of Japan, there have been similar systems to the concept of social capital in existence for many years as part of the tradition and culture of the nation. One example of this is rice farming communities. Within these communities, it is fundamental that farmers cooperate to manage and control the irrigation water, which is vital for rice growth. It is also essential for them to cooperate in regard to pest control, and more widely to liaise and exchange information in regard to climate-related matters (Sasaki, 1988). In other words, trust, networks, rules and cooperation between people in primary industries have been developed and established over years, and in the case of rice farming communities are still recognised, such as the cognitive norms required for a successful harvest.

Pretty and Ward go on to mention (2001, p. 214) the notion of path-dependence (a term used by Putnam) to imply a degree of historical determinism:

It is now appreciated that social capital can increase with use. Under certain circumstances, the more it is used, the more it regenerates. Social capital is self-reinforcing when reciprocity increases connectedness between people, leading to greater trust, confidence and capacity to innovate. So can social capital be created where it has been missing, and can it lead to positive environmental outcomes?

Brook (2010) demonstrates the values of cohesion and collaboration among people and organisations through four case studies of interactive engagement with nature in different situations in Scotland and in the USA. It was concluded (ibid, p.309) that ‘it is crucially important in urban environments, to make possible a fully engaged, multi-sensory relationship with nature, particularly for children. For this, Brook requested to architectural design and planning to facilitate community farms, community gardens, school gardens and allotments’.

These values also appear in connection with people’s connection with nature in urban settings, such as community gardens and allotments (Russell et al., 2013). This study showed that gardening has been found to contribute to building social capital and social networks while simultaneously reducing stress and encouraging nurturing characteristics

(ibid, p. 490). There is also evidence that socialising in nature promotes social cohesion (Chavez and Olson, 2009).

Hawkes and Acott (2013, p. 1131) suggest that:

Further research is needed to determine how allotment gardening influences environmental behaviors beyond the plot, but it would appear that allotment may at least begin a personal internal dialogue, bringing people's attention to both the affects and effects of their interactions with nature.

Dinnie, Brown and Morris (2013, p. 109) point out further benefits and importance of social capital:

More research is needed to understand the different types of social interaction and how these affect both social and material space, and the potential well-being benefits to others. For example, future work could examine how contestations over meaning and use intersect with different kinds of social capital, and how this produces and reproduces greenspace in particular ways. We also need to understand more about how the different kinds of bonds and dynamics shape the power relations through which tensions are played.

2.3.4 *Linking theories of forms of social capital to collective actions*

Ostrom and Ahn (2003, p. xxii) describe forms of social capital to link to collective actions, as below. They suggest three broad forms of social capital and link these to the contextual variables of trust and collective actions (Figure 2-4).

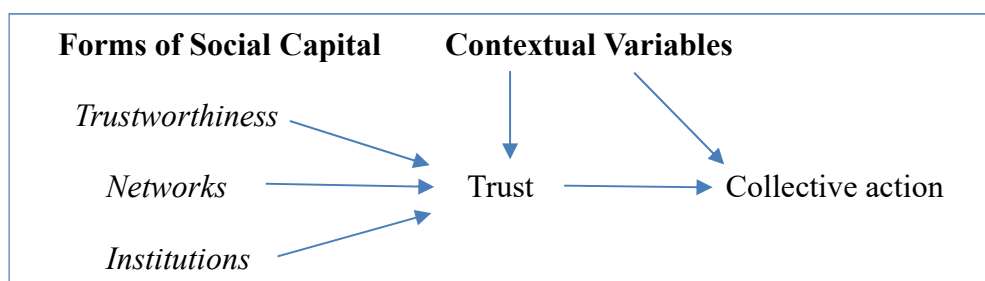


Figure 2-4: Forms of social capital, trust and their linking to achieving collective action

(Source: Ostrom and Ahn, 2003, p. xxii)

It is important to clarify the roles of 'trust, contextual variables, trustworthiness, networks, and institutions' when making a link to collective action.

Trust is a key link between social capital and successful collective action. It refers to contextual variables consisting of both external and internal factors, environmental factors and individual factors, in other words the context of humans' lives. The existence of trust among a group of individuals may be a configuration of forms of social capital.

Trust and trustworthiness are integral elements of reciprocity. An individual who abides by the norm of reciprocity is trustworthy. Ostrom and Ahn (2003, p. xxi) state that an

‘individual’s intrinsic values are an independent reason for behaving cooperatively and reserve the term trustworthiness primarily to such intrinsic motivation’.

Networks are the key for the social engagement of a group of people, not just simply providing additional incentives for behaving cooperatively to selfish individuals. As Putman et al. (1993, cited in Ostrom and Ahn, 2003, p. 229) point out, dense networks of social exchange are a crucial condition for the rise of the norm of generalised reciprocity. Networks of civic engagement represent both dense and horizontal social interactions, and have the most powerfully beneficial side-effects for society as a whole.

Institutions can play an important role in a group of people creating a network and working together; in broad terms they specify what actions (or outcomes) are required, prohibited or permitted, and the sanctions authorised if the rules are not followed. Institutional rules also create incentives for the parties of transactions to behave in a trustworthy way (ibid, p. xviii).

The theory of forms of social capital linking to collective action of Ostrom and Ahn (2003) may be useful for the study of the interaction between people and natural processes in relation to local environmental concerns. This will be looked at in the next section on the role of collective action with social capital.

2.4 Collective Action

2.4.1 Introduction

Collective action plays a prominent role in environmental improvement programmes in the context of places that people inhabit. It also influences the surrounding local areas and their inhabitants, and even extends to wider areas to a national level, as the quality of air, water and soil and the positive effects of natural processes are seen as public or quasi-public goods (Pretty and Ward, 2001; Halla et al., 2013; Vanni, 2014).

The involvement of urban residents in collective action for local environmental concerns can contribute not only to environmental values in their daily life but also to diverse social benefits (Rudd, 2000; Pretty and Ward, 2001). These include social ties, community networks, social well-being and the acquisition of knowledge about natural processes. Those values can be shared among participants and their families, and the people living in the area may also receive benefits.

The effects of these collective actions can be seen in the allotment gardens and community orchards. People who belong to these groups or organisations often implement collective

actions to improve their common facilities and the environment of the area. Their collective actions give participants certain social values, such as social cohesion for families and communities through a wide cross-section of society: the young, the old, both genders, a variety of professions and so on (Nettle, 2014). They also provide environmental and economic benefits (Crouch and Ward, 1997; Crouch and Wildshire, 2005). But at the same time, people involved in allotment gardens and community orchards often face problems and disadvantages, such as soil contamination, high levels of dioxins, vandalism and lack of security (Newcastle City Council, 2010).

There have been an increasing number of studies on collective action in relation to natural environments, including agricultural and natural resource management in rural areas and developing countries; for instance, in the International Food Policy Research Institute and CAPRI Working Papers. However, studies on collective action in relation to people and natural processes in historic built environments have not had much attention.

The following section aims to identify the definition of collective action and the salient relevant characteristics, and then to examine the role of social capital in collective actions.

2.4.2 Definition and characteristics of collective actions

In his book *The Logic of Collective Actions*, Olson (1965, p. 6) presented a logical and theoretical explanation of certain aspects of group and organisational behaviour. The social psychologist Festinger (1957, p. 93) had pointed out ‘the attraction of group membership is not so much in sheer belonging, but rather in attaining something by means of this membership’. Laski (1967, p. 67) took it for granted that ‘associations exist to fulfill purposes which a group of men have in common’. Olson (p. 7) went on to stress that ‘organizations (not individuals) can perform a function when there are common or group interests, their characteristic and primary function is to advance the common interests of groups of individuals’.

More recently, Marshall (1988) attempted to define collective action as an ‘action taken by a group (either directly or on its behalf through an organisation) in pursuit of members’ perceived shared interests’. As observed by Meinzen-Dick et al. (2004, p. 200), the more specific and varied definitions which have since been added have in common the following:

Collective action requires the *involvement of a group of people*, it requires a *shared interest* within the group, and it involves some kind of *common action* that works in pursuit of that shared interest. Although not often mentioned, this action should be voluntary, to distinguish collective action from hired or corvee labour. Examples of collective actions include collective decision-making, setting rules of conduct of a

group and designing management rules, implementing decisions, and monitoring adherence to rules. Members can contribute in various ways to achieve the shared goal: money, labour or in-kind contributions (food, wood).

This is not the place to argue the reconceptualisation of collective action. Bimber et al. (2005, p. 385) consider the recent uses of technologies of information and communication environment as an elaboration on the basic idea that private–public boundaries are a type of limiting factor in collective action. Further study on this matter may be required: as shown in Figure 2.4, a core link between social capital links and collective action is ‘trust’, thus, the development and utilisation of social networks may affect the core link.

It has been widely pointed out that the theories of collective action are seen as integral to explanations of human behaviour (Bimber et al., 2005). Thus, collective action problems have been identified by many studies, most notably the problem of free-riding. Olson (1965, 2010), Halla et al. (2013) and Vanni (2014) explain that collective actions often involve some individuals who tend not to contribute to group activities but gain benefits, thus ‘free-riding’ from other members’ activities. Ostrom (1990) and Davies et al. (2004) note that transaction costs in collective action are higher in particular at the initial stage than those of individual actions. They also remark that these problems are particularly relevant when collective action takes place with the objective of public good. Additional costs have also been pointed out by Singleton and Taylor (1992), which are incurred during preparation and implementation of actions such as negotiation, monitoring and enforcement.

However, it is suggested that while some additional costs are inevitable when carrying out collective actions (Vanni, 2014, p. 26), in many cases the benefits of such action outweigh the costs (Uetake, 2012) because of the economy of scale and scope (Hodge and Macnally, 2000; Davies et al., 2004).

Vanni (2014, p 23) highlighted the benefits of collective action; the issue of scale plays important roles such as ecological scale merits and may improve the economy of scale and scope. For instance, collective action can provide biodiversity and landscape while individuals cannot. Vanni (ibid, p. 25) further discusses other key benefits of collective action, which are:

- (1) The possibility of sharing knowledge and learning for the stakeholders who take place in the collective initiatives: In many cases, a co-operative approach relies heavily on the local knowledge of stakeholders and on the possibilities to integrate this knowledge into the decision making process. Thus, collective action increases

the credibility and legitimacy of decision-making, but also allows for the collecting and sharing of information at a lower cost compared to the individual approaches.

- (2) The possibility of tackling efficiently local issues: While central governments have increasing difficulties in dealing with local issues, implementing collective action locally allow greater flexibility, responsiveness and local relevance. In many cases civil society associations are the typical initiators of actions including innovative development steps and their involvement usually contributes to a great extent to the success of such initiatives.

Regarding the free-riding barrier, the concept of social capital may help to minimise the problems (Rudd, 2000) while maximising the benefits of collective action (Meinzen-Dick et al., 2004; Venni, 2014).

There are a variety of ways in which collective actions are actually implemented (Meinzen-Dick et al., 2004). These include:

- By members of a group directly, or on their behalf by a representative or even an employee.
- Through a formal organisation, or an informal organisation, or spontaneous action.
- Collective action can manifest itself and can be understood as an event, an institution or as a process.

Meinzen-Dick et al. (2004, p. 3) question whether the appropriate approach to collective action studies depends on the purpose of the study; they pose the following questions.

- (i) Is it an exercise to identify the determinants of a specific collective action?
- (ii) Assess the outcomes and impact of collective action?
- (iii) Identify the importance of collective action in a community relative to other factors?
- (iv) Will the focus be on collective action for one particular purpose (e.g. natural resource management), or all forms of collective action in the community?

They acknowledge that each of these can contribute to the general characteristics and benefits of collective action, and have practical applications for development projects, by showing the contexts in which group-based approaches are likely to succeed or the extent of impact that can be expected. However, they argue that such studies tend to be detached, in contrast to more engaged studies seeking to catalyse or enhance collective action for a particular purpose.

This research does not take collective action and its outcomes itself as a main theme, so that the study of collective action alone is not directly related to the case, but in this research, collective actions can be employed as a tool to form a part of the theoretical framework. With this norm, this research challenges the notion that collective actions of particular groups and organisations, along with the concept of social capital, may be seen as an

appropriate and useful method for the examination of the interaction between people and natural processes.

2.4.3 Role of social capital for collective actions

The importance of social capital for collective action has been acknowledged by many studies (Rudd, 2000; Ostrom, 2000; Pretty and Ward, 2001; Pretty, 2003; Meinzen-Dick et al., 2004; Vanni, 2014). It may be worth finding out the role of social capital in collective action and its characteristic points.

Meinzen-Dick et al. (2004, p. 8) considered the notion of social capital in a variety of development contexts, reporting that ‘probably the biggest contribution of the literature on social capital is the recognition of the importance of social relations of people’s livelihoods, development programs and economic growth’. In Section 2.3.4, Ostrom and Ahn (2003) illustrated the forms of social capital, trust and their links to achieving collective action.

Pretty (2003, p. 1913) emphasises the importance of the following four features in analysing the role of social capital and collective management resources: (1) relation of trust; (2) reciprocity and exchanges; (3) common rules, norms and sanctions; and (4) connectedness in networks and groups.

Ostrom (2007) notes that participants involved in collective action in many cases decide to trust other participants on the basis of their reputation in past collective action situations. This is a significant aspect of the theory of social capital and collective actions, and extremely important for this research.

(1) Reciprocity and exchange:

Pretty (2003) explains that cooperation can be promoted by reciprocity and exchange, since reciprocity increases trust and contributes to the development of long-term obligations between people, which helps in achieving positive environmental outcomes.

(2) Common rules, norms and sanctions:

Vanni (2014, p. 30) noted that successful collective action is also dependent on common rules and sanctions, which must be set up according to an inclusive criterion in order to ensure that group interests are in line with those of individuals and should be effective changing behaviors. Ostrom and Ahn (2003, p. xviii) also describe that institutional rules also create incentives for the parties of transaction to behave trustworthiness.

(3) Connectedness in networks and groups:

Pretty (2003) showed that there are three types of connectedness; (i) Bonding: the links from membership of groups of similar people with strong ties; (ii) bridging from membership of more diverse associations; (iii) linking: connections with people in position of power, which is good for accessing support from formal institutions.

Sections 2.3.and 2.4 describe how social capital forms a network of individuals, groups and rules. It links to collective actions and trust. Trust is regarded as a contextual variable of characteristic aspects of people and environment that the network shares. Collective action involves a group of people that act for the pursuit of shared interests. As collective action increases, it can increase successful outcomes. Collective actions can be fulfilled repeatedly or continuously along with the ‘trust’ of the core link between social capital and collective actions. The relation to trust of the collective action includes (1) reciprocity and exchange, (2) common rules, norms and sanctions, and (3) connectedness in networks and groups.

2.5 Forming a Theoretical Framework

2.5.1 Gaps in the literature and focus points of this research

This section identifies important gaps that emerged as a result of the review of the literature above regarding the interaction between people and natural processes in historic built environments. Establishing a theoretical framework from which the sub-questions emerged to approach the empirical investigation.

The gaps in the literature are (a) historical study for the interaction between local people and natural processes in relation to the forms of growth of particular cities, (b) detailed investigations for the urban dwellers daily connections or interactions with the natural processes of the area where they live, and (c) In-depth studies about local people’s involvements with local environmental issues regarding the theory of social capital and collective actions.

In respect to Main Research Question 1, Sections 1.2.4 and 1.2.5 shows, people’s daily interaction with natural processes in historic cities and towns has not been given enough debate in relation to the forms of growth of historic built environments. The interactions between people and natural processes over time may result in the evolution of the environmental characteristics of each place (Roe and Taylor, 2014). In different locations, such interactions may create different forms of growth of the places, including the social development and the environmental changes and continuities. This is because that each place has its own distinctive contexts, such as local history, traditions and cultures as well as the geographic, topographic and climatic characteristics of the area. Thus, Main Research Question 1 (i.e. the form of growth of historic built environments, shown in Section 1.4), can be examined through the interactions between people and natural processes over time in relation to the distinctive contexts of the area.

In relation to Main Research Question 2, the literature review indicates that social and environmental benefits of the interactions between people and natural processes may be usefully examined in relation to the concept of social capital and collective action. As Rudd (2000) and Pretty and Ward (2001) suggest, the involvement of urban dwellers in collective actions for local environmental concerns contribute not only to environmental values in their daily life but also to diverse social benefits. These include social ties, community networks, social well-being and the acquisition of knowledge about natural processes.

However, as Section 2.3.3 shows, the relevant literatures on local environments in relation to the concept of social capital and collective actions focus predominantly on agriculture and natural resources management in rural areas rather than urban areas. Concerning the socio-ecological interaction of people and natural processes, Harrison and Burgess (2003) describe important points about the concept of social capital and collective actions, such as social networks (Section 2.2.9). But they do not show the importance of the contexts of the places. Moreover, recent literature on social capital and collective actions is now focusing more on aspects of society and environment relating to local concerns, as illustrated by the discussions of ‘social and material effects, and well-being benefits to others’ (Dinne, Brown and Morris, 2013). There is a clear expression of the need for more research to understand the different types of social interaction relevant to the evolution of local environments: for instance, how different social interactions with natural processes can affect the society and the environment in different contexts of places. This will be examined in the case studies of Newcastle and Hagi.

2.5.2 Forming a theoretical framework and development of associated research questions

There is a relationship between forms of social capital and collective action and that this link is trust, as described by Ostrom and Ahn (2003). This is a useful starting point in the development of a theoretical framework for this research as illustrated in Figures 2-5 and 2-6 (next page).

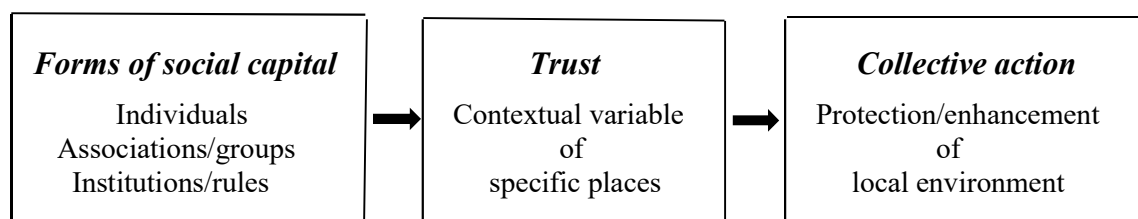


Figure 2-5; The links between social capital and collective actions developed from Ostrom and Ahn (2003, p. xxii).

Forms of social capital may be a network of individual peoples, associations/groups and institutions/rules. Collective actions are purposeful activities, for the protection/enhancement of local environment, such as those that conserve the long-term existence of the environmental characteristics of the place in which those people live.

Figure 2-6 indicates the overall theoretical framework that has emerged from the literature review and analysis. This is used as a hypothetical framework and is tested through the examination of the case studies. The framework shows social capital as a network of people (i.e. individuals, associations/groups and institutions/rules) linked to the collective actions by ‘trust’, which is a context of a particular place that varies according to the circumstances of each place. This trust can be produced in people’s regular interaction with natural processes and with each other, providing shared interests, common benefits, and the appreciation of the contexts and distinctive characteristics of the area. The process that is indicated by this framework is identified as ‘an ecology of land use’ and this term will be used throughout this thesis to indicate the relationships described above.

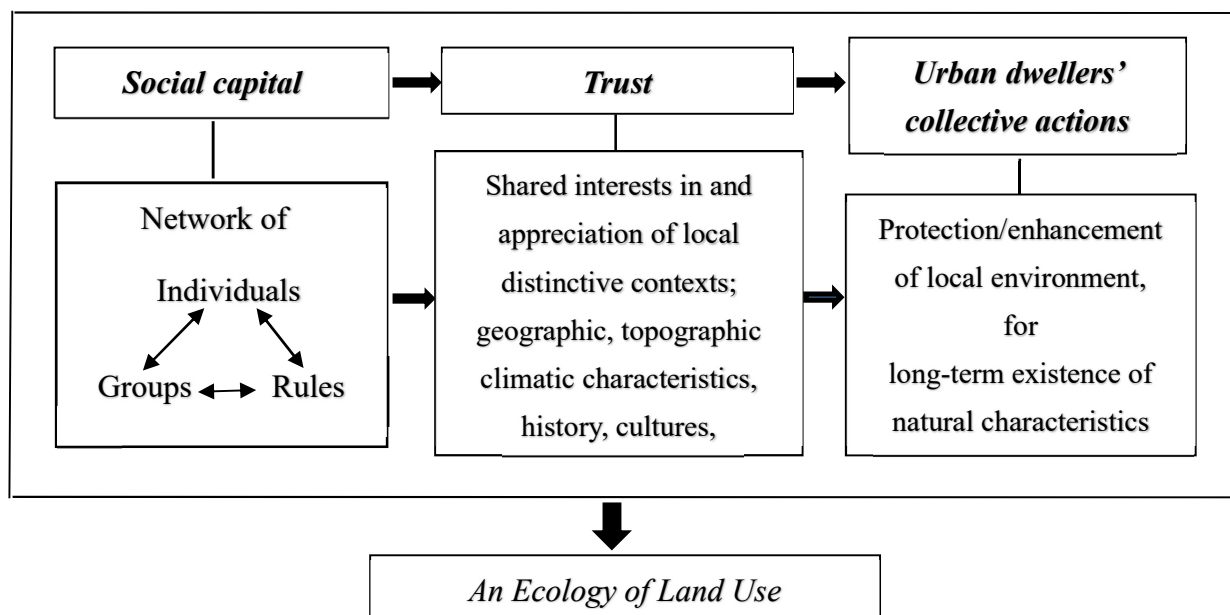


Figure 2-6: Theoretical framework for examination of the case studies, developed from the analysis of the literature

The findings above may provide important arguments about the interaction between people and natural processes that can identify answers to the research questions and sub-research questions, shown below.

Main Research Question 1

In Newcastle and Hagi, have the interactions between people and natural processes

affected the forms of growth of historic built environments?

Sub-Research Questions 1

- (a) What forms of growth have occurred in the historic built environments (in Newcastle and Hagi)?
- (b) How has the growth been affected by interactions between people and natural processes?

Main Research Question 2

Using examples of Newcastle and Hagi, can people's connections/interactions with natural processes be socially and environmentally beneficial?

Sub-Research Questions 2

- (a) Have people worked to protect the long-term existing environmental characteristics of the place where they live?
- (b) How do contemporary citizens understand and evaluate their interactions with natural processes?
- (c) What evidence is there to indicate that the long-term interactions of people with natural processes have a beneficial impact?

2.5.3 *Emerging themes for analysis*

The following three themes have emerged and been developed from the findings of the literature review, the consideration of the research questions, and the empirical data. They include (1) Forms of the growth, (2) People's appreciation for the historic context of natural processes, and (3) Residents' long-term socio-ecological interactions. The main points of these themes are as follows.

Forms of growth

It has been identified that the forms of growth of historic cities have indicated the interactions between people and natural processes over time, as Heynen et al., (2006), Stefanovic and Scharper (2012) and Govorushko (2012) state. Thus, the forms of the growth of historic cities may be used as an analysis tool to understand the interactions that have occurred. Geographical and geological characteristics of the area may play an important role in regional cultures and traditions. Thus, this research looks into the details of the interactions in specific areas over time to see how these norms can be identified.

People's appreciation for the historic context of natural processes

This review of the literature indicates that each historic city has its own local cultures and traditions, as well as distinctive characteristics, socially and environmentally. Many studies

exist that demonstrate indigenous and local cultural development, and relationships with specific contexts (Thayer, 1994; Taylor, 2014; Shinoda, 2008; Roe and Taylor, 2014). Both local cultures and natural products are the results of these interactions (Sections 2.2.2 and 2.2.3). However, the literature does not establish how or to what extent contemporary residents see or are aware of the how interactions with natural processes affect the historic context.

Residents' long-term socio-ecological interactions

The evolution of the interactions between people and natural processes as traced in the literature reflects the changes in society's interests and needs. This is shown in the concepts and policies and the emergence of urban ecology, urban nature conservation and community participation in local environment issues (Heynen, Kaika and Swyngedouw, 2006; Keller, 2010; Stefanovic and Scharper, 2012). This literature also suggests a recognition of the importance of socio-ecological interactions in historic built environments in relation to biodiversity conservation. Harrison and Burgess (2003) suggest the importance of socio-ecological interactions with nature, however, their arguments do not include historical aspects of the people's interactions, or refer to the importance of time in these interactions.

Some of urban dwellers, who regularly carry out (have carried out) socio-ecological interactions with the natural processes of the area for a long time, show an awareness of local environmental conditions. They may be seen as important citizens to deal with local environmental concerns, helping with the risk management of the area. These will be examined in the case studies.

2.5.4 Some understanding of the nature of both individual and collective actions

It is useful for making the assessments of the themes above to outline some understanding of the nature of both individual and collective actions. Although the research questions are not specifically asking the nature of the both in relation to land-use and natural processes as being framed and informed by power dynamics and extent of the agency.

In building social capital and trust not all participants have the same degree of agency or authority. Therefore, within these social groupings power dynamics exist. This might be expressed formally or informally (for example in an allotment society the chairperson might be expected to have more authority, but sometimes it will be individuals with no formal role who might have a lot of influence; Crouch and Ward, 1997; Wiltshire and Burn,

2008). These issues are important. However, this research is not to focus on such power dynamics but on the (potential) net effect of collective action.

It is important to clarify that the people's collective actions are carried out within the social, environmental and economic situation of the time. Their collective actions may have some important purposes for public interests other than the group interests, such as social and environmental significances. People are dependent entity, whereas natural processes are independent entity. People are influenced a great deal by the behavior of natural processes of the area where they live, though their behavior differs in different places (Watsuji, 1935; McHarg, 1969; Hough, 2004).

Significant outcome of the collective actions may make effects to the power dynamics if the collective actions contribute to public interests. It is assume that this may occur as the collective actions involve a large number of diverse people in different generations, and are seen continuous for the long-term.

2.6 Conclusion

The findings of this chapter have revealed important concepts and arguments from the relevant literature and have led to the formation of the theoretical framework for the research and the development of the research questions.

The literature mapping (Figure 2-1) has provided an approach to consider the relevant literature, and also the relationships between the relevant fields of study, which are important areas for this research. The literature review has identified the importance of the interaction between people and natural processes, and that the theories of social capital and collective action can be brought together to form a theoretical framework for this research. It also reveals that there are some gaps in the literature which this study can examine.

The interactions between people and natural processes over time have created the traditions and cultures of those particular places. Such local traditions and cultures can be seen as a result of people's interaction with local characteristics, such as geographical, topographical and climatic conditions, and the natural processes that occur in those places.

Movements of concern for nature emerged from people living in the industrialised cities. These concerns have evolved and reflect the development of social needs and interests, such as urban ecology and urban nature conservation. Such movements often involve

community participation and have generated an understanding of the importance of socio-ecological interaction with natural processes.

The findings of the role and characteristics of social capital and collective actions has provided a theoretical framework for this research. In brief, the concept is that social capital – networks of people (individuals, groups and rules) – links with trust to collective action regarding local environment concerns. This concept will be adopted by this research, because this study is concerned with local environments and interactions with natural processes of local areas. It is important to recognise that trust is a contextual variable relating to place and people; this is the key to implement collective actions. The contextual variables include shared interests, mutual benefits and aims, appreciation of local distinctive and contexts, such as cultures and traditions, as well as characteristics of geography and topography and climatic conditions.

The research questions and sub-research questions (see section 2.5.2) were identified as a result of the examination of the literature in the context of the research aim and objectives (Section1.3).

This suggests that the interactions' effects on the development of historic cities over time should be examined. The keys to the argument of the research may be found through looking at inherent local distinctive and the contexts, such as geographical conditions, including the long-term existence of environmental characteristics on particular sites, as this may show the functioning of ecological processes for richness of species as well as people's involvement with natural processes.

The interactions' effectiveness to the society and environment in which they are situated needs to be scrutinised. It is important, in particular, to look at how the interactions are related to the theory of social capital and collective actions in practice, including people's diverse activities within collective actions regarding local environmental concerns, where social capital forms a network of people (individuals, groups with rules) that involves interaction with natural processes in their urban daily life.

The conclusion of this chapter suggests that case studies could be useful to examine issues relating to the interaction between people and natural processes in historic built environment, and to investigate whether the theoretical framework is useful in this context. The next chapter sets out and justifies the methodology of the research based on these conclusion.

Chapter 3:

Methodology

Chapter 3: Methodology

3.1 Introduction

This chapter sets out the detailed methodological approach of the study. The findings of the previous chapter suggest that the methodology can be structured based upon a theory of social capital and collectived actions.

This chapter consists of three sections: (1) Research strategy; (2) research development process; and (3) research methods and techniques. The chapter justifies the methodology which is a qualitative case study approach.

3.2 Research Strategy

3.2.1 Qualitative case study approach

It was important that the strategy of this research responded to the research theme which explores the relationship between people and natural processes in the historic built environment; in particular, how the study can effectively examine urban dwellers' views, opinions and concerns in their interactions in dealing with local environmental concerns.

As Section 1.4 describes, the research questions ask for an investigation of two aspects of the interactions between people and natural processes; (a) the interactions in relation to the forms of growth of the historic built environment, and (b) the interactions in relation to the benefits to society and the environment in the present day. This involves a twofold study concerning such interactions, on the historic perspective and the present day; in other words, people's actions/collective actions in relation to local environmental issues over time. This requires the establishment of sub-questions to examine topics raised by the main research questions. These are set out in the introduction of each chapter of the case studies.

The research questions indicate that this research explores the effects of people's activities in relation to natural processes. In other words, the study examines social phenomena such as the values, concerns and issues of the collective actions people take, as well as people's opinions, views and concerns about their interaction with natural processes.

It is generally understood (Robson, 2011, p. 18) that social research has two traditions, quantitative and qualitative, the key topics identified above suggest a qualitative research approach or strategy is needed. Stake (1995, p. 37) says that the difference in the two approaches is in searching for causes, explaining the distinction between enquiries that the

former is to make explanations and the latter is to promote understanding. He emphasises can provide understanding of the complex interrelationships among all existing factors. Mason (1996, p. 4) identifies the significances of qualitative research (shown in Table 3-1). As the table explains, a qualitative research approach is interpretative, referring to the way in which the researcher should approach an understanding of social phenomena. For instance, it is important for the researcher to appreciate the contexts or reasons behind their views, opinions, ideas and concerns expressed by respondents involved in the research.

Table 3-1: The Mason's identifications for qualitative research (based on Mason, 1996)

- | |
|--|
| <ul style="list-style-type: none"> • Grounded in a philosophical position which is broadly 'interpretivist' in the sense that it is concerned with how the social world is interpreted, understood, experienced or produced. • Based on the methods of data generation which are flexible and sensitive to the social context in which data are produced. • Based on methods of analysis and explanation building which involve understandings of complexity, detail and context. • Qualitative research aims to produce rounded understandings on the basis of rich, contextual, and detailed data. |
|--|

Mason (1996) suggests that the methods of interpretation should be based on the data, which should be collected by multiple, sensitive ways to acquire an understanding of the social context and complexity in depth, such as through interviews, face-to-face and in groups, and participation in a variety of people's activities. The collected data should be analysed and explained in a thoughtful manner.

Marshall and Rossman (2006, p. 2) explain that qualitative research is pragmatic, interpretive and grounded in the lived experiences of people, and they argue (p. 53) that:

Human actions are significantly influenced by the setting in which they occur and that one should therefore study that behavior in those real-life situations. The social and physical setting and internalized notions of norms, traditions, roles, and values are crucial aspects of an environment. Thus, for qualitative studies, context matters.

This concept supports the important points of the research argument used in this thesis, as it includes the historic contexts of the place in relation to traditions and cultures, as well as the theoretical framework of this research, i.e. the theory of social capital and collective actions concerned with local environments.

Rossmann and Rallis (2003, p. 8) show the principal characteristics of the qualitative approach (Table 3-2). This supports the requirements of this study for multiple and sensitive methods of data collection.

Table 3-2: Characteristics of qualitative approach (Rossmann and Rallis, 2003)

<i>Takes place in the natural world</i>
<i>Uses multiple methods that are interactive and humanistic</i>
<i>Focuses on context</i>
<i>Is emergent rather than tightly prefigured</i>
<i>Is fundamentally interpretive</i>

During the methodology development, namely, the preliminary studies, the early observations and participations in various community activities, the initial visits and the pilot interviews at case study locations, it was evident that multiple methods of collecting data and combined tools would be necessary to produce quality outcomes, validity and reliability.

To sum up, the overall strategy of this research is to adopt a qualitative methodology based on a case study approach, to examine the ‘real-world situation’ socially as well as physically, interpreting the characteristics of particular places, including people’s views and opinions, and its contexts based on the gathering detailed data.

3.2.2 Case study justification

As the research strategy described above in Section 3.2.1 explains, it is necessary for this research to employ case studies as the main data collection method to investigate in depth the interaction between people and natural processes in historic built environments.

Yin (2015, p. 16) describes *the scope of the case study*;

A case study is an empirical inquiry that (a) investigates a contemporary phenomenon (the “case”) in depth and within its real-world context, especially when (b) the boundaries between phenomenon and context may not be clearly evident.

He further explained (ibid, p. 17) *the features of case studies* as phenomena and context are not always sharply distinguished in the real-world situation.

A case study inquiry (a) copes with the technically distinctive situation in which there will be many more variables than data points, and as one result, (b) relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and another result (c) benefits from the prior development of theoretical propositions to guide data collection and analysis.

This explanation of the case study characteristics can be identified as meeting the research requirements; in particular, as explained earlier, that the study examines social phenomena such as the values, concerns and issues of the collective actions people take, as well as people's opinions, views, and concerns about their interaction with natural processes.

To reinforce the case study approach, Gobo's concept (2007, pp. 203–4) underpins the need to undertake a case study for this research:

The qualitative researcher should focus his/her investigation on interactive units (such as social relationships, encounters, organizations), not only because social processes are more easily detectable and observable, but also because these units allow more direct and deeper analysis of the characteristics observed.

The theoretical framework of this research, the theory of social capital and collective actions concerned with the local environment can respond to the important points above.

Punch (1998, p. 150) describes what a case study is:

The basic idea is that one case (or perhaps a small number of cases) will be studied in detail, using whatever methods seem appropriate. While there may be a variety of specific purpose and research questions, the general objective is to develop as full an understanding of that case as possible.

This norm is useful and important in respect of detail and full understanding; however, this research selects two cases in order to view interactions within different contextual variables to attempt to gain a deeper insight for the study of the interactions between people and natural processes in historic built environments. The main reasons for selecting two cities for the study are as follows. As the literature review (Section 2.2) described, people's interaction with natural processes over time has created distinctive cultures and traditions of the places where people live, reflecting the area's characteristics, such as geographic and climatic conditions. The long-term existence of environmental features result from interactions in different contexts, such as history, culture, tradition, geographic conditions. Using two case study cities may offer interesting material to examine diverse ways of the interactions in depth. Thus, the study of two cities can be effective to collect a variety of rich and thoughtful data to debate interactions rather than a single city.

3.3 Research Development Process

3.3.1 *Research process*

An overview of the research process is shown in Figure 3-1, from the background, aim and research questions to the case study, discussions and conclusion. The actual actions the research takes are shown in the sequence of the actions, illustrated on the left-hand side of

Figure 3-1. The elements on the right-hand side show the main works in relation to each action. An important early task after the literature review was to carry out preliminary studies. This was a vital step for the research to progress, as it identified the scope and topics of the two case studies, as well as gaining basic knowledge and material of the places concerned. During this phase initial contact with relevant people and organisations was made, including initial visits, early observations and participation in community activities, and pilot interviews. The qualitative data from studies, at Newcastle and used analytical focus on the context that was emergent rather than pre-conceive. The analyses was conducted in a pragmatic, interpretive and grounded way and considered in relation to the theoretical framework. The discussion was conducted by synthesising the analysis of the findings of all the chapters to respond to the research questions.

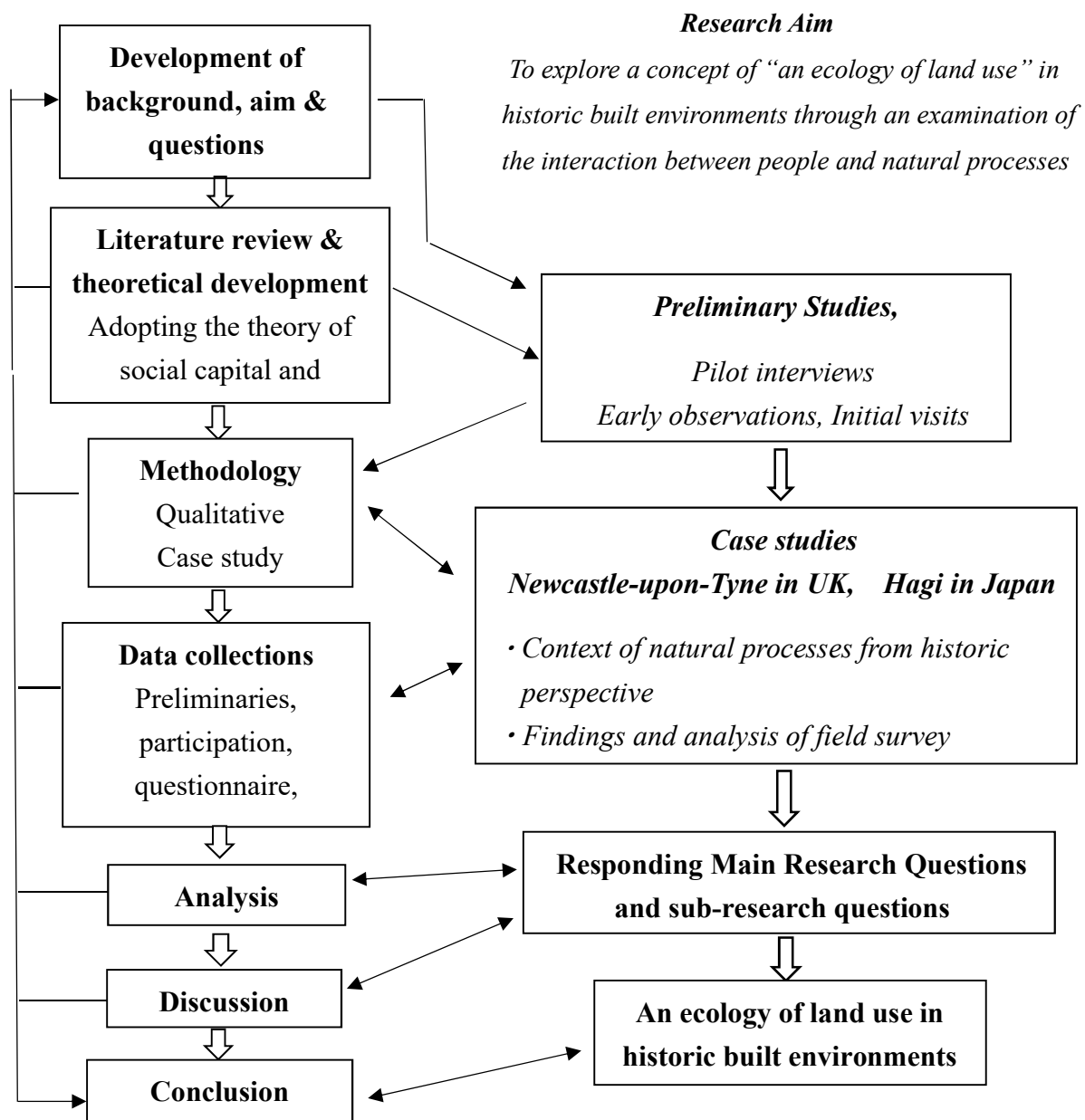


Figure 3-1: Chart for the research process

3.3.2 *Process of case study selection*

The section describes the important step of the selection of the case study places. The first and most important consideration is how the selection is made through selection criteria. The selection is made to respond effectively and appropriately to the research background, the aim and the research questions, the theoretical framework, and the strategy of using the qualitative case study approach. To respond to this, it considers carefully the findings of the literature review (Section 2.2). This includes the fact that historic cities may be seen as a result of the interactions between people and natural processes over time; the interactions have created the culture and traditions of the place, reflecting the distinctive characteristics of the area such as geographic conditions. The long-term existence of environmental characteristics in historic cities may be seen as a result of people's collective actions regarding local environmental concerns. Thus, the criteria for the case study selection were:

- (1) Historic cities
- (2) Distinctive characteristics
- (3) Long-term existence of environmental characteristics
- (4) Accessible

The main reasons for selecting two historic cities can be explained as follows:

- (a) Historic contexts that can be identified with layers of interactions
- (b) Distinctiveness of the place, such as cultures and traditions in association with the long-term existence of environmental characteristics
- (c) Availability, i.e. to access to useful and significant resources for the research questions,
- (d) Practicality for the field survey to be conducted and completed within a limited time

It is assumed that historic built environments may contain wider and deeper information for the debate around the people–natural processes relationship than newly planned cities. It was also considered important to look at those cities that were already well established at a time much earlier than when the Industrial Revolution emerged or that were in the process of growth towards forming an early modern society.

Considering the above, in particular the aspects of historic contexts, characteristics of the locations and availability to access to evidence resources, the research has selected **Newcastle-upon-Tyne in the UK** and **Hagi in Japan** as the case study locations. Both cities offer significant material for the study of the interaction between people and natural processes over time and in the present day. The detailed reasons for the selection are as follows.

Concerning the historic contexts aspect, both Newcastle and Hagi have provided their own historic distinctions within these contexts. Historic perspectives of the interactions between people and natural processes can be identified through the examinations of the form of growth of each city in relation to these interactions. Newcastle existed from well before the Industrial Revolution, and developed into one of the leading industrial cities in the UK (Smith and Yellowley, 2012, 2014); while Hagi was founded in the early 17th century as a planned castle town, developed as one of the most integrated regional capitals in Japan (Shimizu, 2010). Both historic cities offer interesting and different cases of the interactions to examine the form of the growth from, in the case of Newcastle, the time of advancing the early modern industries, and in the case of Hagi, the from Japanese feudal period, to early modern times in the UK and Japan.

In relation to the distinctive characteristics aspect, both Newcastle and Hagi offer interesting but different characteristics, such as geographical, topographic and climatic conditions, where people have been interacting with natural processes in diverse ways. Newcastle and Hagi have retained medieval or earlier environmental features/characteristics that have been in existence for centuries within the historic areas. These features include beaches, rivers, valleys, hills, forests, mountains, grasslands and meadows, together with a variety of plants, species and wildlife. Generations of people in both cities have worked with or protected the long-term existence of these environmental characteristics. These features have formed part of the distinctiveness of these places and become part of the identities of these historic cities, which are now generally recognised as the historic cultural landscapes of these areas.

As Section 2.2.2 described, cultural landscapes may be seen as the result of the interactions between people's activities and natural processes over time. Roe and Taylor (2014) state that the layers of people's activities interacting with nature resulted in the present landscapes as living things originating from a variety of their interactions. In other words, the existing environmental features/characteristics are seen as the consequences of the process of the growth of the area in relation to people's interactions with natural processes. They are associated with the local geographical, topographical and climatic characteristics, creating the distinctive local traditions and culture of the area.

From this point of view, the cases of Newcastle-upon-Tyne in the UK and Hagi in Japan, as mentioned, contain long-existing environmental characteristics and offer significant material to study the interactions between people and natural processes over time. Thus, both cities are appropriate choices when attempting to respond to Main Research Question 1 and its sub-research questions.

Concerning the interactions between people and natural processes in the present day, both cities provide interesting material to investigate, in particular in relation to people's collective actions concerned with those retaining environmental features/characteristics, because both cities have demonstrated a series of people's collective actions, such as conservation, protection and maintenance. This suggests that the case study cities should undertake a field survey to examine today's interactions between people and natural processes to analyse their values and issues, as well as people's views, opinions and concerns about society as well as the environment of the area. Thus, both cities offer thoughtful arguments for responding to Main Research Question 2, and its sub-research questions.

In relation to the availability of access to resources of evidence, the researcher made preliminary studies in both cities, including initial visits to Hagi, early observations and participations in community activities of local environmental matters and pilot interviews in Newcastle. As a result, such availability was confirmed in both cities (this will be shown in detail in Section 3.4.3).

Concerning the practicality of the case study in both cities, Newcastle and Hagi were accessible to the author to carry out the field survey in terms of language, communication with people in the cities, and the author's acquaintance with basic knowledge of culture and history of both cities.

It should be mentioned here that this research does not intend to compare the outcome of the case study of the two cities, as Newcastle and Hagi contain completely different historic contexts and the circumstances of today; they are not comparable. Instead, the case study looks in depth at the historic contexts of the growth characteristics of each city in general, as well as the areas of focus of the topics. In particular, the study is to investigate people's interactions with natural processes in relation to characteristics, geographical conditions and topographic settings of each city's focus areas. Newcastle and Hagi offer different data and resources of evidence of the interactions to analyse them and their impacts or consequences. With the strategy of this research, described in this section, the next section explains the research methods and techniques.

3.4 Research Methods and Techniques

The study in this section describes specific methods and techniques by which the required information and data can be generated, whether from historic archives, documents or observations, attendances or conversation with people in the particular areas. It presents in three parts: the first is to identify the main sources of evidence; the second part explains the methods of data collection and analysis; the final part reviews the major barriers to collecting the data and information, and a reflection of the methods of the case study.

3.4.1 Sources of information

Yin (2014, p. 102) describes that case study evidence may come from six sources; documents, archival records, interviews, direct observation, participant observation and physical artefacts. The way in which this research adopts as many as possible of these sources of information may be seen as ideal, as the research relies on multiple sources of evidence and integrated methods of investigation. This is because the research questions require to provide the analysis for the affectability and effectivity of the interactions between people and natural processes. The use of multiple sources of evidence in case studies has been suggested (Mason, 2002) because it improves the strength, validity and reliability of the argument. Thus, this research uses multiple sources of evidence in the case studies.

The case studies employ two categories of sources of evidence: primary and secondary data (Table 3-2). The primary data includes direct sources of evidence obtained from the researcher's interviews and questionnaires conducted with the respondents involved in the processes, and from direct observations and participations in the events and collective action within the cases, as well as original documents, notes and photographs produced by the researcher. The secondary data refers to indirect sources of evidence gained from information that has been processed or interpreted, including both published and unpublished material about the cases of Newcastle and Hagi and sources about the growth of historic cities in the UK and Japan in general. The secondary data are used in the case studies of both cities as a supplement to the primary sources of evidence. These sources include historic archives and contemporary research papers; survey reports, including descriptive and quantitative as well as analytical and qualitative material; data published by governments, local authorities and other institutional organizations; unpublished data or information from NPO groups, residents' associations, etc. in English and Japanese. More detailed types of sources of evidence are explained in Section 3.4.3.

3.4.2 *Research ethics: the challenges*

Robson (2011) suggests that it is important that the researcher appreciate the social customs and cultures of the case study places, while the researcher should also approach people and organizations with sincerity and politeness throughout the survey. These are the key ethical challenges for the study. An ethical approach for the field survey was therefore based on:

- (a) Appropriate self-introductions and briefings for the case study when approaching people and organization for the first time.
- (b) Appreciation and compliance with rules and conditions of organizations or institutions when the researcher makes inquiries or communications to them. Particular attention should be paid to their health and safety concerns.
- (c) Anonymity to be maintained, in particular when asking for respondents' personal information, as well as using their data in the thesis, such as their views and opinions gained from the field survey of questionnaires and interviews; their data should be protected.

3.4.3 *Methods of data collection*

The methods of data collection are a key to establishing effective case studies to provide appropriate arguments to respond the research questions. The methods of data collection employed in this case study are: (1) first approach, (2) preliminary studies, (3) documents, (4) participation in people's activities, (5) survey by questionnaire, and (6) interviews.

(1) First approach

Newcastle

The first approach to the relevant people who were involved in the allotment gardens and their communities was made on the occasion that the researcher joined the 2014 Forum of the Newcastle Allotment Garden Communities at the Civic Centre as an observer. At the end of the Forum, the Chairman of the NAWG introduced the researcher to the members, including the Allotment Officer of the City Hall and the other attendees. The researcher introduced himself and the brief of the research, as well as an idea for possible field survey.

Since this opportunity arose, the Chairman of the NAWG allowed the researcher to observe the monthly meeting of the NAWG at the Civic Centre as well as attending their collective actions, such as the Newcastle Annual Allotment Garden and Flower Show. The researcher participated in these community activities as many times as possible throughout the research.

Such participation generated productive relationships between the researcher and the members of the NAWG, individual plot-holders, as well as committee members of several allotment associations. The researcher kept regular contact with them through visiting their sites from time to time, and observing or attending their collective actions as many times as possible, including open days, AGMs and working days. Such continuous contacts with them assisted a great deal in designing the methods of the case study, and in particular helped to fulfill the actual field survey via questionnaires and face-to-face interviews.

Hagi

The first approach to relevant people in Hagi was made in 2014. The researcher made two initial visits prior to the actual case study, which took place in 2015. During the first visit, the researcher made courtesy calls to the curator of the city museum and the conservation officer of the City Hall. This did, in fact, become a sort of kick-off talk; they explained about their involvement in the conservation programmes in the city and some schemes under way at that time in Hagi. They introduced some citizens who may be relevant or important to the case study. The researcher met them, introduced himself and gave a brief talk about the case study plan as well as the ethics for the field survey. During the second initial visits, the researcher met other relevant citizens, including the vice-director of the city library, and leading members of some volunteer groups who dealt with the protection of historic environmental characteristics. They gave advice to the researcher how to access people and organizations that might relate to the research. As a result, these preparations gave the researcher several acquaintances and basic information and knowledge of the characteristics of Hagi. It provided effective and productive progress of the actual field survey within the planned period of two months.

(2) Preliminary studies

The preliminary studies were carried out not only to obtain general information and characteristics of both Newcastle and Hagi, but also to identify the focus areas and topics through initial talks with the relevant organisations, groups and people to attempt to arrange regular access, to negotiate a plan of action, and possible times and periods of the field surveys. They included a curator of Hagi Museum, a conservation office within Hagi city hall, and members of environmental protection groups.

In the case of Newcastle, initial discussions were made with officers of the city council, and a member of the Newcastle Allotment Working Group. As Newcastle is the researcher's base,

several preliminary studies were made, including early observations and participation in community activities about local environment concerns, in particular in relation to the allotment garden communities of Newcastle. Pilot interviews with allotment plot-holders were made, identifying the scope and topics of the fieldwork, as well as the methods and techniques of collecting people's opinions and concerns, including how the actual interviews should be organised. The preliminary studies provided possible focus areas and topics through the initial visits to Hagi and the pilot interviews in Newcastle. These are worth noting here.

Hagi initial visits for preparation of case study

The initial visits to Hagi were not only to identify the focus areas and topics but also to gain access to the most relevant people to start forming the structure of the field survey method; given the distance involved between Hagi and Newcastle, this required an appropriate schedule for the case study.

Two initial visits were made, in March and November 2014. In regard to the scheduling, it was important to gain as much information as possible about when and how the field survey could be planned to see people's interaction with natural processes and to collect data. It was required to establish how effective the process would be to complete the field survey within a certain period of time allowed. Most importantly of all, perhaps, it was necessary to raise awareness of the research and researcher with the appropriate people, relevant groups or organisations for the field survey concerned with environmental issues.

As a result, the following process was decided upon and the researcher was ultimately able to obtain the necessary information and make connections with relevant people and form a structure for the field survey methods.

- During the first visit in March, the researcher made enquiries of a chief curator in the Hagi city museum and a chief conservation officer of Hagi city hall. The researcher's profile was introduced and this was followed by an explanation of the research and the case study needs as well as the research ethic. Both gave an enthusiastic welcome to and acknowledgement of the study, expressed co-operation and offered assistance. Some information was obtained about the conservation rules and guidelines of the city, recently completed schemes and programmes currently being undertaken, as well as relevant literature and documentation.
- The second visit was made in November. This was also productive and led to effective results. A few separate meetings with the curator, his assistant and the conservation officer were set up. It provided further progress in considering the research scope and methods, as

well as scheduling the full-scale case study. A courtesy call was also made to the city mayor, who was interested in the research and the city's environmental issues, and offered help and assistance. The conservation officer, curator and assistant introduced more people who might help the field survey. The researcher then met about 15 citizens in different positions and made initial discussions about the survey with individuals separately as well as groups of two to four people, including an architect, a university lecturer, the Hagi eco-museum specialists and members of volunteer organisations.

Newcastle pilot interview

In Newcastle, pilot face-to-face interviews with four individuals were made in late September to early November 2014 as a test to find an appropriate and practical method for the actual interviews and how they effectively obtained people's views and opinions about their connection with natural processes. In this case, pilot interviewees were chosen from allotment plot-holders regarding their connection with the land in Newcastle.

The pilot interviews were conducted with due regard to the impact of the following variables: (a) age, (b) gender, (c) occupation and (d) length of allotment gardening experience, at different locations of interview, including (i) an interviewee's own house; (ii) a café in the city; (iii) a respondent's own allotment garden plot; and (iv) an association's communal lodge. Also, different methods of recording were used: the interviews at the first two places were voice recorded and the latter two used hand-written notes.

Summary of the pilot interviews

Regarding the effectiveness of the pilot interviews in relation to the intended full case study, some important issues were identified that should be considered concerning the method of collecting the data in the full-scale case study. These can be summarized, as follows:

- Face-to-face interviews could produce more information than the questionnaire asked for, and were found to be an extremely useful method of obtaining individual views and opinions in wider aspects and in depth. They could be adapted to the actual case study. However, it was also found that the quality, such as the validity and reliability of the data was very much dependent on such conditions as the relationship between the researcher and the interviewee, the length of the interviews and the environment in which the interview was undertaken. This is discussed in Section 3.4.4.
- Regarding the limitations of the data, the location of the interview may influence topics quite differently. In this pilot case, on one hand, the interview at the interviewee's own

house took the longest length of time and covered many wider aspects than the others, but tended to be focused towards individual views rather than community aspects. On the other hand, the interviews at the respondent's own plot and in the communal lodge covered topics on the practical side of allotment gardening and there were opportunities to walk round the sites. This invited interviewees to speak about the community aspects such as communal facilities, rules and events, health and safety, and importantly, for this research, about the natural characteristics of the site; for instance, how the weather conditions influenced plants, vegetables and wildlife, etc. The limitations of the data are also discussed separately in Section 3.4.5.

- A notable, perhaps negative point found in the pilot interview was that analysing data from the face-to-face interviews required a considerable amount of time to produce a transcript of each whole interview, whatever the length of the conversation, as opposed to information for actual use. Face-to-face interviews are a feasible option for the full-scale case study, but consideration is needed in regard to how many interviews are necessary, and where they are to be held and how to record them.
- To sum up, it is crucial to consider how to select appropriate interviewees. Also, it may be necessary to consider other methods to obtain better outcomes regarding data collection, particularly when a number of responses are needed, such as survey by questionnaire, group interview, or a combination with face-to-face interviews.

(3) Documents

It is important to review the relevant documents concerning both the historic and present-day information and data of Newcastle and Hagi, including local literature, research papers, archives, maps, original minutes, etc. Present-day documents from both cities include relevant researches and survey reports, city hall papers, newsletters, reports and working papers of relevant groups on environmental concerns, etc.; both published and unpublished. Such a review should be carried out using the qualitative case study approach, with a critical interpretative method, as explained in Section 3.2.

(4) Participation in various community activities

Participation in various community activities offers access to significant resources of evidence, thus obtaining a variety of information. It is useful to appreciate people's involvement in running communities. The case studies have made the following participations from the early stage of the study. Table 3-3 shows the researcher's participation in Hagi and Table 3-4 in Newcastle.

Table 3-3: Researcher's participation in Hagi

<i>Hagi tea ceremony at the city park of retaining the castle precinct, May 2015</i>
<i>Conference/general meeting of the group 'Protecting Hagi Water and Life', May 2016</i>
<i>Hagi Open Gardens, May 2016</i>
<i>Hagi Natsu-mikan annual festival, May 2016</i>
<i>Lectures at Hagi City Museum, City Hall and one of the listed historic buildings, May and June 2016</i>
<i>Hamazaki-cho annual festival 06/16</i>

Table 3-4: Researcher's participation in Newcastle

<i>Newcastle Allotment Working Group (NAWG) formation at the Civic Centre, June 2014 and June 2015</i>
<i>NAWG monthly meeting of at the Civic Centre; twice in 2014, 8 times in 2015, 5 times in 2016</i>
<i>Newcastle annual allotment show in Sept. 2014, 2015 and 2016 (helped with the preparations and on the day).</i>
<i>Highbury South Allotment Association (AA) Open Days in Sept. 2014, 2015 and 2016</i>
<i>Moorside Allotment Open Day, Sept. 2015</i>
<i>Thropton Terrace AA committee meeting in Oct. 2014 at the communal lodge on site and a bonfire day in Nov. 2014; Christmas Day at the site.</i>
<i>New allotment: City Stadium Allotment provision programme day, March 2015</i>
<i>Highbury North AA, working day, 07/11/15 at the site</i>
<i>School House AA committee meeting, 14/11/15 at the community lodge</i>
<i>Highbury South AA, Allotment School Day; helped 11 and 22/11/15</i>
<i>Highbury South AA, working day; 22/11/15 at the site</i>
<i>Highbury South AA AGM, Jan. 2016</i>
<i>Highbury North AA AGM, Jan. 2016</i>

(5) Survey by questionnaire

Surveys by questionnaires in Newcastle and Hagi were conducted providing five to seven questions and open opinions to obtain people's views and opinions, concerns, prospects and values, and benefits and issues, in the case of Newcastle about allotment garden communities, and in Hagi from people who were involved in heritage protection or volunteer activities in the city.

In the case of Newcastle, the questionnaire was sent out first by e-mail through the network of Newcastle Allotment Working Group, but the method was changed due to lack of responses. The method was changed to direct visits to allotment sites by the researcher, combined with

face-to-face interviews. This was successful and gained 76 responses (this will be shown in Chapter 5).

In the case of Hagi, about 130 copies of the questionnaire were delivered by the curator, conservation officer, librarian, chief members of various volunteer groups, acquaintances and the researcher to people who might be interested in the survey. 104 people have replied to the survey, expressing diverse views and opinions, which were counted more than 300 responses in total. The results of the survey are shown and analysed in Chapter 7.

(6) Interview

Newcastle

The researcher carried out face-to-face interviews with individual plot-holders and groups of people of some allotment associations in Newcastle. The aim was to obtain more information regarding individual plot-holder's views and opinions about the allotment gardens, their communities and community activities than the questionnaire survey have gained. The preliminary studies, particularly the pilot interviews (Section 3.4.2), were extremely useful in designing the method of the actual face to face interview, such as determine interview topics and deciding on the places where the interviews were to be held and the method of recording. A total of 29 people and eight groups were interviewed (Appendix B).

The interviewees were identified by three methods below, and the face-to-face interviews were conducted by asking the same questions as in the questionnaire survey as a start, then expanded to wider aspects.

- (i) Individual plot-holders who offered to take part in face-to-face interviews; they gave their acceptance of an interview as they returned the questionnaire paper.
- (ii) Individuals and groups of some associations who were introduced by the area representatives of the Newcastle Allotment Working Group.
- (iii) Individual plot-holders who accepted the researcher's inquiries to participate in the interviews when the researcher visited to their own plots.

Their responses were recorded in two ways: (a) interviewees wrote down their own views on the questionnaire paper by themselves. The researcher received these data as the interviews were completed. This particularly occurred in the group interviews, though, at the same time, the researcher made written notes while interviewing. (b) The researcher made records in his own handwriting on the questionnaire papers while receiving people's views. The data were summarized along with the questionnaire's four topics (see Appendix B) and typed out on the

day of the interviews. Most of the interviews were held at people's own allotment sites and their common lodges; some were held at the respondent's own house in the case of (i) above.

Hagi

As section 3.4.3 (3) described, during the Hagi initial visits, the curator of the city museum and the city conservation officer introduced a number of different professionals living and working in Hagi. This created the so-called the 'snowballing effect' (Noy, 2008) in that the researcher met a number of citizens during the initial visits as well as in the early stage of the actual field survey. Thus, the researcher was able to carry out the interviews with many of these people. Most of the interviews were made at their work places; some were at their own house. The total number of interviewees was counted over 40 individuals and three groups (shown in Appendix E). The interviews were conducted by the researcher using the same questions as in the questionnaire survey about individual's daily connections or interactions with natural processes, and their involvements in the protection or enhancement of the historic cultural landscapes. The interviewees' topics were, however, often extended to wider aspects, particularly about the issues of Hagi. (Appendix D shows the questionnaire and result).

Most of the interviews lasted more than one hour. Several professionals gave a couple more interviews to explain about the issues of Hagi in detail and their contexts; for instance, social aspects in relation to the traditions, cultures, and concerns about aging and the sustainability of Hagi, as 'naturally occurring data' (Silverman, 2006, pp.132-3). This fluid approach to methods, in fact, generated a positive snowballing effect, which resulted in a larger number of interviewees than expected. At each face-to-face interview, the interviewee's views and opinions were recorded in the researcher's own handwriting during the interviews. These responses were summarized into several topics while the researcher stayed in the city, this will be shown in detail in Chapter 7.

3.4.4 Method of data analysis

The methods of data interpretation and analysis of the case studies are twofold, reflecting the nature of the two research questions. (a) Analysing the historic data, such as documents and maps regarding the forms of growth of each city. (b) Analysing the current data, from the findings of the field survey, concerning the social and environmental benefits, and examining these data in relation to the theory of social capital and collective actions.

Historic data; Newcastle and Hagi

For both Newcastle and Hagi, the analysis is focused upon the way in which the growth of each historic city occurred by the people's interactions with natural processes in relation to the distinctive context of each place. The analysis was carried out for the following themes in chronological order; this will be shown in Chapter 4 for Newcastle and Chapter 6 for Hagi.

- (a) Main causes and issues for the development of the city, including the expansion of the habitable areas and reasons of the prevention of the expansion.
- (b) Distinctive characteristics of the place, and their effects to the development in relation to people's interactions, such as geographic, topographic and climatic conditions of the place; particular analysis was made of the environmental changes and continuities, and the social aspects, such as growth of local communities and cultures.
- (c) Result of and consequences of growth on the characteristics of the present cities of Newcastle and Hagi.

The result of the analysis of historic data above may provide the focal points of the analysis of field surveys both in Newcastle and Hagi. This method may be seen as a kind of dialogue between the past and the present of the people's interactions with natural processes. It could examine the relationship between people and natural processes over time, in particular, upon long-term existing environmental characteristics or historic cultural landscapes of each city.

This method of analysis may be supported by literature, such as the suggestions of Roe and Taylor (2014) that 'the layers of peoples' interactions have resulted in the distinctive identities of particular places as the cultural landscapes'; and an argument of Marshall and Rossman (2006) that 'the social and physical setting and internalized notions of norms, traditions, roles, and values are crucial aspects of an environment (Section 3.2.1).

Field survey data; Newcastle

The field survey in Newcastle was focused upon the allotment gardens and their communities. This resulted from the analysis of historic data. It identified them as a significant example for the study of the interactions between people and natural processes over time. The analysis of the field survey data was made for the following four themes; this will be described in Chapter 5.

- (i) Distinctiveness, recent trend, and issues of the Newcastle allotment garden communities and their collective actions as a whole in the city today.
- (ii) Characteristics and issues of five particular allotment associations, looking at community

activities and the managements. This includes people's collective actions to support the continuation of the communities and the protection of the open land in relation to different of locations, tenancy conditions and sizes (number of members and plots) of the communities.

- (iii) Effectiveness of allotment gardens and their community activities regarding social, economic and environmental benefits and values.
- (iv) Issues of the allotment gardens and their communities for the future.

Field survey data; Hagi

In Hagi, the field survey focused upon the residents' daily interactions with natural processes and their involvements in collective actions to support the historic cultural landscapes. The analysis was carried out for the following data in relation to the concept of social capital and collective actions; it will be shown in Chapter 7.

- (i) Characteristics and outcomes of collective actions of different forms of volunteer groups to support the protection and enhancement of local environmental significance, including long- term existence of environmental characteristics.
- (ii) Result of the secondary resources (i.e. relevant surveys to this research in the last two decades) regarding the residents' appreciations and concerns about the environments and the life in Hagi. This was necessitated to understand the environmental conditions and issues of Hagi at the time that information became available for the preparation of the field survey of this research.
- (iii) Findings of the questionnaire survey, which were examined in the following steps: First, the responses were divided into positives (appreciation) and negatives (concerns and issues); second, they were classified into relevant specific topics and analyzed according to respondents' different genders and age ranges. Then, these topics were further categorized into different elements to find out distinctive aspects.
- (iv) Outcomes of face-to-face interviews were analyzed in two aspects; (a) Reasons behind views and concerns of respondents, and (b) New movements for revitalization emerging in Hagi.

3.4.5 *Limitations and obstacles*

Validity and reliability

Silverman (2013, p. 279) states that ‘deciding to do qualitative research is not a soft option. Such research demands theoretical sophistication and methodological rigour’. Thus, the validity and reliability of this research need to be identified.

Perakyla (2011, p.365) describes validity in these terms:

The validity of research concerns the interpretation of observations: whether or not the inferences that the researcher makes are supported by the data, and sensible in relation to earlier research.

Hammersley (1992) defines reliability as follows:

Reliability refers to the degree of constancy with which instances are assigned to the same category by different observers on different occasions.

Kirk and Miller (1986, p. 72) considers the importance of reliability:

Qualitative researchers can no longer afford to beg the issue of reliability. While the forte of field research will always lie in its capability to sort out the validity of propositions, its result will (reasonably) go ignored minus attention to reliability. For reliability to be calculated, it is incumbent on the scientific investigator to document his or her procedures,

In this research, to obtain data to answer the research questions, the structuring of the methods for the case study in Newcastle and Hagi were thoroughly considered, particularly the process from the preparation time to the actual fieldwork.

In the case of Newcastle, at an early stage, only the single tool of questionnaires was used and they were just sent out by e-mail to the members of allotment associations. It was felt that the number of questionnaires dispatched was large and sufficient responses were expected. But this did not prove to be the case. Although the e-mail provided the basic interview guide such as an introduction of the researcher, background and purpose of the research with certain ethics statements provided, helped by the committee members, the responses were minimal. Then, as described earlier in Section 3.4.3, the methods of collecting data were modified, using multiple tools: meeting people directly at their allotment sites; face-to-face interviews, focus groups and open-ended questionnaires. As a result, the outcome from the collection of questionnaire data was improved a great deal from that at the beginning.

In the case of Hagi, the initial visits provided the foundations for the full case study. The methods employed for the case study may be an appropriate way in which to establish the validity and reliability of the research within a limited time schedule, as described in Section

3.4.2. In addition to that, it is worth noting here that one of the most crucial issues in the Hagi case study was the way in which relevant people and organisations were identified for the survey, and the resulting good relationships between the researcher and respondents that were established. This can be seen as a reasonably satisfactory method from the results of the data collection, such as the number of responses from the questionnaire and interviews in the limited time period available. This could not have been achieved without the establishment of good relationships with the respondents. As mentioned before, the respondents covered a variety of professionals, different age ranges, and a reasonable gender balance.

Reflections and limitations

As far as reflections and limitations are concerned, a number of points are salient. In the case of Hagi, its location and limitations on time were the key difficulties identified. In this regard, the methods and tools employed in Hagi were those of best practice, such as initial visits to achieve access to appropriate relevant people and organisations, as well as planning a time schedule and the way in which to discover the appropriate process for data collection. This method may be used for other similar case studies, although it may involve extra time and expenses before the actual field survey take place.

With regard to limitations, in terms of respondent locations, there are about 64 allotment garden associations in Newcastle, some 4,000 plot-holders (Newcastle City Council, 2010), yet the case study dealt with limited numbers. However, as far as the data analysis for community aspects was concerned, the method applied to Newcastle, explained in Section 3.4.3, may produce reflexivity, as the examination of five different allotment associations consisted of (a) their locations, where each had its own characteristic topographical and social contexts; (b) different sizes of associations in terms of the numbers of people and plots; (c) different conditions of tenure, which revealed different issues.

The seasons of the year were another condition regarding the limitation of the case study, as the allotment gardening activities varied according to different seasons. The actual case study in Newcastle took place from mid-October to mid-December 2015. A case study at other times of the year might have had different results, although the researcher undertook earlier participation in their activities, which may have minimised the limitations connected to the gardening season._

3.5 Conclusion

The methodology of this thesis was developed based upon the findings of the literature review, the development of theoretical framework and in response to the research questions. The overall strategy of this research was to adopt a qualitative methodology and to use case study analysis. The decisions about the research design were based on the aims and objectives of the research, the key issues to be addressed that were identified through literature review and articulated in the research questions, and guidance from the literature relating to qualitative research. The decisions were also informed by the variety of preparatory work such as preliminary studies, pilot interviews and initial visits.

The theoretical framework of the research was based on an adaptation of the concept of forms of social capital (Ostrom and Ahn, 2003), linked to collective actions relating to local environmental issues.

The overall research development is illustrated as the research process in Section 3.3.3. The progress along with the strategy of the methodology. The method and techniques of the case study included field surveys in the selected cities, Newcastle in the UK and Hagi in Japan. The reasons for the selection of the two cities were identified as being representative of empirical studies for this research, their characteristics and availability to access evidence resources. Both cities offered significant material to study the interaction between people and natural processes over time and in the present day.

Chapter 4:

Case Study – Context of Natural Processes from Historic Perspective, Newcastle upon Tyne, UK

Chapter 4: Case Study – Context of Natural Processes from Historic Perspective, Newcastle upon Tyne, UK

4.1 Introduction

The research was carried out using case studies in Newcastle upon Tyne in UK and Hagi in Japan, as the strategy of this research for a qualitative case study approach was described in Chapter 3. As the methodology showed, the case studies of Newcastle and Hagi examine two aspects; (1) The contexts of natural processes from historic perspective, and (2) The findings and analysis of the field survey in the present day. These are shown in Chapters 4 and 5 for Newcastle, and Chapters 6 and 7 for Hagi.

This chapter looks at the context of natural processes from historic perspective in Newcastle. It intends to respond to Main Research Question 1 and Sub-Research Question 1.

Main Research question 1;

In Newcastle, have the interactions between people and natural processes affected the forms of growth of historic built environments?

Sub-Research Question1;

- a) What forms of growth have occurred in the historic built environments in Newcastle?
- b) How has the growth been affected by interactions between people and natural processes?

The following is a brief summary of the preliminary study in Newcastle which has provided specific topics and objectives for this chapter are shown in Section 4.1.1.

Newcastle represents a 2,000 year-history of the north-east of England, with remaining fragment of the Hadrian's Wall, constructed in the 2nd century as a Roman defensive frontier barrier. The medieval City Wall, built in the 13th and 14th century to defend the town against attack by invading Scots armies or other military threat (Smith and Yellowley, 2012, pp. 7-22), may still be seen in parts in the historic core of the city. The growth of Newcastle from the late medieval time to the early modern time may be viewed as an interesting period to examine the interaction between people and natural processes, as it has formed the basis of the present city structure. It may be seen as the forms by which the city has grown through a great many people's interactions with natural processes, in particular by dealing with the characteristic geographical and topographical settings of the land where Newcastle developed. While many main regional cities in this country may be seen as products of the Industrial Revolution, Newcastle developed well before the revolution occurred but expanded rapidly along with its advance. As the methodology explained, this is one of the most important

points for the examination of the interactions in historic built environments for a longer period and their relation to the present city, as it may offer a wider insight for this research.

The present Newcastle city core has shown layers of the interactions between people and natural processes since the settlement of medieval walled city. The fortified city was built on a characteristic topographical setting location, on a steep hilly land which climbs up sharply from the River Tyne to the North. In the early period of the city, people have to cope with a number of ancient denes cutting deeply through the land from the north to south down to the river within the wall and immediately outside of the wall (Smith and Yellowley, 2012, 2014, 2015). These characteristics of the land have enable people to work for the growth of the city from a very early stage of the settlement to the present day. It was the major determinant in creating the significant townscape as well as the landscape of today's city.

Today, the city centre is dominated by a mixture of both historic and modern buildings and roads which are densely located on top of the historic layout of the city. As part of the historic Newcastle, just outside of the medieval walled city, a vast area of ancient grasslands is still seen, namely the Town Moor. Also, one ancient dene has been retained, namely Jesmond Dene in the east-central part of the city, while most of the ancient denes have been transformed to the habitable lands covered by the buildings and motorways.

4.1.1 *Specific topics and objectives*

The chapter examines the interactions between people and natural processes by looking at the historical trajectory of existing historic areas/places in the city in relation to the forms of the growth and significance.

As Section 2.2 explained, the importance of the long-term existence of environmental elements or characteristics on a particular site is significant in terms of the functioning of ecological processes and richness of species. It contributes to the identity and character of the place. It has resulted from the people's interaction with natural processes, reflecting the distinctive geographic and topographic conditions of the area.

The following four specific topics and objectives are examined:

- (1) The growth of the city; to understand the trajectories of the interactions through which people responded to the characteristics and conditions of the land. These indicate how the forms of growth and expansion of the habitable lands occurred.
- (2) The long existence of the Town Moor; to understand how it has been maintained and protected, and has affected the people and the environment of the city.

- (3) The long-term existence and environmental characteristics of Jesmond Dene; to understand how it has functioned in relation to the growth of the city, and how it has contributed to people's lives and wildlife conservation.

Both the Town Moor and Jesmond Dene are seen as distinctive identities of the city, tangibly and intangibly, representing different characteristics sceneries, an open grassland and a park containing a wooded valley/stream. In the historic perspective, Newcastle offers another interesting examples of people's daily interactions with natural processes; via allotment gardens. Thus, the fourth topic is;

- (4) Allotment gardens and their communities; to examine how the communities have grown and maintained and contributed to people's well-being and the protection of the environment of the area.

4.1.2 *Structure of the chapter*

The chapter is divided into six sections.

The first section explores the overview of the interaction between people and natural processes. It looks at two particular aspects, (1) the forms of the growth in relation to the expansions of the habitable land, where people dealt with the characteristic geographic and topographic conditions of the land, and (2) the issues emerged from the rapid growth of the city; the consequences to industrial workers living conditions, an emergence for living and environmental improvement.

The second section examines the historic contexts of the Town Moor, the reasons of its long-term existence and its functions over time. It also looks at values and issues in relation to the interaction between people and natural processes.

The third section examines the historic context of Jesmond Dene. It looks at changes of the functions of the Dene in relation to the growth of the city. It looks into the cause of the transformation from the industrial uses to the municipal park, examining the reasons of the retention and the protection of long-term existence, and consequences including people's changing values.

The fourth section looks at the foundation and the growth of the allotment garden communities of Newcastle. It examines the significance of the community regarding the functions, values and concerns. (The details of the community will be scrutinized in the next chapter).

The fifth section analyses the findings of the historic study using the method described in Section 3.4.3.

The sixth section concludes the chapter and responds to the main research question 1 and sub-research question 1.

4.2 Natural Processes in Historic Perspective – Overviews of Newcastle

4.2.1 Introduction

Geographic and topographic characteristics

As chapter 2 explained, historic cities contain layers of the interactions between people and natural processes as people constantly challenge or work with natural processes as one of the major determinants of the growth of civilization. The distinctive characteristics of geographic, topographic and climatic conditions of the particular place where people live are strong influential factors of the identity to those places, including people's way of life, cultures and traditions, and the town/landscape of the area. (Section 2.2).

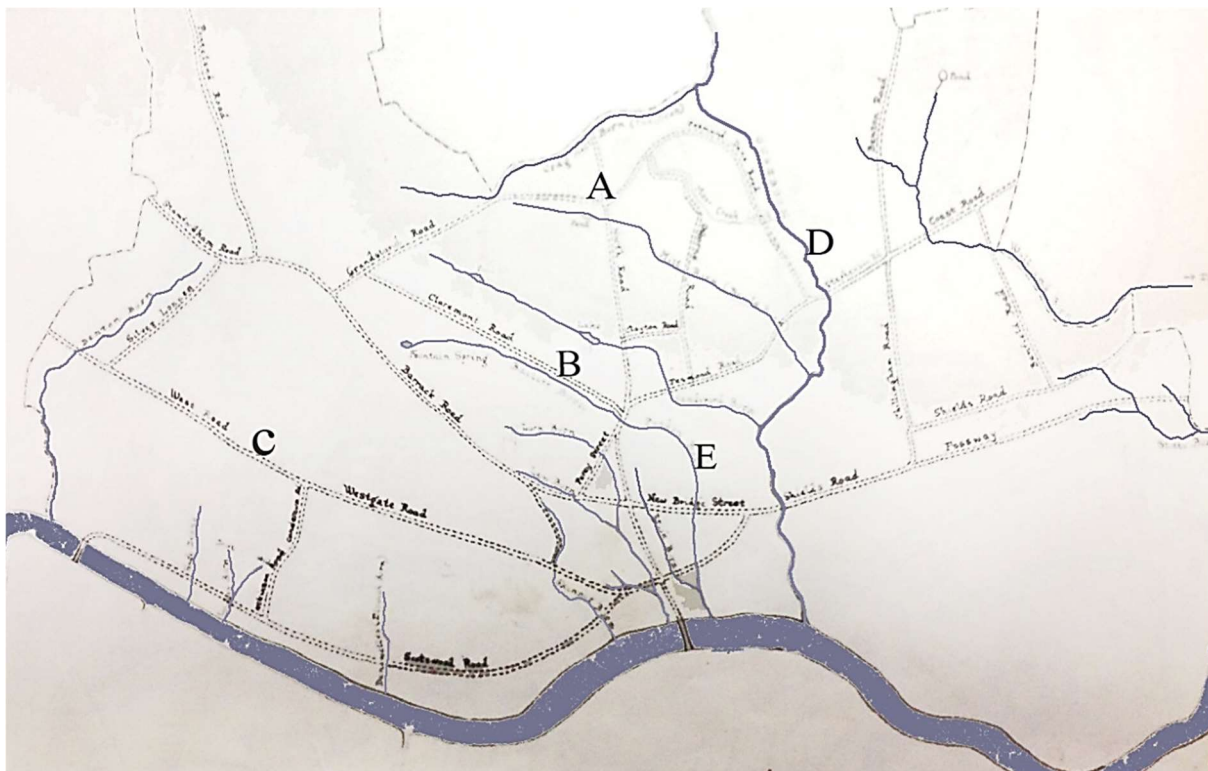


Figure 4-1: Courses of old burns and streams

Graham, F. (1984) Maps of Newcastle, (Source; City Library, highlighted by author)

A: North Road; B: Claremont Road; C: West Road; D: Ouseburn; E: Pandon Burn

In the case of Newcastle, it can be identified that the characteristics geographic and topographic conditions of the land where the city has grown have affected the historic forms

of the growth of the city.

In the early modern period, the development work of the city required a response to the need for the creation of habitable land, which inevitably involved major environmental alterations to its geographic and topographic conditions, in particular, dealing with the ancient denes. As Figure 4-1 shows, the denes and tributaries, such as the Lam Burn, the Lort Burn, the Erick Burn and Pandon Burn, ran through the middle of the walled area and made habitable spaces limited as they cut the land sharply and dropped down to the Tyne River.

During the period of the industrial Revolution, the people of Newcastle worked against the characteristics geographic and topographic conditions of the land along with the advancing modern sciences and technologies. As the physical expansion of the habitable area was tightly restricted by the land characteristics, massive civil engineering works were involved; in other words, a great deal of the interactions between people and natural processes. This was because the Tyne River restricted the expansion of the city to the south, as it runs along the south of the city from the west to the east towards the coast. Ancient denes with many tributaries cut through the central part of the city land from north to the south and dropped down sharply to the River Tyne, resulting in extremely limited habitable areas and difficulties in improving the land.

The Ouseburn, in particular, runs about 1.5 miles east of the town centre, and cuts down deeply, dividing the habitable area on the eastern side of the Ouseburn from the city centre. Also, immediately north of the central area, the Town Moor has occupied a vast space of open grazing land since ancient times. Therefore, the expansions of the habitable area required the people of Newcastle to improve the land conditions; in other words, to change the natural characteristics of the area. The people and the city had to overcome these conditions, interacting strongly with the difficulties imposed by these ancient environmental characteristics.

As with other cities and towns in the UK, the growth of Newcastle owed much to the advance of the Industrial Revolution. Despite of the difficulties to deal with, the geographic and topographic characteristics of the area contributed a great deal to the growth of the city as means of natural produces. While the River Tyne has functioned as a great waterway to other regions as well as other countries, resources for industrial development have been obtained from the land in this area, as it produced a rich mineral resources, such as lead, coal and iron, dug out from ground in and around Newcastle. (Smith and Yellowley 2015). The growth of Newcastle has created rapid increases in population, which required habitable areas to be

created within these characteristic conditions of the land.

This section depicts two aspects of the interactions between people and natural processes. The first is the forms in which the expansion of the habitable land required the rapidly growing population of the industrialized city to deal with the characteristic land of the city. The other aspect is the consequences of the growing industrialized city, in particular in relation to the living conditions of industrial workers and the emergence of a need for the improvement of their conditions in relation to the people's connection with natural processes.

4.2.2 *Creating the habitable land*

The needs for the expansions of the habitable land to respond to expansion and increasing population of the city required a great deal of land improvement work, in other words, the interactions between people and natural processes were to deal with the characteristic conditions of the land in the central area of Newcastle. The material for this examination is mainly the old maps and the literatures of Smith and Yellowley (2014, 2015). The following interpretations were made by looking through the materials in chronological order.

As early as in the middle of 17th century, culverting, infilling and paving started (Smith and Yellowley, 2015), p. 52). From the mid-18th century onwards, the works were escalated; the map of 1746 by Issac Thompson (Figure 4-2, the next page) shows that houses occupied less than a third of the walled area; two-thirds or more may be seen to be areas of plants, vegetables or just open land. At the centre, the Lort Burn is seen as a dominant characteristic. It runs from the outside of the wall into the south side of St. Andrew's Church by New Gate, through the Nuns. Then it occupies the central area, showing a distinctive shape of the Burn between New Gate Street and Pilgrim Street, runs down to the east side of St. Nicholas Church, and then disappears from the map. The work of this area said to have been completed by 1696 (Smith and Yellowley, 2015, p.52).

The 1770 map by Charles Hutton (Figures 4-3, the next page) shows a massive increase in the number of houses within the wall in the 25 years following the 1746 map. The Lort Burn can still be seen, but houses are located close to the stream. This valley has been replaced by gardens and houses. As yet, the improvement of the land within the city wall did not cover very much close to the wall. The Nuns and the Carliol Croft occupy large areas to the north-west and the east of the wall respectively. The stream was then covered in 1784 and is now beneath the Grey Street and Dean Street (Goulding, 1995, p.19; Smith and Yellowley, 2015, pp. 48-52). Maps from the 19th century show a radical development of Newcastle.



Figure 4-2: Map of 1746 by Isaac Thompson, (Source: City Library)



Figure 4-3: Map of 1770 by Charles Hutton, (Source: City library)

Smith and Yellowley (ibid) note that ‘the Burn was used as repository for refuse, butchers’ offal and effluent’; ‘lort’ was as Anglo-Saxon word for dirt or excrement. This was probably because of this area’s environment, as it was densely packed with buildings in an extremely limited habitable area within the city wall. In contrast, however, the picture of John Lumsden depicts a picturesque view of Pandon Dene (Smith Yellowley, 2015, pp. 48-49) just outside of the wall. The word ‘dene’ implies a vale, especially the deep narrow wooded valley of a small river (oxford Dictionary, 2017). It can be said that these were contrasting environments between the built up area inside of the city wall and an ancient dene existing just outside of the wall that had not been as developed. Yet, the needs for more habitable land for an increasing population required the dismantling the city wall.

In the 19th century, the rapidly developed sciences and technologies shaped the city into an urban setting by replacing the land dominated by plants and vegetables that existed within the city wall. The map of 1827 (Figure 4-4) by John Wood clearly indicates the growth of the town, including the wall down form the New Gate to the east and on to the south by the New Jail, extending the built-up area onto the plant and vegetable-dominated land in the north. It shows Eldon Square. But, at the centre of this map, Pandon Burn is still dominant and prevent any expansion to the east.



Figure 4-4: Map of 1827 by Wood
(Source: City Library)

T. Oliver's map of 1838 (Figure 4-5) suddenly gives a different impression of the city. It is apparent that the growth of the city means of the improvement of the characteristics of the land into habitable land, with new roads and houses, including New Market. It may be said that the interaction between people and natural processes in the period of urban development is to do with the civil engineering works to alter the functions of land use. However, Pandon Burn or Dene is still clearly apparent on this map, preventing the expansions of the habitable area to the east. The extension of the city to the east requires the development of the civil engineering technologies. It invited a next stage of the growth of the city, but inevitably necessitated a sort of metamorphosis of the environment of the city.

One of the most notable engineering developments in the 1830s and 40s in this regard was the building of railways crossing over the land of the city. The first railway in 1838 was built from Newcastle to Carlisle, although the 1838 map does not show this development. This was followed by a line to Darlington in 1844 and one then to Berwick in 1847 (Lamber, website, 2016).



Figure 4-5: Map of 1838
by Oliver
(Source: City Library)

It should be noted that as the city grew rapidly, Newcastle became more overcrowded and underwent diverse side-effects of the growth, as experienced by other industrialized cities and towns. For instance, the living conditions of working people became notorious, and chaotic, dirty and unsanitary. An epidemic of cholera in 1832, killed 306 people, and more in 1848-49,

and 1853, with 412 and 1,533 deaths respectively (Wadsworth, 2011, p.22; Lamber, website, 2016). ‘In 1865 Newcastle’s death rate was the highest in the country, and rest of Tyneside was little better’ (Wadsworth, 2011, p. 22). This will be noted further in relation to the emergence of the movement to improve this situation in industrialized cities in Section 4.3.

4.2.3 *Preventing for the expansion*

Appropriate urgent improvement schemes were required for the deteriorating living conditions for city dwellers of Newcastle. The expansion of habitable area into open or vegetable land immediate outside of the centre may have suggested a solution, but it did not work easily as the city’s ancient geographical settings prevented further expansions.

In particular, to the north by the Town Moor, and north east by Jesmond Dene and east by the Ouseburn were the most obvious difficulties.

Christie’s map of 1865 (Figure 4-6) indicates the situation of the time; the Town Moor occupies a large space immediately outside the built-up central area. Also, the Ouseburn prevents expansion to the east, while the Blyth and Tyne Railway is located in place of the Pandon Dene.



Figure 4-6: Map of 1865 of Christie, (Source; City Library)

However, another aspect of the interactions between people and natural processes can also be seen here. Although it was not apparent or known at that time, the prevention of expansion of the habitable land effected by these ancient environmental features would in fact provide a key to the improvement of working people's lives in another effective way. This is the point of this chapter, to see the interactions in wider aspects of the historic context of natural processes. These are people's daily concerns in urban life in interactions with the long-term environmental characteristics of Newcastle; the Town Moor, and Jesmond Dene and allotment gardens. This will be examined in detail later in Sections 4.3, 4.4 and 4.5.

Today, it is generally recognised that a green environment is one way for improve urban environments (Kendle and Forbes, 1997). The provision of municipal parks emerged in the late 19th century across the country, including in the Tyne and Wear region, and this contributed a great deal to a better living environment. In the first instance, parks were not provided to improve working people's living conditions (Green, Pendlebury and Jubb, 1995).

In respect of Newcastle's land improvement work to expand the habitable area, the development to the eastern side of the city was restricted by the Ouseburn and had to wait until the culvert was built in the early 20th century. The reinforced concrete culvert was constructed at the point between the south of Jesmond Vale and the Ouseburn rail viaduct between 1907 and 1911 (Smith and Yellowley, 2015 p. 40). This work enabled the valley to be in filled, in providing a crossing place from the city centre to Heaton in the east.

The expansion to the south was to rely entirely on the provision of building bridges across the River Tyne to connect with Gateshead and beyond. The need of works for new bridges required new scientific and engineering developments which have in fact encouraged the development of the area. Christie's 1865 map (Figure 4-6) shows two bridges, the old Tyne bridge, replaced by the New Hydraulic bridge, which opened in 1876; and the High Level bridges completed in 1849. Today, there are seven bridges closely located together between the centre of Newcastle and Gateshead, representing the cultural expansion of the last 150 years of the two cities (Manders and Pottes, 2001).

As seen above, during the 19th century towards the early 20th century, Newcastle was transformed from a town of much vegetation and open land into the heavily industrial urban environment, as was the case in other cities of the country. This transformation occurred as a result of the advances of the Industrial Revolution, as exemplified by inventions of the steam engine and hydraulic power, as well as people's struggles, and involved a great amount of work to interact with the characteristic geographic and topographic conditions of the land as well as a great efforts of collaborations of different professions and engineers.

However, there were diverse negative side effects created in the growing period of the industrialised cities, socially as well as environmentally, throughout the country. As Section 2.2.3 described, dealing with this issue has given rise to an important movement concerned with people's health and healthy environments in industrial cities and town, including the improvement of the living conditions of industrial workers.

4.2.4 *Living Condition of the working people*

Newcastle was not exceptional in this regard as the population of the city increased so rapidly. Over the 19th century: it was 28,000 in 1801 in the first census, which expanded to 53,000 in 1831 (Lambert, website, 2016), 109, 108 in 1861 (Morgan, 2007, p.10) and 215,000 in 1901 (Lambert, website, 2016) to a population of 284,000 today.

The resultant impact on working-class living conditions is exemplified by Morgan (2007, p. 11). It was recorded as follows;

In the Sandgate area 5,000 were crowded into 350 houses with four private WCs, one public privy and three private privies. There was an appalling built up of dung (human and animal) in the lanes and alleys of town. It was collected into six main depots and some was used as fertiliser on the Town Moor, but this led to further problems as the Moor was the source of some of Newcastle's water supply.

There were many causes of the worsening the living conditions of working people, and many provisions were made to deal with this. One of the remedies was to provide more living accommodations for workers. In fact, rows and rows of terrace houses were built close to their factories throughout the industrial cities and towns in the later part of the century. In the case of Newcastle, so called Tyneside flats were rapidly built at the area right back to the Tyneside shipyard and factories, which expanded into the new suburb of Jesmond and the other side of the river in Gateshead (Wadsworth, 2011). However, this did not help to improve people's life in terms of health, social well-being and living environment. The industrialised society needed more integrated provisions or movements for real reforms to improve people's living conditions.

National Movement

The provision of more accommodations alone did not solve the living condition of working people, the real issues were gradually revealed by pioneering forerunners of the reformers. For instance, a survey of poverty in York by Seebohm Rowntree in 1899 revealed the working-class people's living conditions. His work was quickly recognized as an important issue, and made a great impact on reformers (Briggs, 1961).

The early movement emerged from philanthropic manufactures. For example, they built newly planted towns and villages for their workforce communities, such as Saltaire (1853-) by Sir Titus Salt, Port Sunlight (1895-) by William Lever, Bournville (1895-) by George Cadbury; and Joseph Rowntree (Seebohm's father) started building New Earswick from 1902 onwards (Makino, 1987).

These pioneering contributions for people's living and working conditions led to the emergence of the Garden City Movement. As Section 2.2.3 described, the concept of Ebenezer Howard was primarily to provide an ideal living environment for people by making a marriage of town and country that employed advantages and benefits of both; in other words, where the natural environment features were incorporated in newly designed built environments (Howard, 1898, 1902; Osborn, 1946).

In the case of Newcastle, Sections 4.3 to 4.5 examine how the long-existence environmental characteristics such as the Town Moor, Jesmond Dene and the allotment gardens may be seen as instrumental vehicles in making better and characteristic living environment for people in Newcastle at the turn of the 19th century and beyond.

4.2.5 *Conclusion*

The forms of the growth of Newcastle from the time of the Industrial Revolution to the early 20th century has been closely related to the interactions between people and natural processes. In other words, the geographic and topographic conditions of the land where the city located have given rise to a profound influence on growth; in particular, dealing with the ancient denes which cut through the land in the heart of the historic city, preventing growth. Newcastle had to overcome this to create habitable land to respond to a growing population and the demands of society. This involved a great many workers to interact the characteristics land conditions along with the collaborations of different professions and engineers in the developing modern sciences and technologies. As a result, the central area of the city has undergone a metamorphosis of the environment, representing an industrialized regional capital of the north of England. Yet, it is interesting to identify that some long-term existing environmental characteristics have been retained, including the ancient grassland of the Town Moor and the wooded valley of Ouseburn.

However, the growth has generated a great deal of side-effects, in particular social and environmental aspects. Industrial workers had unhealthy chaotic living conditions. In this situation, radical movements emerged nationally that were associated with the ideal to

connect or interact with natural processes.

4.3 Town Moor

4.3.1 Introduction

The Town Moor is a vast area of grasslands located at the heart of the historic city of Newcastle upon Tyne. The land is owned jointly by the Freemen of Newcastle and the City Council (or various Corporations or Council) and has protected the land and its characteristic environment for centuries. The Freemen own the surface of the land and grasses for grazing, and the City Council owns the land underneath them.

The Freeman of Newcastle upon Tyne of today are the organization of a charitable trust as a conservation body, primarily aimed at protecting to the town Moor and other green spaces, their origin said to be back to Anglo-Saxon time (Freemen of Newcastle, 2016; Walker, 1996). The historic perspective of the natural processes of the Town Moor is worthy of study in terms of the relationship between people or culture and the natural processes in Newcastle over time. It may also offer an insight for considering ecology in historic built environment. It can be seen as political as well as environmental issues in terms of the tenure and the governance of the land with the dual control system for the protection of the enormous open land of the central city.

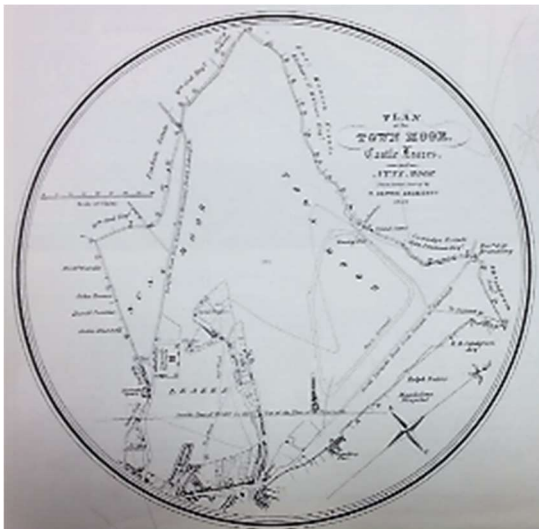


Figure 4-7: Plan of Town Moor
(Source; an insert from John Oliver's
large map of Newcastle, 1831, city
Library)



Figure 4-8: Town Moor today

4.3.2 *Overviews*

The Town Moor has existed since ancient times as a pasture for the cows of the Freemen of Newcastle. Literature on the Town Moor and the Freemen of Newcastle show the existence and the rights of the Freemen in the 12th century. Walker (1996, p. 1) notes that ‘in 1175, the first Royal Charter of Henry II to the Burgesses of Newcastle granted them freedom from toll through all his land.’

Smith and Yellowley (2014, p. 10) show:

In 1213 King John came to an agreement with the Newcastle burgesses on the town’s annual rent to the Crown. A royal order from the time of Edward III, dated 1357, indicates the right of the burgesses to hold the Town Moor (then known as the Castle Moor) and the Castle Leazes (known as the Castle Field) and their benefits in return for the rents. (See Figure 4-7 & 4-8)

Smith and Yellowley (*ibid*) comment briefly about Freemen, Burgess, Guild and Grazing.

“The Freemen of Newcastle are an organization that can be traced back to the city’s trade craft and merchant guilds of the Middle Ages, in even earlier days, Anglo Saxon ‘free men’ were a middle class who carried arms for the defence of their community. Members of the guilds were chief citizens of Newcastle, also known as Burgesses, who paid taxes, took part in the elections and were responsible for the management and conservation of the moors in association with the City Council which owns the land. The Freemen still hold the grazing rights.”

In the course of the following centuries, the Town Moor has had other functions for people in and around Newcastle in addition to a cattle pasture. For instance, in the mid-14th century, a part of the Town Moor was dug for coal; in the early 18th century, horse racing began; later, the race was transferred to High Gosforth and the first Temperance Festival, known as ‘The Hopping’ was held in 1882. Since an Act of Parliament passed in 1870, a part of the Town Moor has become a public park where many activities are held including festivals and exhibitions (Smith and Yellowley, 2014, p. 95).

Today, the Town Moor is protected by the Newcastle upon Tyne Town Moor Act 1988 for the Freemen’s right for graze and for the public to have the right of “air and exercise” on the Moor (Freemen of Newcastle, 2016). It enables people of all sections of society to enjoy the value of the vast open land of the Town Moor, connecting or interacting with natural processes in their daily lives. People spend their own time in the open green land and the fresh air, some may feel a sense of tranquillity, while only 10-15 minutes on foot away from the busy commercial centre of the city. On any day, people quietly enjoy the Town Moor for cycling, walking, jogging, pushing prams, and walking dogs.

Statistics

The Town Moor refers to the part formerly known as the Castle Moor but has, since the middle of the 17th century, been used as a term comprising the entire area, consisting of the fields and moors known Castle Field, Castle leazes, Castle Moor and Nuns Moor. The total area was recorded as approximately 1,229 acres, including Town Moor: 848 acres; Nuns Moor: 240 acres; and Castle Leazes and Castle Field: 141 acres (Walker, 1996, p. 75); the figure of 1,226 acres was mentioned in the Newcastle Improvement Act 1870. The area of the Town Moor today, as near as can be determined, is approximately 960 acres or 1,350 hectares (Table 4-1) (Freemen of Newcastle, 2016).

The total area of the Town Moor has been reduced by about 20% from the original. The Freemen recorded encroachments on the Moor by mutual agreement with the city council (Walker, 1995, pp. 75-80; Freemen of Newcastle, 2016). These include the Royal Victoria Infirmary (1898), the former Fenham Barracks. There was much pressure and a long campaign to convert the Town Moor into a public park. Walker (ibid) noted that the Newcastle Improvement Act of 1870 authorised the corporation (the city council) to acquire two areas, each not exceeding 35 acres, in the Castle Leazes and the Town Moor, now known as Leazes Park and Exhibition Park. The later Acts authorised acquisition of the Nuns Moor Park and Brandling Park. A 'Land exchange' (Freemen of Newcastle, ibid) allowed the building of university halls of residence on Leazes Moor, and a number of roads, notably Claremont Road, Grandstand Road, Nuns Moor Road and the North West radial road.

Table 4-1: Total area of the Town Moor

Area	Hectares	Acres
Town Moor	133.75	330.49
Nuns Moor	144.27	356.29
Hunters Moor	25.57	63.18
Dukes Moor	11.67	28.87
Little Moor	12.39	30.61
Castle Leazes	14.47	35.75
Others	46.10	113.92

(Others include allotments, playing fields, Little Benton and St. James' Park)

The Freemen have protected their rights, at the same time also protecting the nature of the Town Moor, while the city council has been responding to the needs of society and people of

Newcastle. However, for many years, the dual control system of governance on the Moor has not been seen straightforward.

4.3.3 *Dual control and the Town Moor Act*

The dual control system is a somewhat unusual combination of the ownership of the Moor, as the land below ground level, including soil and minerals, is owned by the city council and the surface of the land by the Freemen. Neither party can do anything without the consent of the other. Generally, the ramifications of a tenure right can be seen as democratic, but it is never easy for both parties to agree when alternative policy ideas arise. In the case of the Town Moor, the dual control over the use of the land has put each organisation in very difficult positions over centuries every time a development scheme was suggested or new use emerged.

Historically, there had been considerable disputes between the Freemen and the corporation (over the tenure of the Town Moor and the right of the Freemen for the protection and the improvement of the Moor land). For instance, Walker (1995, p. 80) noted that for a very long period in the 18th and 19th centuries, there had been tension between the Freemen in general and the common council of the town, the members of which were Freemen themselves, but who tended to regard the Town Moor from a different angle. They made a suggestion that the Town Moor should be developed in various ways so as to produce revenue for the town, which was rapidly increasing in size. The dispute lessened with the Town Moor Act 1774. However, difficulties arose from the middle of the 19th century onwards over the use of the Moor as more land developments for the growth of the city became a big issue. More recently, in the 1980s new problems of trespass arose, and there will be looked at later with the 1988 Town Moor Act. The 1774 Town Moor Acts stated, first, the legal validity of the Freemen's right and the role of the corporation.

Walker (1995, pp.77-78) describes:

The 1774 Town Moor Act confirmed and established to the resident Freemen of Burgesses of Newcastle upon Tyne and the resident widows of deceased Freemen forever the full right and benefit of the herbage of the Town Moor, Castle Leazes and Nuns Moor to two milk cows respectively in the accustomed manner.

Smith and Yellowley (2014, p. 14) note;

The legislation also stipulated that the Corporation should not let out more than 100 acres at a time and that the leases (for cultivation) were to be restricted to seven years and should only be for the purpose of improving the Town Moor, Castle Leazes and Nuns Moor. There was a ban on leasing out section of the Town Moor which were most used

by the public, including Cow Hill and the racecourse. The leased out lands are known as 'intakes'. Part of the rent for intakes goes to the Freeman and part to the City Council. The Intake system has been in effect since the 1774 Town Moor Act.

Intakes

Section 9 of the 1988 Newcastle Town Moor Act empowered the Stewards Committee of the Freeman to designate any area of the Town Moor (apart from the Town Moor Festival Site) as intakes. The Freeman noted (The Freeman Newcastle Upon Tyne, website, 2016);

The intake land can be used for purposes other than grazing, such as allotment or playing field, to provide the rentals income for the Town Moor Charity to distribute. This Act restricted Intakes not exceed 40.5 hectares (100 acres). The leases are on the basis of terms determined by the Stewards Committee but they may not exceed 99 years and if they exceed 21 years the consent of the Charity Commissioners is required.

The intake allowing lands for allotment gardens has been reduced over years; today, five different sites at the Town Moor edge are retained for about 25. 7 acres in total. This will be shown further in Section 4. 5. The freemen (ibid, website, 2016) stated;

The intake leases are publicised and open to public bid at auction. If required, an Intake area can be removed from the system and put back to grazing or moved from its present site to somewhere more convenient to the management of grazing. It is vital for the long-term benefit of the Town Moor and to the income of the Charity that the Intake system is closely monitored and the land put to best possible use at all times.

In regard to the dispute between the Freeman and the City Council in 1980s mentioned earlier, it can be seen in the context of re-tightening the dual control system of the both organizations over an appropriate use of the Town Moor. As previously stated this should be for the social benefits of the people in and around Newcastle, not for the commercial or business benefits.

Walker recorded (1955, pp. 84-85) that "the dispute was set as an important milestone in the history of the Freeman and the Town Moor. An action was taken to deal with what was an act of trespass by itinerants who had been made use of the Town Moor. This built up to a very substantial problem and a public nuisance amounting in 1986 to some 600 vehicles trespassing on the Moor."

The 1988 Town Moor Act enabled the Freeman to take court action. The matter was heard at the Moot Hall before His Honour Judge George Hall. In his summary Judge Hall condemned the City Council for their lack of action against the itinerants who were not welcome and had caused local residents much grief. He congratulated the Freeman on their action and found in their favour with immediate eviction and costs. Following this court action, there has since been no trespass by unauthorized persons onto the Town Moor

Grazing – environmental benefit

Regarding the environmental issues including urban ecology and biodiversity in the Newcastle area, this may further suggest that the protection work for the Town Moor may need to emphasize the importance of these aspect, as the Town Moor has been seen as the unique remaining open field of grass, in particular in relation to grazing, in the central part of Newcastle. The Freeman suggest that “grazing is kept the ‘environmentally friendly’ recommended level to support indigenous species of birds and wildlife. They express the Town Moor is grazing pasture; without grazing there would be no open space’ (Freemen of Newcastle, 2016).

Management of the Moor

The Steward Committee is responsible for the business affairs of the Freeman under the 1988 Town Moor Act. This involves the day to day administration of land, properties, grazing rights, investments and charities. Nominations and elections may be submitted by any of the 85 stewards representing the individual companies of Freeman. A minimum of nine and a maximum of 12 Stewards are elected by those in attendance at the Michaelmas Guild. Elections take place annually (Freemen of Newcastle upon Tyne, website, 2016, the Stewards Committee 2010-2011). The Town Moor Joint Working Group consists of members of the Stewards Committee and representatives from various departments of the city council, together with councillors, to address matters of policy and actions arising (Freemen of Newcastle upon Tyne, 2016).

4.3.4 Geographical and topographical advantages

The geographical characteristics of the Town Moor provided more benefits for the growth of the city other than the River Tyne and minerals described in Section 4.2. The Town Moor also produced a natural resource, coal from underground, in addition to the surface grass for grazing. Smith and Yellowley describe (2014, p. 19) that ‘in 1239, Henry III granted permission for the townsmen to dig for coal on the Castle Field (Castle Leazes)’. They noted (ibid, p.20) that:

In the 17th century, the ‘Town Moor Colliery’ was said to have extended for 100 acres under the grassland: in 1825 the colliery for the Brandling Family was granted by the Corporation. In 1834-1835, the Spital Tongues Colliery was opened close to the Town Moor and to Hunters Moor. The mining on the Moor lasted for centuries until the 1940s.

The topographic settings of the city provided interesting advantages to the coal mining works for both the council and the Freeman. It minimized environmental disadvantages when

digging and transporting. In particular, it avoided problems and associated safety risks for the city population, allowing for the development at the city centre. At the same time, it kept certain grazing areas, and also allowed for the protection of nature and the appearance of the open field as far as possible.

For example, the topographic settings in the differences in height between the Moor land and the river provided advantages for the transporting works underneath the city centre through a tunnel constructed in 1839-1842 (Johns, 2010). The Victoria Tunnel was another remarkable engineering achievement that took advantage of the geographic characteristics of the city and thus contributed to the cultural growth, along with other advanced works, described in Section 4.2.

The construction of the tunnel was necessitated in response to the Freeman's right over the Town Moor for grazing, and the need to secure people's activity in the town centre. Also, the tunnel method helped the reconstruction of the centre a great deal. This was one of the most active periods for the city centre rebuilding scheme of 1825-1840. Architect J. Dobson, a builder, R. Grainger and the town clerk, J. Clayton, were the principal figures in this development (Lambert, 2016). The tunnel was 2.25 miles long and transported coal from the Spital Tongues Colliery to directly to the Tyne near its confluence with the Ouseburn under Claremont Road, underneath the current Great North Museum site, the ground of the Civic centre crossing the Pandon Dene and the Shieldfield district of the city (Johns, 2010).

4.3.5 Conclusion

To sum up, while the Town Moor has existed since ancient times as a place for grazing, various Acts of Parliament have enabled people to use it for other functions which evolved over time; for instance horse racing, coal mining, parks, exhibitions, people's daily use such as walking and jogging, as well as the annual event of the Hoppings. The long-term existence of the Town Moor as an open grassland used primarily for grazing has contributed to the issues of environmental concerns, such as wild-life, ecology, biodiversity in the central area of the congested Newcastle. The reasons for these benefits and values can closely related to the following characteristics.

- (1) The retention of an enormous grass open space at the heart of the city,
- (2) The existence of the rights and roles of the Freeman concerning the protection of the grass for grazing, as well as the nature of the Moor.
- (3) The unique dual holding and control system of the land by the Freeman and the City

Council,

- (4) The 1988 Town Moor Act supporting their tasks.
- (5) The recognition of the Town Moor as one the most important historic cultural landscapes and a valuable asset for the people of Newcastle.

4.4 Jesmond Dene

4.4.1 Introduction

Jesmond Dene is a uniquely surviving ancient valley among several denes in Newcastle dating from before the Industrial Revolution. It is located along the Ouseburn and forests known as Dene woodland in the central part of the city. Dene woodland is a term used in north-east England to describe woodlands situated within steep-sided stream valley. In Newcastle the denes are typically remnants of ancient, semi-natural woodlands and show a transition between lowland and upland mixed ash woodland (E3 Ecology, 2007).

Jesmond Dene has probably provided one of the most important examples of all aspects of continuous care and functions of long-term existing environmental characteristics. It may be seen as a significant example for the study of the interactions between people and natural processes, because the historic context may be shown in the development or evolution of the interactions over time. This is the point that this section attempts to examine regarding the interactions in relation to the theoretical framework of the research; i.e. theory of social capital and collective actions for local environment concerns. The section specifically looks at the changing of the functions of Jesmond Dene, the reason of its retention to the present day, and some aspects of the importance of the work undertaken to protect it.

Jesmond Dene is owned by the City Council, and managed and maintained by volunteer groups and the Parks and Countryside Department of the Council. The Dene is a part of the Ouseburn Parks which are made up of five distinct parks: Heaton Park, Armstrong Park, Jesmond Vale, Paddy Freeman's Park and Jesmond Dene including the Ouseburn. The Parks cover 68 hectares and stretch for 2 miles. The Dene itself is about 1.5 miles from end to end and contains steep woodland, open spaces, historic features, and plenty of wildlife. The River Ouseburn runs from the north east of Newcastle at Woolsington, near the Newcastle Airport, through Jesmond Dene on its way down to the River Tyne. It has shaped the land and industries that have surrounded it throughout history.

The Ouseburn is a designated wildlife corridor and Jesmond Dene is the remnant of an ancient, semi-natural woodland that has been extensively altered by Victorian landscape design and

subsequent planting of non-native species. As explained in Section 4.2.3, the Ouseburn stream provided industrial functions such as pottery and glass factories in the early industrial period. The stream disappears at the points between the south of Jesmond Vale and the Ouseburn rail viaduct due to the construction of a culvert and reclamation of the area. However, the Ouseburn stream, together with Jesmond Dene, Ouseburn Vale and others parks, is recognized as a significant historic cultural landscape of Newcastle.

This research considers that the historic perspective of Jesmond Dene associated with other parks and its immediate surrounding area has provided another remarkable example to study the relationship of humans and natural processes in the city over time, because the Dene, in particular, has demonstrated different historic contexts to the Town Moor, including history, use, outlook, and protection and maintenance works. This may suggest that the contextual variables have required different methods of protection for each cultural landscape.

In the case of Jesmond Dene, this can be seen as the collaboration between the city and local volunteers. For instance, it has provided people with a variety of benefits through connecting with nature. In particular, the collaboration offers an interesting education for children and their parents about nature, wildlife and biodiversity as well as the history of Jesmond Dene.

4.4.2 *Historic Perspective*

Industrial use

Jesmond Dene had an industrial history before it was purchased by Lord Armstrong in the middle of 19th century. Two kinds of relationship between people or culture and natural processes can be seen in the perspective of Jesmond Dene. Firstly, the stream of the Ouseburn provided with water mills energy for the early industries before Armstrong. Secondly, after its transformation to a wooded landscape, it became a place of pleasure, first as a private garden and then as a public park for the citizens of Newcastle, as well as others.

There are some industrial records available. Jesmond Dene Mill (Jesmond Dene Old mill, 2016) notes that watermills were in use in the Dene from at least the 13th Century. It was stated that Northumberland Court records for 1271-72 mention a dispute over the ownership of two watermills in Heaton and Jesmond Vale by heirs to Adam of Jesmond. Although the exact location of these mills is not known, it is possible that the Heaton mill was located at the site of the Old Mill. It took advantage of a rapid stream and surrounding farms in Heaton for the milling of corn and later for grinding flint to powder for use as glaze in the pottery factory at the mouth of the Ouseburn.

Green (1999, 4.3) reports that a painting in 1832 by T.M. Richardson shows a view of '*Busy cottages iron works*'. Busy Cottage is said to have stood in the area of the present Pets' Corner. Other evidence includes Tomas Oliver's map of 1844, which shows Busy Cottage (Mogan, 2012, p. 6). Also, the Old Ordnance Survey map of 1859, *Jesmond & Heaton*, noted that a number of mill races took water from the Ouseburn to drive mills standing close to the stream. The Busy Cottage corn mill was worked by Mr. Davison, who sold flour from premises in the Groat Market. The OS map also describes that the Old Mill stood at the site of Rayne & Burns engineering works in the early 19th century. The works comprised a forge, foundry, fitting and blacksmith's shops, with power being obtained by water taken from the Ouseburn; the firm supplied iron for the railways including for bridges. It was closed in the late 1840s and the mill race used by the firm drove the corn mill.

Transformation into a woodland garden

Sir William George Armstrong (later Lord Armstrong) purchased most of the present Jesmond Dene by 1862. He started building a house in Jesmond Dene for his marriage with Margaret in 1835 and transformed the Dene into a Victorian sense of "woodland garden". Much of the Dene seen today is the result of Lord Armstrong's vision. He donated the Dene to the Newcastle Corporation in 1883 when he was 73 years old. In fact, prior to that, a couple of donations were made. Almost 12 years earlier, in 1872, he donated the northern part of the Dene (the area from the Old Mill to the north) to the Corporation, recorded as 'An Indenture'. Also, in April 1878, the so-called Lady Armstrong Bridge was given to the city and the people of Newcastle (FoJD archives, 1978). As a result, the corporation was given the entire area of the Dene, including the Banqueting Hall, by Lord Armstrong for the people of Newcastle. As explained in Section 4.2.3, this proved to be a great gift for working people who were living in the awful conditions of overcrowded industrialized Newcastle.

In the same year as this donation, land that adjoins the Armstrong Park at the south-east edge of the Dene, Heaton Park, was bought by the corporation. Since then, Jesmond Dene, together with these parks, have provided a function as a pleasant place of relief for anyone who wishes to escape from the hustle and bustle of the city and attach to nature enveloped in quietness.

The Town Clerk, A. Reid summarized the development of Jesmond Dene at the time of donation to the people (Green, 1999. 5.3);

The full significance of Sir William's bountiful gifts of the Park and Dene can only be rightly appreciated by those who were familiar with the locality five and twenty years ago. The transformation on the mimic stage, from the barren island to the fairy realms of boundless bliss, is not more complete.

The Dene which is now the Eye, as the broad acres of the Town Moor are the Lungs, of Newcastle, was a wild straggling valley, through which a little streamlet, the Ouseburn, fringed by a thin line of stunted wood, and a tangled undergrowth of bramble and bracken, wandered in search of the Tyne.

Sir William purchased the property, planted it with thousands of trees, shrubs, and flowers, laid down broad walks, built rustic bridges and rockeries, trapped the rivulet into waterfalls, worked into the landscape a watermill of the past generation, erected a sumptuous Banqueting Hall and then gave the whole of it, as he had previously done several adjoining acres, to the people of Newcastle forever.

In 1889, Lord Armstrong desired to give up all powers over the Dene as his age advanced and his absence from Jesmond lengthened. Consequently, the Parks Committee made arrangements to assume the control, and the formal transfer took place soon after for the Dene to be a municipal Park.

4.4.3 *The Deed of Gift*

One of the most interesting aspects of Jesmond Dene is that the area has been preserved without altering the significance of the landscape for more than 130 years, and used and maintained by people of the city and others. One of the functions of the Jesmond Dene for the people of Newcastle in the time after World War II can be seen from a documentary film in 1951, *Jesmond Dene* (Reeve, 1951). It shows a summer day on which a large number of people enjoyed their own time together at the Dene, including open-air burn dances of some 200 people, though this does not happen today.

Jesmond Dene has still demonstrated its unspoiled view and provided functions to connect with natural processes for urban dwellers almost, perhaps, as it did in the late 19th century. It offers an extremely interesting example for this research in terms of the notion of ‘social capital’, described in Chapter 2. The reason is that individual people, groups and institutions subject to particular rules have been bonded together by mutual interest and trustworthiness. This notion has, therefore, led to their collective actions for the protection and improvement of this historic cultural landscape of the city over many years. Furthermore, during the past decades, people from the volunteer group, the Friends of Jesmond Dene (describes latter in detail) have provided opportunities for children’s education on nature and that of the Dene’s history, giving such opportunities as a means of health and potential by connecting with natural processes.

Their trustworthiness can be associated with a mutual appreciation for the legacy of Lord Armstrong regarding the conservation of the Dene. It has, in fact, been protected by the Deed

of Gift since his donation. This is the most important of all aspects for continuous care and functions for people, as well as its long existence.

The Jesmond Dene and Banqueting Hall Deed of Gift was made on the 3rd of October 1883 between Sir William George Armstrong and the Mayor, Alderman and citizens of the city and County of Newcastle upon Tyne (FoJD archives, 1883). The legacy can be seen in the Deed in the conditions Lord Armstrong made for the gifts, which contributed to his vision for a public park. The Deed stated that:

Whereas the Donor is seized of the hereditaments hereinafter described for an estate of inheritance in fee simple in possession free from incumbrances but subject to the mining exception mentioned in the second clause of the Schedule in consideration of the premises the Donor doth grant and convey unto the grantees All those pleasure grounds and pieces or parcels of ground containing together sixty two acres or thereabouts and delineated in the plan drawn comprise (inter alia) the pleasure grounds commonly called Jesmond Dene Together with the building commonly called the Banqueting Hall within the said grounds and together also with the Ruins of the ancient Chapel of St. Mary and the grounds connected therewith.

Green (1999) notes that some of the conditions related to the protection of the dene as follows:

- First is to take measures for diverting the ever-increasing sewage of Gosforth and Bulham Village from the burn which flow through grounds.
- Second is to take steps for acquiring and adding to the park, the bank on the west side of the Dene between St. Mary's Mount and Jesmond village.
- Third is to build an additional lodge and gate for entering the grounds at the east end of the high level bridge across the Burn.
- Fourth is not to alter the laying out of the grounds in a manner to render them more artificial than at present. There may be some minor points to arrange, but nothing involving any difficulty.

It is certain that the Deed of Gift strongly supported the Dene continuing to serve as a municipal park and the conditions that Lord Armstrong laid down. However, the Deed cannot, itself, provide continuous maintenance work to sustain the significance of its environment. A practical management system for the protection and effective use of the Dene is required.

4.4.4 *Volunteers protection*

The protection and conservation work of the Jesmond Dene has been the responsibility of the

corporation and the city council since the Deed of Gift was made. Yet, from the point of view of the effective use of the Dene, the work of the city alone may be seen as insufficient, and thus further support from the people is needed. Also, it cannot encourage visitors to appreciate the significance of the Dene. To respond to these concerns, for the last 40 years, a group of volunteers has been attempting to provide this support and work collaboratively with the city. This group is known as Friends of Jesmond Dene.

During the case study field survey at the Dene, the senior volunteers told the researcher how the Friends of Jesmond Dene came about. It is clear that the Friends have been working over many years for the conservation of the Dene's environment and appreciate the existence of the Deed of Gift. This can be seen as an interesting aspect of 'forms of social capital' and their collective action towards the protection of a historic cultural landscape of Newcastle.

The Friends of Jesmond Dene emerged from the local residents living near the Dene, who cared for and were aware of the need for the protection of the environmental significance of the Dene as part of their social activities. A trigger was an incident in 1970s, when these local residents found that the Ouseburn was being polluted. The cause of the incident was found to do with the sewage pipes of new housing estates being connected to the Ouseburn upstream. It was an unfortunate incident, as the City Council either did not recognize the existence of the Deed of Gift or simply did not follow the conditions that Lord Armstrong made and the city council agreed to a century ago. A group of these people had made a strong claim to the city council about the incident, appealing for the diversion of the sewage pipes. Consequently, in 1976, the Friends of Jesmond Dene were formed.

In 1976, on the 15th July, about 20 people, including five officers of the Recreation Department of the city council and one councillor met at Jesmond Dene Nursery to discuss the formation of a conservation group, a non-political society, provisionally to be known as the Friends of Jesmond Dene (FoJG archives, 1976).

Their first minutes were recorded as the meeting of the Friends held in the same year 16th September. Forty-five people, including five Councillors, were present in the Victoria Restaurant in the Dene. In this first meeting, notable discussions were made including 'the dene should be kept in a more-or-less wild state – not made into a park-like development with flower beds, etc.'. A councillor stated that there should be 'plans for a café, toilet, telephone, lost property, etc. going forward'. "The aim of the meeting was to compile as much information as possible so that a booklet about Jesmond Dene could be printed – flora and fauna, the history, and the plans for future development' 'FoJD archives, 1976).

Minutes of the Committee meeting 13th January 1977 noted the sewage issue (FoJG. archives, 1977).

Lord Armstrong's wishes (e.g. the Dene to be maintained as an oasis of natural beauty within an urban setting) have been faithfully observed although it has been necessary from time to time to lay new drains and add water control measures in the Ouseburn to clear the pollution. Work in connection with the laying of new sewers is practically completed and the restoration program will give an excellent opportunity for the dene to be tidied and re-planted.

Since then, the Friends have been enthusiastically working for the conservation of the Dene regarding a variety of nature issues in addition to the maintenance of the environment, such as botany, ornithology and wildlife (Figures 4-9 and 10). They have also provided the Dene to obtain new members, and provided education for schoolchildren and PR including a newsletter. The first newsletter of the Friends (1977) recorded vandalisms in the Dene as follows;

Members will have learned of the vandalism at Pets Corner recently with a feeling of sick frustration. Parrots, mynah birds and others valued £1,000 were stolen or slaughtered; the little roe deer who gave so much pleasure to children was also found on another occasion in a car park near the Paddy Freemans having been expertly cut up. Letters in the press rightly call for greater security, but for those bent on destruction no amount of fencing or patrols will solve the problem.

The works of the Friends of Jesmond Dene is significant for many aspects, in particular, effectiveness and practicality. It demonstrates a good example for the theory of social capital and collective actions for local environment concerns. This theory can be identified in their work for the protection of the Dene by individuals, the Friends and the city council. Their mutual interests and trustworthiness is underpinned by the significance of the Deed of Gift, which has provided an effective contribution to Newcastle society. The work of the Friends volunteer group may be seen as an example of community participation in urban land management or local environmental issues. This suggests that people's daily interactions with natural processes may be viewed as an informal watchdog role for the local environmental conditions where they live; their actual care and awareness of the area are seen as a vital important.

However, the budget that the City Council provides for Jesmond Dene has been cut in the recent years by a significant amount, which has made the maintenance and protection of the area more difficult than ever before. This study stresses that the city council should realize the significance of the long existence of Jesmond Dene together with its historic contexts. The volunteers' work, collaborating with relevant departmental officers in the city council, must be encouraged as an effective and significant method of local environment protection, with

effects beyond that, such as social well-being. Their work deserves to be appropriately financially supported.



Figure 4-9: Jesmond Dene today



Figure 4-10: Pets Corner, Jesmond Dene today

4.4.5 *Conclusion*

The present physical character and uses of Jesmond Dene reflects the change of function from industrial uses to a public park. It portrays the forms of the growth of Newcastle over the course of the city's development or evolution from the industrial society of the 19th century to the modern society of today. The Dene has retained the 19th century woodland scenery, as it

has been protected by the Deed of Gift of Lord Armstrong, which enable the 19th century environment characteristics to survive. This has contributed to people connecting to natural processes close to the congested, industrialised city centre, giving them an opportunity to spend their own time in a fresh air environment; in particular, for industrial workers, away from the chaotic conditions of the working and living environments, and in a different way of the interactions on the Town Moor. Thus, Jesmond Dene has provided another significant benefit and value to society, which may be seen as another beneficial aspect of the long-term existence of environmental characteristics.

The work to protect Jesmond Dene is significant in terms of the theory of social capital and collective actions for local environment concerns, as the collaboration between the city council and the volunteers of the Friend of Jesmond Dene have demonstrated an effective and practical way to deal with local environment concerns. It has further contributed to the social well-being, such as education for children, as well as conservation of the ecology and biodiversity of the area. It can be recognised as a significant example of the community participation in urban land management or local environmental issues.

4.5 Allotment Gardens and Communities

4.5.1 Introduction

Allotment gardens can be seen as cultural landscapes in England (Crouch and Ward 1997) as well as in other countries (Way, 2009) such as Germany. The historical development of the allotment gardens and its garden communities offers a different insight for studying the interaction between people and natural processes to the Town Moor and the Jesmond Dene. It may be seen as a relationship between people and a traditional culture with land.

In England, for the last hundred years at least, allotment gardening in historic built environments has been viewed as one of the traditional ways in which urban dwellers can make a connection with the land and natural processes. Historically, allotment gardens provided food for labouring classes in earlier times. During wartime, many residents, not just only working people, but also professionals, cultivated the land to supply their own food with the motivations of the British nations as a whole, as explained in Section 2.2.4, for what was known as the “Dig for Victory” campaign (Poole, 2006).

Griffiths (sited in Newcastle City Council, 2010) wrote a general historical background of the allotment gardens of Newcastle for a booklet entitled *Our land: The Newcastle allotment strategy*. Recent general aspects of the allotment gardens and the interests of the allotment

garden communities of Newcastle are shown in the booklet.

This section attempts to investigate the growth of allotment garden communities from the 1890s to the two second wars; in particular, the way in which the management of the allotment garden sites and its communities have been made in the early period, as well as changes in the course of the growth of society. The focus of the section is that the growth of the allotment garden communities may be examined in relation to the theoretical framework of this research; i.e. the theory of social capital and collective actions for local environment concerns. This section particularly looks at the plot-holders' awareness of and efforts in running the allotment garden communities at the beginning of the community's establishment through the time of the two world wars. Some important aspects of the allotment gardens and their communities may be shown because the specific circumstances and conditions of the time. It may be associated with the improvement of the living environments of working people of industrialized city of Newcastle (Section 4.2.4) and a process of social growth in relation to people's environmental concerns.

It is worthwhile reviewing a brief picture of the allotment gardens today before examining the historic perspective. This may provide a useful dialogue for the case study of this section between the historical context and the present situation, including the interests of the allotment gardens and its community of Newcastle.

Brief picture today

It is generally understood (Crouch and Ward, 1997; Way, 2009; Wiltshire and Burns, 2008, Newcastle City Council, 2010) that allotment gardens provide for different sections of people, not only through their own fresh vegetables, fruit and flowers, but also for through diverse benefits and values, such as mental and physical benefits, social and community values. At the same time, allotment gardening allows plot-holders to learn the behaviour and characteristics of natural processes. They gain opportunities to connect with the land directory in urban settings, such as fresh air, wind, soil, water and wildlife.

In Newcastle, there are about 100 allotment garden sites, including 64 allotment association (AA) sites and over 30 independent sites, approximately 713,000 m² in total (Record of the City, 2016). The majority of them are located within the historic area of the city, including the Town Moor, Jesmond Dene and the Ouseburn valley. Most of these lands are owned by the City Council, though some are co-owned by the council and the Freeman. The City Council's record shows that in January 2016 there were 64 association sites, counting 1,898 city plots of

250 m², 2,813 association plots, which include full, 1/2, 1/3 and 1/4 full plots.

4.5.2 *Allotment Garden communities: The earliest pictures in Newcastle*

The allotment garden sites, usually the city's owned land, have been cultivated by individual plot-holders for vegetables, fruits and flowers for their own use. Most of them belong to the AA that has been formed at each site. The city council (historically known as the corporation, or the council) has been responsible for the management of the allotment sites where the lease agreement has been made between the council and each AA. Some 'intake' sites from the Town Moor (Section 4.3.3) have been formed as a contract between the Freeman and the particular association. In practice, however, in order to manage the allotment sites, the association committee members have taken care of day-to-day issues for their allotment community since the very early stage of the allotment garden movement in the city.

Griffiths (cited in Newcastle City Council, 2010, p.6) wrote that the history of allotment gardens goes back to 1890, as shown below. He noted that the first provision of allotment gardens was not provided by the city council (corporation) but by self-help bodies.

In 1890 the Northern Allotment Society was founded by a group of horticultural enthusiasts on Tyneside to promote allotment provision. Failing in an attempt to lease land at Cleadon, members of the Society bid successfully for a ten-acre intake of the Town Moor in September of that year at the Nuns' Moor, an area laid out as the Nuns' Moor Allotments. At the same auction of intakes, a separate group was successful in winning a lease to an intake of land opposite Oxnam Crescent in Spital Tongues. Other private groups began to create allotment gardens, including one in a disused quarry at Bentinck Road, Elswick

These early allotment sites were close to the industrial areas including shipbuilding yard and collieries. These workers lived in overcrowded environments, as mentioned in Section 4.2.3, in small rented accommodations - often the so-called Tyneside flats - without any land or lease. Therefore, the cultivation of the land for their own daily food could be seen as beneficial to their health and living costs. It also provided them with a sense of independence in themselves for gaining their own free time away from their working conditions and the environment where they were dependent on their industries. They were gradually able to build up a different awareness as being a member of a separate social community while cultivating land for themselves. This could be seen as an emerging tool for the social growth of Newcastle.

In the respect of municipal provision for the allotment gardens, Griffiths, (cited in Newcastle City Council, 2010, p. 6) notes that 'the urban district of Benwell & Fenham had been an early provider of allotments, leasing land for 63 plots in 1895, but the lease expired in 1905

and Newcastle Corporation proved dilatory in making further provision. Only in 1908 was a Small Holdings and Committee formed'. This was necessitated by the Small Holdings and Allotment Acts of 1908, which 'repealed and consolidated the Acts of 1907, 1887, and 1890, removed the private proviso (Crouch and Ward, 1997, p. 240), and made local councils to provide allotment on demand' (Poole, 2006, p. 215).

The provision of allotments by the district of Benwell & Fenham was seen as a notable step for the improvement of living conditions for working people as a municipal scheme as the dwellers living in that district were in an overcrowded environment, including living in Tyneside flats without garden.

Griffiths (ibid, p. 7) shows;

The lease for the site mentioned above expired in 1905, as a result of Newcastle's incorporation the previous year of the urban districts of Benwell & Fenham and Walker Urban Districts. Newcastle Corporation proved dilatory in making further provision. Only in 1908 was a Small Holdings and Allotments Committee formed"..... But, the catalyst of the First World War made different pictures for the allotment provisions as well as the people of Newcastle. Consequently, the Cultivation of Lands Order of 1916 made by the new Lloyd George Government required local authorities to move practically and urgently forward to provide allotment gardens throughout the country..... The Land Order provided empowering authorities in urban areas to seize land for allotment use.

As a result, the number of allotment sites set up rapidly in Newcastle in 1917 and 1918 were recorded as follows (ibid, p.7):

By late March 1917, 25 sites had been set up under CLOs, providing 1,396 plots by the closing months of the war, and the Council had been instrumental in creating 55 allotment sites, covering 200 acres and providing 2,900 allotments. Much of the initiative came from ad-hoc groups of potential cultivators; for example, the Fenham Estate Company (an offshoot of the Northern Allotment Society) made undeveloped land on its estate available free of charge for allotments in response to request from local residents. By June 1918 there were 372 acres of cultivated land in the city, divided into 5,263 allotments, compared with pre-war figure of 106 acres and 1,450 allotments.

The statistics cannot give a realistic picture of the time. However, some AA archives may express such a picture of the establishment of the allotment garden communities in 1917-18. This may suggest the considerable interest of the members in running the associations from the start. It could be seen as an example of the theory of social capital and collective actions for local environmental issues.

4.5.3 *Allotment Association Committees' early work*

The West Jesmond AA recorded (WJAA archives, 1921) the following. It shows shortage of

food due to World War I and need for the land cultivation movement due to their worries and prompting actions.

During the end of 1916, when the war was on and food very scarce, it became evident that if we were to continue the war successfully, the production of food was a national question. The promotion of the West Jesmond Allotment Association should be proud that they were the first in the district to go seriously into the matter of securing No.12 “Intake” (the Town Moor) as an allotment, against much opposition.

On the 12th January 1917, there were 37 applicants for gardens and on the 16th Jan., the first meeting was held in the Royal Oak Hotelfor the purpose of speeding forward Mr. T. Hall, Supt of the Town Hall resided as Chairman. At the date Military were in possession and had stables, etc., on the field. On the 1st of March, we received permission to plough, and on 19th March 1917 Mr. Routledge, of Kent Hall, commenced to plough the field.

Intake No. 12 is still shown today in the record of the city council for a term of a seven-year lease of 5.261 acres for the West Jesmond AA. A record of the West Jesmond AA presents a picture of the site just before the improvement work of the land started for the community (WJAA archives, 1921);

In 1914 the site was coal dump for the army, and you will see coal turning up in the soil now. The army had the whole stretch from Fenham Barracks to the moor, and there was an air field. Vickers Armstrong built aeroplanes in the factory at the junction of Kenton Road and Grandstand Road.

In fact, in the Great War period, a number of new allotment garden communities were set up not only at the West Jesmond AA site but also along the Town Moor and other areas in the historic city centre of Newcastle. It was recorded (Minutes of the Smallholdings and Allotment Committee, 1917) that ‘Mr. Kirby on behalf of the Town Clerk reported that Allotments under the Cultivation of land orders had been arranged for a total 25 allotment sites with areas of 458.014 sq. yds., for 1,396 plots, which were set up in 1917’ in Newcastle. In this record, two sites described in this section concerning Highbury South and West Jesmond AA were not shown, as this may be to do with their direct lease contract with the Freeman of Newcastle, not with the City Council (this year 2017 will be the centenary of these allotment sites).—

It is worth noting that the Highbury South AA retained the original minutes from 1918 to 1972. These minutes are seen as an extremely valuable record for the case study to see the earliest time of the community work. The first set of minutes was recorded for a lengthy annual report of 1918. This report reveals how the committee members responded to the efforts of the plot-holders cultivation work at first hands, and the appreciation of the lease contract they made with the Corporation and the Freeman. Also, how they kept their eyes on the conditions of the agreement, and also the rules of the association. They even talked about

holding a show with a neighbouring society.

Since the opening out of the field last Xmas all members have worked how and enthusiastically at their plots have been well rewarded. The results in the shape of the produce have been most gratifying especially as most of the members commenced without any former experience in gardening. (SHAA archives, 1918).

The Committee congratulated members for that they now have obtained a 7 years lease of the Intake from the Corporation at the rate of £ 4-12-6 per acre being an advance of only 10% per acre on the pre-war rental. They take this opportunity to impress upon members that the clause in the agreement stipulates that the field must not be used as a market garden and they strongly deprecate the practice of selling produce on the plots. The Committee resume themselves the right to take drastic action if this practice is not stopped..... The Committee invites suggestions as to holding a show. A special committee would be necessary. The proposal has been made to the secretary to amalgamate with to Lower North Road societies for the purpose of holding a joint show (SHAA archives, 1918).

As seen above, the first year report illustrates an extremely productive year of this association, expressing the enthusiasm of the members for cultivations as well as the running the community. It is interesting to find that despite of the concerns of the war, enthusiastic meetings continued to be held after the first AGM of 06th July 1918. Committee meetings were held five times that year and another Annual Meeting in November 20th: the meetings were on 29th August, 28th October, 04th and 20th November, and 05th and 20th December.

Their activities may be seen as they reflected wartime tensions as well as the plot-holders' motivations of interact with the land of the first year of the allotment garden community. This can be identified in the minuets of the meetings held on four occasions after the war ended on 11th November through to Christmas, recording the process of the lease agreement, including the rent and conditions, in detail. The minutes also show how the allotment community was actively working to get plot-holders together to discuss daily concerns like water supply and their own rules such as 'roads and footpaths [to] be kept in grass, new border not to exceed 6" high [to] be allowed' (SHAA archives, 1918).

Their work can be seen as one of the early examples of the theory of social capital and collective actions for local environment concerns, as well as, probably, one of the earliest examples of community participation in local environment issues. It could be said that these plot-holders were more aware of the local environment, as they regularly interacted with natural processes through the cultivation of the land.

4.5.4 *Changes from the inter war period to World War II*

During the interwar period, the Highbury AA experienced significant strain, probably because

the motivation or interest of the plot-holders could not be sustained at the same level as that of war time, and because of the impact of economic depression in the North East (Griffiths, cited in Newcastle City Council, 2010, p. 8). The surviving original minutes record the strains, which may be exemplified by the ending of shows in 1922. It is also evidenced by the level of attendance at the annual general meeting. This declined quickly and sharply. Even though at the first AGM numbers were not noted, 54 were recorded for the second AGM, 58 for the third, down to more than one third of this figure in late 1920s, then only 11 in 1936. Yet, the association committee had been continuously working to maintain the community and to secure the tenancy.

Griffiths (cited in Newcastle City Council, 2010, p. 7) notes the situation of the inter war period for the allotments in Newcastle.

The Council was entitled to hold the land it had seized until 1922, and the majority of landowners affected agreed to the further retention of their land for allotments; where voluntary agreement couldn't be reached, the Council used compulsory powers of acquisition¹⁶. Nevertheless, as land was required for building purposes - not least the Council's own municipal housing programme - the number of CLO allotments had fallen to 1,959 by April 1922. During the 1920s and 1930s a good deal of attention was given to acquiring land for 'permanent (statutory) allotment, and the first such was set up at Fenham Nursery, although problems in administration led to part of the site being surrendered for municipal uses – including Fenham Library and bath.

The number of the statutory allotment sites has become 11 in total today, although the years of designation are unknown, but the earliest allotment sites were included such as Benwell Lane and Fenham Model set up in 1895, and Tweed Street, Elswick; this site was most likely the disused quarry at Bentinck Road, commencing in the early 1890s, as mentioned in Section 4.5.1.

However, the 'intake' allotment site of the Town Moor had a different situation. For instance, the minutes at the South Highbury AA, as the site of 'intake' of the Town Moor, show that the committee had to face a most difficult task in 1939 as the lease was due for renewal. They fought patiently but strongly to secure the tenure against the efforts of the city Parks Committee and the Freeman to take the land back. The minutes noted that the city authorities, the Freeman and even general public did not favour the allotments, but despite this strain, the committee saved their allotment garden.

Ironically, however, the outbreak of the World War II in September 1939 changed the situation drastically in many respects nationally, no exception for Newcastle. It was the fact that the 'Cultivation of Land Order' enabled the city council to seize land again saved the

allotment garden sites and the communities. Way noted (2009, p.19) that:

Within a month of the declaration of war the Minister of Agriculture announced that half a million more allotments would be made available. There were expected to feed two and a half million mouths, making up for the stoppage of food supplies from abroad. The 'Dig for Victory' campaign was adopted in February 1941 by the Government National Grow Moor Food Campaign.

Apart from above explanation about the decreasing the interests of the allotment gardens between the wars period, the provision of the council housing may be a cause of the declining.

Inter war Housing

The emergence of the provision of council housing in interwar period gave rise to an improvement of working people's living conditions. It was introduced as an alternative way in which working people could gain the opportunity to connect with the land in their daily lives other than allotment gardens. This could have resulted in less interests in allotments, as the council housing provided schemes of building houses in groups of three to seven with the land attached. It was initiated by the design and layout of the architect - planner for the first Garden city of Letchworth, Barry Parker and Raymond Unwin. A great number of the interwar council housing schemes were built with the manner of Parker & Unwin's concept throughout the country (Creese, 1966 & 1967; Evans, 1976). As explained in Section 2.2.3, it be seen as an example of the movement concerning the awareness of the improvement of the urban living conditions in relation to the daily interactions between urban dwellers and natural processes. As a result of the council housing provisions, some people could enjoy connecting with the land in daily life in their house in newly planned housing environments. However, this benefit was not given to people living in existing terraced houses in industrial cities, including Newcastle.

As described above, many plot-holders eagerly requested security of tenure of allotment garden sites, expressed as a community action. Their motivation for keeping the allotment gardens could be seen as a sense of independence of individuals as well as a sense of community spirit. It is important to clarify again here that the growth of these social characteristics have been created through cultivating the land for people's own daily food, and the activities the allotment garden communities have made since the first war period onwards.

There were 2,170 plots recorded as 'wartime allotment' in the city. The figure stayed high and increased to 5,298 in 1948 (Griffiths, 2010, cited in Newcastle City Council, 2010, p. 9) but dropped again soon after the emergence of the housing boom in the 1950s onwards (Way, 2009, p.27), similarly to the situation after the end of World War I. However, this was a

completely different situation compared with the ‘slump’ after World War I, which was due to economic depression. A decline in numbers of allotment sites after World War II accompanied energetic moves to improve the appearances of and facilities available at the sites (Griffiths, cited in Newcastle City Council, 2010, p. 10).

Two important aspects should be realised from the experience of the two wars and community participation in protecting the open land in relation to the allotment gardens and their communities. One point is that the open land can be seen as a contingency for risk management; the other aspect is the importance of the growth of social and community awareness, not only of the production of people’s own fresh foods, but also of the improvement of living conditions. From this point of view, the interactions between people and natural processes over time could suggest an important aspect of socio-environmental or socio-ecological interactions; this will be discussed further later.

4.5.5 Conclusion

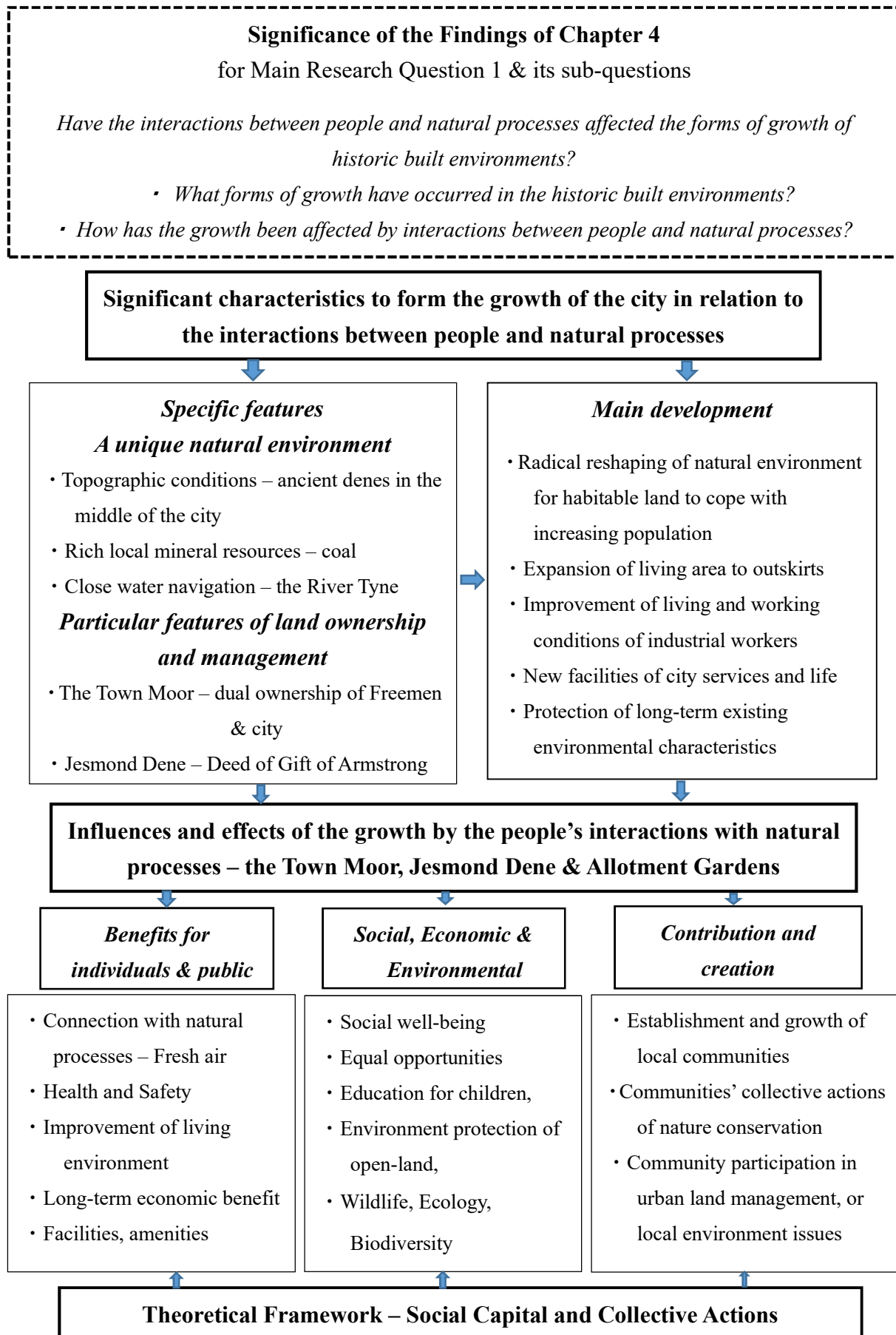
The allotment gardens of Newcastle from the turn of the 19th century to the two world wars, have provided an extremely interesting example of the interactions between people and natural processes. Their interactions have affected a growth of the society; they provided working people with an improvement of their living conditions, representing as a micro-cosmos of social development over the period. For instance, allotment gardens produced people’s daily food, sustaining their lives during both world wars; at the same time, people’s continuation of land cultivation created a social evolution of the city as well. Because of that, while the individual plot-holders interacted with the land, people formed AAs. Their activities in running the community contributed to social growth - for instance, local traditions and culture - as well as creating a sense of community spirit and independence in the plot-holders. In relation to the interactions between people and natural processes over time, the allotment gardens could suggest an importance aspect of socio-environmental or socio-ecological interactions. The allotment garden communities and their activities in the period examined may be seen as a significant example of the theory of the social capital and collective actions regarding local environment concerns.

4.6 Analysis of the Findings

4.6.1 Introduction

This section shows the analysis of the findings of this chapter in response to the main research question 1 and sub research question 1 (shown in Section 4.1). Table 4-2 show a summary of the significance of the finding of this chapter.

Table 4-2: Significance of the findings



4.6.2 *Specific features to the formation of the growth*

As Section 4.2 identified, in the 19th century, Newcastle made remarkable growth which was much faster than the previous centuries and more quickly than in many other industrial cities in this period. This was due to the advance of the Industrial Revolution along with the significant development of modern sciences and technologies (Douglas. 2013).

While Newcastle's history might share common features with other places, its specific development arises from a unique natural environment. It was the particular topography that led to the formation of the city and subsequently it was the presence of relatively easily mineable coal relatively close to navigable water (and in combination with industrial innovation leading to 'carboniferous capitalism') that led to the later rapid growth of the city.

It is identified that the specific growth of the city was formed along with the following two very different aspects in the development. The first aspect was the expansion of habitable areas of the city. The second aspect was to do with the improvement of very poor living and working conditions of people, in particular, for industrial workers, it may be said as a social and environmental reform in the 19th century of Newcastle.

The first aspect of the specific form of the growth was a contrast between the radical reshaping of the natural environment and the retention of ancient environmental characteristics. The expansion of habitable area was necessitated to meet the needs of the growing population, involving the intensive interactions between people and natural processes. Most notably, it was seen in the central area within the medieval city wall; where ancient denes existed they were culverted and filled to accommodate houses and facilities for the people's city life. It provided for improved health and safety as well as better public services for the dwellers. The expansion of the city to the immediate outside of the mediaeval city wall, involving dismantling of the wall. This led to the rapid development of the city, altering the natural environment of the area immediately outside of the city centre. However, two large areas with ancient environmental characteristics, the Town Moor, and Jesmond Dene, hindered this extension. These areas developed in very different ways due to particular features of their ownership and management (this will be discussed in detail in Section 4.6.3).

Such expansions and hindrances to the development of housing have determined the distinctive characteristic form of Newcastle. While having environmental changes, retaining long-term existence of environmental features, they created a unique appearance of the city. There was a distinctive contrast between the congested townscape of the central area and the

semi-rural landscapes which were the open grass of the moor and the heavily wooded Jesmond Dene. As Sections 4.3 and 4.4 identified, the historic contexts of these environmental characteristics were significant.

The second aspect of significance was to do with social reform in the nineteenth and twentieth centuries in relation to the improvement of living and working conditions of workers. In brief, as efforts at social reform developed, the Town Moor and Jesmond Dene were used for new recreational activities. Public parks and allotments were also developed.

4.6.3 *Social growth*

As Sections 4.3 and 4.4 show, the Town Moor and Jesmond Dene have contributed a great deal to the social growth of the city. The retention of these environmental characteristics may suggest a new movement of social and the environmental development in the 19th and 20th centuries of Newcastle. Most notably, the retentions gave rise to the improvement of the working people's living conditions, as they were able to spend their own spare time in the vast open land as well as the wooded landscape. They gained opportunities for fresh air, relaxed time and amusements, through connecting with nature, away from their workplaces.

It is interesting to note that a movement of social and environmental concerns for industrial workers' living conditions was one of the most significant issues of the UK in the late nineteenth century to the turn of the century, such as the Garden City Movement (Howard, 1965, Jackson, 1985; Kendle and Forbes, 1977). The movement in Newcastle can be seen as an example of the national concerns of the time.

The retention of the Town Moor was the result of unique legal rights of the landowners. The Newcastle Freeman have held a right of use of the moor for grazing since the 12th century. The dual ownership of the moor by the Freeman and the city council was confirmed by the 1988 Town Moor Act, stating their right and responsibility for the protection and the management of the vast open land. The Town Moor functions have expanded over a long period of time, from the original purpose of cattle grazing to a variety of uses by people, reflecting needs of the time, for instance, from coal mining, military training, and horse racing, to holding exhibitions and permanent public parks.

As Section 4.4 identified, Jesmond Dene's existence was entirely the result of one man's vision, Lord Armstrong. In 1880s, he started the donation of the vast area of Jesmond Dene to the city for people to spend their own time. The Deed of Gift of 1883 made between Lord

Armstrong and the city council, clearly stated that Jesmond Dene should remain as a public park, protecting its historic cultural landscapes and as many of the original characteristics as possible.

In the 1970s, people who lived nearby set up a volunteer group for the protection of Jesmond Dene, encouraged by the Deed of Gift. This Friends Group has started their collective actions for local environmental concerns. It can be seen as a community participation in urban land management as their collective actions have contributed to a variety of benefits and values for the people as well as the environment of the area. This includes social well-being, biodiversity and ecology, such as an educational opportunity for children to connect directly with the natural world.

The following section 4.6.4 will be discussing this social aspect more about the growth of the allotment garden communities of Newcastle.

4.6.4. *Allotment garden communities*

The development of local cultures and traditions of historic cities are said to be closely related to people's interaction with the natural processes of the area (Thayer, 1994; Roe and Taylor, 2014). As Section 2.2.5 established, allotment gardens are important cultural landscapes in England (Couch and Ward, 1997; Crouch and Wildshire, 2005). In this regard, the historic context of the allotment garden communities of Newcastle is worth analysing to understand the growth of local cultures and traditions.

As Section 4.5.5 identified, the allotment gardens and their communities of Newcastle have existed for over a century within the city. The development of the allotment garden communities may be seen as a sort of microcosm of the social growth of the city from the late nineteenth century onwards. In other words, it was part of a movement for social reform for the industrial workers, creating a sense of individuality, and then developing community spirit, allowing them to connect to the land and raising awareness of local environmental concerns. These processes have created local cultures and traditions over time. This can be seen from an examination of the growth of the allotment communities. For instance, the involvement of women's participation in the community activities, particularly through the response to the nation's wartime food shortage. After the war, the allotment garden activities may have been seen as leisure activities in urban dwellers' lives (Crouch and Ward, 1997; Select Committee on Environment, Transportation and Regional Affairs, 1998).

From the earliest period of the allotment garden communities of Newcastle, different industrial workers gained opportunities to work together outside of their working places, connecting with open land and a healthy fresh air. They established allotment associations, which achieved not only the improvement of the workers' living environment, but also social communications between plot-holders. This led to the development and enhancement of the community, creating community cohesion and community spirit through their collective actions for the protection of open land (Newcastle City Council, 2010). For instance, in the interwar period, a great appeal by the committee members of Highbury South Allotment Association to the landowners made possible the continuation of the community as well as the protection of open land. This led to the wartime campaign of Dig for Victory; this evidence was found from the original meeting minutes of the Allotment Association (Section 4.5.5).

The history of the allotment garden communities gives insights into the socio-ecological interactions between plot-holders and the natural processes of the area. These activities can be seen as an example of community participation in urban land management or local environmental issues. The present-day relevance of this will be examined further in Chapter 5.

4.7 Conclusion

This chapter has identified that the interactions between people and natural processes have had a considerable effect on the forms of growth of Newcastle over time. The people of Newcastle have worked with the characteristic geographic and topographic conditions of the land.

The resulting landscape characteristics are therefore related to both social and environmental change and local traditions, cultures. This has created diverse benefits for social well-being and biodiversity. The significance of the collective actions may be interpreted by the theoretical framework of this research (i.e. social capital and collective actions).

The next chapter will look into details of the interactions between people and natural processes of the present day, in particular, the allotment garden communities of Newcastle.

Chapter 5:

Case Study – Findings and Analysis of Field Survey in

Newcastle upon Tyne, UK

Chapter 5: Case study – Findings and Analysis of Field Survey in Newcastle upon Tyne, UK

5.1 Introduction

This chapter shows the outcome of the second part of the case study in Newcastle for the findings and analysis of the field survey about the interactions between people and the natural processes of the present-day, in particular about the allotment garden community activities. It follows the previous chapter on the context of natural processes from the historical perspective. The examination of this chapter intends to respond to Main Research Question 2 and Sub-Research Questions 2, as follows:

Main Research Question 2

Using the example of Newcastle, can people's connections/interactions with natural processes be socially and environmentally beneficial?

Sub-Research Question 2

- (1) Have people worked to protect the long-term existing environmental characteristics of the place where they live?
- (2) How do contemporary citizens understand and evaluate their interactions with natural processes?
- (3) What evidence is there to indicate that the long-term interactions of people with natural processes have a beneficial impact?

5.1.1 Specific topics and objectives

As Section 4.5 identified, historically, the growth of the allotment garden communities of Newcastle provided a number of social and environmental significances over time. It included a social reform of the industrial working environment and a movement of conservation/protection of the natural environment, reflecting the needs of the time. The interests in local environmental concerns have resulted in their collective actions for the protection of open land and continuation of the allotment garden communities. The daily interactions with the natural processes of the area have created and enhanced traditions and cultures, including sharing their interests in cultivation of plots, in equal opportunities, and in community cohesions.

This chapter examines how the present-day's allotment garden communities of Newcastle have appeared, functioned and affected to the society as well as the environment of the city. It

will obtain opinions, views and concerns of individual plot-holders about the allotment gardens and their collective actions of the present-day. This examination may be described as a kind of dialogue between the past and the present regarding the allotment community activities. It may show the continuities, changes and growth of their works and interests. This examination may offer a deeper insight into the study of the interactions between people and natural processes to give an argument for an ecology of land use in historic built environments.

Thus, this chapter examines the following specific topics and objectives about the allotment garden community activities in relation to the theoretical framework of the research; i.e. social capital and collective actions for local environmental issues.

Specific topics

- (1) To examine how the contemporary allotment garden communities of Newcastle have managed to run communities and fulfill collective actions for local environmental issues, as a by-product of the central aim which is to provide opportunities to grow food.
- (2) To find out what the recent trends and issues of the allotment garden communities are in relation to the society and environments of the city.
- (3) To see how the committee members of specific Allotment Associations view the community today and in the future.
- (4) To scrutinize what the individual plot-holders and the groups say or consider concerning the values and concerns of the allotment garden communities to which they belong.

Main references and materials of this chapter include the archives of the City Council, the findings of the field survey, including the researcher's participation in a variety of community activities, and questionnaires and interviews, as well as the findings of Chapter 2 and Section 4.5. The methods and techniques of the field survey are described in Section 3.4.

5.1.2 Structure of the chapter

The chapter consists seven sections as follows.

The first section shows the way in which the allotment garden communities of Newcastle have been managed in today, in particular the role and collective actions of the present allotment associations of the city and the Newcastle Allotment Working Group.

The second section studies the recent trends and issues of the allotment garden communities of Newcastle, including health and safety concerns.

From the third to the fifth sections examine specific five allotment associations' significances and issues. Five associations are three allotment sites in Jesmond located closely each other along the North Road, one site in the Jemond Vale by the Ouseburn, and another site is located at Heaton. They show different characteristics, such as the size in terms of the number of plots and the members, different tenures, different geographic and topographic conditions and surrounding environments (Figure 5-1).

The sixth section analyses the values and concerns of the allotment garden communities from the outcome of the questionnaire survey and interviews of individuals and groups.

The seventh section shows the analysis of the findings of the field survey of the allotment garden and their communities of the city. It responds to Main Research Question 2 and its sub-questions.

The final section is the conclusion of this chapter.



Figure 5-1: Present-day allotment garden site at the Highbury South AA

5.2 Management of the Newcastle Allotment Garden Communities

5.2.1 Introduction

This section examines the management of the Newcastle allotment garden communities, namely AAs and the NAWG; in particular, their significances and issues as well as recent activities. Figure 5-2 shows the location of the AAs' sites in Newcastle, and Figure 5-3 is the list of AA sites.

Most of the AAs' sites are located in the historic part of the city. A majority (about 80%) of the sites are on the eastern side of the A1 trunk road. As Section 4.5 described, the success of the allotment garden communities and their continuous existence over the last century has owed a great deal to the works of the AAs.

Today, the enlarged AAs and the newly established NAWG manage the communities, protect the allotment garden sites, and enhance community activities.

Currently, there are 64 AAs in operation in Newcastle (Table 5-1).

Our allotment sites

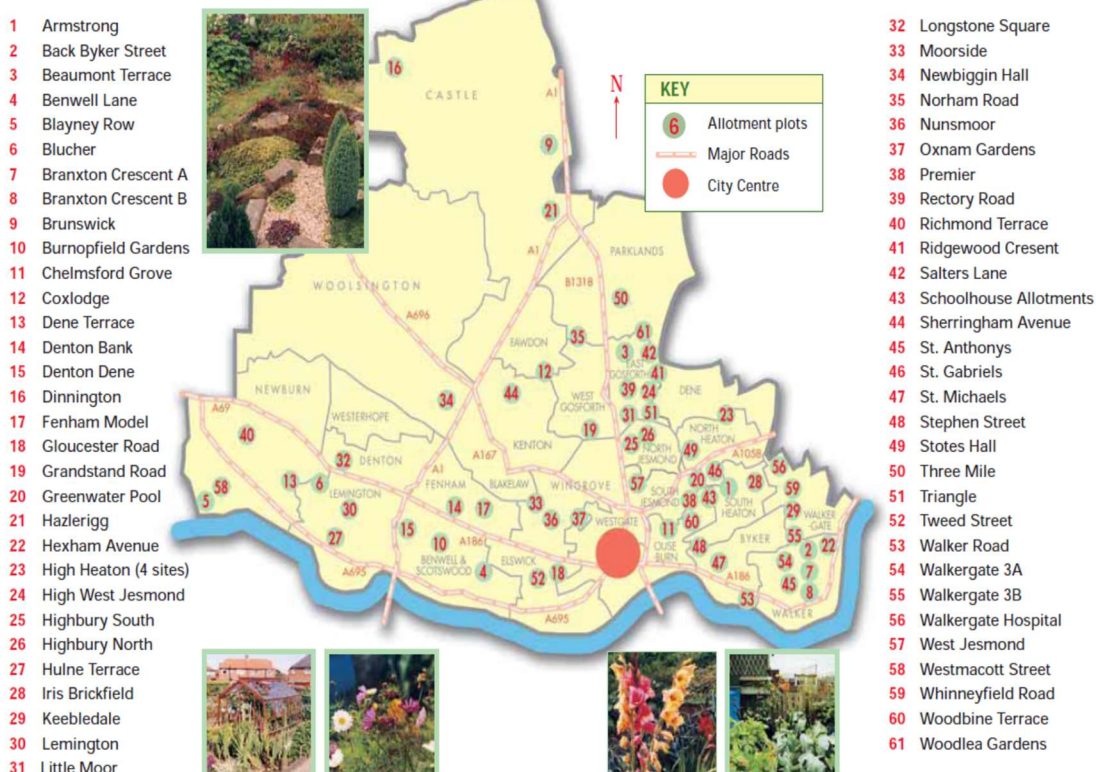


Figure 5-2: Map of allotment association sites
(Source: NAWG, 2016)

Table 5-1: List of allotment associations in Newcastle, January 2016
(Source: Newcastle City Council)

Site	Association	City Plots per 250 m2	Assoc. Plots	Free	Full	1/4 Plots	1/2 Plots	3/4 Plots	1/3 Plots	2/3 Plots	Waiting List
Armstrong	Armstrong Allotment Association	89	96	1	20	4	63	7	2	0	14
Beaumont Terrace	Beaumont Terrace Allotment Association	61	90	0	35	8	47	0	0	0	7
Benwell	Benwell Allotment Association	29	40	0	23	0	6	11	0	0	3
Benwell Homing Pigeons	Benwell Homing Pigeons	38	42	0	42	0	0	0	0	0	0
Blayney Row	Blayney Row Allotment Association	18	18	0	16	0	2	0	0	0	6
Blucher	Blucher Allotment Association	15	25	1	0	0	0	0	0	0	0
Branxton Crescent "A"	Branxton Crescent "A" Allotment Association	11	11	0	10	0	2	0	0	0	10
Branxton Crescent "B"	Branxton Crescent "B" Allotment Association	11	14	0	0	0	0	0	0	0	3
Brunswick	Brunswick & Hazlerigg Allotment Association	13	16	0	16	0	0	0	0	0	8
Burnopfield, Castleside & Tantobie	B C T Allotment Association	8	10	0	0	0	0	0	0	0	0
Cheimsford Grove	Cheimsford Grove Allotment Association	7	7	0	7	0	0	0	0	0	30
City Stadium	City Stadium Allotments Association	8	0	0	0	0	0	0	0	0	0
Cowgate	Greenhill View Allotment Association	4	0	0	0	1	8	0	0	0	0
Coxlodge	Coxlodge Allotment Association	109	118	0	36	0	24	27	3	28	10
Craster Terrace	Craster Terrace Allotment Association	14	24	0	0	0	0	0	0	0	8
Dene Terrace	Dene Terrace Allotment Association	12	14	0	6	0	8	0	0	0	4
Denton Bank	Denton Bank Allotment Association	85	87	3	48	2	37	0	0	0	0
Denton Dene	Denton Dene Allotment Association	31	38	0	0	0	0	38	0	0	2
Dinnington	Dinnington	0	16	0	9	0	8	0	0	0	6
Duxfield East	Duxfield East Allotment Association	15	22	0	20	0	4	0	0	0	8
Duxfield West	Duxfield West Allotment Association	10	18	0	17	0	1	0	0	0	12
Fairways	Fairways Allotment Association	12	0	0	0	0	0	0	0	0	0
Fenham Model	Fenham Model Allotment Association	35	52	0	15	0	35	2	0	0	1
Hazlerigg	Brunswick and Hazlerigg Allotment Association	7	7	0	7	0	0	0	0	0	4
Hexham Avenue	Hexham Avenue Allotment Association	7	6	0	0	0	0	0	0	0	1
High Heaton Allotment Association	High Heaton Allotment Association	0	90	0	0	0	0	0	0	0	3
High West Jesmond	High West Jesmond Allotment Association	18	28	0	7	0	21	0	0	0	10
Highbury North	Highbury North Allotment Association	0	74	6	0	0	0	0	0	0	11
Highbury South	Highbury South Allotment Association	67	192	0	3	48	142	0	0	0	0
Iris Brickfield	Iris Brickfield Allotment Association	69	64	0	35	4	54	0	1	1	6
Keebledale	Keebledale Pigeons	11	18	0	18	0	0	0	0	0	2
Leighton Street Pigeons	Leighton Street Pigeons	8	10	0	0	0	10	0	0	0	0
Lemington	Lemington Allotment Association	33	40	0	15	9	6	10	0	7	4
Little Moor	Little Moor Allotment Association	112	198	0	63	2	109	9	4	2	23
Moorside	Moorside Allotment Association	102	125	0	85	0	40	0	0	0	17
New Heaton Inv. Flying Club	New Heaton Invitation Flying Club	18	15	0	0	0	0	0	0	0	0
Newbiggin Hall	Newbiggin Hall Allotment Association	40	35	0	35	0	4	0	0	0	5
Norham Road	Norham Road Allotment Association	3	4	0	4	0	0	0	0	0	21
Nuns Moor	Nuns Moor	0	139	14	0	0	0	0	0	0	30
Oxnam	Oxnam	0	29	0	29	0	0	0	0	0	17
Premier	Premier Allotment Association	20	21	0	18	0	6	0	0	0	15
Rectory Road	Rectory Road Allotment Association	31	51	0	8	7	38	0	0	0	8
Richmond Terrace	Richmond Terrace Allotment Association	26	21	0	21	0	0	0	0	0	4
Ridgewood Crescent	Ridgewood Crescent Allotment Association	26	26	0	25	0	3	0	0	0	15
Salters Lane	Salters Lane Allotment Association	22	19	0	19	0	0	0	0	0	10
School House	School House Allotment Association	12	37	0	2	7	26	1	3	1	5
Sheringham Avenue	Sheringham Avenue Allotments Association	3	5	0	0	0	5	0	0	0	10
Skinnerburn Road Pigeons	Skinnerburn Road Pigeons	8	10	0	0	0	0	0	0	0	0
St Anthony's	St Anthony's Allotment Association	50	47	0	44	0	6	0	0	0	0
St Gabriels	St Gabriels Allotment Association	30	0	0	19	1	11	1	4	0	3
St Michaels	St Michaels Allotment Association	15	21	0	21	0	0	0	0	0	8
Stephen Street	Stephen Street Allotment Association	5	8	0	0	0	8	0	0	0	16
Stotes Hall	Stotes Hall Allotment Association	18	33	0	0	0	0	0	33	0	3
Three Mile	Three Mile Allotment Association	60	68	0	35	4	64	0	0	0	21
Thropton Terrace	Thropton Terrace	6	10	0	0	0	0	0	10	0	4
Triangle	Triangle Allotment Association	17	21	0	3	0	10	8	0	0	10
Tweed Street	Tweed Street Allotment Association	27	31	0	17	1	13	0	0	0	8
Walker Road Permanent	Walker Road Permanent Allotment Association	80	74	0	62	0	12	0	0	0	68
Walkergate 3A	Walkergate 3A Allotment Association	31	30	0	30	0	0	0	0	0	8
Walkergate 3B	Walkergate 3B Allotment Association	33	29	0	28	0	1	0	0	0	12
Walkergate Hospital	Walkergate Hospital Allotment Association	30	47	0	15	0	32	0	0	0	1
West Denton Allotment Association	West Denton Allotment Association	46	61	0	15	0	15	16	5	10	2
West Jesmond	West Jesmond Allotment Association	0	105	0	23	2	80	0	0	0	20
Westmacott Street	Westmacott Street Allotment Association	76	70	0	68	0	2	0	0	0	0
Whinneyfield Road	Whinneyfield Road Allotment Association	39	49	3	48	0	1	0	0	0	20
Woodbine Terrace	Woodbine Terrace Allotment Association	19	23	0	23	0	2	0	0	0	25
Woodlea Gardens	Woodlea Gardens Allotment Association	14	22	0	2	10	10	0	0	0	4
69		1898	2813	30	1173	117	991	130	75	51	596

5.2.2 *Allotment Association committees*

Today, most of the allotment garden sites of Newcastle form their own AA. Each AA forms a committee that consists of members of the association. The minimum membership of the committee is three: a chairman, a secretary and a treasurer. A number of larger associations have an assistant secretary and other supporting members. The committee works towards the association's common goals, as representatives of the plot-holders, to run the association. The committee members take joint responsibility for any decisions which are made, aiming to make their allotment site sustainable and successful (Hetherington, 2012). The AAs' roles have included various provisions and collective actions to respond to the needs and benefits of their members, the plot-holders and the community.

The main tasks of the committee include letting plots to individual gardeners and day-to-day management to run the community as a whole. They provide a network of individual plot-holders and associations, along with the set of rules of the city council, including guidelines and a template of the council's tenancy agreement. This can be seen as a form of social capital, and they provide a variety of collective actions. These include regular meetings such as the annual general meeting (AGM), committee meetings (two to four times a year) and annual events. Examples of events are open days with produce competitions, working days with a bonfire and leisure gatherings like a barbeque day. These collective actions may be seen as very important and significant community activities for binding the members of the association together, as well as implementing their shared interests and common goals regarding local environmental concerns.

Many associations in the city have participated in the Newcastle Allotment and Garden Show to promote allotment gardening, as well as to encourage the activities of plot-holders and other environmental protection groups in the city, such as school allotments and wildlife protection groups. This has created diverse benefits and values to the allotment garden communities as a whole, as well as to the environment of Newcastle, including biodiversity (this will be described in more detail in Section 5.2.3). As Section 2.2.6 described, Kendle and Forbes (1997, p. 20) state that urban nature conservation is more about process than it is about product. In this view, a number of collective actions of the AA regularly taken over time may be seen as a process of community participation in local environmental concerns and as a part of the work for urban nature conservation.

Tenancy agreement

Each AA holds a lease from the city council, who provide a tenancy agreement relating to allotment gardens. Most of the associations use the agreement provided by the council, usually for a term of three years. They pay the rent to the council annually and the combined rent from all the AAs then forms the allotment budget of the city council. This is basically used to secure perimeter fences, repair water supplies, clear sites where necessary and for pest control and other necessary work. Individual plot-holders have a rent contract with their own AA, and pay rent and also some essential expenses such as water bills (Newcastle City Council, 2012; Hetherington, 2012).

In some cases, a few AAs have a separate lease contract as their land is owned by other organisations or co-owned with the city council. For instance, in the case of West Jesmond AA, it holds a lease with the Newcastle Freemen. Their rent is paid directly to the Freemen. Therefore, such associations manage the sites without financial help from the city council.

Essential site facilities for health and safety

It is important for individual plot-holders and the association they belong to that essential site facilities, such as water and security measures, be provided due to health and safety concerns. The facilities actually provided at each allotment site vary according to the different circumstances of the associations, including the location of the site and the preferences of each association. It is, however, important to note that considering their contribution to healthy food produce and social well-being as well as environmental awareness, essential facilities should be provided at each site; at the least, a water supply for irrigation as well as for washing hands and tools, and security boundary fences. However, such resources have not been sufficiently provided by many sites. This should be recognised as an important issue, not just for allotment gardens but also for their function as an informal local environmental management role.

For example, the city council (Newcastle City Council, 2010, p. 26) recorded in 2008 that only 65% of sites in total had a water supply, and only 25% of individual plots had a direct water supply from the main water pipe. This clearly needs to improve; however, during the field survey, the researcher found that supplying water to allotment sites was not easy, as the work involves different departments of the council from those concerned with allotments. It requires effective coordination and collaboration between different council departments, though it is an issue which involves a great amount of time and cost.

Site security is another example; it is an essential consideration for the city council and allotment committees to be aware of the vulnerability of allotment sites to crime. In 2008, 75% of sites had secure perimeter hedging or fencing (Newcastle City Council, 2012). This facility is the responsibility of the council, via the allotment budget. They provide perimeter hedging and fencing as each AA makes an application. This is a matter for each committee and also the representative of the area to the NAWG (this will be described in the next subsection). Each association is responsible for water pipes, paths and roadways within its boundaries. The field survey identified the necessity for security of the allotment sites to prevent crime as well as flooding incidents.

Other communal facilities such as a communal lodge and on-site toilets make allotment gardening seem more attractive to plot-holders, foster a sense of community and are important in ensuring social inclusivity. The provision of communal facilities enables AAs to hold open days, fun days for children, educational events and so on. However, as the field survey has found, the provision of such communal facilities varies considerably site by site. Some associations provide a communal lodge, stores, toilets, but a few do not have any of these. This seems to depend on each association's policies or the efforts of the committee.

As the plot-holders request communal facilities, the committee needs to make efforts to provide them. They make applications for financial support to the city council and also other available organisations. The committee is required to encourage the plot-holders to use the facilities effectively and give support to maintenance.

An interviewee at Tweed Street AA site notes:

Having cleared the neglected area, replaced broken fences, we have had newly built communal facilities at the communal plot provided since 2012 onward, successfully gained the grants from the City Council, Community Fund and others (by the effort of newcomer women on the association committee). The facilities included the community hut, community plots for people need only small plots, polytunnel to those who have not got a greenhouse. As a result, more people have got together and stay longer hours on the site than before. It has particularly occurred since a new eco-toilet (no electricity and water, but wind) was built two years ago.

The provision of communal facilities on the city's allotment sites seems to have progressively improved, as the survey found by visiting sites and discussing with plot-holders; yet, the researcher has found that on-site toilet facilities have not been sufficiently provided. This causes difficulties for gardeners as well as visitors. In 2008, the survey organized by the city council recorded that the provision of on-site toilet facilities was only at 17% of all plots, and that more work was required (Newcastle City Council, 2010, p. 27).

5.2.3 *Newcastle Allotment Working Group*

The NAWG plays an important role in protecting and encouraging the AAs' work (Newcastle City Council, 2010). It is a unique organization among all the allotment garden organizations in the UK (Wiltshire and Burn, 2008). The NAWG is formed by the allotment officer, as the representative of the city council, and several area representatives and those undertaking particular functions from the AAs.

By participating in various works and collective actions of the NAWG, the field survey found (Table 3.3 shows the list of events in which the researcher participated) that the performance of the NAWG is significant and indispensable for the allotment community of Newcastle.

The position of the NAWG, in the sense of the forms of social capital characteristics, is that of the rules (institutions), although the NAWG is not a part of the city council. It is an advisory body on allotment issues, overseeing the overall health of Newcastle's allotment provision, attempting to bring all the AAs together. It was formed in 1999 (a formal constitution was created in 2002), focusing particularly upon promoting a sense of community.

Today, the NAWG consists of nine elected area representatives from nine area groupings of over 64 AA sites in the city, together with a chairman, a secretary and a treasurer (all volunteers); from the city council are added the allotment officer and one senior member of the Parks Department. Finally, a councillor with the portfolio for allotments makes 15 members of the NAWG in all. The area representatives are elected at the allotment forum every spring and serve for two years before retiring or being re-elected. Most area representatives are usually serving members of their own site committee and have many years of experience of their site (Figure 5-3).

City allotment officer

It is important to note that the city council employs a dedicated allotment officer to provide overall coordinated management of all sites. The field survey has found that the role of this officer is extremely important, not only for running the work and activities of the NAWG as a practical representative of the city council, but also for forming a network with all the secretaries from the different AA committees in the city. This one allotment officer has a significant workload given the scope.

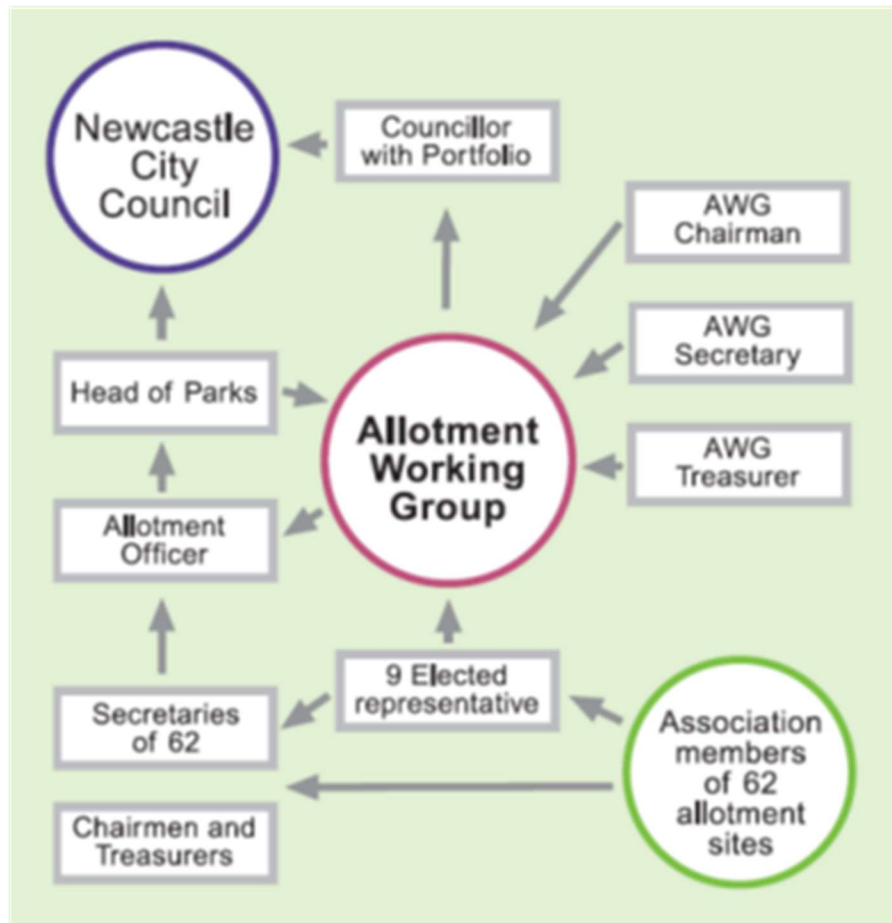


Figure 5-3: Relationships of the Newcastle Allotment Working Group
(Source: Newcastle City Council, 2010, p. 25)

The officer works closely with each committee, including visiting each site regarding issues to discuss with committee members, such as organizing repairs, dealing with difficult matters and making funding applications (Table 5-2). The field survey identified on several occasions that the officer was devoted to his role and performed effectively, as he provided coordination to run meetings and discuss issues with particular committee members; at the same time the officer maintains a good relationship with all other members of the NAWG. This is one of the most important points for the theory of social capital and collective actions for local environment concerns, as Section 2.5.3 described three points of the role of social capital for collective action, including (a) reciprocity and exchanges, (b) common rules and sanctions, and (c) connectedness in networks and groups. The allotment officer's roles are closely related to these characteristics. Thus, the performance of the officer is the key to a successful outcome of the NAWG's works, and indeed, it provides an important position and is seen as indispensable.

Table 5-2: Role of the Newcastle Allotment Working Group

<p>The NAWG meets once a month at the Civic Centre. It advises the council on:</p> <ul style="list-style-type: none"> • Policies and priorities for City's allotment sites. It helped to create the Newcastle Allotment Strategy 2010–2015. • How to spend the allotment budget. It helps to run the annual City Allotment Show. <p>It produces <i>Dig This</i>, a quarterly newsletter which can be accessed through the website, or people who wish can register with the website have his/her own copy or sent to their website. Each AA site has printed copies sent to their secretary for those without e-mail. The group advises AA sites on:</p> <ul style="list-style-type: none"> • Management issues, such as how to run a committee. • Obtaining grants for worthwhile projects such as composting toilets, community huts, etc. The NAWG has its own experienced funding advisor who joins the group meetings.

Table 5-3: Role of Area Representative

<p>The area representative looks after (as routine work) perimeter security, water supplies, pest control, tree works and plot clearances. Normally, each AA secretary contacts the allotment officer directly. The area representative should be contacted:</p> <ul style="list-style-type: none"> • If a routine problem is not cleared up quickly. • If plot-holders need advice about complex problems, e.g. difficult tenants, disputes about buildings and structures at the site (the city council has provided buildings and structures guidance) or cultivation levels. • When the site needs an advocate or advice. The area representative will visit the site and then bring the matter back to the NAWG where they will discuss the matter to take necessary responses.

Area representatives

The area representatives' roles are also shown to be the important and significant aspects of the theory of social capital and collective actions for local environment concerns, as they collaborate with the allotment officer as well as committee members of the associations of which they are representatives. The members of the NAWG enthusiastically carry out their duties, giving their own time for the promotion of the allotment garden communities of Newcastle. They have been responsible for the issues arising at individual AA sites brought to them at the regular meeting. They follow the issues in assisting, encouraging and advising committee members of associations where the area representatives have been involved, including running new allotment sites. For instance, the field survey observed an orientation meeting for the preparation of the new City Stadium AA. The NAWG assisted the inaugural committee in matters such as the tenancy agreement, the Newcastle City Council rules and

constitution, bank accounts, and the signatory mandate forms that new associations would require.

One of the recent notable works of the NAWG was to regenerate Benwell Lane allotments. The city council (Newcastle City Council, 2010, p. 29) explained:

Benwell Lane allotments suffered from vandalism and then blight, such that over 50% of the allotment were overgrown and neglected. The NAWG took over direct management of the site, with the elected area representative becoming temporary Secretary and Treasurer. A Newcastle Neighborhood Renewal Community Fund Grant of £10,000 in 2006 was used to clear ten plots and remove rubbish from the sites; members then cleared the remainder of the site under their own steam.

As a result, the site was awarded the most improved site in the Newcastle allotment competition in 2009 and had a waiting list of 12 people in January 2015.

Supporting the city's sustainable communities strategy

The NAWG has expressed the allotment communities' contribution towards the sustainability of the Newcastle community as a whole, shown in *Our Land* (Newcastle City Council, 2010, pp. 39–40). Some important points for the case study to be noted here are (p. 40):

- **Managing Environmental Impact:**

Allotments have considerable potentials for managing environment impact.

Allotment produce is low in food miles and is not attended by the packaging waste surrounding food bought in supermarkets.

The majority of allotment holders become expert at composting their organic waste on the allotment sites, usually on their own plots, and the knowledge built up often results in composting at home as well as at the allotment.

- **Safe, inclusive, cohesive and empowered communities:**

Allotments are places not only where people grow, but where individuals from all walks of life and differing circumstances come together in a relaxing environment.

There is much talking done, exchange of hard advice and often exchange of produce.

Newcastle's devolved management structure means the members of each site have shared ownership of communal goals, and members often come together to organize social events.

This can also be seen as a good example of the notion of social capital and collective action, as well as community participation in urban land management. The members of the NAWG share communal goals for the protection of the environment through interaction with the land. In this respect, the allotment garden communities of Newcastle, the AAs and the NAWG have contributed towards the sustainability of the city.

Newcastle Allotment and Garden Show

Newcastle Allotment and Garden Show can be seen as one of the most important collective actions of the NAWG, with collaboration of AAs as well as other environmental protection groups to promote and sustain the interests and roles of the allotment garden communities of the city. The researcher participated in the preparation and the actual days of the show in September 2015 (Figure 5-4) and 2016, and found that both shows clearly marked important and significant collective actions of Newcastle's allotment garden communities as a whole. It has been identified that their achievement can be interpreted by the theoretical framework of this research.

The first show was held in September 2002 in a marquee in the grounds of the Civic Centre. Since then, the show has been held annually, and in 2015 was held at the Sports Centre on Westgate Road and in 2016 in Leazes Park. The NAWG were heavily involved in the planning and running of the show; as well as acting as stewards, they ran a stall selling produce and preserves to raise money for the various allotment garden communities.

However, there is an issue about the show's future success. The financial support from the city council has been reduced for recent years, and also there are the following concerns, recorded in the minutes of the NAWG meeting after the 2015 show:

The NAWG support in setting the hall up was carried out by members with an average age of 68 years. These people may struggle to meet the rigours necessary in 2016/7.

In general stall holders contributed through the donation to the tombola, some exhibitors exceeded expectations, while others mainly maintained their presence.

Overall control of the sale of produce aspects will need improvement. An adequate system existed, but insufficient NAWG stewards were available to support that system.

These issues may indicate that concern about a successful continuation of the NAWG itself in the future as the members are all senior ages; they are seeking for enthusiastic young but experienced followers for managing the allotment garden communities in Newcastle.



Figure 5-4: Newcastle Allotment and Garden Show, 2015

5.2.4 *Conclusion*

It has been identified that many AAs have existed since the turn of the 20th century and the World War I period, though some have changed their name. Many new allotment sites and associations were set up over the past decades. The associations and the NAWG have worked for the promotion and the enhancement of the allotment garden communities of Newcastle. They have managed not only to run healthy and safe community activities, but also contributed to wider aspects in relation to local environmental concerns and issues, such as protecting open land of long-term existing environmental characteristics, and the biodiversity and sustainability of the city.

Their work has been seen as significant collective action regarding the environmental issues in and around their sites, emphasizing community values and keeping concerns to a minimum, such as AGMs, working days, open days and fairs. Their work has created cohesive communities and expanded towards wider aspects such as social well-being and health and safety concerns in the area (this will be shown in detail in the next section).

The field survey has identified that the theory of social capital and collective actions interpreted the significance and the importance of collective actions as they formed a network of individual plot-holders, associations and city institutions. These have contributed to dealing with local environmental issues through implementing a variety of collective actions in and around the allotment garden sites. Thus, their collective actions can be recognized as an example of community participation in urban land management.

5.3 Newcastle Allotment Garden Recent Trends

5.3.1 Introduction

This section shows the recent trends of the interests and activities of the Newcastle allotment garden communities. It examines the values and issues of these trends into three topics: health and safety concerns, wildlife concerns and equal opportunities in the allotment garden communities.



Figure 5-5: Open day, Highbury South AA

These trends may be associated with demographic changes of plot-holders of recent years. As more women and young families have become members of the associations, other plot-holders have become concerned with family issues, including community events, school allotments and equal opportunities in community activities.

The AAs and the NAWG have actively responded to recent trends to meet the needs of the members, as well as those of Newcastle society in general.

5.3.2 *Health and safety concerns*

The way in which interactions between people and natural processes are made is concerned with health and security issues in an urban environment. The security of allotment garden sites regarding health and safety concerns has emerged particularly in recent years through some incidents occurring at allotment sites in Newcastle, such as contamination by toxins, deterioration of sites and flooding.

Contamination by toxins

An extreme incident concerning plot-holders' health and safety as well as their produce occurred in Newcastle (Newcastle City Council, 2010, p. 13):

In September 2009 the city council stated that 2,000 tons of ash from the Byker waste incinerator had been used on footpaths at 44 sites, including 28 allotment sites, across Newcastle. Tests from the sites showed an extremely high level of contamination from residual toxins in the ash, and the consumption of eggs and produce from 22 sites was prohibited. In 2002, the Council and the incinerator operator were both fined for breaking environmental protection laws. However, steps were quickly taken to remove the contaminated materials and to provide advice and reassurance to allotment holders. A follow up study report by the Newcastle University in 2001 found that levels of dioxins and heavy metals in vegetables grown on affected plots were minimal, and well within recommended guidelines.

This was a man-made serious incident that can be said to be an example of failure in the management of urban land. It should not have occurred if the importance of health and safety issues were recognized in the relationship between people and natural processes in allotment gardens.

Apart from this contamination issue, for over 20 years Newcastle University has been carrying out a lead biomonitoring study by taking blood samples from plot-holders and from people of non-allotment garden experience throughout the city (Newcastle University, 2016). This may be said to be another example of community participation in urban land management.

Community participation in urban land management should be recognized as an important tool to deal with health and safety issues as well as the sustainability of the community. However, if it is dismissed, it invites serious concern. The following example is a case of a deteriorating allotment site. It can be seen as a lesson as to how important people's daily interaction or awareness of the condition of the environment is, and how the deterioration of an allotment site can create many negative effects to the environment as well as to the city.

Deteriorating allotment site: Nuns Moor

Deteriorating allotment gardens are a threat to the existence of allotment sites in the city as well as a risk of security concern. The health and safety of the sites and surrounding environment may be affected as the appearance may invite anti-social behavior. This relates to the way in which the allotment sites and individual plot-holders have been managed.

The city council (Newcastle City Council 2015) recorded that the popularity of allotment gardening began to fall during the 1980s and, as a result, Nuns Moor AA itself slowly began to move into deterioration; this was made worse by terrible acts of vandalism and the theft of the site which resulted in many plot-holders simply given up; some problems relating to misuse of individual allotment plots, and anti-social behavior were also noted. Chronicle Live (2015) showed its condition and course that 'the Nuns moor allotments have been blighted by graffiti, vandalism and breakings. The Freeman (ibid) said that 'there had been a history of non-compliance with lease which is why the site has ended up being such damaged sites. To deal with the contamination and high-risk waste over some 12 acres fall a cost; hundreds of thousands is required to clean up the sites.

Extensive discussions took place between Leisure Services, the Freeman of Newcastle and the Nuns Moor AA committee to identify appropriate options to resolve some of the issues on the site. As the co-owner with the city council, the Freeman's preferred option was the clearance of the whole of the site with a view to creating a smaller site with fewer, smaller and more manageable plots.

Flooding

Global climate change has caused flooding chaos throughout the world, forcing people to flee their homes, sometimes causing loss of life, and triggering major disruption to infrastructure networks. Flooding on allotment garden sites is no exception; it destroys crops and damages the soil structure, and appears to be increasing in recent years.

The NAWG notes (Newcastle City Council, 2010, p. 55):

It is essential to render all allotment sites in Newcastle free of flooding by ensuring adequate drainage and that the first step is to collate all evidence of allotment flooding. The second step is to create a plan to deal with flooding which includes identifying sources of finance for drainage works.

A number of allotment garden sites in the city have experienced heavy incidents of flooding; for instance, the School House allotment site at the Ouseburn valley by Jesmond Vale (Figures 5-6a and b)



Figures 5-6a and b: School House AA site, 2012 flooding (Source: Newcastle City Council)

Flooding incidents cannot be caused only by natural processes but are concerned with people's interaction with natural processes. They seem to have often occurred in relation to geographical and topographical characteristics and man-made features. The case of flooding incidents at School House allotment site will be looked at in detail later in Section 5.6.

Bonfires

This has yet to occur as a major issue, but bonfires in the allotment garden sites may be an important issue for health and safety concerns as well as biodiversity. Some plot-holders expressed their views and opinions about bonfires on the allotment site during the survey interviews, including a female with a young family. She said that 'Personally, I have never had a problem with bonfire smoke at the allotment gardens, but [I am] very concerned with it for children's health; alternative ideas should be found, otherwise a quality of air in winter will be badly affected and health and safety concern will increase' (the bonfire code of practice does not allow bonfires between 1st April and 31st October).

A biology lecturer, one of the respondents, stated that:

Bonfire on the plot is an issue strongly debatable for human health and biodiversity, personally I think they should be banned. Anything left for bonfire can be composted back to the ground, it takes time and space but more beneficial from the point of view [of] health for humans as well as other lives. It should be realized, bonfire smoke is heavily toxic, more than tobacco, particularly in November [it] is so bad as the weather gets worse to keep smoke over plots. A community bonfire once in November may be understandable as it provides community benefits as people get together for tidying up the season end site, often associated with a working day, but a lot of small bonfires [that] people [are] making at individual plots are troublesome during winter time as smoke comes out from these individual plot bonfires to cover soil, which affects so badly [the] winter propagation of wildlife such as bumblebees, as I personally experienced as an awful disaster.

This is an important statement for the allotment garden communities as they have a great opportunity to demonstrate a good example of managing biodiversity.

5.3.3 *Wildlife concerns*

Recent trends of allotment garden communities in Newcastle have demonstrated a good example for wildlife concerns. Wiltshire and Burn (2008, p. 36) state that:

Allotments can make a valuable contribution to conserving and enhancing a variety of species which have been found unique to single cultivated site.

It could be an important issue to ensure, therefore, that allotment garden provision should be included in biodiversity action plans in the city in their own right, and in a manner that is sensitive to the contribution that gardeners make to the day-to-day maintenance of these sites.

The NAWG mentions this as a part of the optimal future direction (Newcastle City Council, 2010, p. 56). Allotment gardens make important contributions to Newcastle's environmental and ecological well-being, including wildlife concerns. They expressed that it needs to be recognized and fully integrated with a wide range of existing local strategies, including the sustainable community strategy, the climate change strategy, the green spaces strategy, the biodiversity action plan, the tree strategy and the bee strategy.

The Newcastle biodiversity action plan of 2001 shows (Newcastle City Council, 2010, p. 44) that:

The value to wildlife of allotments depends upon the overall character of the allotment sites, and upon the wildlife attitude of individual plot-holders in terms of both input of wildlife friendly features and practices as well as the avoidance of practices which harm wildlife. Examples of positive practice are the installation of bird and bat boxes, the creation of ponds and reservation of corners of the allotment for decomposing logs and wild flowers. Examples of negative practices are the use of pesticides, herbicides and fertilizers which harm wildlife.

The action plan specified a number of targets in relation to biodiversity. They are shown in *Our Land* (ibid, p. 44), one of which is as follows:

To encourage reduction in the use of inorganic pesticides, herbicides and fertilizers, Some progress had been made in terms of the implementation of a pesticide ‘amnesty’ to hand in old caches of pesticides, now out of date and often forgotten at the bottom of the allotment shed.

The field survey made many visits to allotment garden sites in different parts of the city where the researcher was given a variety of opinions and views concerned with wildlife. For instance, a senior male plot-holder in Walkergate Hospital AA expressed the importance of keeping beehives in his sites for pollination. Another male plot-holder on a different site, Highbury South AA, mentioned the same value of bees, but expressed difficulty in keeping the hives and was concerned with bees’ movements, in particular for people near the hives, leaving an abandoned plot for the hives. Another example was that some of the sites contained a designated area to encourage wildlife by leaving the area in as natural a state as possible, such as Thropton Terrace AA.

5.3.4 *Equal opportunities in the allotment communities*

The NAWG recognizes that the provision of equal opportunities is one of the most essential and important issues in the allotment communities in the recent years for society as a whole. Equal opportunity means that all persons, including children, the vulnerable, those of any gender, able and disabled people, immigrants or those of any ethnic group, have an equal right to protection from all types of harm and abuse. The NAWG has encouraged several schemes at a number of sites to meet the needs for all members of the local communities. The following are some examples of this commitment (Newcastle City Council, 2010, p. 41):

- A full plot with a polytunnel and beds built up to waist height for use by recovering patients at an adjacent hospital including disabled toilet provision
- Plots allocated to the Comfrey project for asylum seekers at two allotment sites in the city
- Plots available for use, under supervision, by a local infant school providing food distributed to local sheltered accommodation and wildlife viewing at a hide and in a large pond
- Plots reduced in size and provided with raised beds, small greenhouses and tool storage boxes for use by disabled gardeners
- Raised beds constructed to provide gardening experience for a local disabled group



Figure 5-7: Fairway AA site; facilities for disabled gardeners including raised beds and wheelchair-accessible polytunnels

The field survey has identified these efforts, specifically the last two points above, by visiting Fairway AA, where the survey involved group interviews with several members and walking round the site with them. They explained about how the association was set up and the process through which the site has been developed, including raised beds, wheelchair-accessible polytunnels and other facilities for disabled gardeners (Figure 5-7). They particularly mentioned difficulties in obtaining a water supply at the beginning. The field survey found the same problems concerning the water supply at the newly established City Stadium AA site. This was eventually achieved through the coordination of different departments in the council. The City Stadium AA site has provided whole plots for raised beds.

5.3.5 Conclusion

Recent trends in the Newcastle allotment garden communities have reflected the needs of changes in society. It is an example of community participation in the response to diverse requirements of current society, including health and safety concerns, biodiversity and social well-being.

As Section 5.3.2 described, there are two types of health and safety concerns that have been identified in the allotment garden sites. The first was human negligence affecting a healthy environment; for instance, contamination of toxins by waste incinerator ash from Byker and

the deterioration of the Nuns Moor AA site. The other cause was to do with the direct effect from climate change, such as flooding. Although the location of the sites and geographical condition was closely associated with flooding incidents, human error may be a part of the problem. This will be examined more in detail in Section 5.5.

Regarding the wildlife aspect (Section 5.3.3), the allotment garden sites were seen as a valuable place for wildlife. In this regard, the NAWG has supported the strategy of a biodiversity action plan for environmental and ecological well-being. Some of the individual plot-holders looked after particular plots as nature reserve areas. Also, they recognized the importance of keeping beehives on the site for pollination, but some others were concerned about the flying bees. This was a difficult matter, to do with individual circumstances and biodiversity interests on the site.

In relation to social well-being, the allotment garden communities have provided equal opportunities for minorities, immigrants and disabled people (Section 5.3.4). For instance, Fairway AA has made efforts on workability and accessibility for wheelchair-bound plot-holders, such as raised beds and polytunnels with wider openings.

The survey identified that the interaction between people and natural processes has been oriented towards a socio-ecological interaction. This is a significant tendency to create values for both society and ecology in urban environments.

5.4 Significance and Issues of Three Allotment Sites in Jesmond: West Jesmond AA, Highbury South AA and Highbury North AA

5.4.1 Introduction

Each AA in Newcastle has its own characteristics; none of them are alike, as they reflect the surrounding social and environmental circumstances, including location, time of establishment, and size of sites, number of plot-holders and topographical settings, and so forth.

It is worthwhile examining in depth the different characteristics and issues at different AAs' sites to see the interactions between people and natural processes as well as to identify these findings in relation to the theoretical framework of the research. This will be shown in Sections 5.4, 5.5 and 5.6.

This section examines the characteristics and issues of three AA sites: West Jesmond AA (105 association plots in 2015), Highbury South AA (192 plots) and Highbury North AA (74 plots).

The three associations above are located very closely to each other on the western side of Jesmond along the Great North Road. They were established in 1917, but each community has formed rather different characteristics over time, providing interesting aspects of values, issues and concerns of the allotment garden communities.

5.4.2 *Characteristics of each allotment association*

As Section 4.5 described, the allotment sites of West Jesmond AA, Highbury South AA and Highbury North AA were originally part of the Town Moor, and were given as ‘intakes’ for the use of allotment gardens. These associations were established during World War I in early 1917, according to their records and the original minutes from Highbury South AA. Their earlier activities provide an example of the social growth of the city, including the strong commitments by the committee members to protect the allotment sites and run the associations. It may be seen as an early example of the theory of social capital and collective actions for local environmental concerns. Thus, it is worthwhile examining the present situation of these three associations.

The appearances of these allotment sites provide a decent outlook to the surrounding area and the Town Moor, probably following the instructions of the city council and the Freeman as an approaching road to the city from the north. The site borders are formed by low hedges. Inside, they have open garden layouts without plot divisions and relatively few allotment building structures compared with many other allotment garden sites in the city.

For instance, Highbury North AA site has virtually no building structures. West Jesmond has a limited number of uniform greenhouses in the central part of the site only. Highbury South has some structures and uniform greenhouses, which are arranged to stand in the same direction (Figures 5-8, 5-9 and 5-10). Other allotment sites in the city have provided higher and more solid fences for security and more structural facilities such as communal lodges, on-site toilets, shops and storage facilities for tools and materials.

Coupled with the vast open grassland of Town Moor on the western side of the road, these three allotment sites represent a characteristic urban landscape as an entrance to the historic city of Newcastle. It portrays a unique countryside-like appearance: people passing this area may encounter a pleasant environment for a large number of cows on the grass and people walking, jogging and cycling, which is quite a contrast to the heavy noisy traffic nearby.



Figure 5-8: West Jesmond AA site

Figure 5-9: Highbury South AA;
very limited structures



Figure 5-10: Highbury North AA; no
building structures are seen on the site



5.4.3 *Freemen-controlled sites and city council sites: The contrasting effects on site management*

These three AAs have had to face different restrictions and burdens, and each community has formed different characteristics, because of the conditions of the lease contract and community distinctiveness, as shown below.

Contracts

Currently, West Jesmond AA has a lease of seven years' duration and Highbury North AA a lease of three years, both with the Freemen. They pay rents to the Freemen via the city council. The lease allows members of both associations to use the sites for allotment gardening, but the Freemen have the right to end the lease at any time and for any reason and take the land back. These association committees, therefore, have to deal with various requirements from the Freemen directly. However, Highbury South AA has a year's lease contract with the city council, and pay rent to the council, though it previously had a contract with the Freemen.

There is no area representative allocated from the NAWG to the sites of West Jesmond AA and Highbury North AA as they pay rent to the Freemen, not the city council, even though they are part of the wider allotment community in the city. Thus, they are not entitled to receive any financial support from the council. Other AAs' rents are paid to the city council, and form part of the NAWG's brief, so that they have area representatives from the NAWG. The area representatives initiate matters and concerns of the sites concerned, and bring their own area issues to the regular meeting of the NAWG for discussion. The group makes decisions and the representative assists each site. Therefore, all other AA sites could receive benefits, advice and support from the NAWG and the city council – most importantly financial help – but West Jesmond AA and Highbury North AA are not given any such support. This has created rather different concerns to both committees, as they have to deal independently and directly with the Freemen. Support from the NAWG is minimal.

5.4.4 *Responsibility of the committee*

The committee members of West Jesmond AA and Highbury North AA have rather heavier responsibilities than the rest of the AAs in the city. For instance, the field survey found that the responses of the committee members of these two associations have shown their anxiety about the continuing existence of their allotment garden sites. They have shown a strong commitment for the way in which they have run the communities to maintain a pleasant environment, not just for reasons of environmental awareness but to maintain a good

relationship with the Freeman as they come to inspect the sites from time to time.

The field survey found an interesting aspect in both these communities in relation to keeping and enhancing the significant conditions of the sites. It seems they have a stronger community mindset (among the committee members as well as the plot-holders) than other associations with NAWG area representatives. This may be because plot-holders of other associations bring matters to the attention of their own committee members, who may then take the problems to the area representative for the NAWG, whereas the committees and plot-holders of West Jesmond AA and Highbury North AA take full responsibility with regard to dealing with the Freeman. In short, this sense of insecurity seems to have generated a unique community spirit and distinctive characteristics in these communities.

Sense of community

Both West Jesmond AA and Highbury North AA have established a sense of an ideal community spirit and cohesion. One of the committee members of Highbury North AA expressed this in this way in the responses to the survey by questionnaire:

‘Community spirit’ is one – the sense of belonging to a disparate group of like-minded people, sharing an interest, sharing experience, sharing produce.

Having fun and a great sense of satisfaction from just being in contact with that basic human need – NATURE!

It can be said that without maintaining that kind of community spirit, the AA would not function. One respondent to the interview stated that ‘some years ago there was a real danger of it collapsing. Interest was low and leadership poor. Continuity of the latter is always a concern, as it tends to be the older, retired members who take on this burden’.

The researcher attended Highbury North’s working day and encountered the members’ awareness of the community spirit and sense of belonging to the association. It was a cold wet day with heavy rain one Saturday in November 2015. This is the researcher’s diary account of the day.

Participating in this year’s ‘Working day’ of Highbury North AA. For clearing up the hedges and leaves fallen on the ground on the site and immediate outside of the allotment. Followed [by] a bonfire, one of three community events of the year. Despite the worst weather (they said) of the working day in history, heavy rain for first three hours, but stopped for one hour, rainbows appeared a couple of times in the afternoon then again more heavy rain started. In this awfully bad weather, total 40–45 people, men and women, young and senior, including their children came to the allotment site to participate in the working day. They shared their awareness to tidy up the area, and enjoyed the bonfire, food and drinks. It was a real community day as people worked enthusiastically but hardly showed any complaints about the heavy burden. I have never

seen before that English people, men and women, were so devoted to their own tasks in such bad weather conditions, which was very impressive and I caught the words ‘this is the community’ of a member uttered during the work with whom I helped on the day.

It can be rare to identify the community spirit in an allotment community. In fact, some of the members of Highbury North expressed a possible future concern:

By [the] nature of the local community the allotment holders are mainly from the same demographic, perhaps this will change in the future. I would like to see a group of younger people prepared to take on some of the big heavy jobs on working days.

This may suggest one key point here for the theory of social capital and collective actions. As mentioned earlier, it may help to maintain the established community spirit of AAs if the members could appreciate the theory; for example, a tightness of the network of individuals, groups and institutions that encourages trust and respect, targeting common goals concerning environmental issues while sharing the interest in cultivating their own rented land for fresh fruit and vegetables. Yet, it is not an easy task to run the community with this sense of trust. The next example shows one of the issues existing on the allotment sites in Newcastle, found from the survey by questionnaire and face-to-face interviews.

Burden of the committee

In respect of a community spirit, in the Highbury South AA, where the lease agreement is not with the Freeman of Newcastle but with the city council, such a spirit has appeared rather differently from the Highbury North AA or West Jesmond AA.

Probably the following opinion has represented the case of many other allotment garden community concerns in the city.

My main concern about the Association [Highbury South] itself is that not enough of the members are willing to take part in running the Association so that the burden of running the Association falls again and again onto the shoulders of the same few people. The Association is vulnerable to the risk that these people wish to stop being on the committee etc. There is also the point that the committee probably does not represent the demographics of the membership. I believe that the Association does what it can to alleviate the risks and issues set out at above. I know personally how difficult it is to encourage members to join in the running of the Association. There is a process for encouraging the proper tending of plots, but it is an imperfect process. It has to balance the needs of the Association as a whole with the rights and circumstances of individuals.

The case study has found that the concluding words of this view has represented one of the most difficult but important features of the allotment community in the city; that is, to ‘balance the needs of the Association as a whole with the rights and circumstances of individuals’. This concern is one of the most important points regarding the study of the

theory of social capital and collective actions in allotment communities. It should be examined in detail through the findings of the survey via interviews with individual plot-holders and groups at other AA sites. This is shown more in later sections, and also in the discussion in Chapter 8.

5.4.5 *Values of dealing with wider communities*

Regarding the values of dealing with the wider allotments garden communities in the city, West Jesmond AA and Highbury South AA have provided notable opportunities for other communities such as environmental protection groups and schoolchildren. These are seen as among recent tendencies of allotment gardening, contributing both to social well-being and dealing with environmental issues. For instance, one of the West Jesmond respondents of the field survey explained:

We have a large lawn area that is able to offer other organizations to use with a similar purpose or overlapping functions in addition to our own social activities. For instance, Apple Day of Jesmond Community Orchard and Transition Newcastle has become a popular annual September event at the area for many people, particularly children other than member families. (Transition Newcastle is an organization of interests in environmental issues, such as non-carbon renewable energy, wildlife corridor, etc.)



Figure 5-11: Apple day of the Jesmond Community Orchard at the West Jesmond AA, September 2015

Jesmond Community Orchard is another notable group regarding environmental concerns. It is worthwhile to give some details of this group (JCO, 2016). In March 2009, local residents came together and found an unused, overgrown corner of St. Andrew's cemetery at Jesmond to be ideal site for an orchard; this is an adjoining site to West Jesmond allotment garden. Since then, the group has been running regular productive events including workshops, courses and Apple Days. The courses include grafting and pruning.

It is interesting to see that a few members belong to other environmental groups including West Jesmond AA and Friends of Jesmond Dene, and have provided wider web links to other groups and individuals concerned with environmental interests. The researcher attended the Apple Days held at the West Jesmond allotment site in 2014 and 2015, and witnessed the events as an effective promotion of environmental issues to local communities.

Another example of the wider community provision is the school allotment at Highbury South AA site. This association has provided school plots within their site for West Jesmond Primary School. It was established by one gardener's vision, explained by one of the volunteers for this school allotment in the field survey:

16 years ago, Mr. X offered four and a half plots with three green-houses and a pond in the Highbury South Allotment Association site for local primary school (West Jesmond School). It has provided many benefits for not only children through connecting with nature such as health and nature education, etc. but also wider aspects including family communications, social connections between the school and the allotment communities. He has [done] volunteer work for 15 years, but recently [had] difficulty, then some enthusiastic people helped him for the School Allotment work today.

Every Wednesday from the early spring to the late autumn, about 30 ten- and eleven-year-old children from one class come to the plots from 1:30pm to 3:00pm to learn about gardening from volunteer plot-holders, not only at the Highbury South AA but also Highbury North. Produce is taken back to the school for the families of the schoolchildren.

It is worth noting here that Environ Schools in Newcastle provides supporting work for school allotments. Environ Schools (Newcastle City Council, 2007) is committed to helping 'the city's children and young adults to make a real difference to the local environment and looks at involving pupil's right through from primary to secondary school age, with a selection of projects suitable for each age group'. Examples have included a primary school wildlife pond, as well as a competition inviting schools to look at different ways to use school grounds, including fruit and vegetable gardens. Environ Schools helped to open a school allotment for St. John Vianney Primary School at West Denton AA site in January 2016.

5.4.6 Conclusion

Three AAs have shown different characteristics and significance regarding social and environmental concern. To sum up, their activities have contributed to the following:

- (a) They have maintained the allotment sites as long-term existing environmental characteristics since the founding of the associations in 1917, developing new cultures in aspects of social well-being.
- (b) They have contributed to wider communities, such as school allotments and Jesmond Community Orchard, while keeping the sites in good condition and appearance.
- (c) The committee members of West Jesmond AA and Highbury North AA have shown a strong commitment to running the communities and maintaining the condition of the sites in good order, responding to the contracts that are directly with the Freemen.
- (d) These direct contracts have somehow has generated a community cohesion, creating a sense of community spirit as well one of belonging to the associations.
- (e) The significance and the importance of the works of the three associations can be interpreted by the theoretical framework of this research of social capital and collective actions for local environmental concerns.
- (f) Their collective actions can be identified as an example of community participation in urban land management or local environmental issues.

5.5 Significance and Issues of School House Allotment Association in Jesmond Vale

5.5.1 Introduction

School House Allotment Association (37)

Index (***) : numbers of association plots in January 2015

There are three AA sites located in the Ouseburn valley by Jesmond Vale along the Ouseburn stream on the south side of the Armstrong Bridge. They are smaller in size than the three sites discussed above. Green Water Pool has 16 association plots, Premier 21 and School House 37 (but only three full plots, 26 half plots, three one-third plots and even five one-quarter plots). Also, a pigeon racing club is located in this area.

These sites represent rather different concerns compared with the three allotment sites on the east side of the Town Moor. This is partly because they are isolated from built-up areas at the bottom of Jesmond Vale. They are closed sites surrounded by solid fences, yet one allotment site, School House AA, may be overlooked easily from the lower part of Heaton Park Hill. The appearances of these allotment sites are rather different to the sites at Town

Moor/Jesmond, as plot-holders' own building structures are scattered across the sites. Together with the dovecotes of racing club pigeons, the area seems to be giving an image of the traditional allotment garden site. While they represent a unique cultural landscape in a historic part of Newcastle as an environment enveloped in quietness at first glance, their real world within the allotment sites is rather different, as they have been suffering from security threats more than the allotments at the Town Moor/Jesmond area.

In the case of School House AA, the concerns are thefts, vandalism and flooding. The association is also facing difficulties regarding the balance between the views and opinions of the committee and individual plot-holders on subjects such as individual plot-holders' structures, huts and wooden fireplaces and the rules and guidelines of the NAWG.

It is important to examine the characteristics, plot-holders' and committee members' views and opinions as well as the issues of the School House allotment garden sites and its community for the study of the interaction between people and natural processes in different circumstances and locations to the three allotment garden sites in the Town Moor/Jesmond area, shown in the previous section.

5.5.2 *Security concerns*

The School House AA has experienced many security problems. One respondent of the association members noted:

Vandalism: my hut was vandalized 7 times in 6 years, broken locks, smashed windows, etc. particularly the last 2 years or so till May this year, in May had twice in a week, took the CCTV camera record, but, although the police have recognized both people, they have not made an arrest yet.

Another respondent explained the issue and some measures they have been trying to take to minimize the risk:

Security in the site has been a problem because we have a long perimeter fence and a river boundary which, in summer months, provides open access to the site for anyone wanting to get in to do damage. It would be impossible to secure the site completely from the attacks from vandals and thieves that we have experienced, but, if anything, it has been a coalescing factor in that everyone is aware of the need not to provide attractive items for thieves and to help anyone when their property or structures have been damaged. We have tried to establish an Allotment Watch scheme, supported by our local community police officers. They patrol the sites when there have been incidents nearby and try to maintain a high profile in the area to deter other or repeat offences. We maintain anti-climb paint on the perimeter fence and try to deter people from coming in from the river boundary too.

To tackle these security problems, an area representative of the NAWG for School House has been enthusiastically making efforts to obtain financial support from the NAWG. He has made contacts and worked with the local police, taking certain measures to prevent or minimize those crimes. As a result, as his contribution to these issues has become effective, far fewer incidents have been reported since CCTV, anti-climb paint and other measures were introduced.

5.5.3 *Flood damage*

Flood damage has been intensifying throughout the country for at least the last few years due to the global climate change associated with increasing man-made developments of natural/sub-natural environments. Some, too, are more to do with topographical settings. Newcastle is not exceptional in this regard and the allotment garden sites in the city have been experiencing flood damage particularly badly in recent years, because much of Newcastle lies upon a heavy clay base. Flooding renders the soil anaerobic, killing crops and rendering soil cold, muddy and unworkable.

The School House allotment had one of its worst floods in recent years in the summer of 2012 (Figure 5-12), while flooding has been seen as an ongoing problem of the site due to its location and topographical setting. It is situated at the lower part of the Dene, where a small roundabout is situated in front of the allotment site's gate. The roundabout is on the Ouseburn Road, situated at a higher level than the allotment garden, and the road runs side by side with the Ouseburn stream and allotments. Another steep tarmac road runs down from the hill between Armstrong Park and Heaton Park. One may assume that the collective rainwater slides down the surface of these roads into the allotment gardens rather like a waterfall.

It is notable that in order to renew the site after the worst flooding damage, the plot-holders and the allotment officer from the city council made a great deal of effort to recover the damaged site and to minimize the risk of further incidents. The NAWG has provided three lines of water runways on the site. As a result, the association received the prize for the most improved site at the annual show in 2015. Flooding incidents are occurring less regularly now, although constant worries persist.



Figure 5-12: Flooding incident at School House AA in 2012
(Source: Newcastle City Council)

5.5.4 Structures on individual plots

Traditionally, individual plot-holders built structures on their plots, such as their own huts, often with used or abandoned items such as building materials and windows as a means of recycling. From the point of view of the appearance of the allotment sites, these structures have given an impression of rather old, unwanted scenery when viewed from the countryside or from train windows. As modern allotment gardening advances, people pay attention to the appearance of allotment sites and AAs try to provide a decent outlook to the surrounding area. In the case of School House allotment site, an observer would recognise a more traditional site.

This is one of the concerns of the committee members, as this practice may contravene the rules. Newcastle City Council has provided a document entitled *Building and Structures Guidance* to the allotment garden communities, encompassing sheds, greenhouses, polytunnels, temporary covers and internal fences (given in Appendix A). However, these individual hut structures are an amenity to people's gardening lives, as noted in the survey.

A plot-holder made his own hut with used timber and building materials and so forth, and a wooden fireplace. It has given him another home-like function as he stayed in the hut almost every day, even in the cold season. He said that:

Presently, living in a high rise flat on the 9th floor without a garden nearby, looking down [on] the allotment site from the room, I cannot stay in the flat, [I am] happy with having a plot, quiet, peace of mind, therapy, flowers are calm, not business, satisfaction, give things away, a proper good hobby.

He is aware that the structures contradict the NAWG rules and the city council guidance. The committee is worried about the wooden fireplace for health and safety reasons, as smoke may cause risks if unwanted materials are burnt.

A senior plot-holder in his 80s expressed a different opinion from his long experience of allotment gardening for over 50 years: he moved from the Jesmond area to a high rise flat some years ago, and consequently, he left the membership of Highbury South AA and joined School House AA. He said that:

Too many sheds and other things, and there should be less; [things are] better at Highbury South, because there is less vandalism.

5.5.5 Balancing the needs of the association as a whole with the rights and circumstances of individuals

The most difficult issue in the School House AA site is to find how it can balance the needs of the association as a whole with the rights and circumstances of individuals. This is clearly not only a problem of this association, but an issue of all the allotment garden communities in the city, as many respondents of the survey stated this concern in different words.

Individual aspects

In the field survey at School House AA, many responses regarding individual values and concerns were expressed rather than community values and concerns. It may suggest how issues are stuck between individual rights and rules for the community as a whole.

For instance, a plot-holder noted the case that the site could not be improved without individual efforts.

It is apparently due to the tremendous efforts of one person, XX. Since he had a plot 6 years or so ago, XX has been devoting for clearing and tidying up neglected plots of the area. It was in a terrible state with overgrown plants, weeds, thrown broken glasses, bricks, timber etc. Most of those were cleared by him into two skips. XX showed me pictures before and after the works for the site, explaining enthusiastically. For XX, it is the first allotment garden plot cultivating in his life.

He likes the area to be looking nice and tidy. For example, he made a neatly arranged sitting area, built a bench by himself, and placed it close to the Ouseburn where rubbish had previously accumulated.

He wanted to have an area where people could make things for any use from leftover materials, but the plot was not allowed to be used for that purpose as the committee rejected his idea. He was obviously disappointed, but they were following the council's regulations.

Another member of the same association expressed concerns about the performance of the committee. She insisted upon individual rights in allotment gardening and claimed that unfair decisions had been made by the committee. She made these comments over a different point:

I find it valuable spending time there as it is in a nice quiet area of the city away from

all of the noise and hassle, I can go to my shed and spend time potting up my seeds/seedlings, planning out my veg for next year. I am able to make tea and coffee in my shed and find it nice to spend some time relaxing there and people sometimes come to visit me down there as they enjoy it too.

I have some personal concerns regarding the way the site is run and I do not always find it very fair the way decisions are made, I do not find it fair how 5 voluntary members of panel can decide upon a person's outcome.

Ballot decisions amongst plot-holders so that a seemingly non-judgemental and balanced conclusion is reached.

These views seem to be a personal desire around individual rights. This is clear. And yet, at the same time, it is a common understanding that a compromise decision is required.

Community aspects

A couple of the committee members clearly demonstrate particular views about running their association. Here, the committee's policies seem to be reasonably fair.

For me an allotment site is a place where nobody has more or less power or influence than anyone else. We are all equals, bound by the rules and guidelines of our plot tenancies as laid down by the city council. We all sign a contract with the NCC [Newcastle City Council] that states what is required of us as plot-holders and how we must behave towards one another. These first steps make it clear that we are all part of a community that seeks to promote good gardening, collaboration when and where necessary and where people want to help rather than hinder others in their projects to learn and develop skills.

It would be naive to think that only good things come from having a collective approach to gardening on an allotment site and there are always pockets of discontent and differences that are hard to reconcile, but in many ways this is a reflection of the cross-section of any society and tolerance is one of the ongoing aims of any community. In these ways, the values form a dynamic equation of equality, shared purpose and acceptance of difference within agreed boundaries that, to my mind, are a microcosm of our larger society.

The longer-term benefits of a strong sense of goodwill had to be balanced against the interests of different plot-holders and their rights to garden in an individual manner.

A strong sense of justice and the feeling that each plot-holder has a right to receive fair treatment. The Allotment Committee, elected via annual AGMs, is tolerated rather than enthusiastically supported, unless any committee member(s) are seen as acting in a high-handed or bullying or 'self-serving' way; if the latter approach is experienced, plot-holders have worked together to stand 'against' the particular member.

In many cases, plot-holders are not enthusiastic to help the site overall if it doesn't have a direct benefit on their garden, and are more interested in complaining about problems they see as affecting them directly. This means that it is the minority of plot-holders who are willing to get involved with helping move communal projects forward. If the Committee is stale, or not able to generate enthusiasm, it can be hard to change things for the better down on the site.

This view seems to have represented three significant points regarding the allotment garden communities of the city. They are important topics to discuss the interactions between people and natural processes in historic environment, as follows:

- (1) Allotment garden sites offer equal opportunities for anyone; at the same time, the members of the garden communities should be aware of the community's goals and interests in relation to local environmental concerns.
- (2) The allotment garden communities have contributed to local environmental issues as well as social well-being through community activities and collective actions. In respect of this, individual plot-holders should act and behave under the common rules that they appreciate.
- (3) This may be identified with the theoretical framework for the research for local environmental concerns. The theory can be seen as a significant tool for the understanding of socio-environmental or socio-ecological interactions between people and natural processes. In particular, it is, importantly, concerned with the long-term existence of environmental characteristics in historic cities and towns.

It should be noted here that in the 1960s, these allotment sites, described in the previous and current sections (the Town Moor and the Ouseburn Valley) were considered for possible closure at the time that the new role of city planning officer was created. The city council recorded (Newcastle City Council, 2010, p. 12):

- On the Town Moor, existing allotments would be cleared but new areas of allotments on the Moor set aside. And provision of allotments was included in the brief for entrants to the Town Moor landscape design competition being held.
- In the Ouseburn Valley by Jesmond Vale four small allotment sites would be replaced by a new site on made-up land formed by infilling a further length of the valley, between Chelmsford Grove and Stradford Road West.
- The Town Moor proposal appears to have been met with glazed resignation, but the committee expressed strong resistance to the Jesmond Vale proposals, pointing out the utility of the existing sites and adding tartly that 'the attention of the Town Planning Committee should be drawn to the difficulties of using newly tipped land for allotments'. Eventually sense prevailed: two of the sites were saved and further plots were provided on the valley side, while the infilling plan was dropped.

These statements of the planning officer seem to dismiss the importance and significance of long-term existing environmental characteristics that have created local traditions and cultures, embedded among the residents due to their long-term efforts.

5.5.6 Conclusion

To sum up the examination of the School House allotment site and its association, the contexts of the characteristics and the issues have been identified. In particular, negative aspects such as vandalism, thefts and flood damage were associated with the location of the sites, topographical settings of the area and characteristics of socio-demographic conditions. As Section 5.4 showed, respondents to the field survey emphasized the relationship between the committees and individual plot-holders, which was also stated by a respondent from the School House AA as one of the most difficult and important issues. Awareness of both individuals and committee members for community cohesion and environmental concerns will be fully discussed in later chapters, which will include the characteristic points of the allotment garden communities and their activities as given at the end of Section 5.5.5.

The next section examines a smaller allotment site, its significance, characteristics, values and issues to study in greater depth the interaction between people and natural processes in the case of allotment gardens.

5.6 Characteristics of Thropton Terrace Allotment Association, Heaton

5.6.1 Introduction

The High Heaton area was developed in the interwar years according to an interviewee in the survey who was born and grew up in this area. There were many small open pieces of land scattered throughout the area, among them some farmland, which remained even in the 1960s.

Thropton Terrace AA was established relatively recently, in 2008, though this allotment garden site and community has existed on this site before as a part of four communities of High Heaton AA. This association previously had four allotment sites; it now consists of three communities, still existing in proximity to each other: Craster Terrace (24 plots), Duxfield East (22 plots) and Duxfield West (18 plots).

They are all situated at enclosed locations surrounded by housing estates, and the access points to the sites are narrow gaps between the houses. The allotment gardens are not apparent; they are rather hidden as cul-de-sac allotment gardens. The site of Thropton Terrace AA has the same arrangement. Thus, these sites are not visible from surrounding public roads. Consequently, there are fewer incidents of theft and vandalism recorded on these sites. This section looks at, in particular, the characteristic points of a small community.

5.6.2 Thropton Terrace Allotment Association

Thropton Terrace AA is even smaller than School House AA. It has only ten plots of one-third size. The committee members of this association and the council allotment officer of the council explained that by 2007, Thropton Terrace allotment site was neglected, as evidenced by accumulated rubbish and overgrown weeds, affording negative aspects to surrounding houses and the area socially as well as environmentally. High Heaton AA decided to abandon this site, and left it in a worse state for some time. Then, a few enthusiastic people living nearby appeared on the site and worked hard to revitalize the area for allotment gardens. As a result, they were able to set up Thropton Terrace AA, and made some remarkable improvements. They received the prize for the best improved site at the city allotment garden show soon after their establishment.

At the same time, the community of the association has developed a sense of community spirit. The researcher participated in their regular meetings, their annual bonfire event of 2014 and the Christmas party at the communal hut in 2015, and other occasions in 2016. Their community bonds were witnessed at first hand. Because of the size of the community, they have kept its sense, communicating well and helping each other in many aspects.

One of the members described the community values of the association as follows:

- Social inclusion of members through a common set of values
- Opportunity to add value to a North Heaton ward asset
- To identify and educate our local community on work and life balance
- To contribute and support our local community through times of austerity

It is interesting to know that the members of this association committee are aware of the wider community of the area rather than interested only in the allotment garden sites; in particular, they are aware of local environmental matters. The researcher actually attended the High Heaton community gathering along with the plot-holders of the association. These interests probably emerged from their daily interaction with natural processes; in this case, land cultivation, and also the community spirit they have gained from the interaction at their sites.

Another plot-holder in the association also expressed their view of community spirit:

Working cohesively and collaboratively as a small group of allotment holders to maintain and sustain our allotment: Eagerness to promote and employ best gardening techniques, sharing information and best practice; Interest in encouraging wild-life onto the plot. As we are a small plot we value a community spirit on the plot and encourage social interaction, and support and help each other to interact with the local community.

It may be suggested that a smaller allotment community like Thropton Terrace may be more

manageable than bigger associations like Highbury South AA. Yet, it seems that the members of smaller communities may need to cooperate more tightly and work enthusiastically to sustain their existence than the bigger communities.

A committee member of the association mentioned that:

Thropton Terrace has benefitted from an active committee management team and [is] possibly currently 90% effective and efficient. The loss of key members coupled to a lack of plot-holders support could return the site to near dereliction over a few short years. Therefore my wish would be for existing and/or new plot-holders to be willing to accept the challenge of at least maintaining current site standards.

Their views above are significant for the continuation of the community as well as aspects of social well-being. The researcher identified these characteristics by attending their community events from the preliminary stage of the case study throughout the actual field survey. The members enthusiastically cooperated with each other; for instance, they brought their families, relatives and friends for community events, such as the bonfire and Christmas events held at the sites, marking the cohesion of the wider communities of the area. This should be emphasized here, as Pretty (2003) expresses that ‘cooperation can be promoted by reciprocity and exchange, it increases trust and provide long-term obligation between people’. The theory of social capital and collective actions identify the significance of this AA.

5.6.3 Conclusion

Thropton Terrace AA is a relatively new and small garden community with only ten one-third-sized plots at an enclosed site in Heaton, surrounded by housing estates. It had existed before but was revitalized by the new members in 2007. The field survey has identified that the association members have provided effective community activities, indicating the integration of the association to sustain and enhance community interests, creating community cohesion. They expressed their own views enthusiastically during the interviews, particularly about the community aspect. The level of trust among the members is very important for the running of the community, as explained in Section 2.4. The researcher considers that despite the association being small, it has created important and significant aspects for the allotment community. This may help in achieving positive environmental outcomes.

5.7 Analysis of the Findings of the Field Survey of the Allotment Garden Communities

5.7.1 Introduction

This section describes the analysis of the findings of the field survey of the allotment gardens and their communities in Newcastle in response to Main Research Question 2 and Sub-Research Questions 2. The analysis will be divided into the following key themes, which are found as specific features of the outcome of the field survey.

Key themes

- (1) Values of the allotment garden communities
- (2) Continuous protection of local environmental characteristics
- (3) Response to the needs of the time
- (4) Issues of the allotment garden communities

As Section 5.1.1 described, the field survey included the researcher's participation in a variety of activities of the allotment garden communities (shown in Section 3.4.3, Table 3.4), the questionnaires and interviews of the survey, and the findings of the previous chapters. Table 5-4, below, shows the results of the questionnaires and interviews. The questions and the list of respondents are shown in Appendix B. The respondents' opinions, views and concerns are very important and significant, and should be analysed thoroughly with other data from the field survey.

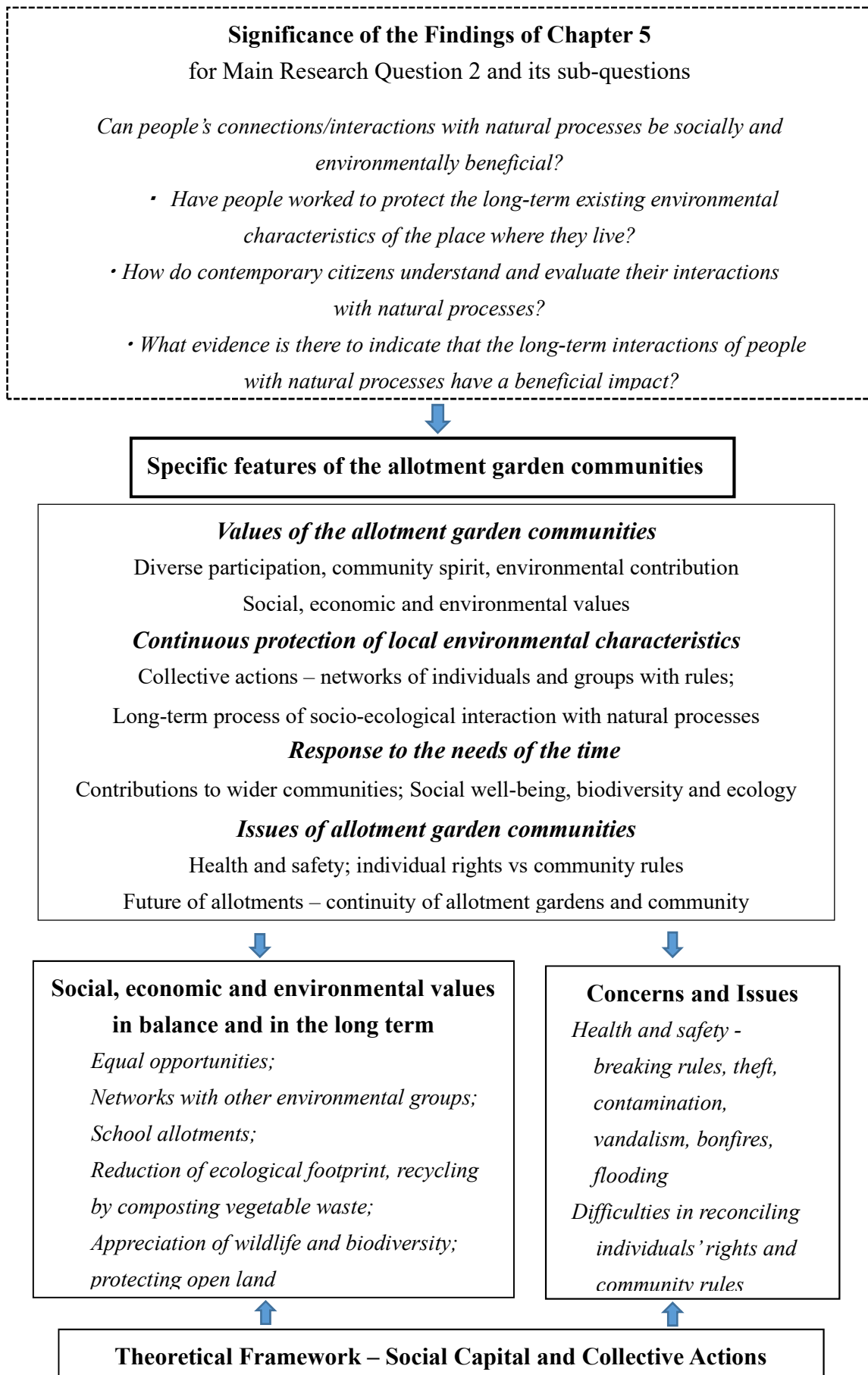
Table 5-4: Results of the survey

Total questionnaire responses: 76 (individuals: 69; groups: 7)								
Total interviewees: 37 (individuals: 29; groups: 8)								
Questionnaire respondents:								
Age	20s	30s	40s	50s	60s	70s/over	Unknown	Total
Male	1	1	2	8	18	11	1	42
Female	0	3	3	8	11	6	3	34

5.7.2 Theme 1: Values of the allotment garden communities

The field survey of the allotment garden communities has identified that the communities have created social, economic and environmental values. These values are recognised by the relevant literature (Crouch and Ward, 1997; Rudd, 2000; Pretty and Ward, 2001). It is found that these values were attributed to a variety of collective actions of the communities over time. Their specific features are summarised in Table 5-5 in the following page

Table 5-5: Significance of the findings



Many respondents to the field survey referred to significant aspects of the allotment garden communities, which are described along with the following four sub-headings:

- (1) Diverse participation
- (2) Community spirit
- (3) Environmental contribution
- (4) Social, economic and environmental values.

The researcher identified these four significant points during the field survey, including participating in a variety of community activities and their collective actions at different allotment garden sites, as well as events held in the city (Section 3.4.3, Table 3-4).

Although the questionnaire did not particularly ask about the individual benefits and values of the allotment gardens, a number of plot-holders pointed these out. Many researchers (Crouch and Ward, 1997; Way, 2009; Wiltshire and Burns, 2008; Newcastle City Council 2010; Newcastle University 2012) describe these benefits and values, such as exercise, healthy food, and mental and spiritual benefits (Section 2.2.5). Thus, they are not shown particularly here.

Diverse participation: combination of cross-section of citizens

Diverse participation is one of the most significant and important characteristics of the allotment garden communities today (Crouch and Ward, 1997; Wiltshire and Burn, 2008). Generally, allotment gardens are seen as a place of great opportunity for any neighbouring people to get together at their particular site and connect with the land by cultivating their own food, fruit and flowers while participating in community activities.

In this regard, the field survey identified that there was no exception in the case of Newcastle (Section 5.3). The allotment garden communities of the city may be seen as one of the most interesting democratic organisations of the current urbanised social world. They consist of a cross-section of citizens. Plot-holders are of different ages – from their 20s to their 80s – singles and families, different genders and professions, the able and disabled, minorities. They have different experiences and knowledge of gardening, and may have their own garden at home or not. Most of them belong to a particular allotment association (AA); in most cases, near their homes. As Wiltshire and Burn (2008) describe, they share the interests, values and rules of the allotment garden in terms of a non-profit, non-political, and non-regional concern. They participate in a variety of community activities, including collective actions, while cultivating the land and interacting with natural processes.

Collective actions of allotment garden communities can contribute much social well-being, (Wiltshire and Burn, 2008; Newcastle City Council, 2010), including education for children.

For example, at the school allotment at Highbury South AA, the researcher participated in their scheme, where volunteers, including some members of Highbury North AA, got together with schoolchildren, cultivating plots, learning the methods of growing each type of vegetable. Children could acquire the meaning of cultivation of land, biodiversity and ecology by connecting with natural processes (Section 5.4.5). The communities generate much social communication or friendships with people, even outside the communities. This was mentioned during the interviews of the field survey; ‘fellow plot-holders [were] one’s friends – some met in other social situations outside the allotment. This is a chance to meet new people with different backgrounds.’

However, respondents expressed some concerns and issues of the allotment garden communities, including health and safety, and about the future of the allotment communities. These will be discussed more in detail in the following sections.

Community spirit

Many respondents pointed out that another most significant value of the allotment garden community was a sense of sharing community spirit. They said that it was particularly appreciated in their collective actions. As Section 4.5 described, the community spirit was established at the very beginning of the allotment garden communities, in particular during the period of the two world wars. It was identified in the present day by the field survey that such as spirit exists and has enhanced by various collective actions that the communities have implemented. The most notable comments of the respondents centred around creating a friendly atmosphere and rich human relationships through cultivating the land on the same site. This can be also related to the diverse participation of the allotment gardens mentioned earlier, created by the combination of different people’s shared interests and common targets in relation to their interactions with the natural processes of the area.

The community spirit may also be produced by the community’s collective actions, including the AGM, allotment open days, working days and other community activities such as bonfire and barbeque days. People’s participation in these collective actions give them a variety of aspects through which to create and enhance the community spirit. They appreciated the spirit, exchanging the trustworthiness; they share and exchange their interests of land cultivation, interact with natural processes, share experiences, comments, knowledge and interests, learn from each other and learn about the behaviour of nature and soil characteristics, and share concerns about local environmental issues, as well as biodiversity and wildlife. The idea of mutual help can also be a key for enhancing the community spirit, such as borrowing and

lending tools and exchanging produce, helping each other with children, the elderly and the disabled, and also watching each other's gardens during holiday periods.

It is worth mentioning again the view about 'community spirit' of one of the committee members of Highbury North AA; he expressed it as follows: 'community spirit is one – the sense of belonging to a disparate group of like-minded people, sharing an interest, sharing experience, sharing produce. Having fun and a great sense of satisfaction from just being in contact with that basic human need, NATURE! (Section 5.4.4).

This represents a significant value of the allotment communities created by their collective actions, which make environmental contributions. This significant characteristic may be seen against the theoretical framework, that collective action and social capital are mutually supportive, which will be discussed in detail in the following sections.

Environmental contribution

Individual plot-holders and their allotment communities have been very much aware of local environmental conditions and issues, to which they actually responded in their daily lives. Their activities can be classified into the following four aspects, which contribute towards environmental issues, such as a reduction of community carbon footprints to mitigate against climate change as well as the protection of natural environments (Section 2.2.6).

As Vanni (2001) points out, 'collective actions may show a benefit of ecological scale as well as scale and scope of economy'. The field survey identified this concept. Environmental contributions by individuals and collective actions of the allotment communities have contributed to the social well-being, biodiversity, wildlife and ecology of the place. Indeed, they may contribute to the environment of a much wider area.

(a) People growing their own fresh food on their own rented allotment land

This has been recognized as the primary and fundamental purpose of the allotment gardens to supply daily food from their beginning. Today, it has recognized as an important contributory factor to the reduction of the ecological foot-print (Wackernagel and Rees, 1996).

(b) Recycling by composting vegetable waste to reuse to fertilize soils

Recycling by composting vegetable waste to reuse fertilize soils were mentioned by many respondents, and observed during the research at most of the allotment sites. This can be a proof of people's awareness of current environmental concerns, and should be recognized as an important contribution to the ecosystems of the area as well as reducing cost of

collecting garbage.

(c) Appreciation of wildlife and biodiversity

As Section 2.2.6 and Chapter 4 have shown, people's concerns about connection/interaction with natural processes over the past 100 years have evolved, with an emphasis on urban ecology in urban landscape management. They have exemplified the needs of society as well as people's awareness of the importance of wildlife and biodiversity in urbanized environments. In this respect, the plot-holders' cultivation of the land and variety of collective actions of the allotment gardens communities of Newcastle have contributed towards appreciating, protecting and enhancing the wildlife and biodiversity of the area.

(d) Protecting and maintaining open land also provide social benefits and values

As Section 4.4 explained, open land in built environments has provided environmental benefits. In addition to that, it may be seen a contingency or a risk management tool for any possible incident as well as any function required by society. It is important to remember and recognize that the temporary use of allotment gardens saved the nation during the two world wars, providing both daily food and community ties. Considering the situation that the world currently faces, it is important to maintain and protect open land in urbanized environments as it provides social benefits and values, in addition to the appreciation of wildlife and biodiversity.

Social, economic and environmental values

As described above, the allotment garden communities' values may be seen as social, economic and environmental values as balanced and for a long term, rather than out of balance and short-term, contributing to the social well-being, biodiversity, wildlife and ecology. The continuous collective actions of allotment garden communities regarding local environmental concerns may provide support in considering the sustainability of historic environments. These assumptions will be further examined by analysing the other three specific features of the allotment garden communities in the following sections.

5.7.3 Theme 2: Continuous protection of local environmental characteristics

The continuous collective actions of the allotment garden communities regarding long-term existing local environmental characteristics may be demonstrated by one of the most significant traditional characteristics or cultures of the allotment communities (Section 5.2). These continuous collective actions can be seen as an important citizens' involvement in urban land management because their actions contribute to the society and the environment of the place. It can be attributed to the following two characteristics of the communities; (1)

collective actions: networks of individuals, groups and rules; and (2) the long-term process of social-ecological interaction with natural processes.

Collective actions: networks of individuals, groups and rules

The allotment community's continuous collective actions may be seen as an important democratic method of citizens' collaboration, because they form networks of individuals and associations along with their rules. As Section 5.7.2 described, diverse participation, community spirit and environmental contribution are the values of the allotment communities; these are the key points of mutual trust for carrying out their collective actions. As mentioned earlier, these significant characteristics may be seen through the theoretical framework that collective action and social capital are mutually supportive.

The theory informs us that the link between forms of social capital and collective actions is 'trust' (Ostrom and Ahn, 2003). As talked about earlier, plot-holders create this trust through cultivation of land and a variety of community activities. Sections 2.3.4 and 2.4.3 described that this trust refers to the contextual variables of the place where they belong. Plot-holders appreciate and share the contexts of their place as well as the existing characteristics of the communities. The contexts include local history, the reputation of past collective actions (Ostrom, 2007), environmental characteristics and issues of the place, which may be related to the geographic and topographic conditions as well as the social characteristics of the area.

As the field survey found (described in Section 5.7.2), continuous collective actions of the allotment garden communities produce reciprocity and exchange among members of AAs. Pretty's theory (2003) supports this norm: he says that 'since reciprocity increases trust and contributes to the development of long-term obligations between people, which helps in achieving positive environmental outcomes'. Another characteristic aspect of the theory is sanction and reward (Vanni, 2014). If individual members break the rules, they must be made to follow the rules.

This is the logical situation, however, the real world is not easily defined. For instance, as Sections 5.4.4 and 5.5.5 showed, some committee members expressed difficulties in balancing the needs of the association as a whole with the rights and circumstances of individuals. Yet, it could help to find a solution through repeating and continuing the collective actions of the communities of the network of individuals and the groups and rules. In fact, committee members of an AA have described to the researcher that they have created their own set of rules, which allow for a sanction when rules are repeatedly broken after warnings.

Long-term process of socio-ecological interaction with natural processes

Historically, plot-holders' daily interactions with natural processes are seen as a *long-term process* of socio-ecological interactions (Section 4.5). It was found that such interactions have created diverse benefits and values for the community and the environment of the area, such as community development and protection of open land. The field survey of the current allotment communities has also identified the existence of these values, which have even been enhanced.

Urban nature conservation or urban land management is said to be about process rather than product (Kendle and Forbes, 1997). In this respect, the allotment garden communities' long-term process of socio-ecological interaction with the natural processes of the area is important and significant for urban land management. On the one hand, as described in Section 5.7.2, their continuous collective actions have created community cohesion and spirit, social well-being, such as education of children through school allotments, as well as environmental contributions, such as biodiversity and ecology. On the other hand, as Section 5.3.2 described, human negligence towards the healthy environment will quickly create the environmental problems, such as the contamination by toxins and the deteriorating site of Nuns Moor AA.

It is of vital importance for urban dwellers to appreciate the condition and characteristics of the local environment for risk management of the area where they live. In this respect, the appreciation of the allotment communities of local environmental characteristics and issues may be said to be an unofficial watchdog as they are familiar with the behaviour of the natural processes of the place, and their continuous collective actions keep the environment in a healthy and safe condition.

Thus, the allotment garden communities' protection of local environmental characteristics via a long-term process of socio-ecological interactions is important and significant, keeping the area in better condition, creating benefits to and values for the society and the environment of the area in which they live. It can be recognised as an important community participation in urban land management.

5.7.4 Theme 3: Response to the needs of the time

As section 4.6 identified, the collective actions of the allotment garden communities of Newcastle in the present day have responded to the needs of the time, as the previous generations experimented to create social development. This is, in fact, seen as a tendency of

the current allotment garden communities of many cities and towns in this country (Wiltshire and Burn, 2008). This tendency may be seen as a new cultural or social movement among urban dwellers, because it creates social well-being and environmental protection, responding to the needs of today, such as equal opportunities and biodiversity, wild-life and ecology (Howkes and Acott, 2013; Russell et al., 2013) through the collaboration work of environmental protection groups. In this regard, diverse collective actions of the allotment communities of Newcastle have responded effectively to the needs of today.

Contributions to wider communities

It is highly important for urban dwellers to be aware of local environmental concerns, such as biodiversity, wild-life and ecology. The importance of urban dwellers connecting with natural processes has been recognised, in particular for children (Low, 2005). The RSPB (2012) express that children should be given opportunities to gain the many benefits that previous generations have enjoyed. In this respect, the allotment communities' involvement in the wider community is of significance for the present-day social world as well as the urban environment.

In the case of Newcastle, the field survey found that recent members of AAs were seen to be more diverse than before (Section 5.7.2), including young families, people in wheelchairs, minorities and immigrants, which has actually encouraged their collective action to aim for wider community concerns. As Section 5.3.4 explained, the NAWG has implemented several schemes to respond to equal opportunities, so that all persons have an equal right to protection from all types of harm and abuse (Newcastle City Council, 2010). For instance, the allotment communities have provided new facilities for disabled people, including raised beds and wider and easy access ways for wheelchairs. The researcher confirmed these provisions during the field survey, being shown examples and receiving talks from plot-holders at different allotment sites, including Fairway AA, Thropton Terrace AA and the newly established City Stadium AA.

Other examples of the allotment communities' involvement in the wider community are the school allotments as described earlier, and another notable provision for schoolchildren is the city Environ-School, which involves young adults as well. Schoolchildren, from primary to secondary school age, learning the importance of people's interaction with natural processes. Their families may look at a real world on the allotment site; for instance, a wildlife pond and cultivation of the land to grow vegetables, fruit and flowers (Section 5.4.5). These learning activities have become a part of school education, which may raise the awareness of their

parents to apply the importance of the interaction with the natural processes of the area to their urban lives.

Furthermore, the recent collective actions of the allotment garden communities of Newcastle have established collaboration work with other environment groups, such as community orchards, and other nature protection groups, such as bees and wildlife. For instance, the apple day organised by the Jesmond Community Orchard was held at the West Jesmond AA site, where other environmental protection groups participated in order to promote their interests in nature concerns, such as a bee protection group and organic fertilizer; families enjoyed the day, learning about people's connection/interaction with natural processes (Section 5.4.5).

The allotment communities' annual city garden show may well exemplify collaboration works, where the NAWG and AAs and other environmental protection groups demonstrate together their interests and activities (Section 5.2.3). The researcher attended both the apple day and the garden show a couple of times during the field survey, and found that these events have created contributions to social well-being and environmental protection, because (a) the event offered participants the opportunity to promote environmental protection, demonstrating the importance of people's awareness of natural produce as well as interactions with natural processes; (b) it also offered opportunities for diverse people and families to generate social communications or interactions. As a result, both those people organising the events (including preparation, implementation and clearance) and those participating in the show appreciate their outcomes. It may be seen that the long-term socio-ecological interaction that the allotment communities and other environmental groups have been undertaking is socially and environmentally beneficial.

5.7.5 *Theme 4: Issues of the allotment garden communities*

Wiltshire and Burn (2008) describe issues of the allotment garden communities such as flooding and vandalism. The Newcastle allotment communities are no exception in this regard. Many respondents to the field survey expressed concerns and issues in running the community. They have revealed important points about and causes of the issues, most of which were concerned with the community itself and the environmental condition of the site, including communication and consultation with the communities, as well as health and safety, hazard and nuisance. These issues are important in considering the sustainability of the communities and the environment of the city.

The responses to the questionnaires and by the interviewees on the issues may be shown in

three categories; (1) health and safety, such as vandalism, theft, contamination, bonfire, flooding; (2) difficulties in meeting individual plot-holders' rights and community rules; and (3) continuity of the allotment gardens and communities in the future. These issues are all significant and important in terms of scale and consequence as well as politics. The most important issue in relation to this research are the concerns about the future of the allotment gardens.

A number of respondents of the field survey expressed their views and opinions about the future of the allotment gardens in relation to their community as a whole rather than as a mere concern of social and environmental problems of individuals. Respondents are very aware of, or rather worried about, the future of allotment gardens; in particular, some committee members of AAs strongly expressed their views. They pointed out that the issue was closely related to the governance of decision-making organisations as well as politics.

As Section 4.5 showed, this issue has existed for a long time. In the history of the allotment communities, Highbury South AA's committee members strongly opposed the possible disappearance of their allotments. In the period between the two world wars, the committee stated a continuous, patient but firm opposition against the landowners' plan to take back the land into their hands; this was to do with the Freeman of Newcastle's 'intake' land concerns. The committee were able to keep the site as the country soon entered World War II. As the field survey identified, the issue of the continuation of the allotment gardens and their communities still exists, which may be seen one of most important issues of urban risk management, as it may be of the utmost importance to safeguard the soil and to maintain its productivity, locally if not nationally.

From the point of view of citizens' collective actions, the continuation of the allotment gardens is of vital importance. As explained earlier, the field survey has found that many plot-holders would like to see an enhancement of the values and benefits of allotment gardens and their communities, such as diverse participation, community spirit and environmental contributions (Section 5.7.2). They were aware of and implemented the protection of open land, contributing to the sustainability of the community as well as to the local environment. They would like to see the continuation of the associations and allotment gardens' existence in the future, as they appreciate the outcome of their interactions with the natural processes of the area over time and in the future.

As described in Section 5.4.4, particular committee members are seriously concerned about the possible disappearance of allotment gardens. They mentioned that this may be related to a

scheme to change the body administering them from local authorities to the central government or other agencies. This was pointed out by particular committee members of associations that have direct lease contracts with the Freeman, as the landowner has a right to terminate the contract at any time they wish, according to the conditions of the tenure (Section 5.4.3).

The issues above are seen in the relationship between people and landowners or tenants and administrative bodies, or power-related issues, which are not the main subjects for this research; this would require future study. Nevertheless, this research identified that the values and issues that concern the allotment garden communities are significant and important, as they are closely related to the sustainability of the city.

5.8 Conclusion

This section shows the conclusion of this chapter, responding to Main Research Question 2 and Sub-Research Questions 2 (shown in Section 5.1). This examination was made via a dialogue between the past and the present day about the significance of the allotment garden communities; i.e. the analysis of the continuity, changes and tendencies of their collective actions and their effects.

In brief, it was identified that people's daily connections/interactions with the natural processes of the area can be seen to be socially and environmentally beneficial. The allotment garden communities of Newcastle have worked continuously for the protection of the long-term existing environmental characteristics. They have formed networks of individuals and groups, and rules, carrying out collective actions for local environmental concerns. Their collective actions have created diverse values in social, economic and environmental aspects for balance and the long term, such as social well-being, biodiversity and ecology. It has been confirmed that these values have resulted from the communities' continuous interests in their daily interactions with the natural processes of the area, as an approach to the long-term process of socio-ecological interaction.

Just as previous generations experimented, the collective actions of the allotment garden communities today have contributed to social growth, extending their influence to wider communities and areas, such as collaborating works with other environmental groups. Their activities can be seen as a practically effective community participation in urban land management. It may support the sustainability of Newcastle as a whole.

The health and safety issues of the allotment communities found in the survey were of

concern not only for plot-holders but also people living in the surrounding area because deteriorating allotment sites affect the surrounding environment badly, inviting social ills such as vandalism. Other issues of the communities are seen in the aspects of the relationship between individual plot-holders' rights and the rules of the administrative bodies or institutions. The most important concerns of the allotment communities concern the future of the allotments, this is probably to do with governance and politics. Some committee members were particularly worried about the possible disappearance of the allotment gardens in the future. These issues should be taken into a wider debate and require further study.

The researcher expresses that urban people's involvement in the protection and enhancement of the long-term existing environmental characteristics of the city are important and significant for the sustainability of Newcastle. This cannot be achieved within a short period of time; it requires social, economic and environmental values in balance with the long term. The allotment communities' involvement in the long-term process of socio-environmental interaction may assist this norm for sustainability, as well as citizens' appreciations of the historic context of natural process, as in the case study in Newcastle examined in Chapters 4 and 5. This matter will be discussed further in Chapter 8 together with the findings of other chapters, including the case study in Hagi.

Chapter 6:

Case Study - Context of Natural Processes from Historic Perspective

Hagi, Japan

Chapter 6: Case Study - Context of Natural Processes from Historic Perspective - Hagi, Japan

6.1 Introduction

The previous two chapters have examined the outcomes of the case study in Newcastle, the UK, about the interaction between people and natural processes, empirically the conceptual and practical dimensions. The chapters have responded to the main research questions and sub-research questions. It was identified that people's collective actions for the protection of the long-term existence of environmental characteristics, such as the allotment gardens, were seen as a significant example of community participation in urban land management. It was confirmed that long-term process of socio-ecological interactions of people and natural processes has created diverse benefits and values for wider communities of the city, such as social well-being, biodiversity and ecology. The theoretical framework for the research has explained these findings.

The chapters 6 and 7 show the outcomes of the case study in Hagi, Japan about the examination of the interaction between people and natural processes as a case of Japanese historic built environments. It provides different contexts of natural processes to Newcastle, therefore, the examination of Hagi may offer a different insight into the interactions between people and natural processes. As in the case of Newcastle, the Hagi case study includes a historic study and a field survey. The outcomes are shown in two chapters; Chapter 6 for the context of natural processes from historic perspective, and Chapter 7 for the findings and analysis of the field survey in Hagi, today.

The preliminary study of Hagi has found that the present Hagi city is recognized as one of the most significant historic cities in Japan as diverse historic features and characteristics of the last four centuries still be seen in the city. People of the city have implemented a variety of conservation programs for the last 40 years, including the protection of the long-term existence of environmental characteristics. As explained in Section 2.2.2, the long-term existence of environmental characteristics/futures are seen as the consequences of the process of the growth of the area in relation to people's interaction with natural processes, in other words, it resulted from the interactions.

6.1.1 Aim

The aim of this chapter is to respond to Main Research Question 1 and Sub-Research Question 1.

Main Research Question 1

In Hagi, have the interactions between people and natural processes affected the forms of growth of historic built environments?

Sub-Research Question 1

- a) What forms of growth have occurred in the historic built environments?
- b) How has the growth been affected by interactions between people and natural processes?

6.1.2 Scope and topics

This chapter examines the forms of growth of Hagi in the period from the feudal era to early modern time, because the historic process of this period portrays one of the most interesting historic contexts of the castle towns in Japan in order to scrutinize the interaction between people and natural processes.

Historically, in brief, Hagi was founded in the early 17th century as a planned castle town on a marshy delta surrounded by water, sea and rivers, as the result of decisive battle of Sekigahara in 1600, between Toyotomi and Tokugawa, two reading *daimyo* of the time. The castle town grew steadily along with people's continuous collective actions efforts to deal with the characteristic behaviour of the delta area in the Japanese climatic nature, such as flooding in rainy season and typhoons. People of Hagi implemented water control schemes, including the land improvements, by interacting with natural processes. As a result, the castle town grew significantly, creating the fundamental characteristics of the town (Hagi City, 1970).

However, in 1860s, castle towns were forced to have their functions removed by the Meiji restoration movement, one of the most dynamic political and social reformations in the Japanese modern time. The people of Hagi suffered social and economic upheavals that resulted from both the dissolution of the castle town and the Meiji Restoration in 1868. The restoration movement emerged through a young generation of samurai who belonged to the regional domains of remote locations far from the central Tokugawa regime in Edo (present-day Tokyo), including Hagi (ibid).

The forms of the growth after the Meiji restoration demonstrates another interesting case of interactions between people and natural processes. It was due to a relief scheme by the Hagi samurai who lost their privileges through the Restoration. The scheme was to plant rare

orange (*Natsu-mikan*) trees on the empty central area where the Hagi domain officers (samurai) previously lived. Many people from Hagi did not appreciate the scheme easily, but once the orange fruit gained popularity, the orchards spread to the whole town, contributing regeneration and revitalization for the early modern Hagi. This resulted in the creation of a unique landscape of the historic areas (Shimizu, 2010; Hai Museum, 2016).

Thus, the chapter examines the following five topics in the historic context of Hagi-

- (1) Growth process of the castle town in relation to the characteristic delta land conditions.
- (2) People's involvement in the schemes for the prevention of flood disaster
- (3) An emergence of social and environment changes at the time of the transformation from the castle town to the early modern Hagi
- (4) Regeneration by the rare orange (*Natsu-mikan*) orchard scheme
- (5) Retention of the castle town characteristics in relation to the modernization of Hagi

6.1.3 *Structure of the chapter*

The chapter divided into six sections to examine the forms of the growth of Hagi in relation to the interaction between people and natural processes in chorological order along with the specific topics mentioned above.

First section; Overview of the characteristic forms of the growth of Hagi castle town in relation to the geographical and topographical conditions of the delta land in relation to the characteristics castle town restrains, including zoning (segregation of living area according the classes) system of Japan under the *Tokugawa* regime.

Second section; People's interaction with natural processes for the prevention of flooding disaster, examining the provisions and systems, including involvements of the townspeople's street community participation in the schemes, and a variety of continuous civil engineering works, such as a creation of water courses in the delta land.

Third section; Causes and influences of an emergence the social and environmental changes in Hagi at the Meiji Restoration time, marking the turning point from the feudal era to the early modern Hagi.

Fourth section; Regeneration of Hagi through the scheme of planting rare orange (*Natu-mikan*) orchard in the heart of the dismantled the main administrators' quarter of the castle town, changes and continuities of the environment of the area.

Fifth section; Causes of the retention of the characteristic castle town features of Hagi in relation to the modernization of Hagi, in particular arrival of rail ways.

Sixth section: Analysis of the findings of the study in the context of natural processes in the

historic perspective to respond to Research Question 1 and Sub-Research Question 1. The final section is the conclusion of this chapter.

6.2 Growth of Hagi Castle Town in Relation to Land Characteristics

6.2.1 Introduction

Hagi castle town was built as the new capital of the Chosyu Domain by the Lord Mouri's family, on a marshy delta land, surrounded by water (Figure 6-1 shown Hagi at the present). It is located at the western end of Japan's main island *Honsyu* in Yamaguchi prefecture (Figure 6-2).

The present-day city of Hagi has given rise remarkable conservation works as the historic part of Hagi has retained significant historic characteristics features, including the distinctive castle town layouts. Among them, the long-term existence environmental characteristics have formed a part of the unique landscapes of Hagi for centuries. For instance, Figures 6-3, 6-4 and 6-5 show remaining Hagi castle at *Shizuki-yama* from *Kikugahama*-beach, a part of the network of water-course in the delta land, remaining earthen wall and *Natsu-mikan* (orange).



Figure 6-2; Position of Hagi in Japan



Figure 6-1: Hagi from the air in 2001, Hagi castle at the top left of the delta, at the foot of the Shizuki-yama mountain
(Source: Hagi City museum)



Figure 6-3: Remain of the Hagi castle at *Shizuki-yama* push out to the Sea of Japan, *Kikugahama*-beach



Figure 6-4: One of the flood prevention provision in the castle town period, a canal at the left side of the delta land running to the *Hashimoto* River



Figure 6-5: Orange orchard and hedge remained in the historic core

It is generally recognized that castle towns built in the early 17th century in Japan provided the basic structure of the present-day main regional cities (Nishikawa, 1972). In this respect, Hagi is no exception, but it represents one of the most remarkable examples for the study of the interaction between people and natural processes among many historic cities in the country.

The interactions between people and natural processes have played a significant role in many aspects for the people's lives, as well as the forms of the growth of cities and towns in Japan. As described in Section 2. 2, the country has few plains, but instead is covered by forests and continuous high mountains, together with a great number of rapid stream rivers. Therefore building a defensible castle and castle town would also provide a highly resilient method and system against the behaviors of natural processes of the Japanese characteristics climatic and geographic conditions. Thus, it was essential to consider the conditions of places and to employ the geographical settings as an advantage effectively (Yamori, 1972).

In the case of Hagi, *Mouri* Domain, this norm was well exemplified where the castle was built at one of the most strongly fortified locations of the delta, using the characteristic topographical setting of the area. This resulted in the castle complex being completed within a very short period of time; whereas, building the castle town of Hagi took a considerable long period, in particular in the early stages, growing steadily over 250 years. Because of the characteristic marshy delta land on which the town was built, people continuously faced a great deal of difficulties due to the natural processes on the delta and two rivers surrounding the town (the rivers Matsumoto and Hashimoto) and the Sea of Japan (Higuchi, 2007).

However, this condition of the land made Hagi a significant place, as the regime officials (samurai) and townspeople, got together to implement continuous and diverse collective actions to deal with the characteristics of the delta. As a result, a castle town with unique social and environmental aspects was created.

6.2.2 *Defensive position of the castle*

The construction of the castle was completed in four years from 1604, as *Mouri* had previously experienced of fortifying Hiroshima castle by locating it near a coast. Miura (1997) describes that Hagi castle was unique in terms of fortification of the castle precincts in the early 17th century castles of Japan, despite of the strong the *Baku-Han* System of the central regime of the *Tokugawa Shogunate* to control the regional Domains (Miura, 1977). It used three

methods of defense, incorporating mountain, sea, and multiple water moats filled with water. The castle was situated at the north-west corner of the delta, where a mountain, Shizuki-yama, pushed out to the Sea of Japan. The mountain was an isolated ancient island with granite rocks and heavy forest, but the accumulated earth of the delta created a causeway between the foot of the mountain and the delta land at the time of the low tide.



Figure 6-6: Castle remains and Shizuki-yama



Figure 6-7: Castle remains

This natural setting provided the substantial size and the strongest defense structures of Hagi castle. It consisted of a variety of buildings in the relatively large area at the foot of the 143 meter-high Shizuki-yama. The five-floor castle tower, administrant facilities, a large garden and living quarters were sited at the plain, protected by Sea of Japan, the Shizuki-yama, and a triple set of moats. (Higuchi, 2007).

Today, the area functions as a public park with a variety of plants, and with Shizuki-yama behind it, it forms an area least influenced by human activities, giving rise to the biodiversity of the area, one of the distinctive historic cultural landscapes of Hagi.

6.2.3 Growth forms of the castle town

The forms of growth of the castle town was affected by the characteristic behavior and the condition of the delta land surrounded by water. The earliest work was to form the castle town zoning layout taking the contour of the land (Figures 6- 8 and 6-9) as well as making the reclamation of the swamp to create habitable areas (Higuchi, 2007, p. 94).

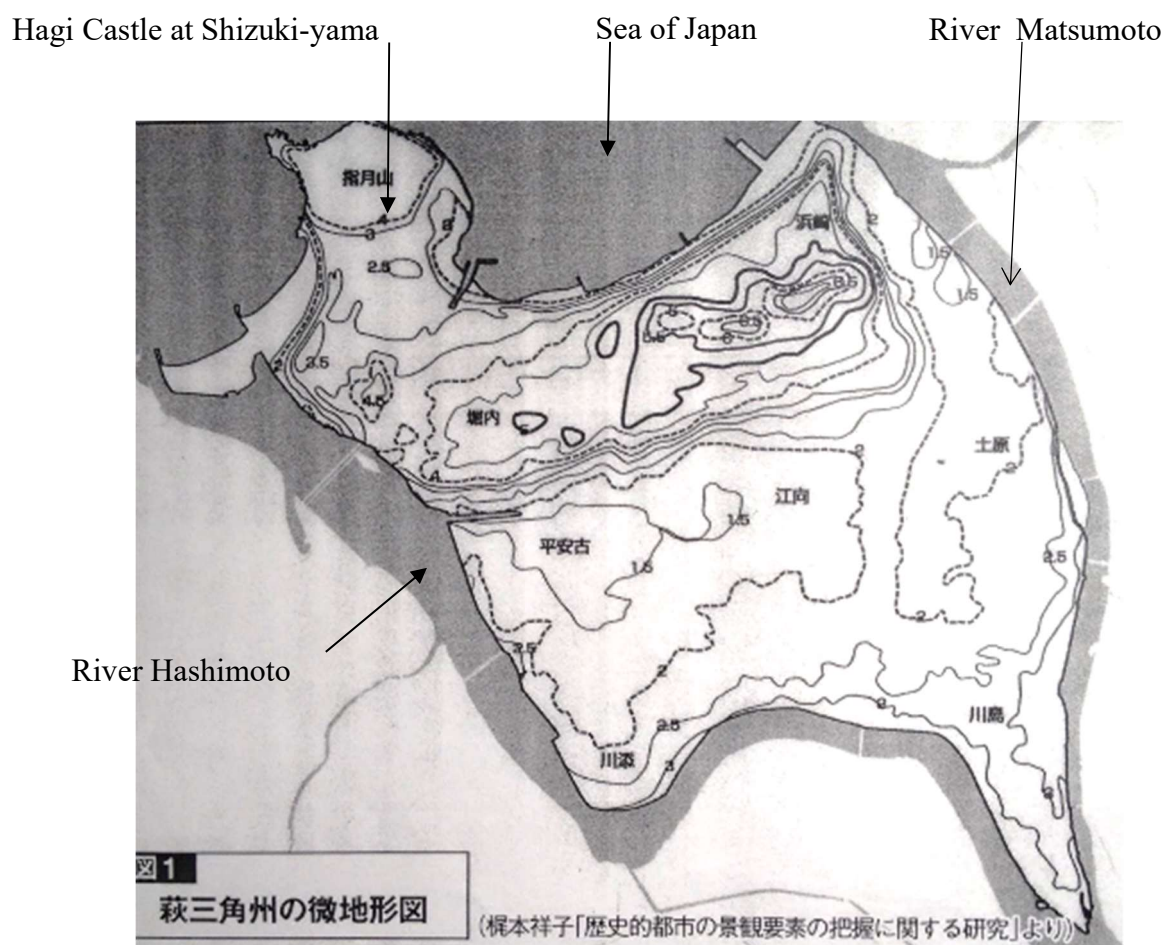


Figure 6-8; Contour line in the delta
(Source; Kajimoto, 1999)

Characteristic of castle town zoning

The Tokugawa regime enforced strict zoning in the castle town in Japan under the *Baku-Han* system. This was to secure the stability of the regime, reflecting the classes of people in

different jobs or positions in society in the feudal period of Japan. It was formed of four classes of people: the highest class was Samurai (*shi* or *bushi*), then Farmer (*nou*), Craft (*kou*) and Merchant (*shou*). Formers ordinarily lived outside the castle town. Court noble and sacred profession were categorized separately from the four classes (Nishikawa, 1972, pp. 211-230).

The castle town zoning system was a strict segregation of people to live in three different, designated areas according to the class to which they belonged.

- (1) *Buke-chi*: *bushi* or *samurai* residential district (regime administrative officials);
- (2) *Jisha-chi*: district for temple & shrine (priest, clergy);
- (3) *Chonin-chi*: residential area with working spaces for ordinal townspeople, such as merchant, craftsmen, tradespeople.

The townspeople's residential area (*Chonin-chi*) was surrounded by *Buke-chi* and *Jisha-chi* or faced to sea, river, moats or ditches in order to control people's activities. (Nishikawa, 1972; Naitou, 1972; Tamai, 1977).

The segregation of people's residential areas via the zoning of the castle town was significant, as it created the structure of the castle town as well as formed the social fundamentals of the time. For instance, it made people's ways of life considerably differently according to the area, socially as well as physically, such as the styles and sizes of houses they lived in. It has given rise to the basic urban structure of the historic cities of Japan today, such as *Hikone*, *Nagahama*, *kanazawa* as well as *Hagi* (Yamori, 1972; Nishikawa, 1972; Miyamoto, 2010).

A map of Hagi castle town in 1652 (Figure 6-9, the next page) shows the characteristics of the zoning system. The castle and the castle precincts dominate this map, with detailed descriptions for the facilities, as prepared for the Tokugawa *Bakufu* (Higuchi, 2007). The highest-ranking samurai premises were located inside of the outer water moat, called *San-no-Maru*. It occupied a considerably area of the delta, (though a proportion of this area seems bigger and the delta shape rather different to the later maps). This represents the power of the *Mouri* domain, as each property of this class of samurai depicts an extremely large plot compare with other ranking samurais lived outside the *San-no-Maru*. The outer water moat of 36 metre width provided a clear division between the castle precincts and the town. There were gates and bridges at three positions along the moat to control the access of the *San-no-Maru*.

Three zoned areas for other ranking samurai, priests and townspeople were allocated according to the geographical condition of the land. Yet, the *Buke (samurai)* residential area occupies a large area of the better condition of the habitable land in the delta. The plot sizes of

samurai's property were decided by rank. For instance, in 1604 the higher ranks, with up to 3,000 *koku* (yield) were given the plot size of 900 *tsubo* (3,000 m²); the lower ranks, up to 50 *koku*, were given 200 *tsubo* (Ishii, Ishiki and Nakai, 1975, p. 16). That the differences between the ranks are great can be seen in the map.

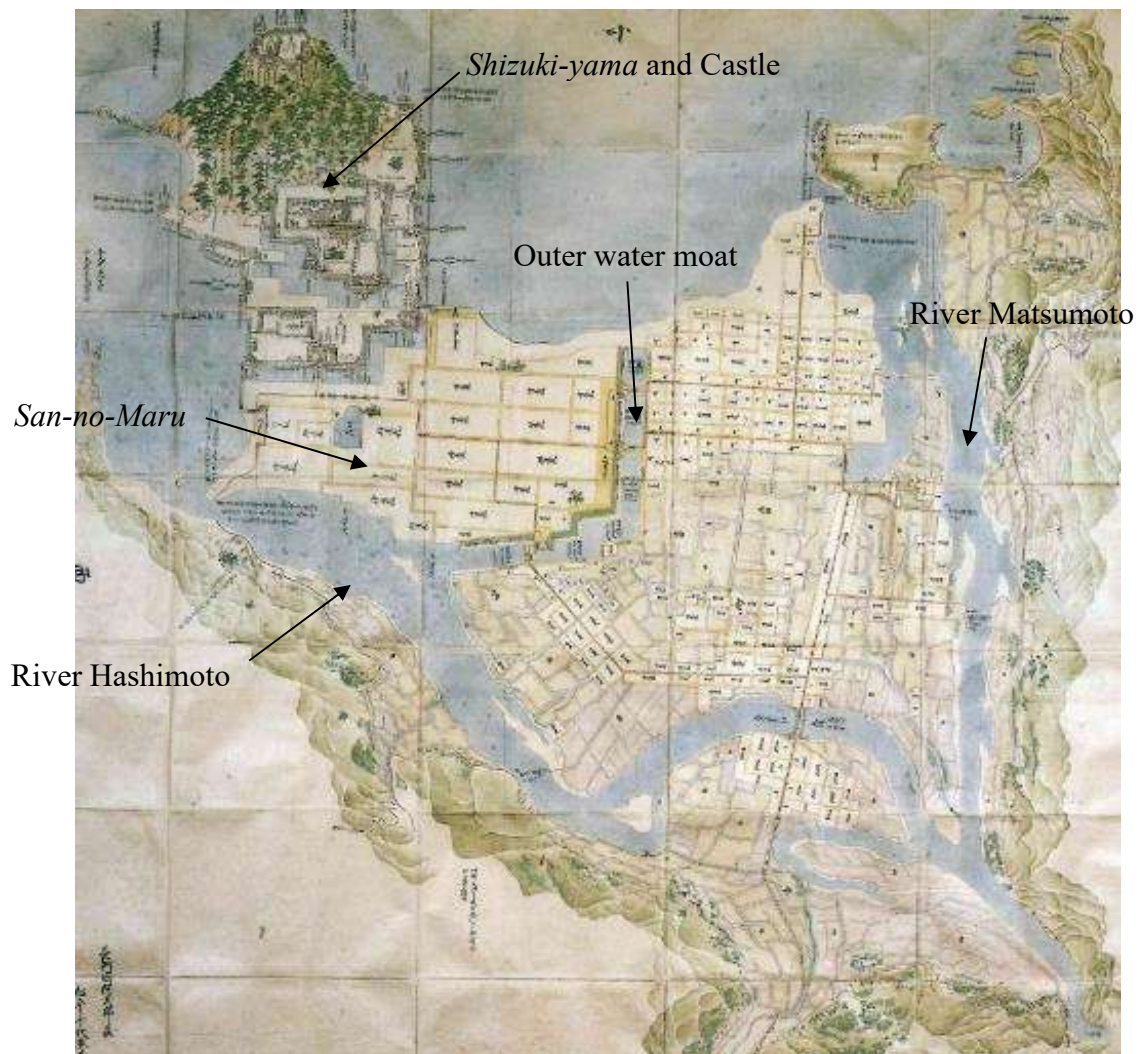


Figure 6-9: Map of Hagi Castle Town in 1652, (Source; Yamaguchi Prefecture)

The middle and lower middle ranking samurai were not placed in the strictly ordered plots. Even lower-classes samurai and ordinal townspeople could be found coexisting in some of the areas. Yamori (1972, p. 167) notes that this was due to the availability of the habitable space in relation to the shape of the delta.

Limited habitable area

The map of 1744-1747 (Figure 6-10, the next page) shows interesting features of the habitable areas. Lower-class samurai premises were located at the south and the east edge of the delta

along the two rivers. This extended the habitable areas as building embankments allowed for their provision (this will be described more in detail in Section 6.3), while a large area in the middle of the delta was left as an open marshy field to serve as a rainwater pool. Some part of this could be used for cultivating vegetables. Yet, there were still only two bridges connecting the inner part of the delta and the outer part. There was a gatekeeper's lodge at each bridge, which meant that entry into the castle town was still severely controlled. This could suggest that the lower-class samurai population increased and lived in the new areas. The population in 1849 of Hagi was recorded as 16,424 *Chonin* (townspeople) and 7,000 *samurai* (regime officials), a total 23,400(Ishii, Ishiki and Nakai, 1975, p. 8).

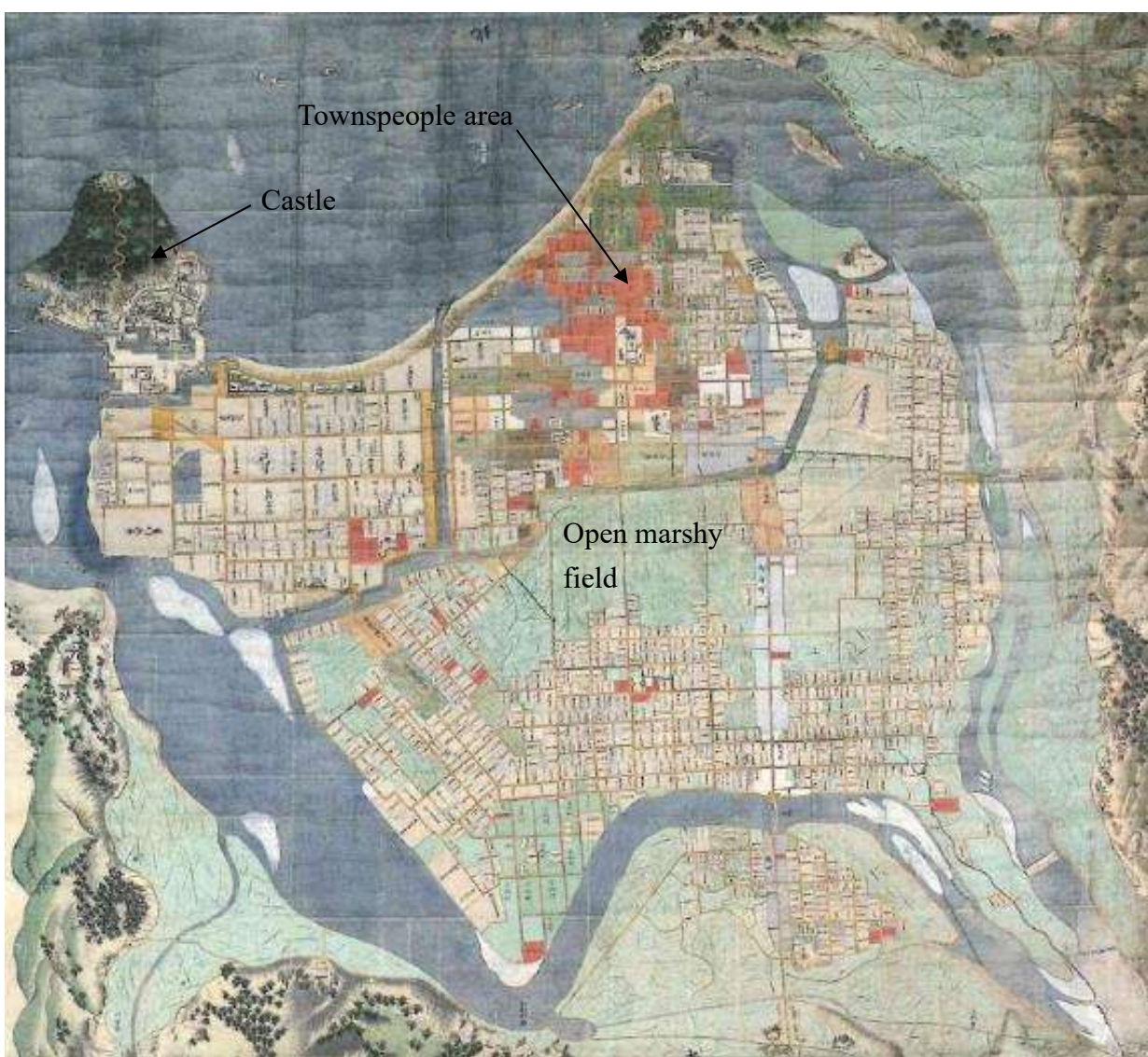


Figure 6-10: Map of Hagi in 1744-47, Light brown colours indicate plots of samurais, Red colours temples and shrines, other colours are townspeople area, except Green for farmers and paddy fields, (Source; Hagi Local Museum)

The samurai areas occupied a substantial area, and their population accounted for about 35% of the total population of the castle town. They may suggest that Hagi could be seen as a samurai dominated town and as a ‘consuming’ town rather than a ‘producing’ town. The residential area of the townspeople (*chonin-chi*) was extremely small and limited, mostly located in the northern part of the vast marshy land in the middle of the delta. Although, the townspeople had lived in a dense environment and were subject to strict regulations, they developed their own culture; in particular, in relation to the community. This is one of the significant aspects of the Hagi castle town that should be emphasized in the examination of historic contexts.

Townspeople’s street communities

The townspeople’s street communities were one of the most characteristics and important social developments of the Japanese castle towns. In this regard, Hagi castle town was no exception; more importantly, Hagi’s street communities undertook collective actions, participating in local environmental issues, such as the prevention of flooding (Higuchi, 2007 p. 104).

The townspeople’s communities were made up of street units where the same type of tradesmen or craftsmen lived in the same street, giving the streets their names from their jobs or trades, such as *ryougae-cho* (Bank), *gofuku-cho* (Kimono fabric trade), *daiku-machi* (Carpenter) and *kaji-machi* (Smith). The houses were usually two stories on both sides of the street, often combined with a front shop or workspace and living rooms at the back or upper floor (Nishikawa, 1972, Naito, 1972, Tamai, 1977).

Each unit provided the basis for community life, including social communication and caring neighbors near each other, as well as security and protection of the street environment. In Hagi, there were roles for the street communities, including a regular street cleaning, tidying up the gutters, trimming hedges, repairing earthen wall wherever provided. One of the most significant and important works of the communities was the participation in the flooding prevention scheme of the town (this will be described in detail in the next section). A system for firefighting was also developed from this street community units; notably, one of the regulations that was strictly enforced was that there were to be no bonfires, because the traditional houses were made by wood (Nishikawa, 1972: Yamori, 1972). It is interesting to note that townspeople were given a fine if they failed to maintain the street environment in a tidy and clean conditions (Higuchi, 2006, pp.18-19).

As described earlier, the names *Cho* or *Machi* of streets in the townspeople's area suggested these people's jobs and trades; the increasing numbers of *cho* or *machi* indicated the growth of the town. In the case of Hagi castle town, the numbers increased and were fixed to 28 *cho* (street communities) in the early 18th century (Higuchi, 1997, pp. 98-99). Kashimoto (1997, pp. 79-80) noted that in 1751, the average street length of one *cho* (street) was about 550 meters and had 128 houses, and the total number of houses in the town were recorded 3,467 and 360 warehouses (*Kura*, storage-house). Families of townspeople usually followed their forefathers' trades or jobs and they often had apprentices, so that the expansion of the *chonin-chi* could be considered as representing the economic growth of the town as they set up new trade shops or branches in the expanded *chonin-chi* area. However, the increasing population of the town required expansions of habitable land, yet the characteristic geographic condition of the delta restricted the area, as a vast marshy piece of land occupied the middle of the delta. This was necessitated civil engineering works, which needed to take account of flooding prevention schemes, including reclamation to create new habitable areas, and building embankments and canals to control flows of water. This will be shown in the next section in detail.

Another notable community development can be found in the later maps (Figure 6-11: map of 1806-26). The fishing community of Hamazaki-cho was established as a response to the growth of the castle town and population, situated at the north-east corner of the delta land at the junction of the beach and the *river* Matumoto. This community had a separate

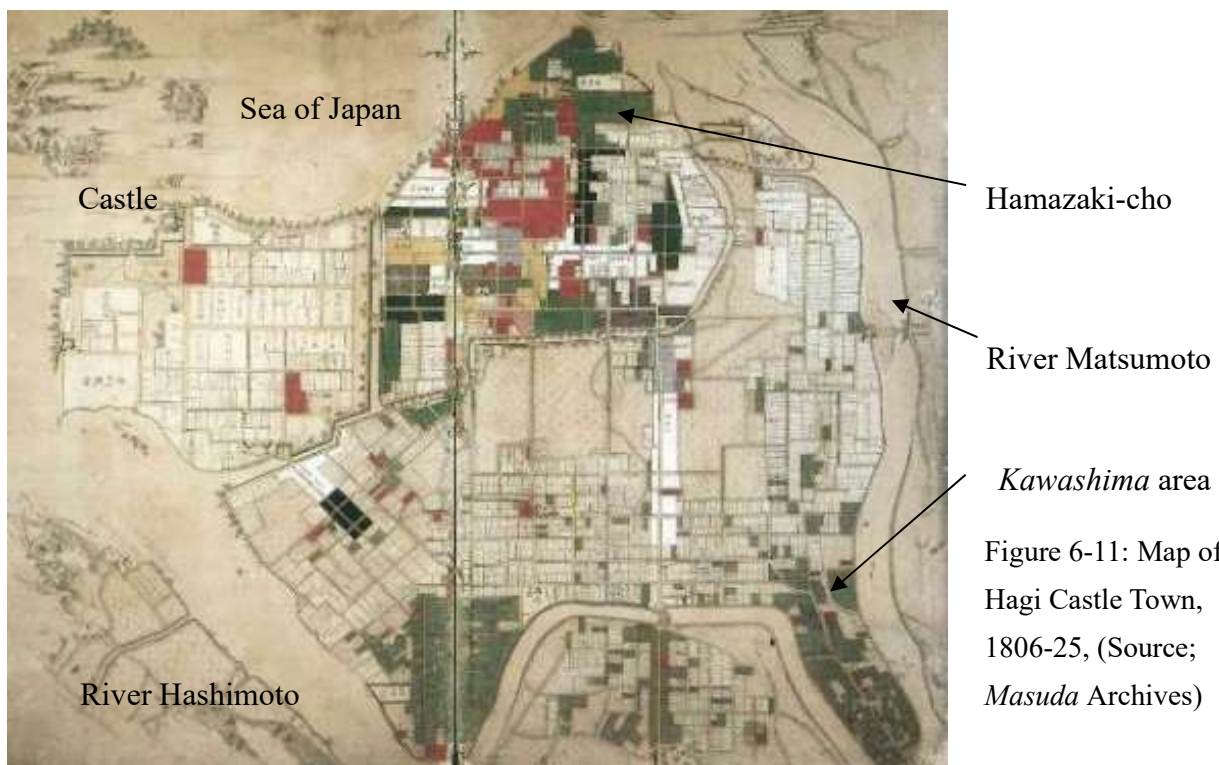


Figure 6-11: Map of Hagi Castle Town, 1806-25, (Source; Masuda Archives)

administration system from Hagi castle town, it could be seen as a commercial town for fishing and trade. With a locational advantage at the waterfront and rich fishing catches from the Sea of Japan, the community of Hamazaki-cho soon became an important port in this part of Japan. In particular, the transport businesses on the sea route of the Sea of Japan grew to trade with other castle towns in the country, bringing wealth to Hagi castle town as well as their own community (Kajimoto, 1999; Murakami, 2011, Nishiyama, 2004).

6.2.4 Conclusion

This section has examined the historic contexts of the forms of the growth of the castle town in relation to the interaction between people and natural processes. The characteristics of the geographical and topographical conditions of the marshy delta where Hagi was built affected the growth a great deal, yet, the castle town has developed steadily over 250 years having made the improvement to the land, expanding the habitable areas in the delta.

One of the most notable social aspects of the castle town was the establishment of the street communities of townspeople. Their roles included a regular street cleaning, tidying up gutters, trimming hedges, and repairing earthen wall wherever provided. One of the most significant aspect of the street community units was its participation in the flooding prevention schemes of the town. The street community unit was made up of people living together in the streets who all carried out the same jobs, craft, or trade or were all merchant. These townspeople's works for local environmental concerns may be seen as an early example of community participation in urban land management. This will be examined more in detail form next section onwards.

6.3 Flooding Disaster Prevention

6.3.1 Introduction

It is important to see the interaction between people and natural processes in relation to flooding prevention in the forms of the growth of the castle town, in particular regarding the theoretical framework for the research. Thus, this section scrutinizes people's collective actions including the schemes of controlling water in the delta. As explained in the previous section, since the foundation of the castle town, people were constantly confronted with difficulties of natural processes enforced by the characteristic behavior of the marshy delta surrounded by water. It was a crucial and fundamental task for the castle town to create resilient systems and provisions against flooding, as flood incidents occurred repeatedly throughout the castle town period. Thus, continuous prevention works and improvements

were absolutely necessitated to minimize the effect of such incidents. For instance, a large amount of strong running water, together with earth and driftwood, rushed into the rivers Matsumoto and Hashimoto from the stream higher up the valleys and flowed over the delta, particularly in the rainy and typhoon seasons.

This section looks at two topics of these prevention schemes; the social and physical aspects. The former concerns the street communities' prevention system and the latter is the way in which Hagi established a network of water courses in the delta over 250 year period. The collective actions of townspeople under the unit system and the regulations of Hagi castle town could be seen as an early example of community participation in local environmental concerns or environmental management, even though it took place in Japan's feudal period. It may also be seen as an example of the theoretical framework for this research, as a group of people worked together while obeying the rules in force at the time.

6.3.2 *Street community units for flood prevention system*

People of Hagi, i.e. the townspeople's street community unites and the castle town administrative officials (samurai), developed together the significant and effective flood prevention systems and provisions. They implemented a variety of schemes during the growth of the castle town over a 250 year period. This may be seen as an example of community participation in local environment concerns, in this case to create a town water control management system.

For instance, one of the documents of Hagi historic archives showed the flood prevention system of the town in 1739, Higuchi (2006, pp. 14-18) describes in detail that the system involved the street communities efforts; 27 *Cho* or *Machi* units in total, with 1,278 townspeople. Each community had a certain role; for example, once a flood risk was alerted, ringing bells informed people street by street, then groups of people were positioned to act quickly in predetermined roles, such as showing their community (*Cho* or *Machi*) logo flags and lanterns at their set places. In particular, the most risky areas were designated where a total of 327 people from seven street communities were dispatched and certain jobs were carried out according to the dills and rules for each street. An interesting and notable task was carried out by a group of *sake* brewery groups to provide huge barrels with full of water placed on bridges to prevent the bridges being washed away (Higuchi, 1997, pp. 106-7).

The townspeople of the Hamazaki-cho area (fishing community) and farmers who lived within the delta also had a role in these prevention measures, but separately from the street

communities of *Chonin-chi* in the castle town. The number of people were recorded 150 from the fishing community and 100 from the farmers (ibid). Furthermore, in fact, the street community unit systems used for other functions, notably for the fire prevention within the town, providing a base of the early fire brigade provisions in the Japanese modern time (Higuchi 1997; Hagi City, 1970). This may be seen as an example of the theoretical framework for this research.

In addition to the above, another interesting provision was concerned with a health and safety issue of the castle town that was formed during the growth process. A regular security guard system, made up with Samurais in charge, were placed at permanent security lodges called *tujiban* at certain places in the town. By 1725, the number of *tujiban* were increased to 100 positioned (Hagi City, 1970, p. 246). These provisions could suggest that the Hagi castle town provided a sort of comprehensive management system involving the health and safety of the town, including flood prevention by the first quarter of the 18th century.

6.3.3 Network of watercourses

As Section 6.2 described, continuous civil engineering projects were necessary in relation to the characteristic conditions of the delta since the foundation of the castle town. In particular, the street community units and samurai officials worked together throughout the growth process, both physically and socially (Higuchi, 2007, pp. 104-113).

One of the most significant features of civil engineering works in the town was a variety of schemes for controlling water, notably the building of a network of watercourses, including canals. The network has created streams cutting through the middle of the delta, connecting the surrounding rivers Matsumoto and Hashimoto. Embankment works were also carried out along the rivers. The network was vital at the time of the rainy season (the late May –the Mid July) and Typhoon season (usually from May to October).

The Tokugawa *bakufu* enforced severe restrictions in order to control the regional *daimyo* activities, including civil engineering projects in any castle town. Any regional regime had to make an official application to the central Tokugawa *bakufu* regime in Edo (present-day Tokyo) to gain permission (Hagi City, 1970). Such applications were made throughout the period of the castle town.

The water network was completed after a long-year of continuous collective actions. As a result, the network has ensured the growth and stability of Hagi, physically as well as socially. It served many factions for centuries until the late 20th century, not only for the controlling

the water flow, but for many other functions. In particular, as the network extended irrigation stream networks for paddy field of rice and lotus, eventually the total network provided a significant influence over the people and the town. This included, boat transportations for daily domestic goods and trading goods in and out to the town, water for fire-fighting, drainage, even small industries and domestic uses. The engineering works led to the creation of a substantial habitable area; in particular, areas of a lower altitude of only 1 or 1.5 meters above sea level in the middle of the delta. The engineering works of Hagi formed the basic infrastructure of the modern City. Main works are as follows.

- ***Replacement and re-shaping of the course of the river Hashimoto***

The earliest major civil engineering works were to change the course of the river Hashimoto (Higuchi, 2007, pp. 2-6), including work at the mouth of the river which was carried out with the construction of Hagi castle. The mouth of the river was shifted from the east side of Shizuki-yama to the west side.

The second task was that the course of the river Hashimoto at the south-east corner of the delta was altered; the starting point of this river, which was bent sharply from the river Abu (the main course of the rivers Hashimoto and Matsumoto near the bottom of the delta), was reshaped toward the inner side of the delta in 1616 (Higuchi. 2006, p. 5). The first Hashimoto-Bridge was said to be built in this period.

- ***Shinbori-gawa (new canal)***

The *Shinbori-gawa* (new canal), a water course of 10 metre width, was built in 1680-1687, cutting through the middle of the northern part of the delta. This was the first major canal dredged in the town, connecting two rivers on either side of the delta, from the river Matsumoto at the north-eastern edge of the delta to the western edge to meet the river Hashimoto. As a result, this produced a great improvement in dealing with flooding problems, and also caused a ripple effect on the local economy in diverse ways. It led to many functions as a bypass for transport, including commercial uses. It was narrowed to a 4- meter width after World War II as a part of road widening scheme.

- ***Building embankments***

Notable embankment work was required after severe flooding incidents in 1702 and 1704, in which a vast area of the delta was flooded, including many samurai houses in the *Buke* area and townspeople's houses in the *Chonin* area. It necessitated the building of 2,300 metres of embankment along the river Hashimoto in 1706. This was completed in three

months and involved a great number of workers from the town, including masons and carpenters (Higuchi, 2006, pp.8-9).

The 1652 map (Figure 6-9) shows these works. Figure 6-12 shows the river Hashimoto from the Shizuki-yama, and Figure 6-13, the river Matsumoto from outside the delta today.

- ***Outer water moat rework***

The outer water moat was built at the same time as Hagi castle, the full width of 20 *ken* (about 36-37 meters) was completed in 1622. It was the most important moat for the fortification of the castle precinct. Kashimoto (cited in Miura, 1997, pp. 74-75) described in detail that the moat had been narrowed down to 8 *ken* width (14 meters) over time due to building *Kata-machi* (houses built along one side of the street only, due to the moat being on the other side) as an expansion of the *Chonin-chi* (the townspeople's area). The narrowed moat accumulated with earth and sand, which made for small boat traffics. Some parts of the moat were covered over by houses, which caused flooding problems on the outer edge of the moat. As a result, in 1739, the moat was dredged and extended to the north, connecting with the Sea of Japan, to release flood water and to for transport goods by boat. It could be suggested that the prevention of flooding disaster was given priority rather than the primary purpose of protecting the castle precinct.



Figure 6-12: River Hashimoto from Shizuki-yama, a part of the delta on the left, some parts outside of the delta. Mountains are close to the river



Figure 6-13: River Matsumoto from outside of the delta

- ***Aiba-gawa (watercourse)***

Aiba-gawa (watercourse) was the second canal built in 1739 to 1744, running from the southern corner of the delta where the two rivers start departing from the main river of Abu River, weaving through the delta land of the lower ranking samurai houses toward the north

Aiba-gawa was constructed by expanding part of existed irrigation water networks made earlier for the vegetable and rice fields (Figure 6-19: Map of Hagi in 1742-47). It was much wider, deeper with more volume of water running than now, connected to the new canal *Shinbori-gawa*, creating more functions as they formed a network of river transportation of the town.

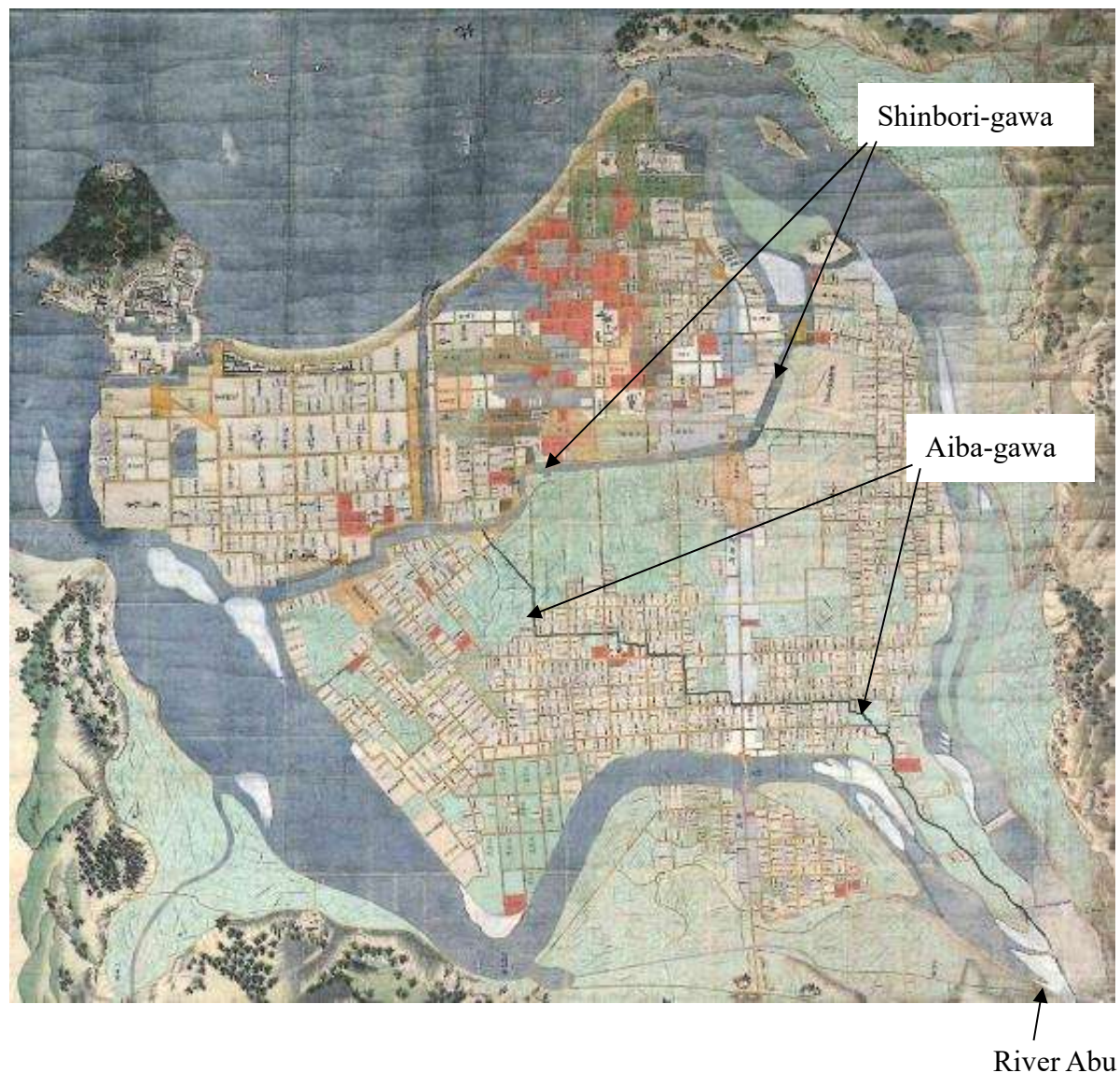


Figure 6-14: Map of Hagi in 1742-47, (Source; Masuda Archives)

It may be interesting to note that many rules were set out for the protection of the network of the watercourse and the environment along it (Higuchi, 2006, pp. 9-11). For instance, fishing, littering and dumping human waste were strictly prohibited to control the quality of water. Also, walking by the waterside was restricted to prevent street edges crumbling off into the stream; instead, turf was planted along the edge. Notifications to protect the watercourse were made from time to time in order to allow it to be cleaned; such protection included dredging, mowing the turf, and cutting off bamboo and branches growing over the stream.

The name of *aiba* means a place of dying indigo. There were dye shops and drying yards until the 1940s. Today, people living along the *aiba-gawa* work to protect the watercourse. There is no industry, but a few people still use the stream water for washing vegetables and fruit. The *aiba-gawa* has been preserved as one of the characteristic historic cultural landscapes of Hagi. This will be explained in detail in the next chapter.



Figures 6-15 & 6-16; *Aiba-gawa*,

- ***Ubakura-Unga (big canal)***

Hagi has continuously faced flooding problems, despite the canals and other measures. There was a significant flooding disaster in 1836, with a recorded 200 lives and two bridges being lost. As a result, the Hagi regime of Chosyu domain carried out significant dredge work to construct a big canal, the *Ubakura-Unga*. It was a water course of 30 meters width, 3 meters depth and 816 meters length at the mouth of the river Matumoto on the opposite site to the delta. It took three years to complete and involved a 300,000 strong workforce. Eventually, the *Ubakura-Unga* appeared to be a successful and effective scheme to release the water into this canal, particularly at high tide. Since then there has been no similarly significant flooding disasters in the town (Higuchi, 2006, pp. 11-14).

6.3.4 Conclusion

This section has examined, in particular, the flood prevention schemes of the Hagi castle town, the way in which people carried out collective actions to prevent or minimize flood disasters in relation to the theoretical framework for the research; in other words, the interactions between people and natural processes in dealing with the characteristics behavior of the delta. It was identified that people's continuous implementation of the schemes has contributed to the forms of the growth of the castle town a great deal, created significant social and environmental characteristics of it.

In respect of the social characteristics, people, i.e. administrative officers (samurai) and townspeople's street communities, worked together for prevention of flooding throughout the period. It was notable that the continuous prevention works consolidated the townspeople's street communities. These communities were made up a total 27 units of streets, where the people who carried out each specific craft or trade lived in a same street; thus, the people of each street community unite worked for flood prevention as a team in their particular roles according to their own professions, while obeying the castle town's rules (Section 6.3.2). This was seen as an interesting example of the theoretical framework for the research.

In relation to the environment aspect - the physical growth of the castle town - the townspeople and samurais implemented continuous collective actions for the growth of the town while carrying out resilient civil engineering works against repeated flooding. A network of water- course has been in place for over 200 years, involving people's collective actions for building canals, irrigation streams and embankments. As a result, the watercourses have functioned in multiple ways for the town in addition to controlling the flow of water. This included boat transportation for domestic use as well as commercial use, as the network was linked with the fishing and marine community of Hamazaki-cho at the mouth of the river Matsumoto. It also served as irrigation water for paddy fields of rice and lotus, water for fire-fighting, drainage, and even small industries and domestic uses. The network of watercourses has created the local cultures and traditions while people have made daily use of it while protecting and maintaining it (Section 6.3.3).

The prevention works of the townspeople's street communities may be seen as an early example of community participation of urban land management, though it was seen as a collaboration work with administrative officers under the regime rules.

6.4 Emergence of Social and Environment Changes

6.4.1 Introduction

The Meiji restoration in 1868 transformed Japan from the feudal era of the Tokugawa regime to the modern era of the Meiji government. It marked the restoration of the Emperor, terminating the 260 years of the Tokugawa shogunate's power, including the end of the *sakoku* system (the ban on people's travel abroad and trade with foreign countries), and opened the country to the outside world. It brought the tremendous impacts and changes to the nation, including cultures and traditions (Kuwabara, 1984).

With respect of the forms of the growth of Hagi in the early modern period in relation to the interaction between people and natural processes, it is important to note here the way in which the restoration began and developed in relation to Hagi, and how its impacts influenced people and the physical environment of the castle town. This section looks at the causes and consequences of such impact regarding the social and environmental changes. It is worth noting briefly how the younger generations of Hagi were involved in the Meiji restoration from its very early stages to its completion and beyond.

The emergence of the restoration movement resulted from the situation where Japan had faced since foreign countries such as the UK, the Netherlands, France and the USA had tried to approach Japanese land with armed ships. The Japanese nation was absolutely astonished by their black ships appeared to the Ocean. For instance, one of the most well-known incidents concerned Perry's Black Ships, which came to Japan in 1853. This caused a grave concern to the Tokugawa regime regarding the stability of the country as well as their power. In these circumstance, different groups of young samurai in remote domains located far from the Tokugawa central regime formed a movement that aimed to see the world outside Japan and wanted to reform Japanese society.

A group of young samurai in Hagi castle town were responsible for the movement along with the Tosa domain (Kouchi, Shikoku) and the Satsuma domain (Kagoshima, Kyushu). The enthusiastic young samurai of Hagi, concerned with the stability of Japan to do with foreign countries, were inspired greatly by one man in Hagi, Shoin Yoshida. He was educated originally at the domain's school, Meirinkan, and developed himself to be a man of intelligence of the time.

With this in mind, new systems of education for young samurai of Hagi were developed which, in fact, resulted first from the flood prevention schemes. As explained in Section 6.3.3, the network of the water courses allowed reclamation of land in the middle of the delta, the

lowest situated paddy fields, proving a large habitable area. This offered a variety of functions for the early modern Hagi; in particular, building new administrative or institutional facilities. A forerunner of new facilities was for the education for young samurai.

6.4.2 Education of younger generation

The forerunner of the new facilities was for the domain's school Meirinkan, built on newly reclaimed habitable area in the middle of the delta. In 1849, the school was removed from the original site located inside the moat, the *san-no-maru* (see Section 6.2.3), a part of the castle precinct. This was significant, as facilities were expanded for the education for young samurais. The new site covered five hectares, 15 times bigger than the previous site, containing a new complex including an enlarged military training field five times bigger than original school, which was founded in 1718 by the Fifth Lord *Mouri* (HJCC, 1978, pp. 37-39).

The old and new school of Meirinkan produced a number of educated young samurai over a century that reinforced the quality and stability of the Hagi castle town. However, around the middle of the 19th century, the movement for the reformation of the country emerged, including scholars of the new Meirinkan. As mentioned earlier, the most influential figure of Hagi, Shoin Yoshida educated in Meirinkan, established his own academy called Shoka-sonjyuku, just a short distance from the river Matsumoto, in 1857. A large number of young people, including about 90 townspeople, studied at this academy, who later became great advocates of reform for the modern Japan.

For instance, the first Prime Minister of Japan, Hirobumi Ito was a pupil of Shoin Yoshida. In fact, Hagi has produced four Prime Ministers for the early modern Government of Japan, including Ito (four times), Aritomo Yamagata (twice), Taro Katura (three times) and Giichi Tanaka (once). They were born and raised within the historic city of Hagi (*Kantei* web-site, 2015).

6.4.3 Removal of the Hagi domain

Young samurai who learned under Yoshida and in his academy practically invited the social and political reformation movement of Japan. Ironically, this led to end of the 260-year existence of the Hagi Castle Town.

In 1863, the 14th Lord of Chosyu (Hagi), Takachika Mouri moved from Hagi castle to a place called Yamaguchi, about 20 miles to the south-east, located inland across the mountains. The reason of his decision was that the location of Hagi castle, which faced to the Sea of Japan,

became one of the places most at risk to foreign attack. Although the castle provided the strongest fortification against the Tokugawa in the early 17th century as described in Section 6.2.2, taking an advantage of the sea and water network, this became a disadvantages for defending against foreign armed ships in the middle of the 19th century. On top of this, Hagi was not located in the right position for Hagi (Chosyu) domain to work with allies for the reformation of the country. They needed the right position to command the movement. As a result, most of the samurai, in particular higher ranking ones, left Hagi castle town for Yamaguchi within a very short period of time. As a result, Hagi castle and the buke-area in the town suddenly became practically empty.

The removal of Hagi domain resulted in great difficulties which the Hagi samurai and townspeople now had to face, though these had started before the actual removal of the domain. Yet, the earlier difficulties made the Hagi people into tighter communities. For instance, the works involving the building a defense system against foreign military actions, people made Hagi castle much more heavily fortified than the original. They manufactured guns and constructed batteries associated with banks at several positions in the town. While this work was being carried out, the Hagi domain decided to move. So the defensive works were stopped; instead, dismantling of the functions of the castle buildings and samurai residences began. This created tremendous changes of the castle town socially and environmentally within an extremely short period of time.

As a result, the townspeople of Hagi found themselves in the most difficult situation, besides many other incidents that had arisen, adding to the people's worries. For example, people were informed that the Hagi domain fired on foreign ships on the west coast of the territory, and the French navy landed on Japanese soil, burning out houses of the area. This made the inhabitants of Hagi very agitated. Yet, it is interesting to learn, Higuchi (2007, pp. 110-112) noted that groups of the townspeople in Hamazaki-Cho (the fishing industry community) asked the permission of the domain to build a defensive bank along the beach to prepare for a foreign attack. This became an emotional event of Hagi castle town that led most of the people, men and women of all classes including samurai families, to join the Hamazaki-Cho community's work for the completion of a 1,000-meters bank. Fortunately, foreign ships did not appear in the Sea of Japan close to Hagi Castle. The bank is still in place today.

6.4.4 *Dismantling of the function of the castle and town*

As the Meiji restoration was completed, the Tokugawa *Bakufu* was terminated as well as the Hagi domain. A new Japanese government was set up in Tokyo (the new name of Edo), and

the Emperor moved from Kyoto into the imperial Palace in the former Edo castle precincts. The new administration and the cabinet were formed by ex-samurai who opposed the Tokugawa shogunate regime, including Hagi domain (Miyamoto, 2012). As mentioned earlier, the first Prime Minister was Hironobu Ito, one of the pupils of Shoin Yoshida.

The Hagi Castle complex had its functions completely removed by 1874 (Hagi City, 1970: HJCC, 1978). The symbol of the town had disappeared and left the people in a state of devastation as most of the domain's samurai had moved out to Yamaguchi by that point. Yet, it was recorded that 3,500 samurai households – it is assumed that these were the lower ranks - still remained in Hagi even years after the Meiji restoration (HJCC, 1978, p. 98).

In 1871, a new centralized Meiji government system (*haihan-chiken*) was enforced by abolishing the federal domains followed by the establishment of prefectures. All feudal lords were sent to Tokyo: prefectural governors were dispatched from the new government. The privilege of the entire samurai class of the country was ended completely, and the samurai lost the titles, positions, jobs and incomes (Miyamoto, 2012: Shimizu, 2010).

As a result, Hagi found itself in the most unsettled time in its history, economically as well as socially; there was even a riot of former samurai. In, 1876, the revolt of Hagi broke out among some hundred samurai. The revolt was led by Issei Maehara who was a pupil of Shoin Yoshida at the Shoka-sonjyuku academy, and had returned to Hagi from Tokyo, having opposed the new government policies. It was not only the problem in Hagi, but also in every town and city that had samurai left, with the same situation throughout the country. The most notable revolt was the Satsuma rebellion at Kagoshima prefecture, which was led by Takamori Saigou, one of the key figures to proceed the Meiji restoration. However, their resistances against the sudden modernization of the Meiji government was defeated (Ichisaka, 2012, p. 73)

The new government took the situation seriously as the most urgent agenda to be tackled, and every office of the newly formed prefectures provided recovery measures by promoting new industries in farming, crafts, engineering and commerce. In particular, the new government made relief provisions for former samurai to facilitate regeneration, and new education which were separate from that for others, including townspeople. In the case of Hagi, the relief employed the natural produce of oranges (*natsu-mikan*), a new method of interaction between people and natural processes in Hagi. This rescued the former samurai in Hagi as well as the townspeople, sustaining their life and the town (HJCC, 1978, p. 98).

6.5 Regeneration of Hagi through the Orange Business

6.5.1 Introduction

This section shows two aspects of the interaction between people and natural processes in Hagi after the Meiji restoration. The first topic is about the successful regeneration scheme for the planting orange orchards in the historic area. It examines the process where people overcame the upheaval of the town caused by the dismantling of the functions of the castle. The second topic is about a decline in the orange business. These topics may demonstrate the process whereby the historic area where the orange orchard occupied most of the plots the former samurai premises was transformed to a scene of almost no orchards. Yet, it is interesting to examine how and why this area still represents the original castle town layout and is now recognized as one of the distinctive cultural landscapes of Hagi.

6.5.2 Planting orange orchards

The revitalization of Hagi after the Meiji restoration was achieved by the scheme of growing rare orange fruit orchard and its business. The orange species is *Citrus natsudaïdai* Hayata; its popular name is *natsu-mikan*. The lives of the former samurai were relieved through the planting a number of these orange trees on the empty sites of their residences in the central part of the former castle town. This was the area where these residences had had their functions dismantled at the time of the domain's removal, leaving the plots empty.

The orange business did not easily receive the appreciation of the townspeople at first. Yet, as the *natsu-mikan* has gained significant popularity, the orchards spread to the area even outside the delta; wherever people could plant. The orange business became successful, allowing the regeneration of Hagi socially, economically and environmentally. The orchards became one of the significant historic cultural landscapes of the city.

Historically, the orange (*natsu-mikan*) trees were said to have been planted in Hagi castle town as early as the 1830s, and a tree on the *Kodama*'s ground, a samurai premises, had fruit in 1848, although he mainly used it just for appreciation purpose of his garden. But, accidentally, his son ate the fruit, and the family found it edible and delicious; they presented the fruit to the 13th Lord Mouri (in about the 1850s). From then on, orange trees were grown at some of these samurai premises, yet were kept just for domestic use (Hagi City, 2013, p.1).

Although other industries were also considered, including sericulture, raw silk, spinning and sawing, only the planting of the *natsu-mikan* orchard and its business were found to be successful (HJCC, 1978, p. 98), while the emergence of the heavy industries had not reached

Japan by this time.

The orange fruit business was founded by a former samurai Takamasa Obara who returned to Hagi to relieve the hardship of the people, in particular those of the samurai who remained in the town after the removal of the domain. He who took the initiative to revitalize Hagi by means the orange business, having left the prefectural governorship of Kokura.

Obata saw some 200 *natsu-mikan* trees left in the ground of former premises in the *san-no-Maru* (the former astle precinct inside the outer water moat), and set up a pioneer company ‘Taikyusha’ in 1876 for the orange business by using the government bond provided to samurai. He planted orange fruit (*natsu-mikan*) trees on the empty plots in the historic centre. This successful business was not only the contribution of Obata, but also of samurai who learned about planting and growing the saplings, though they were inactive at the beginning. The townspeople, as they were aware of the popularity of the fruit, followed the samurai’s example, expanding planting areas for orange orchard (Hagi City, 2013: Shimizu, 2010).

The growing of *natsu-mikan* orchard was not as difficult to learn as rice farming, and the soil and the climate of Hagi were conducive to orange cultivation. The business grew rapidly and eventually create a century-long flourishing economy for the city (Shimizu, 2010, p.4). Hagi was transformed from a ‘consuming’ town of the feudal society into a ‘producing’ town of the early modern Japanese.

By 1887, most of the former *Buke-chi* was packed with *natsu-mikan* trees and started their shipments from the Hamazaki port to other cities in the country. It had become one of the main industries in Hagi by the turn of the 20th century, providing a huge economic boom. The orange crop reportedly developed extremely high values which was eight times bigger than an annual budget of a city in those years. In that period, oranges from Hagi could sell at quite a high cost because the fruit was not produced in any other prefectures on an industrial scale in Japan, Hagi accounted for 90% of the total orange fruit production in Yamaguchi prefecture and shipped to Hiroshima, Northern Kyusyu, Osaka, Kyoto, even to Tokyo (Shimizu, 2010, p.4: HJCC, 1978, p. 30).

The orange business had also given rise to other businesses of natural products associated with the fruit, and also transportation. For example, there was a significant production of bamboo baskets for the *natsu-mikan* shipments. As the mountains in the Hagi area produced an abundance of the best quality bamboo trees, the basket production business also supported the vitality of the city’s *natsu-mikan* industries (Figure 6-20: *natsu-mikan* loading).

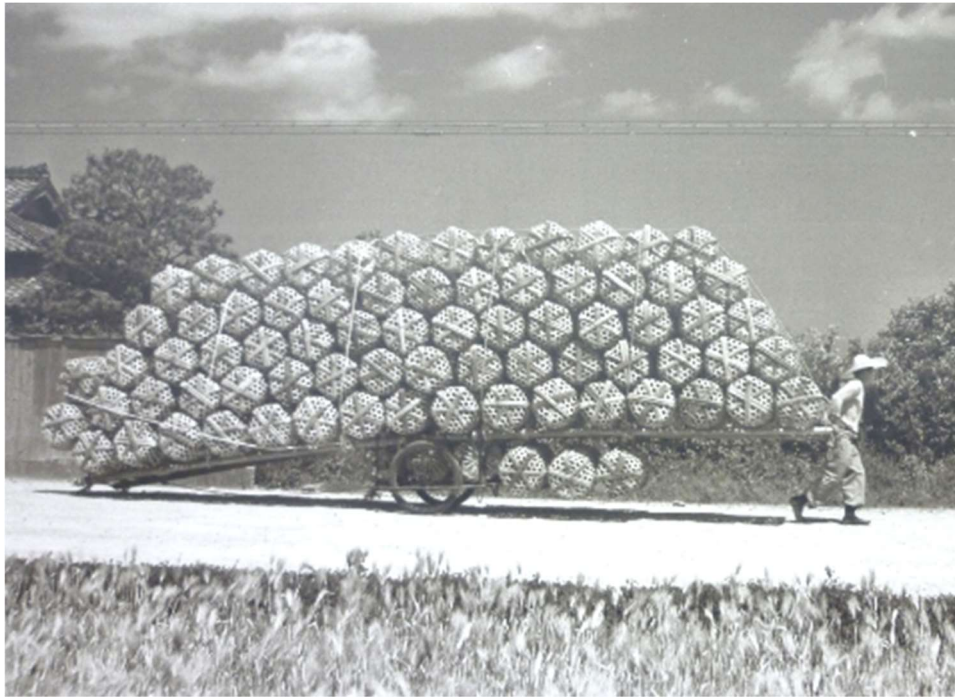


Figure 6-17: Loading *natsu-mikan* using bamboo baskets, c.1950.
(Source; Hagi City Museum)



Figure 6-18; *Natsu-mikan* plots at former
Buke-chi, enlarged part of next figure



Figure 6-19: Map of plots of *natsu-mikan* orchard in 1952
(Source: Hagi City Museum)

As a result, the people - and Hagi city in general - enjoyed a quite active and prosperous period due to the *natsu-mikan* business for more than three-quarters of a century, from the 1880s to the early 1960s.

The 1952 map of *natsu-mikan* trees in Hagi (Figures 6-18 & 6-19) shows the function of land use in the area of the historic core during this period. It is clear that almost all former premises of high-ranking samurai were occupied by the *natsu-mikan* orchards. As a result, the orange orchards have created the distinctive scenery of the historic core of Hagi as one of the most striking urban cultural landscapes among the Japanese historic cities.

The original castle town layout has been preserved nearly intact at the historic core of Hagi until today, although the orchards occupied most of the plots, they have reduced considerably. It is worth noting the reason why the original castle town layout of road and plots has been retained today; in particular, the shape and size of the plots of high-ranking samurai premises were kept nearly intact. This was closely related to the flooding prevention schemes; as mentioned earlier, the reclamation created the habitable spaces on the marshy land of the central delta, where the Meirinkan was relocated from the former *buke* area for the education of young samurai, as the forerunner of the building new facilities for the modern Hagi. It was then followed by a number of administrative and institutional buildings constructed in this area from the Meiji restoration onwards to the present day.

Most of the other castle towns in the country, today's regional capitals, portray completely different scenery to Hagi. Those cities' historic core, i.e. former *buke-chi* districts together with former castle precinct, have become regional and municipal centers, occupying the area with administrative offices, institutions and relating facilities; for instance in the Kasumigaseki in Tokyo. It could be said that Hagi has formed a unique modern urban development as a former castle town of Japan, retaining the original characteristics of the castle town layout almost intact. This uniqueness resulted from the characteristics of the delta and the interaction between people and natural processes over time.

In this respect, the growing *natsu-mikan* orchards of Hagi have demonstrated a different type of interaction between people and natural processes in this period to the castle town period, creating different form of the growth for the early modern Hagi. They have portrayed an interesting and significant method of interaction, which has created new traditions and cultures, and caused historic built environments to evolve. However, the successful orange fruit business, in the end, had a negative effect. The *natsu-mikan* business could not last for ever, this will be described in Section 6.5.3.

6.5.3 *Decline of the Hagi orange business*

It is interesting to note that the long-term orange business of Hagi resulted in delays to the development of new industries in the city, while the orange business itself has declined. This brought the city to a different but another difficult position, in particular concerning the aspects of economic revitalization and further regenerations of Hagi. It was found that the climatic condition of the Hagi area in particular years affected the orange crop a great deal, and caused the declining the orange business, in addition to dealing with business competitors.

The declining orange business emerged from the competition of the similar business and in relation to the natural processes of the area regarding the climate. It became apparent that the competitors had eventually taken over the specialty of Hagi orange business because the climatic conditions of the competitors' locations met the healthier growing requirements for the orange tree than Hagi, such as air temperature, precipitation, sunshine, and topographic and geographic conditions; for instance, soil characteristics. It is known that to obtain a constant healthy growth for a rich crop of *natsu-mikan* requires appropriately warm weather; for instance, an annual average temperature to be over 15°C and the minimum in the winter time should not be lower than -5°C (Hagi Museum, 2010b). Hagi is located along the coast of the Sea of Japan where the severe Siberian wind blows occasionally during wintertime. Snow and low temperatures are a possible feature in winter around Hagi, whereas other competitors were located in better and warmer climate zones, such as Ehime, Kumamoto and Shizuoka prefectures. The crop of these areas rapidly caught with the Hagi, producing good example *natsu-mikan*, creating a variety of products from oranges as well as cultivating other citrus products.

For instance, the period from the late 1910s to the early 1930s, Hagi suffered more severe weather than the other orange-growing areas, and experienced terrible crop damages. In 1929, the crop of *natsu-mikan* of Hagi reached 13,881 tons, while the amount of rice from the city was 14,587 tons; both amounts were seen as a normal for a year of ordinal weather. However, in 1931, extreme cold weather hit Hagi, and affected the crop so badly that the production of the orange fell to only 430 tons, significantly less than a usual year, while the rice crop was able to maintain 11,360 tons in the same year; nearly an average crop (Hagi City, 1970, p.322). This revealed that the *natsu-mikan* business had a weak point regarding nature's behavior; in particular, a temperature lower than -5°C.

There could be another reason for the decline in the Hagi *natsu-mikan* industry. One of them

may be related to the fact that the city did not investigate other types of citrus as quickly and effectively possible as other cities did, despite people already having tasted other types of oranges such as mandarin and satsuma, which are smaller in size and sweeter than those of *Natus-mikan*. It may be possible that the city and people did not maintain a similar enthusiasm for growing *natsu-mikan* that they had done 100 years earlier to compete with others, or it may just be to do with the nature of natural processes of the area.

However, *natsu-mikan* has been continuously produced in the historic area of the town, though in far lower amounts than before, contributing to the economy of the city to a certain degree until the early 1970s, when the new Japanese industries started to gain worldwide popularity. As the nation achieved regeneration after World War II, other reasons can be pointed out, such as tourism, including school trips to Hagi. As a result, the economy of the city has been sustained and visitors have begun to appreciate the significance of retaining the historic heritage as well as the cultural landscapes of the historic part of Hagi, including the characteristic scenery of the *natsu-mikan* along with the remaining earthen wall of former samurai premises, the remains of the castle and Shizuki-yama Mountain, and views from the beach at Kikuga-hama. This has generated a conservation movement in Hagi.

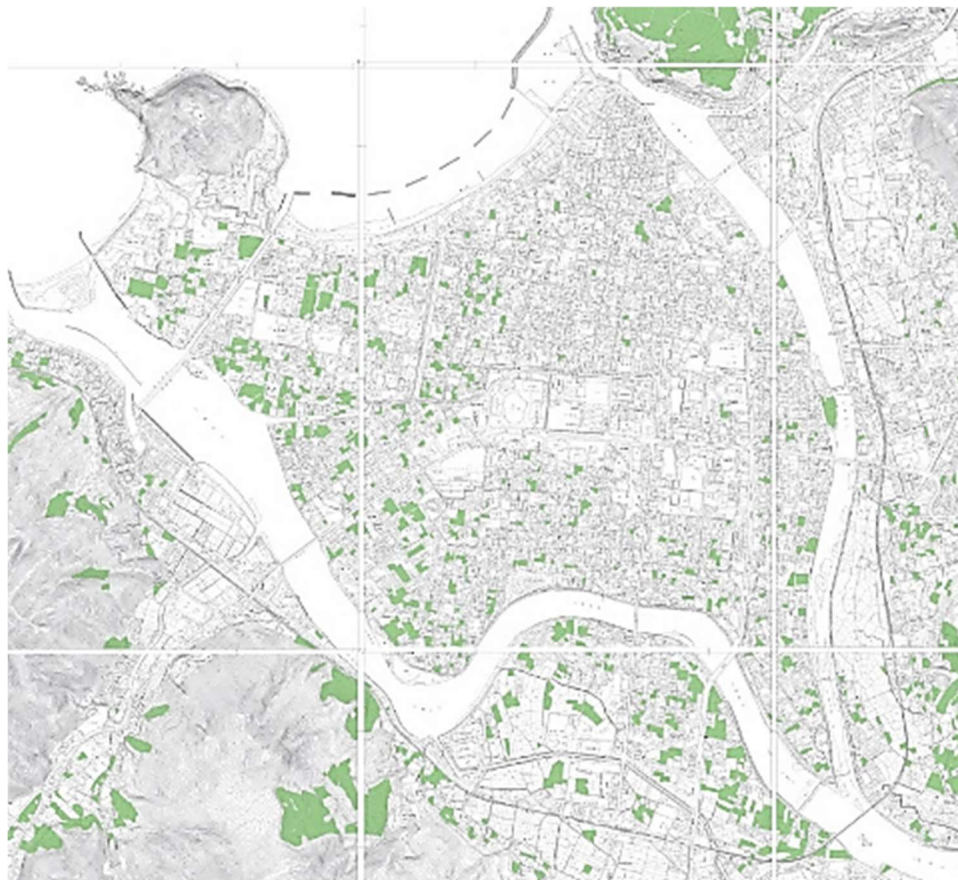


Figure 6-20: *Natsu-mikan* plots, in 2009, (Source; Hagi City Museum)

Changing culture

The map of Hagi in 2003 (Figure 6-20, the previous page) shows the recent location of the *natsu-mikan* plots. The orchards have disappeared to a huge degree, though the castle town layout has been retained.

It may be a more realistic reason of the declining of Hagi's fruits industries - though not in the case of Hagi alone, but throughout Japan - that it was closely related to great changes in the social and economic landscapes occurred after World War II. In particular, it is noticeable that the traditional culture, which was related to people's awareness and appreciation of nature or their interaction with natural processes, as explained in the previous chapters, and was embedded in the nation, has disappeared. Instead, a new culture emerged from around the time of the 1964 Tokyo Olympic Games; it was markedly noticeable that the changing lifestyles of the Japanese were influenced by American culture. It may be said that the Japanese seem to have become a rather more materially oriented nation than appreciating nature or natural processes.

One of the notable examples of such changes was the land use in historic built environments; for example, a rapidly increasing land values arising from the emergence of new industries including motor vehicles and constructions, which expanded rapidly along with the new way of life, dismissing the importance of the primary industries of Japan, such as farming and fishing. The new culture and new way of life attracted people, in Hagi as elsewhere; for instance, the orchard sites in the historic core have turned into ideal new living areas for people rather than growing the *natsu-mikan* trees, as the price of oranges has already fallen to all-time low.

6.5.4 Conclusion

Section 6.5 identified the modernization or transformation of Hagi from the end of the feudal era to the early modern age in relation to the interaction between people and natural processes. Notably, for the aspects of social and environment changes, it was apparent that the *natsu-mikan* (orange) orchards were planted on the empty sites of former samurai's plots. The scenery of orange orchards created a new distinctive identity of Hagi and enabled regeneration following the Meiji restoration, providing a time for Hagi to flourish until the mid. 20th century. However, it declined because the climatic conditions of competitors' bases were more suitable than those of Hagi to grow *natsu-mikan*, and new cultures and lifestyles arose after World War II, generating new issues of regeneration and new industries for Hagi today.

Notwithstanding, the fluctuating economic and social situation in Hagi over time, the castle town layout and the historic cultural landscapes have been retained remarkably well, though there have been positives and negatives found, this will be discussed in the next chapter.

6. 6 Retention of the Castle Town Characteristics

6.6.1 *Introduction*

Section 6.5 described the reasons of the retention of the castle town characteristics and layout and the emergence of a new cultural landscape, the orange orchard, in the historic core of Hagi. This resulted from the reclamation of the marshy land in the middle of the delta as explained. There is another distinctive cause of the retentions for these environment characteristics, which occurred in the first quarter of the 20th century. It was the later arrival of the railway in Hagi, as well as the position of the truck and the stations in three particular places. Consequently, this has preserved the historic area nearly intact, as well as the characteristic cultural landscapes such as the network of watercourses.

This section examines the process of the introduction of the rail ways in Japan and in Hagi, in particular, and some significant context of the railway provisions as well as effect and consequences to the historic city.

6.6.2 *Railways in Hagi*

At the beginning of the Meiji government, they recognized that modern science and technologies needed to be learned from the advanced countries such as the UK and Germany. Among them, one of the most urgent and important tools to modernize Japan was to establish a network of railways in the country. In fact, surprisingly, this was started soon after the Meiji restoration. The first railway line was completed in October 1872 only four years after the restoration, between Shinbashi in Tokyo and Yokohama for 27 kilometers, with nine carriages and a maximum speed about 35 kilometres per hour (Japan National Railways, 1997: Hagi Museum, 2010a).

The skills and knowledge concerned with building the railways in Japan were quickly learned and this allowed Japan to enter into the modern age. All sort of associated works, including modern science, engineering and financial arrangements as well as practical managements were needed, as the scheme was entirely new to the Japanese. Nevertheless, it was achieved remarkably effectively, helped by UK specialists in the engineering fields and the aspects of finance and operation (ibid).

It is perhaps very interesting to learn that so called the father of the Japanese railway

development was a Hagi man, Masaru Inoue, one of the young former samurai known as the Chosyu five. He had spent five years in the UK from 1863, one of five young former samurai from Hagi who learned about modern science and engineering systems from the UK. Although Hirobumi Ito and Kaoru Inoue had to returned to Japan within a year because the occurrence of the Meiji restoration, the other three samurais from Hagi, Kinnosuke Endo, Youzou Yamao and Masaru Inoue stayed for five years in the UK. They have provided the greatest contributions to the reformations and development of early modern Japanese systems, including the mint, shipbuilding, railways and higher engineering education (Dousako, 2011).

As a matter of the interest, it may be noted briefly that Masaru Inoue stayed for some time in Newcastle in 1867, at least in the December of that year (Dosako, 2010, p. 48). He was studying British industries in London, particularly railways and mines. Masaru may have been a witness to the most active development period of Newcastle, including the building of a network of railways; the High Level Bridge had already been completed almost 20 years previously in 1849, mentioned in the Section 4.2.1.

The first railways in the Tokyo and Yokohama owed the success to Masaru Inoue, yet he was only 29 years of age, but was a rare person to gain knowledge of railway engineering and other associated knowledge, learned directly from advanced British professionals. He then built the Japanese main line, Tokaidou, from Tokyo to Kobe in 1889, notably without any foreign help (HJCC, 1987, p. 104; Hagi Museum, 2010, pp. 1-3). It may be realized that building railways was not easy in Japan, as the country contains little flat land but many mountains and rivers. In particular, lines running along the coasts and the building of tunnels and bridges were inevitable; this was one of the most significant achievements of Japan, representing another interaction between people and natural processes. As a result, these works have helped to develop other industries in Japan including heavy industries planted along these railways. Masaru Inoue was devoted to the establishment of the national railways throughout his life. He died in London on the way to visiting European railway developments in 1910, at the age of 67. Unfortunately, he was not able to see the railways arrive in Hagi (Hagi Museum, 2010).

In 1901, the railways arrived in Yamaguchi prefecture; the Sanyou line was completed from Kobe along the southern coast of Seto-naikai, the Inland Sea, where important heavy industries were developing, including shipyards, in Hiroshima prefecture. However, until the Sanin-line was built along the Sea of Japan coast, the modernization of the areas it would serve, including Hagi, was delayed. The people of Hagi had to wait until April 1925 for the arrival of the railways. The Sanin line via Hagi was connected with the Sanyou line at

Shimonseki in 1933 (Japan National Railways, 1997, HJCC, 1979).

The most important and significant aspects for the retention of the castle town layout and the cultural landscapes was that the railways for Hagi were laid out, not inside the delta, but just outside, running round the watercourses of the Matsumoto and Hashimoto rivers, as may be seen in Figure 6-20. The railways did not destroy the street pattern or the traditional wooden town houses in the historic core; whereas in many cases, building the railways changed most of the historic townscapes and landscapes in Japan (Simizu, 2010).

There are three stations in the City, unusual for a city of this size; it said to be for the convenience of villagers nearby. People could access the historic core within 10-15 minutes on foot from any of these stations and enjoy looking at the significant landscapes of the area. Yet, the railways had some negative effects on Hagi as well. For example, the Hamazaki fishing communities had enjoyed their position as the important port of Hagi until the arrival of the railways; they lost their advantage and did not make progress in modernizing the area (HJCC, 1978, pp. 104-105). Instead, the environment as well as the traditional family fishing industries of the Hamazaki remained, though they have been experiencing a recession.

The main Hagi station is a wooden building in the British style of high-pitched tile roof with dormer windows. It has been restored recently and used as the station as well as for the permanent exhibition hall for the works of Masaru Inoue.

6.7 Analysis of the Findings

6.7.1 Introduction

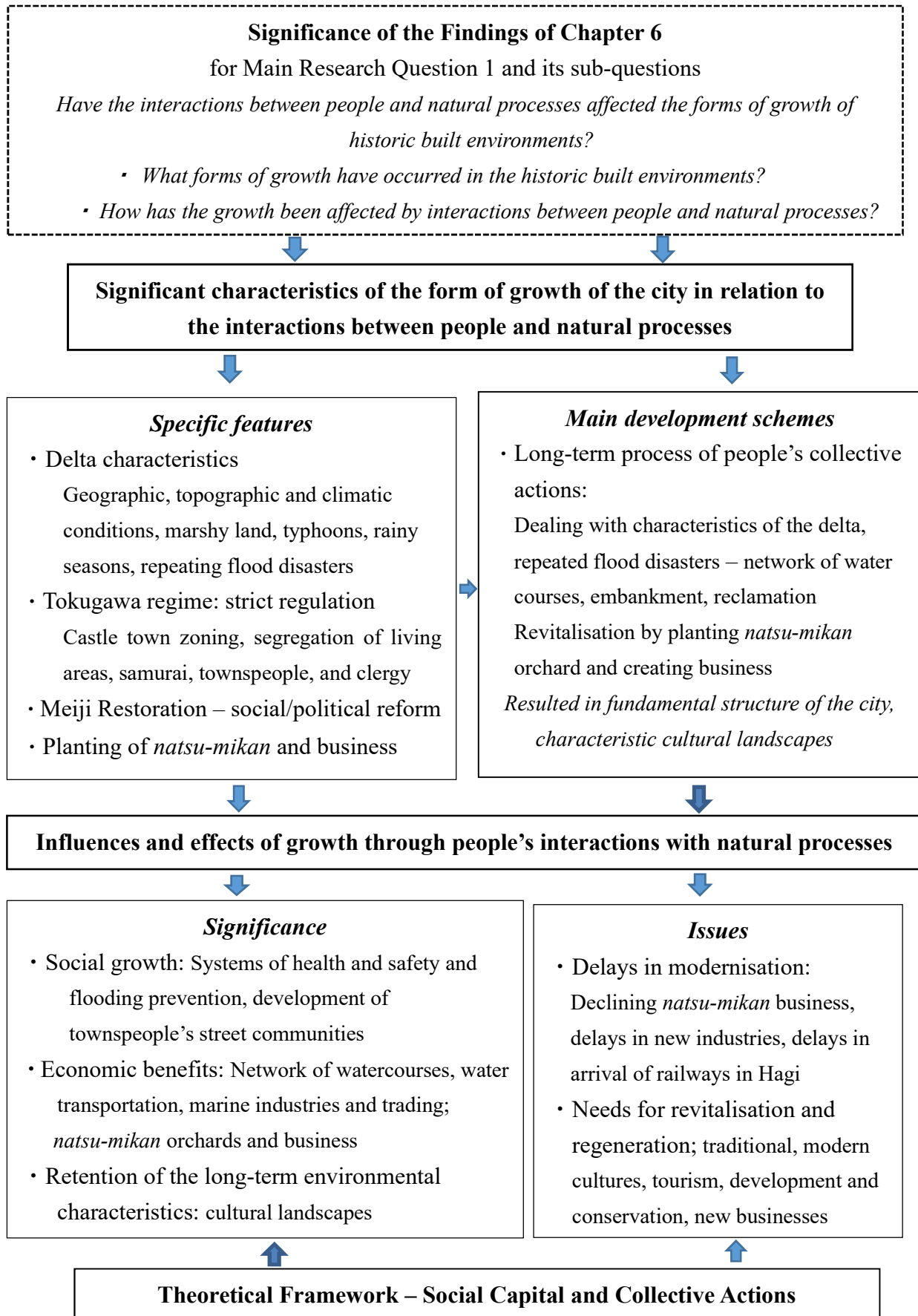
This section shows the analysis of the findings of this chapter in response to Main Research Question 1 and Sub-Research Questions 1 (shown in Section 6.1).

The analysis of the findings was made by examining the distinctive historic context of the natural processes of the city chronologically with the forms of growth in relation to people's collective actions; in particular, concerning the following three aspects.

- (1) Specific features of the forms of growth: (a) geographic, topographic and climatic characteristics of the delta; (b) constraints of the Tokugawa central regime; (c) the Meiji restoration; and (d) the *natsu-mikan* orchard and its business.
- (2) Significant outcomes from the people's collective actions: (a) social growth; (b) economic benefits; and (c) environmental characteristics.
- (3) Issues of the modern Hagi: (a) delay of modernisation; and (b) need for revitalisation.

The summary of the significance of the findings is shown on Table 6-1 on the next page.

Table 6-1: Significance of the findings



6.7.2 *Specific features of the formation of growth*

It has been identified that people's interactions with the natural processes of the place where Hagi was developed affected the forms of growth of the city a great deal throughout this study period. The most significant features of the formation of growth were the following four items:

- (a) Characteristics of the delta where Hagi was founded at the beginning of the 17th century, including geographic, topographic and climatic conditions;
- (b) Political and social circumstances that governed Hagi castle town under the central Tokugawa regime over 250 years, which made a characteristic form of the castle town layout;
- (c) Influence of the Meiji restoration that occurred in 1868 – one of the most important political and social reforms of Japanese history – which created the modern era of Japan, including significant environmental changes of Hagi, in particular by;
- (d) Planting of the *natsu-mikan* orchard and its business.

In brief, it was identified that people's interactions with the natural processes of the place in relation to the significant features above created (a) the fundamental structure of the city; (b) a revitalisation of the modern Hagi; and (c) the establishment of the characteristic cultural landscapes of the city.

Creation of the fundamental structure of the city

During the period under study, there were two significant schemes of Hagi that created the forms of growth of the city in relation to interactions. The first was the flood prevention scheme in the castle town period over 250 years (Section 6.3), and the second was the scheme for *natsu-mikan* orchards and their business after the Meiji restoration in 1868 (Section 6.5). These schemes can be seen as a long-term process of people's collective actions regarding local environmental concerns, creating the development, consolidation and revitalisation of the city.

The first scheme demonstrated the long-term process of the people's collective actions to deal with repeating flood disasters in the delta, where townspeople and samurai worked together continuously to develop a system of flood prevention and social development (Section 6.3.2). The system involved diverse civil engineering works with collaboration between the townspeople's street communities and the samurai administration, as Section 6.3 explained. It minimised flooding incidents and increased the health and security of the town; at the same

time, the habitable areas in the delta increased. The scheme included a water control system together with the building of embankments and reclamation of marshy land, as well as the townspeople's street communities system (this will be discussed in Section 6.7.3). As a result, the long-term collective actions for the prevention of flooding created the fundamental physical and social structures of the city, contributing to the sustainability of the place.

The water control system was designed to regulate storm-water flow and the tide of the Sea of Japan via the network of watercourses and the new canal and *Aiba-gawa* that were built, connecting with the rivers Hashimoto and Matsumoto, and the Sea of Japan (Section 6.3.3). The reclamation of marshy land created vast habitable areas and, along with the embankment, served particularly well for low-ranking samurai houses. Notably, a substantial habitable area that was gained in the central part of the delta offered sites for new public or institutional facilities, such as the Hagi domain's school (Section 6.4).

The second scheme was commenced soon after the Meiji restoration, as Section 6.4.4 described. Hagi suffered one of its most difficult times in history when the restoration movement advanced into the modern era of Japan in the middle of the 19th century. The events of the removal of the Hagi domain and the termination of the Tokugawa central regime led to the end of the samurai's privilege, which caused social and economic upheavals in Hagi. It was the *natsu-mikan* orchards and their business that were a response to such difficult situations; many citizens joined the former samurai's work to grow the *natsu-mikan* orchards, spreading to the city wherever possible. This initiated the revitalisation and regeneration of the city.

As regards the form of growth of Hagi, the *natsu-mikan* orchard business had two significant influences on growth. The first was the creation of unique landscapes in the former castle precincts, and the second was the formation of the fundamental physical structure of modern Hagi in the middle of the delta.

Generally, in most of the castle towns in Japan after the Meiji restoration, the former castle precincts and higher-ranking samurai sites served as administrative or public facilities for the early modern Japanese society, due to the availability of these sites (Nishikawa, 1972). However, Hagi was unique in terms of the position of administrative facilities in the city. These public facilities were built on the newly gained habitable areas in the central part of the delta (Section 6.4.1). The former castle precinct and high-ranking samurai sites were occupied instead by the *natsu-mikan* orchards, creating one of the most unusual sceneries of castle towns in the country (Hagi Museum, 2016). In other words, the removal of the Hagi domain

left these areas empty, creating an opportunity to grow *natsu-mikan* orchards, which encouraged the development of the building of public facilities in the newly acquired areas in the middle of the delta.

Thus, the two main schemes, i.e. (a) flood prevention during the castle town period and (b) the *natsu-mikan* business after the restoration resulted in the formation of the growth of Hagi. In other words, the long-term process of people's interactions with the natural processes of the place created the fundamental structure of the city. The people's continuous collective actions in dealing with the specific features of Hagi may be seen as one of the early examples of community participation in urban land management in Japan.

6.7.3 *Significant outcomes from the people's collective actions*

Social growth

Another significant development in the long-term process of people's collective actions in dealing with specific features was the social growth of the city. The flood prevention scheme instigated the integration of the townspeople's street communities, which developed the system of prevention drills and actual works, collaborating with the samurai administration. As Section 6.3.2 described, the system later extended to the security and fire-fighting of the castle town, then developed further towards a modern system of health and safety (Higuch, 1997; Hagi City 1970).

In this regard, the long-term progression of the interactions between people and the natural processes in Hagi during the study period may be interpreted by the concepts of social capital and collective action. This is because people of different positions and jobs aimed for the same targets to deal with natural disasters and initiate the revitalisation of the city. They worked together collectively along with shared interests, aims and rules, though under the political and social circumstances of the time.

Another aspect of social growth can be seen with educational development in Hagi. It was indebted to the sites newly acquired by the reclamation of marshy land in the central part of the delta. The building of enlarged facilities for the domain's school that was offered by the land reclamation led to the development of a system of education during the transitional period from the feudal to the modern, not only for young samurais, but also townspeople's families (HJCC, 1978). For instance, as shown in Section 6.4.2, young generations of people in Hagi took part in the Meiji restoration movement, and Hagi eventually produced the first prime minister of Japan.

Economic benefits

In Hagi, people's continuous collective actions regarding the interactions with the natural processes of the area brought economic benefits for the citizens as well as the city. The first was the flood prevention scheme, and the second, that of the *natsu-mikan* orchards. This can be identified by the concept of Vanni (2001), who states that collective actions may show a benefit of ecological scale as well as the scale and scope of economics.

Although the water network was built to deal with flood disasters, it actually functioned in many other ways, creating significant benefits that contributed to the rapid economic growth and sustainability of Hagi. As Section 6.3.3 showed, these diverse functions started with boat transportation for people and goods in the delta, creating new dynamics of the city, including domestic industries such as indigo dyeing; people's daily use, such as washing vegetables; and irrigation. Most significantly, it developed marine industries and trades by connecting the city to other places in the country from Hamazaki port to the river Hashimoto, the river Matsumoto and the Sea of Japan.

Another notable economic benefit was achieved by the scheme of the *natsu-mikan* orchards and its business, as explained earlier, which caused revitalisation and regeneration, and led to economic stability for Hagi. The *natsu-mikan* business invited other industries: for instance, marine transportation and trades, carrying a large number of *natsu-mikan* in bamboo baskets, which were produced from the rich bamboo forest close to the delta (section 6.5).

It can be said that the people of Hagi created the stable and healthy, as well as economically lively society by themselves through the natural produce that resulted from the people's collective actions regarding the interactions with the natural processes of the place. As a result, this has created a new local culture with the plantation of the *natsu-mikan* orchards and their business, in addition to the traditional culture of catching fish. However, this traditional culture would soon face another difficulty in relation to the modernisation of the city; this will be analysed in Section 6.7.4.

Environmental characteristics

As Sections 6.5 and 6.6 showed, it has been identified that the city of Hagi was represented by the significant historic cultural landscapes in the delta (at least until the early 1960s) resulting from the long-term process of people's collective actions to deal with specific features (described in Section 6.7.2).

The examination of Hagi in the context of natural processes identified the recognition that cultural landscapes are seen as the result of the interactions between people and natural processes, as Section 2.2.4 showed. Roe and Taylor (2014) point out that in addition to the layers of activity in the past that built up the present-day landscapes, the cultural landscapes are seen as living, reflecting the range of the relationship between humans and natural cycles.

The cultural landscapes of the distinctive environmental characteristics of Hagi include the form of the delta itself – as if the flat land is floating on the water – the network of watercourses and the unique scenery of the historic centre with the *natsu-mikan* orchards. In addition, the environmental characteristics of the delta were enhanced by the positions of the railway track and the three railway stations in Hagi outside the delta; the track runs outside the two main rivers (Matumoto and Hashimoto). As a result, the environmental characteristics have been preserved nearly intact, including the form of the delta together with the *natsu-mikan* orchards, and the street pattern of the castle town in the delta (Section 6.6).

6.7.4 Issues of the modern Hagi

Delays in modernisation

The issues that Hagi faced in the early modern period was due to the delay in modernisation; in particular, the development of new industries. As described earlier, the successful *natsu-mikan* business led to the fortune and stability of Hagi for a long time, but as this was the dominant business, Hagi faced new difficulties, not catching up with new industries, while other Japanese cities and towns progressed.

As Sections 6.5.3 and 6.6.2 described, there were two main causes for the delay. On the one hand, competitors in the *natsu-mikan* business in other parts of Japan grew new types of citrus fruits, using the advantages of better growing weather conditions for such fruits than Hagi. The competitors rapidly gained popularity for the new type of citrus they produced, while Hagi somehow missed the opportunity to create new business other than the *natsu-mikan*. On the other hand, there were delays to the arrival of the railway in Hagi, causing consequent hindrances to the modernisation movement, while many other castle towns developed new industries – taking advantage of the railways, which were introduced much earlier than in Hagi – such as steel production and shipbuilding, for instance in Hiroshima city (Japan National Railways, 1997; Hagi Museum, 2010a).

Nonetheless, as described in Section 6.7.3, the delay to the arrival of the railway in Hagi

created environmental value, because the track was positioned outside the delta, preserving the significant historic features in the delta nearly intact, including the cultural landscapes. Consequently, this has caused the emergence of tourism of the city, though Hagi needed to be revitalised again.

Need for another revitalisation

It was identified that Hagi suffered another difficult period due to the decline of the *natsu-mikan* business, which fell to an all-time low before World War II. In addition, during the delays to modernisation, a new culture emerged from the early 1960s onwards, such as the changing lifestyles of the Japanese; people have become more materialistic in their lifestyle along with the development of the motor vehicle business. This has affected the traditional Japanese lifestyle, including the daily interactions or connections with natural processes.

Thus, the city faced two new issues, as may be seen in other historic cities in Japan; (a) the relationship between the development or modernisation and the conservation of historic areas, and (b) the revitalisation and regeneration of the city as a whole. In Hagi, the tourism industry has grown, in particular with school trips in 1960s and 1970s, due to the significance of the historic heritage and its context, including the long-term existing environmental characteristics, and remaining castle town scenery with the *natsu-mikan* orchard. However, the tourism industry alone has not been large enough to sustain the city economically since tourism became a popular business throughout Japan. At the same time, changes to the people's lifestyle and environmental characteristics have been under way; Hagi's current situation needs to be studied in relation to the interaction between people and natural processes. This will be examined fully in Chapter 7.

6.8 Conclusion

The investigations of this chapter have responded to Main Research Question 1 and Sub-Research Question 1. It has identified that the interactions between people and natural processes have affected the forms of growth of Hagi a great deal. From the foundation of Hagi castle town in the early 17th century, the people's interactions with the natural processes of the area affected growth, creating the distinctive forms of the fundamental structure of the city physically as well as socially. This resulted from the people's long-term collective efforts to establish a scheme to prevent the repeated flood disasters. It involved the collaboration of the townspeople's street communities and the samurai administration, including civil engineering projects, such as the network of watercourses, and reclamations of marshy land, which

generated social growth.

From the Meiji restoration onwards, the scheme of the *natsu-mikan* orchards and their business generated a revitalisation of the city, responding to the upheaval that occurred due to the ending of the functions of the castle. The scheme led to the stability of the city, providing economic benefits to the people as well as the city. At the same time, the scheme created the unique cultural landscape of the orchards in the historic core, as well as the development of public facilities in the newly acquired site in the middle of the delta.

In respect of the theoretical framework of this research (social capital and collective action), in the period of Hagi castle town as part of the feudal society of Japan, the concept of social capital and collective actions cannot be seen as the same as in the present day. However, the collaboration between the townspeople's street communities and the samurai administration may be seen as a norm of social capital and collective action characteristics. This is because the people of Hagi shared concerns and interests, aimed at local environmental issues, implementing diverse collective actions continuously while keeping to the rules of the time.

The investigation has identified that people's collective actions can be seen as an early example of community participation in urban land management. The significance and the importance of the people's collective actions may be interpreted the evidence through the theoretical framework of this research. The people's long-term interactions with natural processes in the case of Hagi during the period of study are seen as socio-ecological interactions. Such interactions have contributed social, environmental and economic values. This will be further examined in detail in Chapter 7, the findings and analysis of the present-day field survey in Hagi.

Chapter 7:

Case Study – Findings and Analysis of Field Survey in Hagi, Japan

Chapter 7: Case Study – Findings and Analysis of Field Survey in Hagi, Japan

7.1 Introduction

This chapter shows the findings and analysis of the field survey in Hagi in relation to the interactions between people and natural processes today, following Chapter 6 about the context of natural processes from historic perspective of Hagi. It has been identified that people's continuous interactions with natural processes have affected the form of growth of the city a great deal, creating social development and significant environmental characteristics, forming the basic structure of Hagi. The examination of this chapter intends to respond to Main Research Question 2 and Sub-Research Question 2, as follows.

Main Research Question 2

Using the example of Hagi, can people's connections/interactions with natural processes be socially and environmentally beneficial?

Sub-Research Questions 2

- (a) Have people worked to protect the long-term existing environmental characteristics of the place where they live?
- (b) How do contemporary citizens understand and evaluate their interactions with natural processes?
- (c) What evidence is there to indicate that the long-term interactions of people with natural processes have a beneficial impact?

7.1.1 Key themes and objectives

As Section 6.1 described, Hagi is recognized as one of the most important and characteristic historic cities in Japan, because diverse elements of heritages have been significantly retained. In particular, for the last 20 years, the city hall, together with NPO Hagi Eco-Museum (Nishiyama and Murakami, 2010; NPO Hagi Eco-Museum, 2015) has provided a variety of conservation schemes for the historic heritage of the city, including the long-term existence of environmental characteristics. As explained in Section 6.7, these characteristics have resulted from the continuous collective actions of people in dealing with the changes in natural processes of the delta over time.

Today, a number of volunteer groups of residents are involved in or participate in the conservation programs implementing diverse collective actions for the protection and

enhancement of the significant historic features, including the long-term existing environmental characteristics. Thus, it is important to examine the way in which these volunteer groups have been involved in or precipitated in local environment concerns. The examination will look at, in particular, the following key themes and objectives, which emerged from the analysis of data obtained in the field survey.

Key themes

- (1) Residents' awareness of local environmental concerns
- (2) Appreciation of historic contexts in residents' activities
- (3) Values of people's continuous collective actions
- (4) Issues of revitalization and regeneration of Hagi

Objectives

- (1) To examine how the people/groups of people of Hagi have participated in or been involved in local environmental concerns in recent years.
- (2) To scrutinise to what extent their actions/collective actions have contributed to the society and environment of Hagi.
- (3) To find out why and how they are involved in local environmental concerns.

7.1.2 Structure of the chapter

The chapter consists of the following seven sections to examine the outcomes of the field survey.

The first section describes the involvement of different volunteer groups in the protection and enhancement of environmental characteristics in Hagi, including their objectives, significance and contributions to the society and environment of the city.

The second section examines the outcomes of secondary sources of three related research studies undertaken in Hagi in recent years in relation to local environmental concerns. It scrutinizes, in particular, the outcomes of survey via questionnaires, open-ended comments and face-to-face interviews. These surveys were intended to develop an understanding of the characteristics and issues of Hagi at the time of this research was carried out.

The third to fifth sections show the findings and analysis from the field survey of Hagi. The data of these sections includes the researcher's participation in collective actions, the questionnaire survey and interviews with individuals and groups, carried out by the researcher (the methods of data collection and data analysis were shown in Section 3.4.2 and 3.4.3

respectively).

The third section portrays the positives and negatives of the questionnaire respondents' views and opinions. The fourth section scrutinizes the reasons and causes of the interviewees' views and opinions. The fifth section examines an emerging movement for the regeneration of Hagi; remaking traditional arts and crafts work, and collaborative opportunities of pupils and senior professionals.

The sixth section shows the analysis of the key themes from the findings of the field survey in response to the research question 2 and its sub-questions.

The final section is the conclusion of this chapter.

7.2 People's Participation/Involvement in Local Environmental Concerns

7.2.1 Introduction

This section shows the involvement and participation of different volunteer groups of Hagi in the protection and enhancement of local environmental concerns, including the long-term existence of environmental characteristics. A large number of volunteer residents' groups have been involved in a variety of environmental activities, implementing diverse collective actions. In this section, five types of participation are identified. It examines differences of the types, objectives, significance and the contributions to society as well as the environment of the city.

Table 7-1 shows a summary about the characteristics, scale and beneficiaries of different types of volunteer groups and outcomes of their collective actions.

In Hagi, there are 104 volunteer groups or organizations of different interests, registered in the civic collective action center (Civic Center 2015). Among them, 18 volunteer groups are acting for the environmental protections, and 47 groups are identified working for the revitalization of the city. In addition, a number of individual environmental volunteer groups are found in the survey that are not registered with the action center. These groups have played an important role in the protection, enhancement and beautification of the local environmental characteristics. They, and their collective actions, have produced a great deal of materials for this study.

The main sources relating to these groups and their collective action groups are based on related literatures, reports, archives and websites of Hagi Museum, NPO Hagi Eco-Museum and city hall, and papers received from volunteer groups and interviewees during the survey.

Table 7-1: Characteristics of volunteers' collective actions

Type Name & Objective	Characteristics	Scale & Beneficiaries
<p>Type 1: People's involvement in city policy</p> <p><i>Combined Community group Meeting 'Citizen Conference' (CCGM)</i></p> <p>Influence of citizens to the spending of the relevant budget</p>	<p>Evolution of the different groups' activities over the past ten years to reflect the need for the society.</p> <p>Recent years, the priority is given to the social and the traditional cultural aspects of Hagi from tourism.</p>	<p>A positive influence on the city governance;</p> <p>Contribution to the revitalization of Hagi, including the improvement of the city life for the majority of residents;</p> <p>Creating social, economic and environmental benefits:</p> <p>Growing interests in people's interaction with natural processes.</p> <p>Promoting tourism</p>
<p>Type 2: Community participation with the institutions for the protection of local environment</p> <p><i>Protecting Water and Life in Hagi, Fukue</i></p> <p>The environmental protection and the ecology of land use, including the complete abandonment of the scheme of industrial waste final treatment plant</p>	<p>A grand scale of collaboration;</p> <p>The most effective continuous fulfillment of diverse activities and collective actions of people;</p> <p>Generating the powerful movement to prevent the scheme;</p> <p>Continuous progress even after the scrap of the scheme concerned with the ecology of land use.</p>	<p>Effective continuous works;</p> <p>Complete abandonment of the scheme;</p> <p>Residents participation in urban land managements or local environmental issues;</p> <p>People's awareness of the ecology of land use;</p> <p>Value for the city as a whole;</p> <p>Social and environmental benefits, biodiversity and the ecosystem of the city</p> <p>Contribution to social well-being, e.g. the education of school children</p>

Type 3: Neighboring communities participation in the beatification of long-existing environmental characteristics 1) <i>Aiba-gawa Love Group</i> 2) <i>Kikugahama-Beach Beatification Group</i> Beatification; Enhancement of the community tie	Continuous protection of the long-term existence of environmental characteristics; Conservation of the specific cultural landscapes;	Importance of the residents' awareness of the historic contexts; Creation and enhancement of local cultures and traditions; Community ties; Environmental protection; Promotion of tourism; Neighboring community enhancement
Type 4: Residents participation in the city clean-up campaign 1) <i>Hagi Beatification Scheme</i> Clean-up streets – a year round work schedule 2) <i>One-day-cleaning for Rivers, Canals and Beaches</i> Clean up work of one whole day 3) <i>Residents environmental protection groups</i> Environmental protection	Scheduled collaboration work between residents and city hall; Influence on people's awareness of keeping the local environmental condition. Operating independently from 1) & 2), some were started before the CCGM	Residents involvement with city hall; An opportunity of a large number of residents' socio-ecological interaction with natural processes; Value for the city as a whole; Created as a result of the CCGM; Social, economic and environmental benefits
Type 5: Individual environmental protection groups 1) <i>Hagi Castle Conservation Group</i> Protection of the precinct 2) <i>Hagi Open Gardens</i> Promotion of tourism	Declined in numbers due to aging concerns, and a lack of financial support. Popular events among residents.	Small groups of individuals, but contributing the promotion of tourism, while protecting and enhancing the historic local environments An opportunity of social interaction.

7.2.2 *Type 1: People's involvement in city policy; Combined Community Group Meeting (CCGM) 'Citizen Conference'*

Type 1 is an interesting group involving in city policy, called the combined community group meeting (CCGM) of the Citizen Conference. It was set up in September 2006 (Hagi City, 2014), as a system of residents' involvement in city policy to influence the spending of the budget. The CCGM have contributed many aspects to the revitalization of Hagi, as they have implemented a variety of collective actions, such as a series of meetings, workshops and visits to various places, including the assessment of other cities' concerns.

It is a significant that a number of different communities get together to form a group that meets to participate in city policy. It is interesting to study their values, in particular in relation to the theoretical framework for the research, as the CCGM forms a network of individuals and different community groups working together along with the common rules and goals.

The CCGM has consisted of several groups. At the beginning, the total 117 members in eight sections were formed, including groups for education, information, tourism, industry, environment, welfare, globalization and life (Hagi City, 2014). It could be said that the GCCM has represented residents' concerns and interests to the governance of the city. Until 2011, they provided proposals and suggestions annually and made presentations to the city hall; since then, they have only presented reports. The relevant departments of the city hall replied to each proposal and made suggestions, demonstrating plans and actions wherever possible. As a result, a number of proposals have been taken into the consideration. Also, collective actions of the residents have taken place, implementing the outcomes of the CCGM meetings, including the protection and beautification of the environments of the city.

The CCGM has evolved over the past ten years according to the needs for the society. Although it has become a smaller in terms of the number of members and section, it has combined the relevant groups of the earlier period together into four sections; (1) welfare/education, (2) agriculture/forestry/fisheries, (3) education/culture/sports and (4) bamboo/flower arts. This modification can be seen as a result of the activities of the CCGM that have had a positive influence on the city governance and the changing needs of the citizens. For instance, the tourism section was closed in 2012, and now, the priority is given to the social and the traditional cultural aspects (Hagi City, 2014). For example, the theme of the 2012 CCGM was 'preventing depopulation and helping the revitalization of the city'. It may be said that this progress of the CCGM shows one of the ways in which social capital

strengthens over time (Ostrom and Ahn, 2003).

In respect of social well-being, the CCGM members have been acting on Children's education concerns in connection with children's interaction with natural processes. For instance since 2013, the welfare/education group has arranged for children of primary schools in the city to have agricultural experience such as rice planting (Hagi City, 2014). It has offered the opportunity for pupils to learn the importance of the work of farmers to produce the staple diet of Japan by making the direct contact with the land and natural processes. Another interesting movement can be seen in newly established groups for arts and crafts with natural materials such as bamboo and flowers. They seem to have taken advantage of the richness in nature or the environmental characteristics of Hagi to revitalize the daily life.

7.2.3 *Type 2: Community collaboration with institutions for the protection of the local environment “Protecting Water and Life, in Hagi, Fukue”*

This is the largest environmental group in Hagi. It represents significant works of community collaboration with institutions in relation to land use in the city. The group called ‘Protecting Water and Life, in Hagi, Fukue’, and their works may be recognized as one of the most effective continuous collective actions in the area in recent years, concerned with the environmental protection and the ecology of land use in historic cities in Japan. This organization stated its aim of preventing a scheme of Yamaguchi Prefecture that was to build an industrial waste final treatment plant on the hill at ‘Hagadai’ at Fukue near the Hagi historic area. The organization achieved a successful result after a variety of collective actions were implemented over the last seven years in particular. The organization achieved the complete abandonment of the prefecture's scheme, which was scrapped officially in December 2014 (Hagi-Fukue, 2015).

This issue began in 1988, first when a scheme to build a golf course made a planning application to the village of Fukue, which later became a part of Hagi city in 2005. The plan was frozen a few years later, as the interest in new golf courses had already begun to fall in Japan. Instead, a plant scheme for industrial waste disposal was proposed to take over the land in 2004. However, a powerful environmental protection campaign immediately emerged (Hagi-Fukue, 2015).

As a result, the activities and collective actions provided by the organization in the campaign for “protecting water and life” generated the powerful movement to prevent the scheme. The following three characteristics of the organization could suggest how it achieved its positive

result along with the situation encompassing the scheme, including the fact that the issue of environmental concerns and ecology had already become one of the most important agendas in Japan.

First, it was a significant organization of the residents, collaborating with the institutional bodies of Hagi, including the city assembly, the municipal administration and many other institutions. They acted together so the movement respond to the serious public concern about the scheme (Hagi-Fukue, 2015).

The second significance feature was the diverse activity and collective actions the organization continuously carried out. It provided meetings, workshops and lectures, and conferences with other cities on similar issues. From these activities, many residents were able to acquire a general knowledge about contemporary environmental issues and become more aware of the relationship between people, culture, tradition and natural processes than before (Hagi-Fukue, 2015).

For instance, the very beginning of the campaign in 2009, a lecture by a professor from Tokyo was held in the city to an audience of over 200 people, including the members of various groups, the mayor, and councilors of the city and the Yamaguchi prefecture. It was televised by Hagi Cable TV, so that more people than the actual attendees were able to hear the lecture about the plant scheme and the consequences to the environment. The lecture led to the popular expansion of the campaign. Another notable lecture was held in December 2003 by an assistant professor from Kyusyu University with the title ‘Regional wisdom/knowledge can protect the sea, river, forest and sky of Japan’. It gave another perspective for people’s interaction with natural processes in relation to traditional regional cultures. It also provided a positive effect on the movement. In April 2014, a demonstration of approximately 200 people marched through the city streets after the fifth general meeting of the organization (Hagi-Fukue, 2015).

The third point was that the organization continued to progress even after the plant scheme was scrapped. This was because another scheme for a massive solar power generation plant had been proposed at the site. The residents expressed concerns about the construction of the foundation of solar panel supports. It is interesting to note that the organization still exists today to continue to watch over the area’s land use, with the membership of over 700 people and 27 public and private groups, including medical institutes, industries, and commerce, tourism, and environmental groups, as well as the CCGM (Hagi-Fukue, 2015).

The researcher attended the general meeting of the organization in May 2015, at which five

groups of pupils from three elementary and two junior high schools were present. Each group presented their findings of their experimental field works about their interaction with natural process, such as tree planting at Satoyama in Hagi. They demonstrated their learning about the ecology of land use and the water cycle enthusiastically. This was seen as a significant event contributing social well-being, as those children gained a basic knowledge of natural processes as well as the importance of the protection of the environment. The scale and length of the continuous collective actions of this group has generated wide-ranging influences; it may be seen as another way of strengthening of social capital.

7.2.4 Type 3: Neighboring communities' participation in the beautification of long-existing environmental characteristics.

This type of community group emerged from people's daily activities over a long period of time in relation to the beautification of the area where they live. Two significant examples are shown below, Aiba-gawa Love group and Kikugahama-Beach Beautification Group. These groups demonstrate an example of residents' continuous protection of the long-term existence of environmental characteristics; in other words a conservation of the specific cultural landscapes. Their interactions with the characteristics show (a) the importance of the residents' awareness of the historic contexts, and (b) the creation and enhancement of local cultures and traditions.

Aiba-gawa Love Group

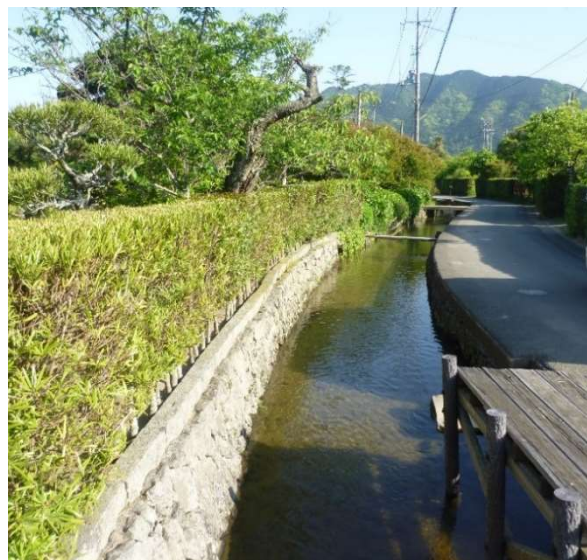
This environmental protection group was officially set up in 1988, following a previous 40-year long unofficial existence (Hagi City, 1996); the group was led by the people living along the *Aiba-gawa* watercourse. The newly established group has provided two aims. The first was for the enhancement of the neighboring communities' ties, the second was for the environmental protection of the area by keeping the *aiba-gawa* clean and beautiful.

As Section 6.3.3 described, the *aiba-gawa* was built in the mid-18th century as part of the network of watercourses by expanding a part of the irrigation stream network for the vegetable and rice fields in the middle of the delta during the castle town period. The watercourse was said to be much wider deeper with more water flowing than today. Historically, it provided many functions such as daily goods transportation, domestic washing and bathing, and industrial uses. One of the industries was indigo (“*ai*” in Japanese) plants and dying, called *aiba* (meaning a place of indigo dying). Historically, to protect the *aiba-gawa*'s banks from crumbling, walking along close to the *aiba-gawa* was prohibited. The protection and maintenance had been a part of the daily work of the neighbouring communities for centuries; it had then become a sort of custom or norm of the resident living

nearby. This work, over a long period, gave rise to the foundation of the volunteer group called the '*aiba-gawa* Love Group' (HJCC, 1978; the Hagi City, 1970)

It was recorded (ibid) that *aiba-gawa* was deteriorated after World War II by a number of new houses built quickly in the area where the watercourse run through. This changed the land use rapidly from vegetable cultivation and rice field to domestic houses and commercial buildings. It was found that drainage ran from these houses into the *aiba-gawa*, causing the stream to deteriorate rapidly. The city established rules and measures to prevent the problem reoccurring, and the *Aiba-gawa* Love Group was set up by neighboring communities and has since worked hard.

As a result, the *aiba-gawa*, together with the houses and gardens along its stream, now represents one of the most distinctive cultural landscapes in the town. The stream runs gently beside a narrow street through the historic quarter in the middle of the delta, where people live and where visitors choose to come for their enjoyment of this long-existing environmental characteristic when visiting the city. In 1984, *Aiba-gawa Love Group* was twice awarded the prizes from the Government for the environmental protection. Their current main task has been the management of the watercourse for over 1.6 miles in the heart of the historic area. The protection group was divided into 12 sections; their activities included caring for newly released carp, preventing rubbish being thrown into the stream, and cleaning the water by taking out the sludge accumulated at the bottom of the course (Figures 7-1 & 7-2). The *aiba-gawa* has received great admiration from many people in the field surveys.



Figures 7-1 & 7-2: *Aiba-gawa*, Today

Kikugahama-Beach Beautification Group

This environmental protection group for *Kikugahama-Beach* was founded in 2003. It was notable that this beautification was started by one man's volunteer work at the beach (Hamakaze-dayori, 2009). An elderly man, Mr. Akagi, had devoted his energy to cleaning up the beach for over 30 years. Many residents living nearby were witness to his work and were inspired by it. As Mr. Akagi approached 93 years age, about a dozen of the residents started to join his activities. Consequently, they established the 'Kikugahama-Beach Beautification Group' with the participation of approximately 100 residents. Their long-term collective actions has contributed to not only the beautification, but also neighboring community enhancement, as well as the promotion of tourism.

Today, the group of about 80 volunteers divide the area into three sections for the mile-long sand beach; they meet twice a month, on the first and the third Sunday, from 9:00 am throughout the year. In April, they held an AGM, and an evaluation meeting in December. Most of respondents in the field survey expressed the beautiful maintenance of Kikugahama-Beach.

7.2.5 Type 4: Residents participation in the city clean-up campaign

This type of residents' participation in clean-up campaign of the city was created as a result of the CCGM (see Section 7.2.2) proposal for the environmental improvement of the public areas in the city. They create a value for the city as a whole, contributing to social, economic and environmental benefits. Three different activities are shown below.

Hagi Beautification Scheme

It provides a year-round work schedule of the collaboration between the groups and the city; groups of people pick up litter and rubbish from roads, streets, water ways and parks. They work twice a month, usually on the second and fourth Thursdays, and the City collects garbage bags. Today, Total 104 groups and 69 individuals have registered with the Environmental Department of the city hall. This department has provided volunteers with three facilities; (1) garbage bags, (2) armbands and (3) group insurance (Hagi City, Environment, 2015).

One-day-Clearing for Rivers, Canals and Beaches

Another collaborative environmental improvement activity involving the residents and the city is called 'One Day Clearing for Rivers, Canals and Beaches'. This involves a large number of residents working for one whole day. The Environmental Department provides the

tools, vehicles and collection bags. Typically, it occurs on the second Sunday of July every year. The residents work at cleaning up streams. In the last year, a level of resident participation of about 16,000 was recorded and the work started at 6:30 am and ended by 6:00 pm (Hagi City, Environment, 2015).

Residents' environmental protection groups

Some individual volunteer groups have been acting to protect the environment. They are completely separate groups from the city hall or institutional bodies, operating independently. In fact, some of this type of volunteer groups were set up many years before the Eco-museum and the CCGM were established. This shows residents awareness of the condition of the local environment.

7.2.6 *Type 5: Individual environmental protection groups*

Although, this is a type of small volunteer groups of different sections of individuals who share their common interest, their collective actions have provided an enhancement of the local. These group may show an example of the advantages of social capital, described by Ostrom and Ahn (2003) that a few may generate positive benefits for others.

Hagi Castle Conservation Group

This volunteer group was set up in 2004 with 29 residents. It became an NPO in 2008. Their work has been aimed at protecting the environment of the Hagi castle precinct. They aspire to keep the area tidy, including weeding the high stone wall. They meet twice a month on the second and the fourth Thursday from 8:00 am for two hours. This has contributed for the appearance of the Hagi Castle as well. However, the group has been facing difficulties to sustain the work, as members have been declining in numbers as many have become too old to work outside; the paucity of new members has also not helped.

As a result, membership has reduced to 17, and consists only of men this year. They also have faced financial difficulties as the work has received a lower subsidy from city hall.

Hagi Open Gardens

Hagi Open garden is an annual event of a group of volunteers who open their private gardens to the public in Hagi's best season in May. It was started in 2002 as a promotion for tourism, organized entirely by the group without any subsidy from others as a result of the CCGM (Figures 7-3 & 7-4). One of the organizers expressed his view that the event has also become a popular event among the residents. The event is held for about ten days in May within the

historic area of Hagi (Hagi Open Garden 2015).



Figures 7-3 & 7-4: Open gardens

The researcher has made visits to several gardens during the case study in May 2015; a total of 26 garden owners participated in the open gardens in that year. It was seen that the event was one of the important activities for the tourists and the residents of Hagi to rise an opportunity of social interaction as well as the interaction with natural processes. Some of the open gardens provided events of ocarina gig and tea ceremony.

7.2.7 Conclusion

It has been identified that people and groups of people have become involved in or participated in local environmental concerns. Their collective actions are undertaken for the protection, enhancement and beautification of local environmental significance and the long-existing environmental characteristics of Hagi. People's involvement or participation in environmental concerns can be recognised as the significant achievement, contributing many aspects, including social well-being, revitalization, biodiversity and the ecosystem of Hagi. For instance, 'People's involvement in the city city; CCGM 'Citizen Conference' (Section 7.2.2), and the community's collaboration with institutions for 'Protecting Water and Life, in Hagi, Fukue' (Section 7.2.3).

In particular, the people's continuous collective actions may be seen as a socio-ecological interaction with natural processes, and have created social, economic and environmental values, such as community ties, lower maintenance costs, an inviting environment to visitors,

and a clean and tidy environment and significant scenery; for example, neighbours' community participation in the beautification of the long existence of the *aiba-gawa*, and Kikuga-hama beach (Section 7.2.4).

The motivation for people's participation may be related to their appreciation of the significance of Hagi, especially the historic contexts of the long-term existence of environmental characteristics. This will be examined further from the next section onwards.

7.3 Residents' Reactions and Concerns about Hagi from Secondary Sources

7.3.1 Introduction

This section depicts the findings and analysis of previous questionnaire and interview research about the schemes of the city hall relating to the local environment. It examines residents' reactions and concerns about the schemes proposed on the following three topics:

- (1) Residents' reactions to the previous three surveys of people's opinions on;
 - (a) Restoration programme of Tumemaru in 1994 (Hagi castle building at the top of Shizuki-yama mountain);
 - (b) Revisions to the conservation area of Horiuchi and Hiyako districts in 2004;
 - (c) 'Green planning' in 2011.
- (2) Residents' open-ended comments about the surveys of (a), (b) and (c).
- (3) Outcomes of the face-to-face interviews, which have been carried out by *the Kitaura-Web* (a local bulletin publisher) over the last five years in the city.

The results of the three previous surveys contained extremely useful information for this research to see the respondents' appreciation and concerns of the schemes as well as their awareness of the daily interaction with natural processes. As Sections 3.4.2 and 3.4.3 described, they may offer useful information about the situation of the environment and a landscape of the life of the city at the time of the surveys took place, and may help in considering appropriate methods and techniques of the actual field survey of this case study.

7.3.2 Residents' reactions on the previous three surveys

One of the most significant and interesting previous surveys was a survey of 'people's opinions concerned with the restoration programme of Tumemaru' (a building of Hagi castle at the top of Shizuki-yama Mountain). The restoration scheme was proposed by the city hall in 1994. The survey was carried out by a group opposed to the scheme called 'Protection Group for the Nature and the Beauty of Shizuki-yama'. This may be seen as one of the most significant collective actions for the environmental protection in Hagi in recent decades. The summary of this survey is shown below; detailed analysis and interpretation of the

open-ended comments will be shown in 7.3.3.

The result of the campaign about the city hall's programme of Tumemaru showed (Shizuki-yama Protection group, 1994) an astonishing victory of the opposition group. Over 80 % of 1,025 responses in total expressed strong and also thoughtful opinions against the scheme. Consequently, the city abandoned the scheme. The survey, via questionnaire, was carried out by a volunteer group, appealing to the public about their concerns regarding the proposed restoration scheme. It involved individual people from the group participating in the campaign on the streets and in other places. They distributed the questionnaires to schools and workplaces.

Although this survey was carried out 20 years ago, it portrays an interesting picture for the issues of the City at that time as well as people's reactions and concerns about the City. They expressed open-ended comments on a variety of views, not only about the restoration plan but also about the environments of the city. These will be shown in detail in Section 7.3.3.

The other two schemes of the city hall were progressed, as each survey received positive results to the schemes. Yet, the actual outcomes of the survey appeared quite differently to the campaign shown earlier in terms of the statistic of the respondents.

In terms of these statistics, it is interesting to see that the methods used for the survey, in particular the different method of data collection, obtained rather varied results.

For instance, the survey and research for 'Revising the conservation areas of Horiuch and Hiyako districts in Hagi' in 2005, conducted by the Kyusyu University, School of Planning (Onishi, 2003), collected 467 responses out of 735 distributed (about 64 %). The survey on 'Hagi Green Planning' as part of the City Master Plan, carried out by the city hall's Department of Town Planning in 2011, 837 responses out of 2000 (about 42%) distributed by post (Hagi City, 2011). Both demonstrate lower responses than the campaigning method.

In terms of the profile of respondent, the age ranges have also demonstrated rather different results. For example, in the campaign for Tumemaru (Shizuki-yama Protection Group, 1994), with a total 1025 respondents, the highest percentage response by age was that of the 10-19-year-olds with 25.7%. The second highest was those aged 40-49 with 18.0 %, and the third joint highest those aged 20-29 and 30-39 with 13.9 %. The city hall survey 'Green planning' (Hagi City, 2011) demonstrated a rather different outcome in terms of the age of respondents. In a total of 837 responses out of 2000 questionnaires sent out, the highest percentage response was that of the over-70s (30.0 %). The second highest response was from

those in their 60s (25%); in short, more than 70% of the total number of respondents were aged 50 or over. In contrast, in the case of the Tumemaru survey, those aged between 10 and 49 accounted for more than three-quarters of the total number of respondents; the over-50s gave less than a quarter of the responses (Shizuki-yama Protection group, 1994),

In respect to the gender differences in respondents, the survey for Tumemaru showed male respondents as 35.2% and female as 59.8 % (Shizuki-yama Protection Group, 1994, pp.14-15); this is similar to ‘Green planning’ with 40.7 % male and 58.5 % female respondents (Hagi City, 2011, p.57)). This seems to suggest that females showed more interests in environmental issues than males in both surveys.

It was identified that the outcomes of survey via questionnaire might have rather different results according to the method of delivering and collecting the questionnaire. Also, the method of obtaining respondents’ views and opinions play a crucial part for the survey. The three previous surveys mentioned above have provided the results of open-ended comments they obtained. This may be seen as an effective way to gain respondents’ wider and freely expressed views rather than a pre-set method (usually as providing a range of opinions set by the researcher, from which respondents choose the answers). This field survey therefore examines the results of the open-ended comments of the previous surveys in depth.

7.3.3 *Open-ended comments*

The case study analyzed and interpreted the respondents’ open-ended comments in the previous surveys. This has provided interesting points of discussion for the case study, as many people expressed the environmental concerns in a variety of ways as well as on a variety of aspects.

Restoration program of Tumemaru (Shizuki-yama Protection group, 1994)

The report of the survey classified the respondents’ views into several different topics which showed all relevant opinions (ibid, p.1). The largest number of opinions of (137) was given on the topic worded, ‘Do not touch Shizuki-yama; keep nature as it is’. The second largest number of 104 was against the restoration of Tumemaru via the city’s scheme. It is worth noting that the majority of respondents (77.3 %) stated that the Shizuki-yama was a symbol of Hagi, representing the significance of the cultural landscape of the city. A housewife in her 40s provided an example of a symbolic message (Shizuki-yama Protection Group, 1994, p. 2);

As we come back to our home town after being away for some time, as we see Shizuki-yama, still far away but right in front of us when approaching Hagi along the Abu river, we are filled with deep emotion due to our arrival in our home town.

It was also interesting to see an opinion of a female of high-school student (ibid, p. 3), she said ‘thousand and thousand years of existence of Shizuki-yama are far more important than building Tumemaru for a year or two’.

In contrast, it was interesting to note that 58 views were in agreement with the Tumemaru restoration scheme (ibid, pp. 4-6). Some said that ‘the scheme may be seen as an advantage for the city to promote tourism and the vitality of Hagi’. Yet, at the same time, many of the opinions agreeing to the scheme expressed sympathy for environmental changes (ibid, p. 6), some gave ideas for the scheme to minimize the deterioration of the existing cultural landscape and the natural/sub-natural environment of the Shizuki-yama; others even expressed the importance of environmental protection. The campaign for the Shizuki-yama concluded (ibid, p. 6) that ‘the campaign can be seen as a key movement of the environmental protection of the city and bring the hopes of individuals together’.

Hagi Green Planning, Survey for the City Master Plan (Hagi City, 2011)

In this case, a total 111 written open-ended comments were collected out of a total of 837 respondents (ibid, p. 56). Most of their views were physical demands and requests in relation to the environmental improvement (ibid, pp.70-75) such as ‘more facilities for children playing area, more flower beds in the historic core and more trees to be planted along the new roads’. A few interesting ideas related to social aspects, such as ‘a need for the resident participation in creating the green programme, including workshops, debates and public relations’. Also problems of an ageing society were stated such as ‘difficulties in mowing’. An elderly person said that ‘for me, green spaces are just nothing other than troublesome’. Only one respondent pointed out the orange orchard (ibid, 73);

Natu-mikan is one of the distinctive features of the cultural landscapes of Hagi, and should be emphasized more effectively in the conservation area. *Natu-mikan* is a symbol of the historic core of Hagi as much as important as Shizuki-Yama.

Section 6.5 described that the *natu-mikan* orchard in the historic core represent a significant and important context of the early modern Hagi. This has resulted in the creation of the distinctive characteristics of the historic city of Hagi among many other historic cities in Japan. The area can be seen as one of the most important and significant historic cultural landscapes of the city. In this respect, the low response concerning the *natu-mikan* orchard may indicate that residents are more demanding practical use of the green spaces and associated facilities.

Revising the conservation area of Horiuch and Hiyako districts in Hagi (Onishi, 2003)

A total of 595 written opinions from 467 respondents (out of 735 questionnaire distributions) was recorded (ibid, pp. 97-101) in this survey. The opinions expressed were mainly concerned with the aspects of the physical characteristics and the outlook of the area as reflecting the purpose of the survey.

However, closed analysis may reveal an interesting issue regarding the condition of the local environment. It was found that the largest numbers of opinions (97) were given in the category of environmental improvements. Here, most concerns were focused to inadequate provisions for the safety of children, such as street lighting (21 comments), and the maintenance of parks (18), including cleaning and mowing. The second largest number (94) was on the topic of the tourism industry. Many were in favour of tourism, but 19 people expressed views against it, as visitors' cars and lack of parking spaces generated negative effects on the environment. It was interesting to note that 25 gave opinions on the category of 'convenience vs. conservation', in which six people said that priority should be given to conservation. Ten respondents said that 'both should go together' and nine people chose convenience.

Only a single view on social aspects was noted; it was concerned with the issue of aging and the declining population. 'I am concerned with continuing evidence of less communication with the younger generation as well as depopulation in Horiuchi district' (ibid, p.101). This district was a residential area for former high-ranking samurai during the Castle Town period. After the Meiji Restoration (1868), the plots of this area became the *natsu-mikan* (orange) orchard, described in Chapter 6.5.2. Today, this respondent said 'the area has far fewer *natsu-mikan* orchard than before'. In fact, the area was of mixed use, containing both domestic houses and public buildings, including schools and the city museum, and a few shops. It was seen as a rather quiet area even in daytime, despite being in the core of the historic area. This person particularly mentioned that 'this has become more noticeable since the area was designated as a conservation area' (in 1976).

7.3.4 Face-to-Face Interviews by the Kitaura-Web

The field survey has found that a study using face-to-face interviews by the *Kitaura-Web* (a local bulletin publisher) was extremely interesting to observe the residents' views and opinions about the living environment of the city. These interviews have been in progress in the city, at the time of this field survey, for five years. It was so called a 'relay of face to face

interview' and addressed '*Kitaura* Relationship'. The 'relay' was such that the person who had been interviewed then recommended another person as the next interviewee. The results of the interview were shown on the website in the *Kitaura* paper. However, it was found that the outcomes had not been analysed, told by the editor, and felt that the interviewees' views should be examined to see the characteristics of Hagi and their life in the city

The interviews were a fortnightly serialized interview sequence with ten fixed questions to professionals. The bulletin has been inserted as a supplement to several major and local newspapers since the first issue of November 2011, with distribution of approximately 26,000 copies a day to subscribers in and around the Hagi city. The *Kitaura-Web* intends to continue the '*Kitaura* Relationship' for more years to come.

The field survey found that the following three questions in the *Kitaura-Web* (2015) were worth analysing in depth for the case study:

- *What do you like most about Hagi?*
- *What do you think are the problems of Hagi?*
- *What do you consider are the solutions?*

The analysis can be approached from the following three points of view.

The first was that these questions were fixed, simple but important, to discover what the interviewees thought that the fundamentals of life in Hagi were.

The second interesting point was the length of the scheme. It has already been carried out for five years and is expected to continue for more, although no analysis and interpretation has been made so far. Thus, examining the outcomes of the interviews may depict the trends and social characteristics of Hagi, such as the types of topics, problems and ideas for the solution at the time of interview, as well as changes and continuity of these issues over time.

The third point was the method of selecting the interviewees, as the final question of the interview asked: 'Will you introduce a friend of yours for the next interviewee who you think "great" in the *Kitaura-area*' (the wider area of Hagi). This method can be seen as experimental and significant. This is because the interviewees were usually decided by the survey organiser, and tend to reflect their interests and ideas. However, this *Kitaura* method could expect open-ended comments. The interviewees came from a variety of professions including medical doctor, high school teachers, priest, potters, painter, handmade crafts artists, martial arts leader and shop owners, but no NPO members or bureaucrats.

7.3.5 Analysis of the outcome of the face-to-face interviews

In terms of the number of interviewees, 69 people in total had undergone interviews by 2 July 2015 since the first interview of 2011 (*Kitaura-Web*, 2015). Appendix C shows the result of all interviews. The genders of the interviewees were not balanced. Only 11 females have undergone interviews so far, while 58 males have done so. This male-dominated result was reflected in the final question or request from the organiser; e.g. the interviewee nominates a person as the next interviewee. The male interviewees seemed to have recommended more males as the next interviewee rather than female. In this regard, the outcomes of the interviews may be one-sided. However, the results have demonstrated a great enthusiasm when talking about the issues existing in the city. Statistically, a large number of the interviewees (85.5 %) are aged between their 20s and their 50s; 32 people in their 20s and the 30s, 27 in their 40s and 50s, while six were in their 60s and over (four people did not mention their age). From this perspective, the answers to three particular questions were worth examining to discover social aspects in relation to the issues of the city.

‘What do you like most about Hagi?’

It was notable that 27 people out of 69 said that they liked ‘nature’ or ‘the natural environment’ in Hagi, such as the sky in daytime and night-time, clean air, the beach and quietness of the city (*Kitaura-web*, 2015). They expressed about differences in ‘nature’ between Hagi and the hustle and bustle of big towns. Many of those pointed out particularly the significant and distinctive cultural landscapes of Hagi. They were thinking of the cleanness of the Kikuga-hama beach, and the distinctive feature of the Shizuki-yama mountain, the *aiba-gawa* canal, and also the orange orchard *natsu-mikan* in the historic core.

A female high-school teacher particularly admired the city for its richness in natural resources, also expressing a liking for the clean coast and abundant fish and marine life: she said that ‘Hagi is an ideal place for raising children’. Other notable views with similar expressions were that 22 interviewees said something along the lines of ‘Hagi is a reasonable city because of its “countryside-ness”’. Fifteen interviewees mentioned another significance feature of the city, talking about the distinctive historical heritages together with the remaining characteristic appearance of the streetscapes with the traditional wooden houses and narrower streets.

‘What do you think are the problem of Hagi?’

It has found that social problems were some of the most serious concerns in Hagi. A total of

46 interviewees (66.7 %) pointed out the social issues in various ways (*Kitaura-Web*, 2015). To summarize, 27 people expressed the concerns about depopulation, the aging society and the declining birth rate. Nineteen individuals said that the problems were associated with a lower population of younger people because of fewer opportunities, such as jobs, culture, shopping and leisure etc. Concerned about these social issues appears to have been increasing in recent interviews: 18 out of the last 20 interviewees mentioned social matters as problems of the city.

For instance, a chief priest for a Buddhist temple in the city clearly pointed out the social issues were a problem, saying that ‘with the social situation of Hagi, depopulation, an aging society with fewer children, there is no way for the economic power of the city as a whole to emerge from the bottom up’ He also said (*Kitaura-Web*, 2013);

The Aging society has difficulty with shopping and receiving medical treatments, as many of them have given up driving cars by themselves but public transport in Hagi is not good enough for them.

He mentioned an example of the consequence (*ibid*);

A couple who came to live in Hagi after retirement until the end of their lives has gone back to a bigger city. That is because the medical services and public transportation were not good enough to support their new life in the city.

A male doctor interviewee emphasized the seriousness of the medical care problems as calling it a ‘crisis’. It may be noted that the aforementioned surveys via questionnaire were not able to reveal these serious concerns, but the face-to-face interview method of *Kitaura* has done so.

‘What do you consider are the solutions?’

The ideas of interviewees about ‘solutions’ have clearly stated the need of opportunities for the young generation (30 people out of 69) (*Kitaura-Web*, 2015). They strongly suggested job opportunities as well as culture, facilities and the supports of city hall. The second highest consideration was given to more radical ideas to create new systems for the revitalization of the city, including more public relations work, information exchanges and networks. A number of people talked about the effective use of the IT communication tools; for example, the idea to use Skype to share workshops and conferences.

The doctor who identified the medical problems (*Kitaura-Web*, 2012), added that ‘to protect local medical care, it is important for administrators, residents and people in medical care to share the information effectively while they do the best in their own role, in addition to dealing with the need for more doctors.’

It is clear that residents wish to see productive use of more communication tools in the city.

7.3.6 Conclusion

This section has identified that the secondary sources have given useful and important information about the characteristics aspects of Hagi in relation to the interaction between people and natural processes. Although these secondary data date from between 1994 to 2011, they have offered a basis of this case study to be concerned with the significances and issues of such interactions. In particular, the open-ended comments from the three surveys (Section 7.3.3) have revealed much wider aspects of respondents' views and opinions than the survey themes, covering themes from the environmental characteristics to the life of Hagi. Among these, it was notable that the respondents' perception of the long-term existence of the environmental characteristics of Hagi was emphasized. For instance, in the Shizuki-yama protection campaign, a woman has appealed for the importance and appreciation of the historic context of Shizuki-yama, saying it was seen as a symbol of Hagi. The campaign was an interesting collective action, and the theoretical framework for the research has interpreted the significance of the campaign.

The face-to-face interviews of the *Kitaura-Web* gave a variety of opinions and views of diverse professionals of Hagi, which were significant in terms of gaining the overall picture of Hagi and the issues of the city during the last five years. The researcher has analysed these interviews, which had not previously received any interpretation or analysis. As Section 7.3.5 has described, recent interviewees have expressed more concerns over social issues than those from earlier years. Many recent interviewees have pointed out that the aging society, the declining birth rate and depopulation were serious problems. They have stated that these social issues have affected many aspects for Hagi, particularly in relation to the revitalization of the community, including the continuous protection of the long-term existing environmental characteristics, because such protection work has relied on senior/aged volunteers. Many interviewees have strongly pointed out the main concerns of Hagi were the needs for revitalization and more opportunities for the young generation than at present.

This section has suggested that the field survey of this case study may need to look at socio-environmental or socio-ecological aspects of Hagi in a greater depth. Thus, the survey has used multiple methods of data collection, including questionnaire survey, interviews and participation in residents' collective actions in the city. Sections 7.4, 7.5 and 7.6 will depict the findings and analysis of the field survey of Hagi in the present day.

7.4 Positives and Negatives of Respondents' Views and Opinions

7.4.1 Introduction

This section shows the outcomes of the questionnaire survey of this researcher undertook in Hagi in 2015, as part of the field work. This method of data collection and data analysis of the questionnaire survey were described in Sections 3.4.2 and 3.4.3 respectively. This survey consisted of six questions (shown in Appendix D), which were designed to reinforce or support the key themes and objectives of this chapter, shown Section 7.1.1.

Brief results - statistics

The outcome of the questionnaire survey obtained diverse views, opinions and concerns of the respondents. A total 130 questionnaire papers were delivered in the first and second week of July 2015 with the help of the acquaintance made in Hagi. Table 7-1 shows descriptive statistics of the respondents.

Table 7-2: Respondents to the survey by questionnaire

Respondents	Male	%	Female	%	Total	%
20s	4	8.7%	9	15.5%	13	12.5%
30s	6	13.0%	6	10.3%	12	11.5%
40s	6	13.0%	7	12.1%	13	12.5%
50s	6	13.0%	17	29.3%	23	22.1%
60s	17	37.0%	12	20.7%	29	27.9%
70s	7	15.2%	5	8.6%	12	11.5%
80s	0	0.0%	2	3.4%	2	1.9%
Total	46	44.2%	58	55.8%	104	100.0%

The total respondents were counted 104, 46 for the male and 58 for the female, with age ranges between those in their 20s and those in their 80s and over. The total number of responses was

349, all of which were classified by gender and age range. This is shown in Appendix D.

Brief result - responses

The responses were divided into either specific positive topics or specific negative topics, in the total number of 349 responses, the positive topics were given 208 and the negative of 142, as shown Section 7.4.2. In brief, the positive opinions centered on the characteristics of history, tradition and culture of the place, where respondents expressed appreciation for the significance of Hagi. These included respondents' interests in conserving the historic heritages, and the long-term existing environmental characteristics, volunteer activities and collective actions in relation to interactions with natural processes.

These positive responses seemed to suggest the activities of the environmental protection groups received favorable views and opinions from respondents. It was found that many respondents were themselves members of one of those environmental protection groups, as they have contributed to the protection, beautification and enhancement of the environments one way or another, as described in Section 7.2. In contrast, the negative responses indicated rather different attitude to the historic heritages. Noticeably, many people pointed out social issues in the city as the possible causes of negative effects; for instance, problems of an aging society and depopulation. These concerns and issues were expressed by a large number of the *Kitaura-Web* face-to-face interviewees, as described in Section 7.3.5.

7.4.2 Method of analysis

All responses to the survey were classified into the following six specific positive topics and six specific negative topics. These topics have represented significant aspects or characteristics concerning the environment, heritage and life of Hagi.

Six positive topics

- A) Interest in conservation of historical and cultural significance*
- B) Belonging to volunteer group(s)*
- C) Participation in collective action(s) on environmental concerns*
- D) Appreciation of beautiful and distinctive long-term existence of environmental characteristics*
- E) Use of local natural produce*
- F) Enjoyment of gardening: flowers, fruits, vegetables.*

Six negative topics

- G) Generation gap and other gaps.*
- H) Conservative, no creativity, and no flexibility*
- I) Few opportunities for younger generation*
- J) Unsustainable future with problems of aging society, depopulation and fewer children*
- K) Younger generation required for settlement and vitality*
- L) Deteriorating environments, empty houses, safety*

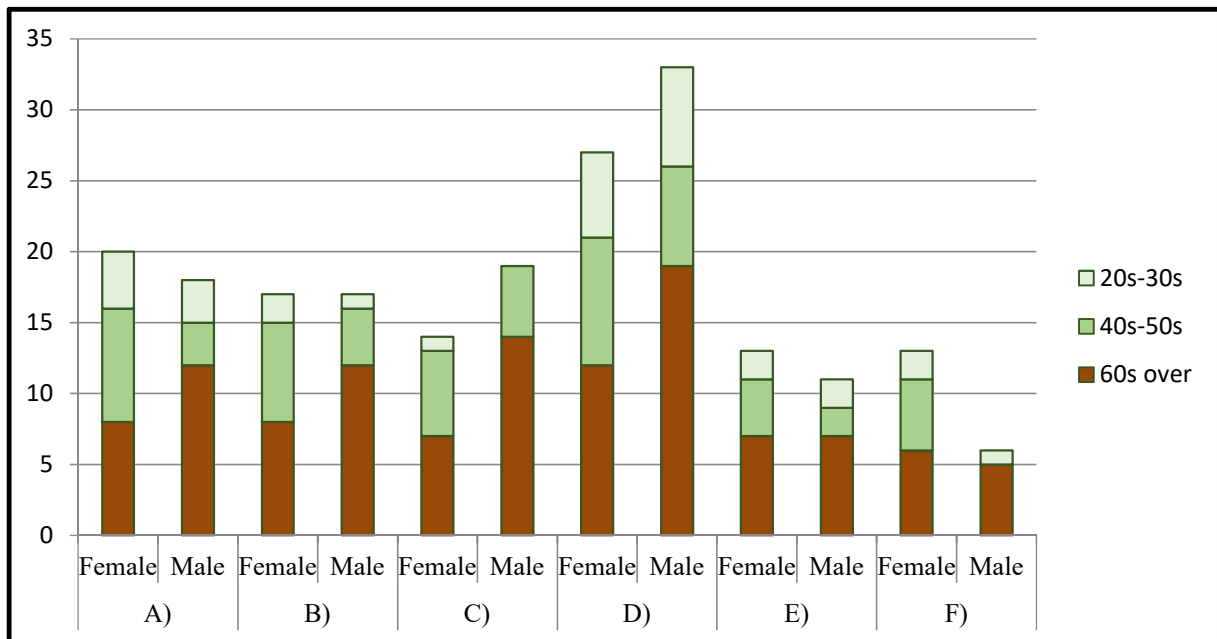
7.4.3 Positives: people's appreciations

Brief Result

The most significant aspects that arose from the questionnaire survey was that a large number of the responses on the positive aspects were given on the topics related to the appreciations

of the historic and social characteristics of Hagi, such as *D) Appreciation of beautiful and distinctive long-term existing environmental characteristics* (60 responses out of a total of 208 on the positive topics). The second largest number of responses on the positive aspects were given to *A) Interest in conservation of historical and cultural significance*, and *B) Belonging to volunteer group(s)*. This was an interesting result in terms of gender and age differences and will be discussed in a brief analysis as follows.

Table 7-3: Specific positive topics



		60s over	40s-50s	20s-30s	subtotal		Total	
A)	Female	8	8	4	20	19.2%	38	18.3%
	Male	12	3	3	18	17.3%		
B)	Female	8	7	2	17	16.3%	34	16.3%
	Male	12	4	1	17	16.3%		
C)	Female	7	6	1	14	13.5%	33	15.9%
	Male	14	5	0	19	18.3%		
D)	Female	12	9	6	27	26.0%	60	28.8%
	Male	19	7	7	33	31.7%		
E)	Female	7	4	2	13	12.5%	24	11.5%
	Male	7	2	2	11	10.6%		
F)	Female	6	5	2	13	12.5%	19	9.1%
	Male	5	0	1	6	5.8%		
Number of responses		117	60	31			208	
		56.3%	28.8%	14.9%				100%
Female		48	39	17	104	100.0%		
Male		69	21	14	104	100.0%		
Number of Respondents		F19, M24	F24, M12	F15, M10	F58, M46		F+M104	

Brief analysis

The thorough analysis in relation to the chapter question and the topics will be shown in detail in Section 7.7.3, which should be examined with other chapter's findings in the research carried out so far.

The following points are a brief analysis to show the basis of the more thorough analysis, where the six specific positive topics can be classified into three elements, (1) significant heritage, (2) collective actions, and (3) individual interests, as follows

- (1) Respondents' appreciation of the significant heritage of Hagi (98 responses out of 208, 47.1%. Genders; Female 45.2%, Male 49%)

A) Interest in conservation of historical and cultural significance

D) Appreciation of beautiful and distinctive long-term existing environmental characteristics

- (2) Collective actions (67 out of 208, 32.2%. Genders; Female 29.8%, Male 34.6%)

B) Belonging to volunteer group(s)

C) Participation in collective action(s) for environmental concerns

- (3) Individual interests (43 out of 208, 20.7 %. Genders; 25.0%, Male 16.4%)

E) Use of local natural produce

F) Enjoyment of gardening: flowers, fruits, vegetables.

This classification may indicate the following characteristics of the responses.

- (1) A large number of respondents appreciated for the significant heritage of Hagi, including interest in conservation of historical and cultural significance, and the long-term existence of environmental characteristics. It is interesting to see that more males made the appreciation for the heritage than females did so. This can be seen in relation to men's involvement or participation in collective actions for the protection, enhancement and beautification of these environments, as shown in topic *C), Participation in collective action(s) for environmental concerns*: the total showed 19 males but only 14 females, while the largest numbers was given by those aged over 60s, with twice as many males as females, 14 and 7 respectively, this may relate to their retirement. Interestingly, the topics *A), B), C) and D)* for the categories of the appreciation of the heritage and collective actions, it is significant that more men expressed their views than female; 57 male responses, and 35 female ones.

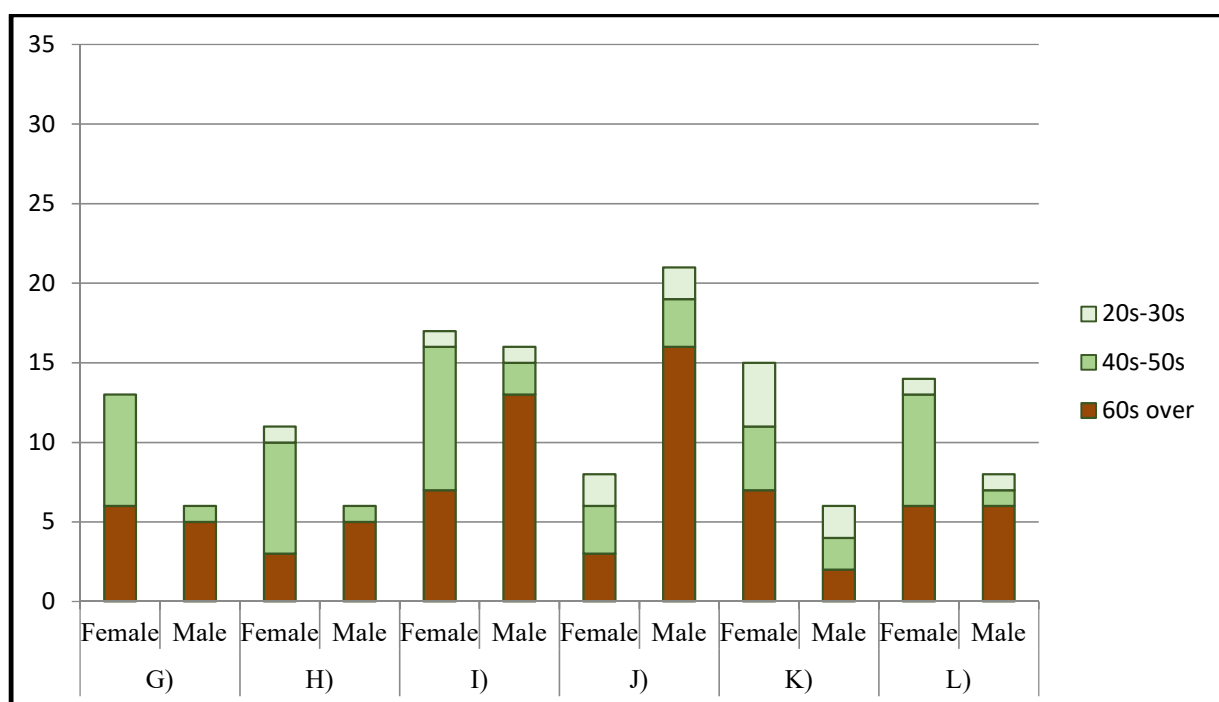
(2) Another interesting point was that more responses were given in the category of collective actions (67 responses) than in the category of individual interests (43 responses). This indicates that the people of Hagi pay more attention to community activities than individual ones, suggesting, presumably, people's awareness of local environmental concerns. As Section 7.2 described, there are many opportunities for the residents to be involved or participate in activities about local environmental concerns. This may be related to their motivation to join volunteer groups or feel a sense of belonging, or simply be the residents of Hagi. This aspect will be examined in Section 7.5.

7.4.4 Negatives – concerns and issues

Brief Results

In contrast to the positives, respondents expressed many negative aspects about the city in particular, concerning the social issues. It was noticeable that male of age 60 years and over expressed their concerns about the topic *J) Unsustainable future with aging society and depopulation and fewer children*. Also, they have shown concerns with topic *I) Few opportunities for younger generation*. It should be noted that, as Section 7.3.5 discussed, the social aspect was one of the main concerns among the interviewees mentioned in the face-to-face interviews by *Kitaura-web*.

Table 7-4: Specific negative topics



		60s over	40s-50s	20s-30s	subtotal		Total	
G)	Female	6	7	0	13	16.7%	19	13.5%
	Male	5	1	0	6	9.5%		
H)	Female	3	7	1	11	14.1%	17	12.1%
	Male	5	1	0	6	9.5%		
I)	Female	7	9	1	17	21.8%	33	23.4%
	Male	13	2	1	16	25.4%		
J)	Female	3	3	2	8	10.3%	29	20.6%
	Male	16	3	2	21	33.3%		
K)	Female	7	4	4	15	19.2%	21	14.9%
	Male	2	2	2	6	9.5%		
L)	Female	6	7	1	14	17.9%	22	15.6%
	Male	6	1	1	8	12.7%		
Number of Responses		79	47	15			141	
		56.0%	33.3%	10.6%				100.0%
Female		32	37	9	78	100.00%		
Male		47	10	6	63	100.00%		
Number of Respondents		F19, M24	F24, M12	F15, M10	F58, M46		F+M104	

Other remarks were seen on the subject of social characteristics, such as topics *G) Generation gap and other gaps*, *H) Conservative, no creativity and no flexibility*, and *I) Few opportunities for younger generation*. More female expressed concerns than males for *G and H*, as well as *I) few opportunities for younger generations*. These social characteristics will be discussed with the findings of the interviews of the survey in Section 7.5 and will be thoroughly analyzed with other chapters' findings in Section 7.7.

Brief analysis

The six negative specific topics may be grouped in the following three elements:

(1) Cultural aspects (36 responses out of 141, 25.5%. Genders; female 30.8%, male 19%)

G) Generation gap and other gaps.

H) Conservative, no creativity and no flexibility

(2) Consequences of policies (62 responses out of 141: 44.0 %. Genders; female 32.1%, male, 58.6%)

I) Few opportunities for younger generation

J) Unsustainable future with problems of aging society, depopulation and fewer children

(3) Social and environmental phenomena (43 responses out of 141: 30.5%. Genders, female 36.9%, male 32.2%)

K) Need younger generation for settlement and vitality

L) Deteriorating environments, empty houses, safety

The classification above may suggest the followings.

- (1) In terms of gender, there was a greater difference in the negative aspects between female responses and male responses than the positive views between the genders. In particular, female responses (30.8%) on the cultural aspects showed a greater percentage than male (19%), whereas the male responses on the element of consequence of policies (58.6%) were much greater than the female (32.1%). Yet, the younger generations did not express negative responses so much as the over-40s, except on the consequences of policies. It may be said that younger generations did not think the cultural aspects elements (G & H) were as serious concerns as the seniors, or they might not have experienced enough to identify them. This result can be seen as a characteristic of Japanese society that the males are more concerned with policies than females.
- (2) However, it was interesting to look into detail in that, although males showed a greater response to *J) Unsustainable future with problems of aging society, population and fewer children*, a far fewer males than females responded to *K) younger generation required for settlement and vitality*. This may suggest why the cultural aspects responses of females *G) and H)* were much higher than those of males. Senior males may be reluctant to admit culturally negative aspects.
- (3) However, the assumption above is not certain unless more samples are collected and studied. Instead, these social aspects will be examined in detail together with the outcomes of the interviews of the field survey. This will be shown in Section 7.5.

7.4.5 Other significant views

Results

Individual respondents expressed other significant views and opinions, thoughtful suggestions and ideas, in particular for the future of Hagi. These were worth giving here.

On the one hand, a female (in her 70s) wished to revitalize the city with traditional cultures including making arts and crafts products with natural materials. Another female (in her 50s) expressed a similar opinion to the above, with a suggestion that it was necessary for training to maintain the traditional cultural skills with local materials such as bamboo.

On the other hand, some other respondents wished to see new cultures and new movements, with such ideas as:

- ‘Diversity and mobility are key words for the regeneration’ (male in 40s),
- ‘Participation offers community enhancement’ (female in 50s),
- ‘Need for change in Hagi residents’ way of thinking’ (female in 50s),
- ‘*Ruko* (a guesthouse) [would be] a wonderful place for meeting and enhancing human relationships’ (female in 40s female)

It should also be noted that some negative views were concerned with tourism and the care of the environment, as follows:

- ‘Serious concern for sustainability of Hagi via tourism alone’ (male in 70s),
- ‘Present popularity of Hagi due to TV programme *Hanamoyu*, it’s short-lived, should find a way out from that, need for hospitality and repeat visitors’ (male in 60s),
- ‘More attention should be paid to encourage values of the cultural landscapes for tourism’ (female in 40s),
- ‘Residents’ concern is their own life, not protecting nature’ (male in 50s),
- ‘Aging now, rather prefer to see fewer nature areas that at the present as they need constant maintenance and involve money and security risks’ (male in 60s).

Brief analysis

It is interesting to find that the other significant views from the questionnaire have shown productive and positive ideas for the future of Hagi. Interestingly, these ideas were given by females more than males; males mentioned their concern but did not have many suggestions. Other notable points were expressed concerning problems of an ageing society and matters regarding the life of Hagi. This tendency was seen in the changes in the CCGM ‘Citizen Conference’, described in Section 7.2.3. Tourism in Hagi was once the top agenda item for the CCGM, but this section has been closed; instead, the priority was given to social issues.

7.4.6 Conclusion

The questionnaire survey in Hagi achieved remarkable results in terms of the number of respondents and variety of responses. The outcome has revealed both the appreciations and concerns of the respondents. Their views and opinions may be divided into two categories: the six specific positive topics and the six specific negative topics. A large number of responses were made concerning the appreciation of heritage and the long-term existence of environmental characteristics, and a variety of volunteer activities. However, many have expressed negative views of the city, particularly regarding social concerns. These included the category of cultural characteristics, such as *G) generation gap and other gaps*, and *h)*

conservative/no creativity/no flexibility concerns. Many had concerns about the category of consequence of policies, such as *I) few opportunities for younger generation*, and *J) unsustainable future with problems of aging society, depopulation and fewer children*. Also social and environmental phenomena received notable attention, such as *K) younger generation required for settlement and vitality*. These views should be examined more in depth with the results of the survey via interviews with the residents.

7.5 Contexts of the Respondents' Concerns

7.5.1 Introduction

The field survey utilized face-to-face interviews with individuals and groups. Although the same basic questions as the questionnaire were asked as the main topics of the interviews, the majority of interviewees expressed a wider range of views than the survey asked for. This was because of the time spent with each interviewee and each group, and because the interviews were detailed enough to obtain extended information and details. The interviews covered a wide variety people ranging from their 30s to their 90s in diverse professions, including company directors, schoolteachers, officers, artists and doctors. They had been living in Hagi for different periods. Some had been born in the city and had lived in it throughout their life, while many were returning residents. Some had lived there only a few years. The list of the interviewees is shown in Appendix E.

The interviewees expressed thoughtful views, opinions, ideas and concerns about life in Hagi. This section categorizes them into the hollowing six headings, which may be recognized as the significant characteristics of Hagi.

- (1) Conservatism and divisions
- (2) Aging society and declining population
- (3) Environmental deteriorations
- (4) Changes in local industries
- (5) Experimental activities with natural materials
- (6) Opportunities for collaboration

These are seen as important factors in examining the interaction between people and natural processes. They have revealed interesting aspects of Hagi, including causes and reasons behind the results of the survey via questionnaire, shown in the Section 7.4.

The heading (1) and (2) above represented negative aspects of the city, generating fundamental social concern, which are closely related to the aspects (3) and (4). For instance,

social concerns have prevented the revitalization of the city. Categories (5) and (6) can be seen as positive movements within the city and will be shown separately in Section 7.6.

7.5.2 *Conservatism and divisions*

The outcomes of the interviews have revealed that ‘conservatism’ was a serious concern in Hagi. It was seen as one of the distinctive characteristics of the city, relating to the established social and cultural traditions of Hagi over time. It has created a division in variety of ways in the city life, causing negative effects on the community. However, it has also been found that the positive effects of conservatism have been attributed to senior residents’ volunteer activities for the protection of the cultural heritages and the environmental characteristics, as they have been devoted to their volunteer activities very keenly.

A number of the interviewees, particularly among established senior professionals, have mentioned the conservatism of the city, saying that ‘Hagi is a very conservative town’ (a couple of males in their 60s). They have described the divisions between people as such that the reason for conservatism is due to differences in personal history, saying that divisions can be identified between people who were born in Hagi and have lived in the city throughout their lives, those who have made a ‘U-turn’, (born in Hagi and left for college or/and jobs for a long period of time but then returned), and those residents who have made an ‘I-turn’ (come to live in Hagi from outside of the city).

People who have been living in the city throughout their life usually had a relationship with traditional family industries across the generations. It may be understandable that they protect the family industries they have inherited. These people seemed to show less flexibility, while most of the ‘U-turn’ residents liked the challenge of a new life in their home town. The ‘I-turn’ people have often found difficulties in this social environment.

For instance, a 92-year-old woman explained about the characteristics of Hagi-born people; ‘they have inherited *Samurai nature*: i.e. dignified with strong-mindedness, great self-respect, protect their family interest and their own regime’. Interestingly, negative side of the characteristics of Hagi-born people was expressed by a couple of senior men saying ‘they have no sense of hospitality, do not help tourists, they are the main reasons for low level of repeat visitors’.

Another serious division was seen among groups in different NPOs and volunteers regarding the conservation and protection of heritages and the environments (males and females in their 60s and males in their 50s). Interestingly, it was reported that there was insignificant

interaction between different groups, even with same aims. They seemed to work within their own organization/group context alone. This may not be described as a sense of conservatism but more of a reluctance to mix, or just a characteristic of Hagi people. Some volunteers were working for two or more different groups and they were naturally making communications within the groups with which they were engaged, but interactions between the groups were limited to individual interests (e.g. a couple of males in their 70s). Thus, this characteristic may be said to be neither productive nor effective for the city as a whole.

7.5.3 *Aging society and declining population.*

The issue of an aging society with a declining population can be seen as a fundamental cause of all sorts of negative effects in Hagi, economically, socially, culturally and even environmentally. Many interviewees have expressed worries about the sustainability and regeneration of the city because of these fundamental social issues.

In fact, the aging society is not only a major problem in Hagi, but also a national concern throughout Japan. In particular, it is seen as a crucial phenomenon for the regeneration or revitalization of regional cities and towns; it can be said to be one of the most distinctive and problematic characteristics in Japanese society today. The centralization of the country towards Tokyo might be the main cause of this, as all sorts of opportunities for the younger generations are concentrated there, such as educations, cultures and jobs, while far fewer opportunities found in regional cities and towns throughout Japan.

In the case of Hagi, depopulation has undoubtedly been problematic for the last two to three decades, creating low number of opportunities for younger generations such as jobs and cultures. The problems were of great practical concern; people (a male and female in their 60s male and a female in her 50s) said that most of the volunteers were senior age and they engaged in supporting tourist services, while there were not enough jobs for younger people. In fact, tourism was one of the few stable businesses of the city, and seen as an opportunity for senior people to take.

However, as long as the present rate of new volunteers remains low and the aging society continues, it is foreseeable that in a few years' time the performance of the tourist services will have fallen away; the sustainability of the city will be at risk, including the protection of the historical heritage and the long-existing environmental characteristics, unless positive measures are taken to deal with the problem as soon as possible.

Statistics can shed light on this difficult issue (Hagi City, 2015): The population of Hagi in 1980 was 74,826, and dropping to 49,323 in May 2015. Those aged between 0 to 14 years old

were 20.9% of the population in 1980, but down by half (to 10.7%) in 2010 (12.5% nationally). Those aged from 15 to 64 were 64.4% of the population in 1980, down to 54.2% in 2010 (62.1% nationally). It is predicted that in 25 years' time, only 43.8% of the total city population will be of potential work force age (15-64).

7.5.4 *Environmental deteriorations*

In the interviews, while the majority of interviewees expressed appreciation of the beautiful and distinctive long-term existing environmental characteristics, many were concerned about environmental deteriorations and changes in the landscapes in and around the delta area of Hagi. They pointed out the causes of the deterioration had much to do with the development of the modern culture, including a motorized society and the popularity of tourism in Hagi. Yet, a number of interviewees appreciated the benefits of tourism for the revitalization of the economy of the city, and some wanted to see more visitors (people in their 60s).

During the interviews, senior people (men in their 50s and 60s and women in their 60s) mentioned changes in the landscape. For instance, land with 'soft' surfaces retained in the central area, such as vegetable fields, rice paddy fields and orange orchards, have become parking areas for visitors' cars, taxis and tourist coaches. There has been a new road network of car traffic built within the delta area connecting with new access roads from surrounding areas, including bridges over the rivers of Hashimoto and Matsumoto. Some historic streets have been widened for motorists and tourists, leading to negative effects for the residents, such as the health and safety of vulnerable pedestrians, as well as noises.

Yet, it is noticeable that the narrow streets of the castle town period in the historic core have been retained nearly intact, forcing the car traffic to respect the significance of the heritage and health and safety for both visitors and residents. Apart from the increasing level of tourism, the disappearances of local cultures and traditional industries have been pointed out by many interviewees as a cause of the environmental changes.

7.5.5 *Changes in local industry*

Traditional family industries with natural materials and products

It is generally observed that the occurrence of land-use changes in urban areas is closely related to the advance of industrialization as well as the development of urban cultures associated with urbanism. In this regard, Hagi is no exception; the changes in the local industries of Hagi have led to the disappearances of the primary industries, resulting in the

expansion of consumer service businesses. This is seen as a change of culture, tradition and urban dwellers' daily life, creating fewer interactions between people and natural processes. In the survey, several interviewees were concerned by this situation; for example, one interviewee (a male in his 50s) insisted on the importance of the retention of the small plots of agricultural land in the historic area. This concern was noted in the CCGM agenda, as explained in Section 7.2; one of the recent collective actions of the welfare/education group has given schoolchildren experience of rice planting.

Before the advance of industrialization and modernization, small family agricultural fields were occupied the central area of the delta where the land was at its lowest point in the city and provided a suitable location for paddy field for rice and lotus cultivation. One interviewee, a senior person in the Agricultural Institute in Hagi, has enthusiastically talked about the changes of agricultural business along with the modernization of the city. He particularly pointed out, looking outside from the window of his office, that 'this building was surrounded by lotus paddy fields until quite recently'. Today, most of the cultivated land and paddy fields in the middle of the delta have been transformed into a built up area. As this area functions as the city centre, these changes were necessary where most of the institutional buildings, commercial facilities and car parks have been constructed, such as the city hall, the city library, the museum, the police station, a variety of large shops and retail parks, although a few tiny paddy fields for rice and lotus may still be seen.

During the field survey, it was observed that an elderly couple were working in the lotus fields in the heart of the city. A curator of the City Museum and a retired volunteer from the museum and the library expressed the importance of the remaining paddy fields for the protection of the long-term of environmental significance as well as the ecology of the area. They also mentioned the remaining irrigation networks for the fields. The senior volunteer took the researcher around the city to identify the networks of watercourses, including those for irrigation, within the historic area. Most of the irrigation stream were covered by concrete or iron grid caps, but open irrigation was found in part in other areas of the city.

As Chapter 6 described, the long-term existence of environmental characteristics has resulted from the interaction between people and natural processes. For example, the network of watercourses in the delta area, including those of the irrigations, was created in relation to the flooding prevention works of the 17th to 19th century, an outcome of the continuous collective actions for the characteristic delta land behaviour.

As, explained in Section 6.2, the Hamazaki fishing community at the mouth of the river Matumoto and the Sea of Japan coast has contributed greatly to the economy of Hagi, as they developed fishery products and marine industries. The marine transportation business created positive effects, as their natural products and produce were sent out all over the country, including timber, bamboo, *nastu-mikan* (oranges), pottery and glass products, allowing the growth of the city for centuries from the castle town age to the mid-20th century.



Figure 7-5: Traditional fishing business



Figure 7-6: Traditional fishing catch

Yet, today, some industries are still retained. Figures 7-5 shows the traditional way of work for drying fish by the Kikuga-hama beach. Figure 7-6 is a seasonal catch of *shirauo* on the river Matsumoto close to its mouth.

Hagi natsu-mikan (oranges) and others

The field survey has identified that the *natsu-mikan* orchard has shown a strong identity of Hagi, as many respondents admired the history and the scenery of the orchard together with the remaining earthen wall at the central part of the historic quarter. It has represented one of the significant cultural landscapes in Hagi (Figures 7-7 & 7-8).



Figure 7-7: *Natsu-mikan* orchard and remaining earthen wall at the historic core



Figure 7-8: *Natsu-mikan* orchard

As Section 6.6 described, today, the *natsu-mikan* business has become a far smaller than before and many orchard plots have been turned into houses and other uses. Yet, many interviewees have proudly referred to the context of the *natsu-mikan* orchard of the historic core, as it once rescued the city from depression in the 1870s (Section 6.5). The city hall has set up the annual *natsu-mikan* festival in May in the *natsu-mikan* park located by the river Hashimoto. It may be seen as an example of the collective actions of people in relation to the tradition and culture, associated with the interaction between people and natural processes.

Hagi has provided another distinctive traditional cultural product, *Hagi-Yaki* (pottery); recognised as one of the most important and the oldest pottery centres in Japan, Hagi has produced two living national treasures of Japan in the pottery arts in the 20th century (Ishizaki, 2003). The survey has identified that a number of potters in the city have continuously created high- quality pottery as well as pots for everyday use, though its popularity has declined over the past 20 years or so.

As the emphasis has moved to high-tech industries from the traditionally primary ones that used natural materials and produce, Hagi has suffered from an economic slump for a long time. In this circumstance, a movement for the revitalization or regeneration has emerged in Hagi. This will be explored in Section 7.6.

7.5.6 Conclusion

This section has identified that interviewees' views and opinions have been key to appreciate a real world of Hagi, as well as the important aspects and characteristics of the interaction between people and natural processes. It has revealed in particular, distinctive cultural characteristics of Hagi and people to understand the causes behind the specific topics of negatives and positives found in the survey by questionnaire (Section 7.4).

One of the most distinctive aspects in their views and opinions seems to be related to the cultural or social characteristics of the city. It has included conservatism and division between the residents, which are associated with the different lengths of time people have lived in Hagi. Yet, it has resulted in positive and negative reasons for the significance of Hagi's situation. The negative points may be to do with the regenerations and revitalizations of Hagi, while the positives can be said to be a variety of volunteer activities for the protection and conservation of historic heritage. The other aspects included (a) an aging society and declining population, and (b) changes in local industries. These aspects have generated fundamental concerns about Hagi, including environmental deteriorations and the sustainability of the city.

To sum up, it has been identified that the most significant characteristics of Hagi may be part of a socio-environmental or socio-ecological interaction between people and natural processes, in particular in relation to the local tradition and culture. In this respect, the next section, about an emergence of the regeneration movement is important to understand the cultural characteristic of Hagi more in depth.

7.6 An emergence of Regeneration for Hagi

7.6.1 Introduction

The emerging regeneration movement in Hagi may be seen as a positive movement because the collective actions of some groups of people have created a contemporary interpretation of the of the traditional local culture using natural resources of the area, and different generations' collaboration works. Although, the movement has been conducted by isolated small groups, and the results have not yet received a wide enough reputation, they can be seen as an invitation for related collective actions to revitalise and regenerate Hagi. The movement may enhance the local identity as well as creating social, economic and environmental values for Hagi.

7.6.2 Experimental works with natural materials

The field survey has found that there have been experimental new businesses employing local natural materials, such as bamboo for papers and furniture, and minerals for glass. Interviews have been held with craftsmen and women in relation to the renewal of traditional cultural products.

Bamboo paper-making and bamboo forest protection

This is a small group of a few members in relation to the reinterpretation of the traditional culture of Hagi. They have recreated bamboo paper using the local natural material, one of the traditional crafts activities in Hagi. Bamboo paper can be used many ways as one of the materials for interior decoration, in addition to artistic products. The group have contributed the protection of the bamboo forest of the city, as they have maintained the forest. Thus, their work may be said as a significant collective action in the city, creating social, economic and environmental value, as an interesting production of the interaction between people and natural processes.

The work was started by one of the interviewees (female, in her 70s) by herself about 15 years ago. She enthusiastically explained her experience of how she became involved in protecting bamboo forests and making handmade bamboo paper. She began hill climbing in Hagi after

her children had grown up. As she climbed a mountain of Tadoko-yama in the city, through a satoyama landscape between the mountain and the river Matsumoto, she discovered the deterioration of the bamboo forest, and set up an environmental protection group called *Komorebi – Satoyama Ouentai*. She also began making bamboo paper in 2003 (Nishizaki, 2015). She presented her scheme to the forest owner and the Hagi office of the Forest Department of Yamaguchi prefecture, who helped her to use bamboo for free for maintaining the forest.

It was painstaking work for her and her followers as they had no previous experience of forest maintenance and handmade bamboo paper-making. They studied, tried and made mistakes repeatedly, and the membership once declined to only two people including herself. Nevertheless, they overcame the difficulties and exhibited their bamboo paper at the city hall.

They set up a bamboo paper studio in March 2015 and, soon after, the studio was visited by four women from Tokyo who had experience of this kind of craft making; this encouraged the group. A young man and a few women in the city have since joined the studio, and established a network of bamboo forest protection and bamboo paper-making groups.

Before the World War II, bamboo paper production was once an active industry in Hagi, as the surrounding mountain forest produces abundant bamboos of high quality. However, it caused environmental problems, as polluted waste waters from the pulp products ran into the river Matsumoto, generating huge damages to the fishing business at the mouth of the river. Consequently, the demand for bamboo declined rapidly, and it was eventually abandoned. As a result, the bamboo forest has hardly received any attention for a long time, and deteriorated so badly until the “*Komorebi*” was set up (Nishizaki, 2015). The group has discovered a way to inflict the least possible environmental damage by creating a new method of paper production, as well as using the waste of other bamboo productions, such as bamboo screens.

Glass works

Another craft work being resurrected is that of Hagi glass and *urushi* (a lacquer of Japan). This Hagi glass is a recreation of the 19th century glass work made from a local type of stone of quartz-basalt, a kind of andesite produced from Kasa-yama (Gagi Glass Art Studio, 2015), a tiny peninsula pushing out to the Sea of Japan, located just off the eastern edge of the delta in the city. Hagi glass was originally founded by a scientist Mr. Nakajima, in 1860, and today a man (Mr. F), a crafts artist, scientist as well as a historian on the growth of Hagi’s industry in the early modern period, has set up the Hagi Glass Art Studio. He has made an interesting contemporary design for the new Hagi glass using the original method. One of his recent

interesting works has been an experiment to fuse together two cultural tradition, the Hagi glass of a very pale green colour and the dark red or black of the *urushi* coated on the surface of the pale green glass, representing a sense of Japanese art.

Allotment

Another notable example of an experimental collaboration work is seen between farmers and the City's Agricultural Department, enhancing the people's interaction with the land, i.e. allotment. It has progressed for the last three years, with the emergence of an interesting movement to use uncultivated land as the allotment gardens. The collaborative work started through a survey of uncultivated land in Hagi in order to first create a database. Then, a scheme for allotments was created for anyone in the city who wishes to cultivate the land. As a result, the department has received more demands from residents than the actual number of available plots.

7.6.3 Collaborative opportunities

The group of interviewees have revealed the potential of Hagi. A group of middle-aged men and women in different professions has set up 'Hagi-Love', a volunteer group of people who love Hagi, aiming to re-energise the city by providing experimental activities and communication with younger people, not only within the city but also throughout the country. They have used a range of social media and other internet tools effectively.

For instance, the group have established the 'Hagi-Love School', a series of collaborative activities between the members of Hagi-Love and the pupils of the Hagi High School of Commerce and Technology that has been running for the last five years. It has aimed to promote the contents of the tourist interest in Hagi and to give an opportunity for the pupils to learn the traditional culture directly from the artists and its local significance outside the school in the city. As a result, it has provided a connection not only between the pupils and the artists, but also between the values of the past, present and possibly the future.

The 2015' collaboration activity of Hagi -love School was to establish communication between parents and children. One of the 13 groups of the school proposed an interesting idea of establishing communication by children and parents caring for a vegetable field together. The researcher participated one of their workshops in one of the classrooms in the high school; interestingly, this workshop was monitored and recoded by professionals in Tokyo using internet tools. This may be seen as an interesting example of collective actions regarding the collaboration of different age groups, as well as the way in which they have provided a network and used the communication technologies available.

7.6.4 Conclusion

The section has identified that interesting new movements are emerging in the city that are contributing to the revitalization and regeneration of Hagi. It is interesting to find that these experimental activities were undertaken by a variety of people, not only professional middle-aged men and women, but also seniors and young people of both genders.

In relation to the interaction between people and natural processes, it has been identified that re-establishing traditional arts and crafts, or making contemporary interpretations of products of the traditional culture, such as bamboo paper and Hagi glass, were significant. For instance, the group making bamboo paper have delivered the protection of the bamboo forest. This may be seen as an example of community participation in local environmental concerns. These experimental activities were isolated and limited, and the influence on revitalization was not great, yet significant. Another significant experimental collective action was the collaborative opportunities between different professions of middle-aged males and females with pupils of the Hagi High School called 'Hagi-Love School'.

7.7 Analysis of the Findings of the Field Survey

7.7.1 Introduction

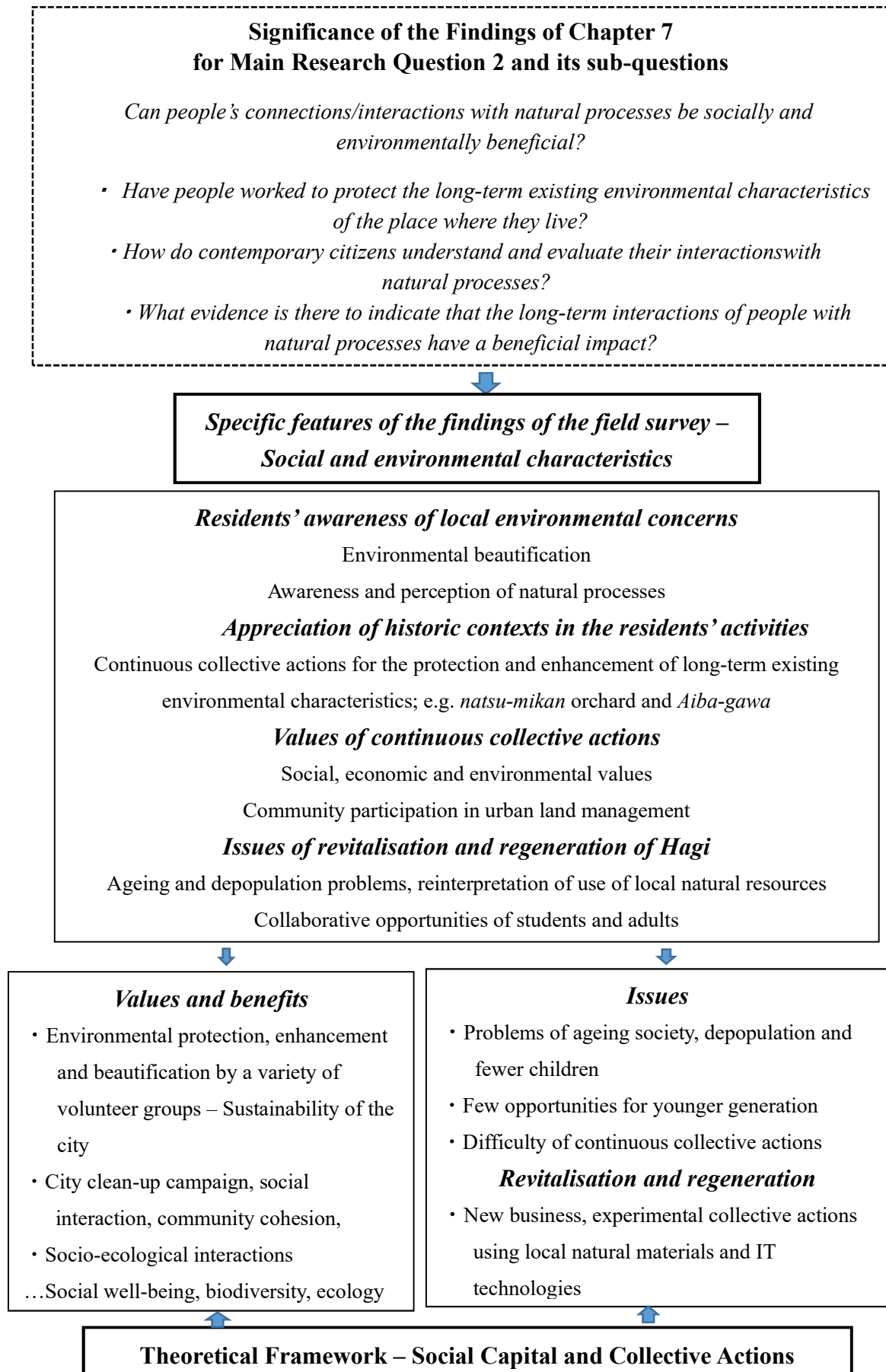
This section provides further analysis focusing on Main Research Question 2 and Sub-Research Question 2 (Section 7.1). The analysis was carried out along with the key themes, below, and the objectives (shown Section 7.1.1), describing as a kind of dialogue between the past and present regarding people's interactions with natural processes.

Key themes

- (1) Residents' awareness of local environmental concerns
- (2) Appreciation of historic contexts in residents' activities
- (3) Values of people's continuous collective actions
- (4) Issues of revitalization and regeneration of Hagi

Table 7-5 shows (next page) the significance of the findings of this chapter.

Table 7-5: Significance of the findings



7.7.2 *Theme 1: Residents' awareness of local environmental concerns*

People's awareness of local environmental concerns may be seen through their attitude and perception of the natural processes of the place where they were born or have lived for a long time. This was found from the outcomes of the field survey in Hagi.

Environmental beautification

One of the most significant findings of the field survey was residents' awareness of environmental beautification, which can be seen through their continuous collective actions for the protection and enhancement of the long-term existing environmental characteristics, as well as the beautification of local streets and watercourses of the city (Section 7.2). They have included (a) the *Aiba-gawa* love group, (b) the *Kikuga-hama* beach beautification group, (c) the Hagi castle conservation group and (d) a number of residents participating in the city clean-up campaign, such as the Hagi beautification scheme and one day cleaning rivers, canals and beaches (Sections 7.2.4, 7.2.5 and 7.2.6).

The examples may be seen as a community participation in historic city environmental management. For instance, the collective action for the beautification of *Kikuga-hama* beach group can be representing a notable example for citizens' awareness of local environmental conditions (Section 7.2.4). The group was established in 2003 by the people living near to the beach, who were inspired by one man's lifelong work cleaning up the beach over 30 years (Section 7.2.4). As the man approached 93 years of age, about 100 people got together to continue his work. Today, the group is seen as an active community of 80 people, divided into three sections for the beautification of the beach, working twice a month throughout the year, and holding an AGM in April and an evaluation meeting in December.

The beach is located at the northern edge of the delta, close to the former castle precinct; it has a wonderful grandstand view of *Shizuki-yama*. It is one of the most significant cultural landscapes of the city, functioning as a bathing beach in the summer also.

This may be interpreted by as Japanese awareness or perception of natural processes of the place in which the people live, as a cognitive connection with natural processes. People appreciate their own identity of the place where they live in relation to the natural processes of the area. Local tradition and culture are closely related to the regional characteristics of climate and geographical settings. As Section 2.2.2 showed, the Japanese recognition of the distinctive four seasons of the country is closely associated with the traditional daily foods of the seasonal natural produce and fish catch.

The evidence from the findings show that regional climate differences play an important part in people's lives, including awareness and perceptions of natural processes. For instance, Japanese farmers are very much aware of climate change and environmental conditions, in particular the rice farmers during the rice growing process. As talked about in Section 2.2.2, it is vital for them that the sequence of the seasons follows correctly, from the rainy season through high summer to a moderate autumn for the success of the crop, and in this period, typhoons usually arrive on the ocean side of the Japanese archipelago. Thus, for the farmers as well as fishermen, working and coping with daily weather is crucial, if not almost their entire life; they have to cognitively prepare for the prevention of possible damage due to the climate or natural processes.

At the same time, however, the Japanese admire another characteristic of natural processes that they appreciate very much: the seasonal landscape sceneries. For instance, a variety of species of trees and fruit along with blossom in different seasons – such as cherry in spring, water melon in summer, grape in the early autumn, and satsuma (a type of orange) in the late autumn – appear in seasonal sequences according to the geographic location of the places.

In the case of Hagi, residents' awareness or perception of the local environment seems to be related to their lifelong connection or interaction with the natural processes of the area, and their appreciation of the historic context of natural processes. As Sections 6.2 and 6.3 showed, the characteristic relationship between people and natural processes are reciprocal in such a way that people are influenced by nature and people influence nature (Everts, Mitten and Overholt, 2014). This norm may be interpreted in the contexts of the forms of growth of Hagi castle town (Chapter 6). It can be seen in the present day as well in relation to people's collective actions for the protection or enhancement of the long-term existing environmental characteristics of Hagi.

7.7.3 *Theme 2: Appreciation of the historic contexts by the residents*

Another important and significant finding of the field survey was people's appreciation of the historic contexts of the natural processes of the place, which may lead to their collective actions for the protection and enhancement of the cultural landscapes in relation to their environmental awareness (Section 7.7.3). This is important for the study of the interactions between people and natural processes; in particular, for the sustainability of historic built environments. This is because the respondents to the field survey have expressed and appreciated the values, reasons and consequences of people's interactions with the natural

processes of the place over time, including social development and establishment of the long-term existing environmental characteristics.

The findings support the conclusion of Harrison and Burgess (2003). They say that individuals are socially engaged actors whose environmental understanding and behavior is contingent on where they live, the history of events, their social networks and moral values. As regards the theoretical framework of this research, their argument may reinforce the concepts of social capital and collective actions, as they show the way that society ‘works’; it depends upon a reflexive process of mutual trust through which individuals and structures come to constitute each other.

This may be examined by creating a dialogue between the historic context of the natural processes of the area and present-day collective actions concerning the existing environmental characteristics. Examples are shown below for the issues of the *Natsu-mikan* orchard, and *Aiba-gawa*.

Natsu-mikan orchard

Respondents to the field survey were aware of the distinctive scenery of the *Natsu-mikan* orchard in relation to its historic context, in particular those remaining in the historic core of the city. As Section 6.5 showed, the scheme of *Natsu-mikan* made the revitalisation and regeneration of Hagi possible when the people of Hagi suffered the most difficult time in their history after the removal of the Hagi domain and the Meiji restoration for a couple of months from the 1860s.

The scenery of the historic area of Hagi with the *Natsu-mikan* orchard has been recognized as one of the most distinctive cultural landscapes of Hagi by many people, including writers and artists of the country. Although the orchards disappeared to a great extent in this area after World War II, the area represents the historic context of Hagi’s existence. Today, in May every year, people participate in the annual event of the festival of *Natsu-mikan*, at the *Natsu-mikan* Park in the historic area close to the river Hashimoto, commemorating the context of revitalization. Residents and visitors enjoy the unique scenery of the orchards with the blossom of white flowers and the yellow-orange color of large fruit; both are seen at the same time in May. It is an important event in the city as a meaningful continuous collective action of the residents, involving many individuals and volunteer groups.

Aiba-gawa

Aiba-gawa was built in the middle of the 18th century as a part of the network of watercourses for the flood prevention of the delta, connecting with two main rivers and the Sea of Japan. As Section 6.3.3 showed, the network of watercourses has created not only the fundamental structure of Hagi, but also many other functions of the growth of the city, contributing diverse benefits and values for it. Since the beginning, the protection and maintenance of this watercourse have been undertaken by residents of neighboring communities along the stream for centuries; it has become a sort of custom or norm of these people (Section 7.2.4). Although its width has narrowed, it has retained the original route and the work of the maintenance group was twice awarded prizes from the government for environmental protection in 1984. The current protection group, the *Aiba-gawa Love Group*, was set up for the enhancement of neighboring community ties and beautification in 1988.

As Section 2.3.5 explained, where a socio-ecological interaction between the residents and the natural processes of the area is consciously made for a long period of time, it may create ‘ontological security’ in the personal history of people’s lives. It may contribute to people’s motivation to join the implementation of the environmental protection of the place.

7.7.4 Theme 3: Values of the continuous collective actions

The continuous or repeating collective actions of various volunteer groups regarding local environmental concerns have added values to the city such as social well-being, revitalization and biodiversity. As talked about earlier, people’s continuous protection, enhancement or beautification of the long-term existing environmental characteristics are viewed as significant community participation in the management of local environmental issues; for instance, the work on *Kikuga-hama* beach and *Aiba-gawa*, explained in Section 7.7.4.

As Section 7.2.4 explained, the most notable example of the value of continuous collective actions was ‘Protecting Water and life in Hagi, Fukue’. It stood against the prefecture’s scheme to build an industrial waste final treatment plant and was a remarkable achievement of protecting the local environment, creating social, economic and environmental value. It represented community participation in the land-use management of Hagi City Hall. The reason for this is that their continuous collective actions were implemented over a 17-year period, involving diverse organizations, professions and individual citizens, including the City Hall; and the prefecture eventually abandoned the scheme. People’s efforts over long-term collaborative actions have built up their credibility and legitimacy as they involved diverse

collective actions, including lectures by the relevant professionals, visits, conferences, and demonstrations in the city streets.

The evidence from these findings concurs with the concept developed by Vanni (2014), who states that collective action increases the credibility and legitimacy of decision-making. The success of these actions was owed to people's networks over long periods of time, as a closeness or bond was created among the participants. The concept of Putman et al. (1933) supports this; they say that dense and horizontal interactions create the most powerfully beneficial scale effects for the society as a whole.

In respect to an aspect of ecology, Vanni (2014, p. 23) says that collective actions of scale play an important role; in particular, ecological scale merits. The collective action 'Fukue' explained above is a good example of this scale merit for ecology. Other collective actions, such as the beautification groups for *Kikuga-hama* and *Aiba-gawa* (Sections 7.2.6 and 7.7.4), have created ecological value. These examples suggest that continuous collective actions – participating in the local environmental issues – may achieve an ecological contribution; in other words, ecological value results from the socio-ecological interaction between people and natural processes.

7.7.5 Theme 4: Issues of revitalisation and regeneration of Hagi

The evidence of the field survey concurred with extremely important issues in Hagi that are concerned with the revitalization and regeneration of the city. As Sections 7.3 and 7.4 described, many respondents to the interviews focused on social issues. They were worried about the problems of the ageing society, depopulation and fewer children, as well as fewer opportunities of the younger generations, and were concerned about the sustainability of the city (Section 7.5.3). This issue was also pointed out by many interviewees in secondary sources from the *Kitaura-Web* (Sections 7.3.4 and 7.3.5). These problems might result in all sorts of negative effects in Hagi, economically, socially and environmentally; for instance, at present most of the volunteers of the city, such as those involved in the protection and enhancement of the cultural landscapes, are senior citizens.

The fieldwork indicates that the theory of social capital linking to collective actions on local environmental concerns may not work effectively if the number of the participants in the collective actions falls below the minimum. For instance, as Section 7.2.6 showed, the Hagi castle conservation group has faced difficulties with a decline in the number of participants due to concerns about ageing and depopulation, while no newcomers have joined in recent

years. In fact, this issue is not only a major problem of Hagi, but also a national concern throughout Japan, due to the centralization of the country towards the Tokyo area (Section 7.5.3).

Needs for regeneration and revitalization

The issues of ageing and depopulation are crucial for the younger generations. Hagi needs effective schemes or provisions for regeneration and revitalization. As Section 7.6 showed, the emerging movement of regeneration may be seen as a positive sign, because the collective actions of some groups of people have created a contemporary interpretation of the traditional local culture using the natural resources of the area, and different generations' collaborative works; for instance, new businesses employing local natural materials, such as bamboo paper and furniture, and minerals for glass (Section 7.6.2). Another significant example is the collaborative opportunities between a group of middle-aged men and women in different professions and the pupils of the Hagi High School of Commerce and Technology. Their aim is to re-energize the city by providing experimental activities and communication across the generations, not only within the city but also throughout the country, using a range of social media and other internet tools. An interesting experiment of theirs was the idea of establishing communication by children and parents caring for a vegetable field together (Section 7.6.3).

Such experimental collective actions may help to revitalize and regenerate the city effectively, because residents may know more about local environmental characteristics and the historical contexts of the relationship or interaction between people and natural processes. Collaborative collective actions of young students and adults to learn together about local culture and tradition, using both current technology and local natural resources, interacting with each other as well as with natural processes, may be significant. Although these experimental collective actions were isolated and limited, and the influence on revitalization was not great, they still revealed the potential and significance of Hagi.

7.8 Conclusion

This section presents the conclusion of this chapter and the examination of the findings and analysis of the field survey in Hagi to respond to Research Question 2 and its sub-questions.

It has been identified that people's interactions with the natural processes of the place can be socially and environmentally beneficial. Specific features of the findings of the field survey were related to distinctive environmental and social characteristics of Hagi, including people's involvement in protection or enhancement of the cultural landscapes, and social concern about

depopulation and ageing problems. It was identified that the theoretical framework of this research, i.e. social capital and collective actions regarding local environmental concerns, can interpret the significance of their collective actions.

In brief, it was found that the people of Hagi have become involved in or have participated in collective actions for the protection or enhancement of the cultural landscapes in the city, including the long-term existing environmental characteristics. People have formed a variety of environmental protection groups, undertaking diverse collective actions regarding local environmental concerns. This contributed to people's personal life histories in Hagi, as well as their appreciation of the historic context of the natural processes of the area.

Many respondents to the field survey expressed individual opinions and views, concerned with not only the appreciation, awareness and perception of the historic cultural landscapes, but also social concern about the ageing problems of the city today. The face-to-face interviews revealed the reasons behind these significant issues. It was identified that people's continuous collective actions for the protection of the local environment have created social, economic and environmental values, contributing to the city, such as social well-being, biodiversity and ecology. Their continuous collective actions may be seen as socio-ecological interactions and community participation in urban land management.

The field survey of Hagi identified that people's connections/interactions with natural processes have been socially and environmentally beneficial. This can be seen where people have fulfilled collective actions on local environmental issues over the past decades; in particular, a variety of volunteer groups' collective actions in relation to their interaction with natural processes. These were significant, as they have continuously been implemented for the protection, enhancement and beautification of the cultural landscapes over time. This can be seen as a significant community participation in local environmental concerns. People's works have created positive effects and values for the city in social, economic and environmental aspects.

At the same time, however, the field survey has found significant social issues in Hagi, which focused on the problems of an ageing society and depopulation. The issues may affect the sustainability of the city in the future unless effective measures or actions for revitalization and regeneration are initiated. To respond to this situation, a new movement has emerged in the city. Although the movement is still isolated and limited in numbers, it may lead to the development of regeneration and revitalization because it involves the experimental collective actions of a cross-section of people. As Section 7.6 described, they include a current

interpretation of traditional cultures, including arts and crafts products using the natural resources of the area, such as bamboo and minerals. The collaborative communication opportunities among high school children and middle-aged professionals are a notable action; they have used IT communication technologies effectively (Section 7.6). Another example is, as Section 7.2.2 showed, the CCGM; the welfare/education group have given the opportunity for pupils to learn the importance of the interaction between people and natural processes, such as an experience of farming, connecting with the land.

To sum up, the examination of the findings of the case study of Hagi has raised a number of important specific features for the study of the interaction between people and natural processes in historic built environments. The analysis of the findings of the case studies in both Hagi and Newcastle should be discussed together further to respond the research questions and their sub-questions, which should include the following four themes to argue how and why the interactions between people and natural processes in historic built environments are important; this will be shown in Chapter 8. The four themes are:

(1) Forms of growth; (2) people's appreciation for the historic context of natural processes; (3) residents' long-term socio-ecological interactions; and (4) ontological security and risk management.

Chapter 8:

Discussion

Chapter 8: Discussion

8.1 Introduction

This chapter presents discussions on the conclusions of Chapter 2 (the literature review), Chapters 4 and 5 (the case study of Newcastle), and Chapters 6 and 7 (the case study of Hagi), in order to answer the following Questions:

Main Research Question 1

In Newcastle and Hagi, have the interactions between people and natural processes affected the forms of growth of historic built environments?

Sub-Research Question 1

- (a) What forms of growth have occurred in the historic built environments (in Newcastle and Hagi)?
- (b) How has the growth been affected by interactions between people and natural processes?

Main Research Question 2

Using examples of Newcastle and Hagi, can people's connections/interactions with natural processes be socially and environmentally beneficial?

Sub-Research Question 2

- (a) Have people worked to protect the long-term existing environmental characteristics of the place where they live?
- (b) How do contemporary citizens understand and evaluate their interactions with natural processes?
- (c) What evidence is there to indicate that the long-term interactions of people with natural processes have a beneficial impact?

Chapter 2 provided important concepts and arguments from the relevant literature. The findings of the role and characteristics of social capital and collective actions have provided a theoretical framework for this research. In brief, the concept is that social capital, a network of people (individuals, groups and rules) link through trust to deliver collective actions regarding local environmental concerns. It is important to recognise that trust is a contextual variable relating to places and people, and it is the key to the implementation of collective actions. The other contextual variables include shared interests, mutual benefits and aims, appreciation of local distinctiveness, and contexts such as cultures and traditions, as well as characteristics of geography, topography and climatic conditions. These are the basis of the arguments of this research in response to the research questions.

8.1.1 *Structure of this chapter*

This chapter aims to propose answers to Main Research Questions 1 and 2, and their sub-questions. The chapter consists of five sections; the first four sections show the discussion on the following four themes, and the fifth section is the conclusion.

Themes for analysis

- (1) Forms of growth;
- (2) People's appreciation for the historic context of natural processes;
- (3) Residents' long-term socio-ecological interactions;
- (4) Ontological security and risk management.

These themes emerged from the literature review (Section 2.5.3), and were identified as specific features in the main findings of the case studies of Newcastle and Hagi. The analysis is shown in relation to the four themes, as a kind of dialogue between the past and the present – the continuities, changes and significances in both historic cities.

8.2 Theme 1: Forms of Growth

The evidence revealed that the specific features in relation to people's interactions of each city over time have contributed to the forms of growth and fundamental structure of both cities. These features include the distinctive geographic, topographic and climatic conditions, as well as the circumstances of the place, such as politics, conflicts and significant events. These findings support the conclusion of Heynen et al (2006) that historic cities portray the outcome of the interactions between people and natural processes. Also, the examinations of empirical studies concur with the argument of Scharper (2013) that human–nature relationships reflect and are reflected in people's experience of the places and environments they encounter in their live.

The case studies have revealed that the people's interactions with the natural processes of the place were seen in two-fold of contrasting characteristics, (a) working counter to, or disruptive of natural processes and (b) working with the natural processes. The latter was identified through examination of the long-term existence of the environmental characteristics of the both present cities. Analysis of the historic context of these characteristics has shown a significant evidence for the continuity and change of the relationship between people and the natural processes of the area over time. It has shown the process of social growth as well as people's concerns about the local environment. The following are significant findings in each case study place.

Newcastle

Newcastle had a significant radical reshaping of the natural environment in the 18-19th centuries, along with industrial advances such as modern science and technology. Ancient denes in the middle of the city and rich local mineral resources such as coal, and close water navigation of the River Tyne, required an intensive development. The denes were culverted and filled, creating habitable land, new road and public facilities developed to respond to the rapidly increasing population; this was seen as a case of the people's interactions which were working contrary to or disrupting the natural processes.

On the contrary, and at the same time, examples of people's interactions working with the natural processes for the benefit of both people and natural systems can be seen in the central part of the city. The ancient environmental characteristics of the Town Moor, a vast open grass area, and Jesmond Dene, a wooded dene by the Ouseburn, were retained. These areas developed completely different modes of use due to the unique conditions of their land use: the former was the ancient right of the Freemen of Newcastle for grazing, and the latter was the Deed of Gift of Lord Armstrong for citizens' use.

These forms of growth have resulted in the distinctive characteristics of the historic area; creating a unique contrast between the congested city centre and a countryside appearance of the Town Moor, and Jesmond Dene, still seen in today, as the historic cultural landscapes and identity of different parts of the city.

One of the most significant findings of the examination for the form of growth in Newcastle is the growth of social activities and connections resulting from the people's interactions, working with natural environments. This was closely related to the unique development of the Town Moor (Section 4.3) and Jesmond Dene (Section 4.4) as well as the allotment gardens (Section 4.5). These areas became an opportunity for people to connect with or interact with natural processes in their daily life, including new recreational activities, producing their own food in the fresh air, taking them away from the unhealthy industrial working places, as well as the developments of public parks, demonstrating the interactions. It has also led to the development of a grass-roots environmental protection movement which is the volunteer group Friends of Jesmond Dene. While the group has carried out the collective actions for the protection and enhancement of the Dene, they also contribute to the education of children, such as developing and understanding wild-life (Section 4.4.4).

As section 4.5 described, the growth of the allotment garden communities stimulated the emergence of individuality and a sense of community spirit among plot-holders. While

plot-holders have cultivated the land for their own fresh foods, they have also developed social activities, creating social communications and a community spirit, and have protected open land through the collective actions for the running the communities. As a result, their engagement with the land has created local cultures and traditions, such as allotment associations' annual events and helped protect wildlife and work with ecology of the area. It should be noted that the allotment garden movement which reflects the national movement of the time concerned with social reform in relation to industrial works, can also be linked to other movements that reflect the benefits of people interacting with natural processes, such as the emergence of the Garden City Movement (Creese, 1966; Makino, 1987; Kendle and Forbes, 1997).

Hagi

The case study of the historic context of natural processes of Hagi has revealed another interesting and significant example of the forms of growth, in the case of Japan, along with a unique social and environmental development. The following two long-term collective action schemes have resulted in the growth of and created the fundamental structure of the present city.

The first was the flood prevention scheme in the castle town period (from the beginning of the 17th century to the mid-19th century) due to the inherent nature of the marshy delta where Hagi castle town was situated. The second scheme was the planting of the *natsu-mikan* orchards and the business that emerged from them, after the Meiji restoration.

During the growth of Hagi castle town, the unique social growth and environmental characteristics were developed, while the strict regulations of the Tokugawa central regime affected the castle town layout to a large extent. For instance, an emergency system for health and safety was created through collaborative work between the townspeople's street communities and the samurai administration to manage the natural processes of the delta; in particular, to alleviate flood disasters. Their long-term collective actions of the interactions changed the environmental characteristics – for example, by building a network of watercourses in the delta – but enhanced community as well as creating the fundamental structure which has resulted in the unique characteristics of the present city.

Regarding the growth of the early modern period of Hagi, the upheaval difficulties at the time of Meiji restoration, were eased by the people's collective actions in the planting of the *natsu-mikan* orchards throughout the city, and the business that was created as a consequence. Hagi transformed from a feudal society to an early modern society, contributing to regeneration and economic stability through the creation of (a) characteristic landscapes in the historic core

with the *natsu-mikan* orchards, and (b) administrative and institutional facilities on newly acquired habitable land by the reclamation of the marshy central delta. However, delay of modernization relied on the *natsu-mikan* business resulted in the need for further regeneration and revitalization of Hagi.

To sum up, the distinctiveness of the present cities of Newcastle and Hagi are seen as the accumulation of the people's long-term interactions with natural processes, forming local cultures and traditions resulting from residents collective actions based on local environmental concerns. This has helped create the identity of these historic cities. This finding supports the statement of Roe and Taylor (2014) that cultural landscapes are seen as living landscapes that reflect a range of relationships between humans and natural cycles. The findings will be discussed further in detail, as a dialogue between the past and present of the interactions, in Sections 8.3, 8.4 and 8.5.

8.3 Theme 2: People's Appreciation for the Historic Context of Natural Processes

The field surveys of both Newcastle and Hagi have revealed that many respondents expressed their appreciation for the historic context of natural processes of the area where they live, and they were aware of the present environmental conditions and issues. This was found to be of common significance in both cities through the survey findings.

It was identified that there has been a tendency to form volunteer groups to carry out collective actions in relation to the local environments, in particular the protection or enhancement for the long-term existing environmental characteristics of the areas. For instance, in the case of Newcastle, the foundation of Friends of Jesmond Dene and their continuous collective actions in relation to the Deed of Gift of Armstrong (Section 4.4). and in the allotment garden communities (Section 4.5), through their development from individual interests to the community interests. In the case of Hagi, a variety of volunteer groups' collective actions are evident (Section 7.2), such as the continuous collective actions of community collaboration for 'protecting Water and Life - Fukue (Section 7.2.3).

These collective actions have contributed to social and environmental well-being, including social communications, the support of wildlife and ecology. It may be recognized as an example of community participation in urban land management or conservation of the local environmental character. The evidence supports in different places in the literature. For instance, as Section 2.2.7 shown, the importance of community participation in urban nature conservation has been addressed, including community-led nature enhancement (Kirkcaldy,

2017) and conservation programmes (McPhee, 2007). People's awareness of natural processes may be related to individual environmental morality or environmental ethics, which may vary from person to person, as well as the distinctiveness of the natural processes of the area, such as climate differences (Sections 2.2.1 and 2.2.6). It includes the tradition and culture in relation to the regional characteristics of the natural processes of the place (Section 2.2.2).

The findings of the field survey support the conclusion of Harrison and Burgess (2003) that individuals are socially engaged actors whose environmental understanding and behaviour is contingent on where they live, the history of events, their social networks and moral viewpoints.

Such collective actions of local people may be interpreted by the theoretical framework of this research, i.e. social capital links collective actions. The importance of social capital is the networks of individuals, groups and rules, and the key to the link between social capital and collective actions is 'trust', which is the contextual variables according to the place (Section 2.3.4). People's appreciation for the historic context and awareness of local environmental issues may be seen as a common or shared interest of people. This may generate 'trust' among the group members for carrying out their collective actions to achieve their common goals.

This research argues that the allotment garden communities of Newcastle may be seen as a significant example that support and explains the hypothetical framework, showed in Figure 2.6 (Section 2.5.2).

The allotment communities have developed from the individual interests in the cultivation of land for their own daily food, connecting with fresh air, which created a sense of individuality, away from the industrial work places. This may be seen as a trigger of the beginning of social growth or a modern social movement of the country. These communities have developed a sense of community, forming the networks of individual plot-holders, allotment associations (AAs) and collective rules and actions. As Section 5.4.4 described, their collective actions developed over a century have created community values, including not only community cohesion and community spirit, but also local cultures and traditions. The field survey of the present day allotment garden communities found that the communities have extended their contributions to wider communities, including school allotments and concerns about equal opportunities, as well as collaboration works with other environmental protection groups.

Thus it may be said that people's appreciation of the context of natural processes or awareness of local environmental issues catalyse their collective actions, and contribute to social and environmental well-being. Their continuous collective actions have resulted in the

enhancement of education for children and young families, social communications among participants, such as annual apple day of Jesmond Community Orchard associated with West Jesmond AA (Section 5.4.5). It has also provided greater connection with other environmental groups to support the conservation of wildlife, for instance, through Newcastle Allotment and Garden Show with other environmental groups (Section 5.2.3).

In Hagi, as section 7.4 showed, many respondents to the field survey expressed their admiration for the cultural landscapes and the appreciation of the historic contexts, for instance, the *natsu-mikan* orchards and the business stemming from them, and the Aiba-gawa Love Group work. The former represents the historic significance of successful revitalization for the upheaval of Hagi after the Meiji restoration (Sections 6.5.2). The latter represents the historic importance of the network of watercourses for the prevention of flooding. The continuous collective actions of Aiba-gawa Love Group have created not only local cultures and traditions, but also social cohesion of the neighbouring communities, in addition to the beautification of the watercourse; the group has existed for 70 years (Section 7.2.4).

Thus, this research stresses that the importance of people's appreciation or awareness of the historic context of natural processes. There is potential benefit to communities of increased learning from the context and past experiences of the interactions. The next section will look into another significant finding of the case studies regarding residents' long-term socio-ecological interactions.

8.4 Theme 3: Residents' Long-term Socio-ecological Interactions

One of the most significant findings of the case studies is the collective actions of people's long-term socio-ecological interactions due to local environmental concerns, identified in both Newcastle and Hagi. Such interactions have contributed to public interests, creating social, economic and environmental values that may contribute to the sustainability of historic built environments. This research indicates that such interactions create a positive cycle for the sustainability of natural processes in urban environments.

Positive cycle

As Section 2.2.1 explained, the recent literature in the field of the human–nature relationship in urban environments are more concerned with the importance of socio-environmental or socio-ecological interactions between people and natural processes. This is reflected through the concern over issues of environmental deterioration, including changes in biodiversity and ecosystems globally and regionally. This has been connected to current urban dwellers'

lifestyles, as they enjoy the proliferation of information technology and the dynamics of urban culture, while not connecting or interacting with natural processes as they did decades ago. This is particularly true of children (Louv, 2005).

The examination of the case studies of Newcastle and Hagi support Selman's (2012) argument that environmental problems seem to have been attributed to a profound disconnection between people and natural processes in their daily lives. It also identifies the theory of Brook (2010) and Russell et al. (2013) that as urban inhabitants' connection with natural processes increases, people tendency to appreciate the characteristics of natural processes, and they are enabled to receive the positive effects that nature offers. As Section 2.2.6 described, the positive effects include people's appreciation of wildlife and biodiversity. Another view was also identified in the empirical studies of both cities in the conclusion of Kendle and Forbes (1997) and Marzluff et al (2008) that the recognition of sustaining urban ecosystems provides a better living environment for people.

Regarding the characteristics of socio-ecological interaction, the field surveys support the argument of Harrison and Burgess (2003) that socio-ecological interaction can be seen in relation to local concerns rather than universal ones in the scale of their delivery, and be action-led rather than based on exhortation. The research supports the argument that one of the most important aspects of socio-ecological interactions are their long-term continuation. This is because such interactions create public interest, not only social, economic environmental values but also extends contributions to wider communities. This was identified in both case studies in the historical contexts and the present-day field surveys that long-term socio-ecological interaction sustains and enhances habitats, communities and species; in addition, it creates social well-being and environmental protection. It optimises the interpretation and education potential of the interactions.

For instance, the growth of the allotment garden communities in Newcastle has demonstrated this positive cycle. In the earlier time, as explained in section 8.3, industrial workers found independence as they got out from workplaces, cultivating land for their own food. They developed their own allotment association, having worked together with other members of the community, creating a sense of community spirit through carrying out collective actions for running the communities, as well as the protection and enhancement of open land. Members of the associations of recent years come from more diverse background. They have helped conserve the local environmental characteristics, creating social well-being in the form of community cohesion, education for school children and equal opportunities. Their recent collective actions have extended their contributions to wider communities, including

collaborations with other environmental protection groups, acting to enhance biodiversity, wildlife and ecology; their collaboration may also therefore contribute to the sustainability of the city.

It is indicated in the literature that the socio-ecological interactions have existed historically in many countries, including the concept of *satoyama* and *satoumi* in Japan (Section 2.2.8), though much less existence than before in recent years, in particular in urban environments. In the case of Hagi, the field survey identified the long-term socio-ecological interactions throughout its history. The field survey in Hagi revealed (Sections 7.2 and 8.3) that a variety of volunteer groups have been carrying out collective action, along with socio-ecological interactions for the protection or beautification of long-term existing environmental characteristics. They have contributed to the conservation of the cultural landscapes, creating social, economic and environmental values. These groups range from a small number of volunteers to a large number of members.

The most significant example of people's long-term collective actions is a large group for community collaboration with an institution in the city called 'Protecting water and life in Hagi, Fukue'. This exemplifies that such scale and length of collective actions of people for local environmental issues in relation to the socio-ecological interactions can create a most effective influence on decision makers. As Section 7.2.3 described, this organisation has existed over three decades being concerned with environmental protection and the ecology of land use. They achieved the complete abandonment of the prefecture's scheme for an industrial waste final treatment plant. Their collective actions involved a variety of residents from schoolchildren to a number of volunteer groups and institutional organisations in Hagi, as well as university professors and experts outside the city (Section 7.2.3.). They provided social cohesions of diverse people and groups, an education of school children about the socio-ecological interactions, contributing to an ecology of land use. The organization still exists today, acting for the land-use concerns and the protection of the local environmental characteristics. This emphasises the potential significance of collaboration and collective action for environmental policy.

8.5 Theme 4: Ontological Security and Risk Management

Urban residents' interaction with the natural processes of the area in which they live may create additional significant values for individuals as well as communities. The research found from the outcomes of the field surveys in Newcastle and Hagi that people's interactions with

the natural processes of the area have produced a feeling of ontological security for individuals in relation to risk management of the area.

Ontological security

The literature suggests that people who have interacted daily with the natural processes of the place in which they were born and lived in their childhood age or lived for a long period of time gain an individual sense of ontological security (Giddens, 1991; Grenville, 2007). A sense of identity and belonging to the area gained through particular daily experiences with natural processes. This norm has been identified in the research analysis of the case studies. Both surveys indicated a positive effect of ontological security, but a negative effect was also found.

As Section 2.2.9 described, ontological security is said to be a very important form of feeling of secure; humans require social structures in order to give them a sense of order and continuity, which in turn allows them a measure of confidence about who they are and how to behave in any given situation. In this regard, a sense of ontological security may be observed in the respondents of the research. For instance, allotment plot-holders of Newcastle who have been cultivating the land for many years described a clear identification with their allotment plot, as if their attachment with the land has been unconsciously embedded into their body and memories.

Some examples of ontological security could be found historically in the early years of allotment gardening in the period of World Wars I and II. According to the minutes of the Highbury South AA, ontological security characteristics may have developed among the plot-holders due to their cultivation of the land. As shown in Section 4.5, they developed a sense of attachment with the land and a sense of belonging to the allotment community, since they gained an opportunity to cultivate the land for their daily food. The importance of this was clearly seen in their prolonged negotiations with the Freeman and the city in the interwar period, where plot-holders desperately insisted on continuing to work on their plots, against the landowners' attempt to take back the land after World War I. Eventually, they met another need for cultivation of food due to the outbreak of World War II, and kept working on the land.

However, there may be seen a negative side of people's sense of attachment of the land for long-term. For instance, the field survey identified a common difficulty of many allotment garden communities about the balancing the needs of the association as a whole with the rights and circumstances of individuals (Sections 5.4.4 and 5.5.5). It has identified as one of

the most difficult issues of. For example in the School House AA some respondents of the field survey expressed regarding individual values and concerns rather than community values and concerns.

One of the important characteristics of the theoretical framework of this research, ‘trust’ may be a key to tackle the issues above. ‘Trust’ makes a link between social capital (i.e. networks of individuals, groups and rules) and collective actions. The continuous collective actions of socio-ecological interactions of the networks may ease these difficulties.

It should be noted, however, that to retain trust in continuous collective actions may be difficult where there are difficult power dynamics, for instance to do with the political and economic circumstances of the time or where such action may embarrass the decision makers, or land owners. This may affect the allotment communities’ cohesion.

In the case of Hagi, the research has examined whether ontological security may also have something to do with the motivation of the residents for volunteer work for the protection of the environment in Hagi. This has been identified, in particular, among those residents who have been connected with the existing environmental characteristics in the city for a long time or have embedded memories associated with these characteristics from when they were young. A number of respondents in the field survey expressed their embedded associations with specific sceneries or memories of the long-term existing environmental characteristics in their childhood or school-age period. It seems to be not only to do with their appreciation of the significance of the historic context or just a feeling of nostalgia with it, but also a feeling linked to their own existence or their established belonging to the place. This seems to align with ontological security characteristics, especially for those volunteer residents participating in protection work regarding local environmental concerns. Examples of this were found in the groups for the *aiba-gawa* watercourse, Kikugahama beach and Hagi castle’s remains, described in Sections 7.2.4, 7.2.6 and 8.4.

However, some respondents have expressed that communications between different volunteer groups were few; it may be to do with the distinctive social characteristics of Hagi, i.e. conservatism and divisions (Section 7.5.2). If collective actions are generally beneficial it is important for governance bodies to find a method for improving communications among volunteer groups and other concerned with local environmental issues, particularly. More effective outcomes may be achieved if all concerns are aired, and effects shared. The function of the CCGM (Combined Community Group Meeting ‘Citizen Conference, shown Section 7.2.2) may help in relation to this issue.

Risk management

Risks related to the urban environment are a growing concern. Because of the rapid urbanisation, urban dwellers often face serious incidents, such as flooding or landslides when unusual torrential rain falls in a short period of time or there are prolonged periods of extreme weather events. It may be recognised that the long-term existing environmental characteristics may alleviate risks because such interactions may improve people's awareness of changing environmental conditions and therefore their capacity to react in such cases. The most important point is the people's daily interactions with environmental characteristics, because it is not just the existence of the environmental features but the people's interactions with them that raises their awareness and understanding of environmental maintenance and protection. It is particularly significant that people interact collectively and continuously as a form of social capital because they therefore build knowledge and share an understanding of the characteristics and behaviour of the natural processes of the area.

As Sections 8.2, 8.3 and 8.4 discussed, this research emphasizes strongly that the people's long-term socio-ecological interactions are therefore of potential significance in risk management and should be appreciated by the decision makers as well as general public. (This will be discussed more in Chapter 9).

Furthermore, environmental characteristics themselves could create a risk if they are neglected. Such neglect can encourage vandalism or other anti-social activities. They will generate not only hazardous areas and nuisance to humans, but also concerns about contaminated land. For example, as Section 5.3.2 described, as heavy rainfall or bad weather continues; the unhealthy conditions of the area could spread to neighbouring people's living areas.

It may be said that natural disasters such as flooding may also result from human activities, not just as a feature of natural processes. This could occur from a lack of regular observation or monitoring of environmental conditions. This may happen anywhere in urban settings, if risk management is underestimated in relation to the environmental characteristics or there is a misreading of the area's characteristics.

Although risk management work is a role of skilled or trained people, such as rangers, as their work itself involves a risk, people who are familiar with the geographic and topographic characteristics of the area, including plants and wildlife, may help with the rangers' work. For instance, a couple of residents (in the early members of Friends of Jesmond Dene) found the

incidents of water pollution of the Ouseburn, this was a trigger to establish the protection group in the 1970s (Section 4.4.4).

In the case of Hagi, as Section 6.3 described, people's interactions with natural processes have, historically, provided functions and systems to manage the risk of flooding disasters. Hagi residents and administrative officers worked together on large civil engineering schemes on the characteristic marshy delta area, creating the network of watercourses connected to the two main rivers to prevent flooding. Also, they had created risk management systems for administrative and working operations to respond to the possible occurrence of natural disasters. Their daily interaction with natural processes became a kind of norm which helped them to prepare for the sudden occurrence of incidents.

In the case of Japan environmental risk is a constant concern. The nation suffers typhoon damages almost every year, and unexpected widespread disasters by earthquake and tsunami. Although, it happens suddenly in relation to the distinctive natural processes of the area, it should be emphasized that the incidents may be exacerbated as a result of the inherited characteristics of the geographical and topographical conditions of the place. Continuous maintenance and observation of the long-term existence of environmental characteristics serve a variety of risk management functions, not only in the knowledge of the behaviour of natural processes but also in practice for evacuations.

8.3 Conclusion

This chapter presented discussions on the conclusions of Chapter 2 (the literature review), Chapters 4 and 5 (the case study of Newcastle), and Chapters 6 and 7 (the case study of Hagi), by analysing four themes (shown in Section 2.5.3), in order to answer Main Research Questions 1 and 2 and their sub-questions (shown at the beginning of this chapter). The four themes were identified (Sections 8.2, 8.3, 8.4 and 8.5) as specific features in the main findings of the case study places, Newcastle in the UK and Hagi in Japan.

Regarding Main Research Question 1 and its sub-questions, it has been identified that the interactions between people and natural processes have affected the forms of growth of historic built environments a great deal. These interactions have created diverse benefits and values for society and the local environments, as well as the evolution of the community, including community spirit and cohesion, and local cultures and traditions.

In respect of Main Research Question 2 and its sub-questions, it has been identified that people's connections/interactions with natural processes can be socially and environmentally

beneficial. People implemented collective actions concerning local environmental issues, including the long-term existing environmental characteristics of the place where they live. They have formed networks of individuals, groups and rules; they have shared their interests and aimed at common targets for local environmental protection and enhancement. This supports the concept of social capital and collective action used as the theoretical framework of this research.

The field surveys of both cities have identified significant commonalities in both cities. The allotment garden ploholders of Newcastle and a variety of volunteer groups of Hagi have carried out socio-ecological interactions collectively to protect and enhance the local environmental characteristics, associated with their appreciation for the historic context of natural processes (Sections 8.3 and 8.4).

The face to face interviews in both cities revealed the causes and reasons behind people's appreciation and their concerns. The residents' appreciation was centred on the historic context and collective actions as well as the values of community participation in local environmental issues. The main concerns and reasons were found in the social aspects. For instance, in the case of Newcastle, respondents were worried about the future of allotment garden communities; in particular, in relation to political concerns, including the right of land-owners and policies of the decision makers. In the case of Hagi, the issues focused on ageing and depopulation problems, which also concern the future of environmental protection.

To sum up, it has been found that the people's long-term socio-ecological interaction with the natural processes of the area where they live can create social, economic and environmental values which may contribute to the sustainability of historic built environments. People's collective actions concerning local environmental concerns are important for the future of the society and the environment of the place. They may be viewed as significant examples of community participation in urban land management.

Chapter 9:

Conclusion

Chapter 9: Conclusion

9.1 Introduction

Chapter 9 outlines the conclusion of this thesis; it consists of four sections:

- (1) Key points of overall conclusions
- (2) Proposal for policy and practice
- (3) Reflections
- (4) Prospects for future research

This thesis has examined people's daily interactions with natural processes in historic built environments over time, focusing on case studies in Newcastle upon Tyne, UK and Hagi, Japan. These case studies have revealed that the different contexts of these interactions have resulted in different environmental characteristics, values and issues. At the same time, it has found that there are commonalities in the findings of both case studies.

The field surveys in both cities, involving questionnaires and face-to-face interviews, identified people's daily interactions with natural processes, including collective actions on local environmental concerns, such as the protection and enhancement of the long-term existing environmental characteristics. They have determined that these interactions, in particular collective actions, have created value for the society and environment of Newcastle and Hagi, contributing to social well-being, community cohesion, biodiversity and ecology in each place. The theoretical framework of the research developed through the literature review interpreted the investigation.

9.2 Key Points of Overall Conclusions

This section shows the key points of the overall conclusions of the thesis. These have emerged from the analysis and discussion of the literature review and the case studies, i.e. the outcomes of all previous chapters. The following four key points of overall conclusions reinforce the answers to Main Research Questions 1 and 2 and their sub-research questions, set out in Chapter 8.

- (1) Long-term existence of environmental characteristics
- (2) Collective actions of networks of individuals, groups and rules on local environmental concerns
- (3) Importance of socio-ecological interactions
- (4) Ecology of land use

9.2.1 Long-term existence of environmental characteristics

As discussed in Section 8.2, the case studies identified that local people's daily interactions with natural processes in the place where they lived produced significant local cultures and traditions. In particular, people's continuous collective actions regarding local environment concerns over time have created local environmental characteristics; these can be referred to as existing environmental characteristics which have survived over the long term in historic built environments. These may provide a link between past, present and future values in a process where social cohesion and collective actions of the residents have been found. The values and processes have created a unique local identity of the place in which the residents live. This has been identified in relation to the interactions with the fundamental local physical characteristics, such as the geographic, topographic and climatic conditions of the place, as well as specific conditions and incidents that have occurred in the historic process. This range of activities seems to have motivated local people to act in a dynamic way.

Historic process

The long-term environmental characteristics of Newcastle and Hagi have consisted of tangible activities of past generations, and the struggles and involvement with the natural processes of the place. These historic characteristics may be seen as an accumulation of people's energy in relation to natural processes over time. People identify themselves with their locality through interaction with local characteristic. Their interaction with natural processes has been influenced by traditional values in a cultural and social context, as well as physical characteristics, such as the geography, topography and climatic phenomena of the area. These interactions have provided a foundation for the present distinctive characteristics of both historic cities which has resulted in the identity and value of the places. The context of this process should be appreciated in considering any future environmental change.

For instance, in the case of Hagi, Japan, the provision for the network of watercourses in the historic area from the beginning of the 17th century to the middle of the 19th century has contributed to the characteristics and identity of the present-day city of Hagi. This has resulted from the people's collective actions on the protection work against the flooding incidents of the delta area where Hagi is located, in particular in actions taken the rainy and typhoon seasons (Section 6.3).

In the case of Newcastle, Jesmond Dene on examination of the Ouseburn watercourse, demonstrates the historic processes of people's interactions with natural processes. It portrays

a process of the socio-ecological growth of the area from industrial use to a municipal park. Today, Jesmond Dene is seen as one of the most strongly identified long-existing environmental features of the city (Section 4.4). The allotment gardens and their communities in Newcastle have provided a significant example of people's continuous collective actions since the late 19th century. These collective actions have contributed to the development of local society as well as the environment of the area, expanding a variety of social, economic and environmental values, including community spirit, social well-being, biodiversity and ecology (Sections 4.5 and 5.3).

Social cohesion

The residents' continuous collective actions regarding the environmental characteristics of both cities have created social cohesion in their urban life. For instance, the allotment gardens began to meet the basic needs of individuals, such as daily food. Soon after, people set up groups/communities to facilitate their mutual benefits, thus sharing interests and aims. While they cultivate the land daily, which means connecting with natural processes, they established a sense of independence as well as a sense of respect for each other and a community spirit, thus creating social cohesion and an opportunity for community development.

The historic process which has led to the present character of the allotment garden communities of Newcastle may well exemplify this notion. In the early 20th century, while people cultivated their rented land for their daily vegetables, fruit and flowers, this connection with the land soon led them to form a garden community of allotment associations (AAs). The connection with the land provided people with a benefit from growing produce in a healthy environment away from unhealthy, industrial conditions, but they also had the added advantage of creating social interaction outside the workplace, contributing to a healthy and significant environment and its values. Thus, adding values created a new lifestyle in the industrial city and enhanced community cohesion through the protection and cultivation of the open land of the city (Section 4.5).

In the case of Hagi, during the castle town period from the 17th century to the mid-19th century, the street community units participated in the flood prevention schemes of the town. This created community ties and a social cohesion between the townspeople and castle town officials through the continuous collective actions regarding water control as well as the maintenance of the network of watercourses. The watercourses had many functions, benefiting both individuals and the community for centuries. This has resulted in the creation of the basic structure of the present city, socially and environmentally, including social

characteristics such as the residents' appreciation of the historic context and a sense of belonging (Sections 7.4 and 7.5)

9.2.2 Collective actions of a network of individuals, groups and rules regarding local environmental concerns

The case studies indicate that the theoretical framework of the research developed in the literature review helps to show the importance and significance of the people's collective actions in both Newcastle and Hagi. The particular form of social capital investigated in this research is a network of residents, i.e. individuals, groups and rules (Section 2.3). It has provided one of the most effective and valuable methods of implementing collective actions for the protection and enhancement of local environmental characteristics in the historic built environments examined. As Section 2.4 described, the people in the network share their common interest, working together for mutual goals along with the rules and the trust that arises while dealing with local environmental issues. It is significant that community action is involved, as opposed to just following top-down measures or the criteria of the central governing body. This supports the idea that local environmental issues cannot be dealt with by a single method; they need to be tackled in multiple ways, from an overall theme to everyday practices at local level.

Ostrom and Ahn (2003, p. xiii) showed that 'the concept of social capital, forming a network of people, helps to synthesise how culture, social and institutional aspect of community jointly affect their capacity to deal with collective action problems', as Section 2.4 discussed in detail. This stated that the network may consist of individuals, groups (associations) and rules and refers to Ostrom and Ahn's (2003) forms of social capital. It is usually recognised as a concept in the field of economics, yet it could apply to multidisciplinary studies such as this research. For instance, the research has identified that the allotment garden communities of Newcastle may well exemplify the concept of social capital and collective actions regarding local environmental concerns, as the network of individual plot-holders, allotment associations and their rules are bound together to work on such concerns (Chapter 5). In the case of Hagi, Japan, other types of interesting collective actions can be found; a variety of volunteer groups of residents have implemented different collective actions for the protection of the heritage of Hagi, including the long-term existing environmental characteristics; for example, the *Aiba-gawa* Love Group and Kiguhamma beach beautification group (Section 7.2.4).

Henocque (2012, p. 66) considered that ‘enhancing social capital was about promoting local knowledge deeply rooted into local communities’ practices on land and sea’. He referred to the concept of *satoyama* and *satoumi* in Japan and the cultural and traditional way in which people’s specific interactions with natural processes has provided an emerging socio-ecosystem, as shown in Section 2.2.8. Indeed, the method of ‘forms of social capital – collective action’ is not an invention of the present society; it has been in existence for a long time, such as in rice farming communities in Japan, as shown in Section 2.2.2. Also, as the Hagi case study found concerning the flooding prevention work in Section 6.3, people formed a network, with groups of townspeople and administrative officers along with their rules and methods.

Appreciation for the contextual variables of the place

This study supports the understanding that environmental problems are complex issues, and require as much accurate information as possible. It is essential to gain details of the concerns and social, economic and environmental conditions and circumstances of the particular place. In other words, one of the most important and fundamental aspects for the improvement or protection of local environmental issues is to understand the contextual variables of the place. This means to see the problems accurately, including possible sources, and the background, such as tradition, culture, and geographical and topographical settings. Without the appreciation of the local distinctive contexts, the issue cannot be tackled appropriately; otherwise, negative effects may be triggered. In this respect, the concept of social capital and collective actions regarding local environmental concerns can work effectively, because people form the network to work together to deal with local environmental issues along with appreciation of the contexts, common interests and rules, and respect each other toward the goal.

As Sections 8.3 and 8.4 explained, the contextual variables of each historic built environment can be included in the inherent local distinctive and specific historic conditions or incidents in the particular place, such as geographic, topographic and climatic conditions, as well as history, culture and traditions. They are different and may be unique to each place. The residents’ appreciation of these local characteristics may be the key to the development of activities to deal with local environmental issues effectively. This problem may be a common issue but the nature of the activities needed may be different according to the place.

It is important to understand the social and cultural characteristics of the place. For instance, in the case of Hagi, demographics can also be a vital point in the protection of the

environmental characteristics; for example, the ageing society and depopulation problem causing the declining numbers of volunteers (Sections 7.4 and 7.5). The cultural characteristics, such as the conservatism of Hagi, may provide positive actions for the protection and enhancement of local environmental concerns (Sections 7.4 and 7.5). As Ostrom and Ahn (2003) state, ‘trust’ is the key link to people’s collective actions, and they show trust according to the contextual variables of the place that the network of people appreciate. Thus, the contextual variables of the place should be appreciated and considered in working to deal with the local environmental issues.

Collective actions: To be repeated or continued for better schemes

It cannot usually be denied that the environmental problems people face in a particular area are not a matter to be solved in a short period of time. While problems may have been affecting people’s lives and wider communities for a number of years at the same time, the issues have been changing and developing along with the surrounding circumstances including the social, political and economic landscapes of the time. Therefore, to tackle the issues through collective actions, there may be a need for ongoing action and the situation may require monitoring and reflection to develop more suitable or appropriate methods to deal with the issues as the situation changes.

However, for communities to tackle the issues effectively basic information should not be too complicated, and it can be limited just to the work on current issues and conditions. The reasons for this may be explained in the following points.

- (1) The environmental issues are of continuous nature. Therefore, they cannot be solved at once, but must be responded to as soon as possible as the concerns may expand quickly. Although it is important to deal with these challenges continuously and to seek to find fundamental solutions, more immediate measures can be taken if required when certain more pressing problems arise.
- (2) One of the most important aspects in tackling environmental issues is that the problems cannot be handled without the residents who have been regularly interacting with the natural processes. They may participate in the collective actions effectively and appropriately with the knowledge and experience they have gained through their daily connection with the nature of the area over time.
- (3) The collective actions of networks of people who appreciate the local distinctiveness may provide better solutions. The forms of a network are seen in sharing their common interests and mutual understandings, including the objectives and values of

the network and its rules. These collective actions can facilitate ongoing monitoring and reflection.

- (4) While the members (individuals and groups) in the network may change over time, the functions and values of this system will still be workable in the future, whatever the circumstances or conditions of the environmental issues. For this to be effective, the forms and the network to link to the collective actions must be continued, with shared concepts, as they share mutual interests and common targets.
- (5) Regarding problems in relation to individual rights or ontological security within rule-enforcing administrating bodies running these communities, it may be advisable to use the repeating or continuing and reflecting method of collective action. It may minimise the problems, such as the issue in the allotment garden community discussed in Section 5.6.

As Section 7.2.2 described, the particular points emphasised above can be well identified in the continuous collective actions of one of the environmental protection groups of Hagi. The community's collaboration with the institution 'Protecting Water and Life, in Hagi, Fukue' was notable in that collective actions were undertaken involving diverse organisations, professions and individual citizens, including the city hall, against the prefecture's scheme of building an industrial waste final treatment plant. This can be seen as a remarkable collective action in terms of continuous implementation concerning environmental protection because the organisation carried out such work for over 17 years. Eventually, they successfully caused the scheme to be abandoned. It shows that the scale and length of such continuous collective actions may generate positive benefits for others (Ostrom and Ahn, 2003).

9.2.3 Importance of socio-ecological interaction

This research has identified that people's interaction with natural processes in a collaborative working relationship may create a variety of benefits for the wider community, socially and environmentally, including social well-being, biodiversity and ecology. The outcomes of the case studies of Newcastle and Hagi have found that the collective actions of the residents' interaction with natural processes, along with the particular method of operation for the protection and enhancement of environmental characteristics, can provide diverse values and benefits, for instance in the case of Jesmond Dene (Section 4.4), the allotment gardens (Section 5.3) and various collective actions in Hagi (Section 7.2). Both case studies have reinforced the premise that an ideal relationship or interaction should never be achieved by

either people's domination of natural processes or natural processes' domination of humanity. It may be seen as a desirable relationship for both if people strive to maintain a healthy secure environment by working with natural processes rather than against them. This interaction may produce a kind of ecological output, providing and sustaining biodiversity, ecology and ecosystems for local environments; the effects may extend to wider areas.

It has been recognised that human domination of natural processes has been claimed as one of the main causes of global environmental issues, such as those attributed to the advance of the Industrial Revolution. It was also noted that, while ever-developing science and technology have resulted in dynamic urbanisation, they have generated grave concerns for the earth, such as disappearing environmental characteristics in historic built environments and changes to ecosystems (Section 2.2.6).

This research considers the notion that the interaction between people and natural processes that existed before the Industrial Revolution may be seen as a kind of ecological relationship or socio-ecological interaction, because people usually worked with natural processes in a collaborative way in which they understood the behaviour and characteristics of natural processes in the place where they lived or worked. For instance, the concept of *satoyama* and *satoumi*, which are the traditional knowledge and methods of nature conservation management in Japan, has been recognised as a socio-ecological production landscape in the country (Section 2.2.8).

It is worth noting that both case studies, in Newcastle and Hagi, have found that the benefits and values created from the people's socio-ecological interaction with natural processes seem to have shown universal characteristics; because, as people implement socio-ecological interactions with natural processes, in turn, people gain positive outcomes socially and ecologically whenever and wherever they interact in this way. In particular, it can be seen to be more beneficial as groups of people continuously undertake socio-ecological interactions with natural processes in their daily life; in turn, wider communities gain a variety of benefits and values from these interactions, including social well-being, health and education, social cohesion, equal opportunities, as well as enhancements to wildlife, biodiversity and ecosystems (Sections 2.2.8, 4.4, 5.2, 5.3 and 7.2).

Thus, the research considers that the socio-ecological context in the historic process, as well as the collective actions of socio-ecological interactions regarding local environmental characteristics, can be said to be one of the most important notions for people who are involved in working on local environmental issues in historic built environments.

9.2.4 *An ecology of land use*

The conclusion of Chapter 8 and the key points of the overall conclusion of this chapter suggest that the continuation of people's collective actions within a socio-ecological interaction with natural processes may be seen as an ecology of land use in historic built environments. This is chiefly because the people who carry out this interaction are aware of the local environmental characteristics, values and issues; they appreciate the historic contexts, distinctiveness and behaviours of natural processes in the particular place. The research indicates that people will be more aware of environmental issues if they are continuously interacting with natural processes in this manner over a long period of time. Such interactions may enhance local ecology, such as safe soils, healthy food and carbon footprints, and provide benefits in terms of social well-being and environmental value.

9.3 *Proposal of Policy and Practice*

This section portrays a suggestion for policy and practice for the environmental protection of historic built environments, as part of the conclusion of this research for the interaction between people and natural processes. The followings are important points what should be valued and improved in relation to residents' engagement in natural processes in historic urban environments.

Policy 1: Residents should be given more opportunities to connect/interact with natural processes in their daily life.

Policy 2: A variety of benefits from the interactions should be delivered widely.

Policy 3: People's continuous collective actions of socio-ecological interactions should be appreciated and supported by general public, as well as relevant authorities

In practice;

The following suggestions should be considered and given appropriate support by governance bodies.

- Opportunities for people to understand the significance of the connection/interaction with natural processes in their urban daily life; through, for example, public lectures, workshops and exhibitions.
- Opportunities for volunteer groups of environmental concerns to participate in variety of provisions for the above mentioned practices.
- Opportunities for researchers to carry out more studies about socio-ecological interactions, in historic built urban environments, which should include the historic context of the

natural processes of the area and its consequences in today.

- Opportunities for the outcomes of these provisions and studies to be taken into the consideration for environmental programmes.

Main Reasons;

Residents' long term socio-ecological interactions with the natural processes of the area where they live create an increasing positive cycle, contributing to social, economic and environmental values, such as social well-being, biodiversity, and urban ecology. It may optimize the potentials of the interactions between humanity and nature.

9.4 Reflections of the Study

This section shows three significant points of reflection on the research strategy, tactics, and the way in which the case studies were carried out, including literature mapping, the theoretical framework of the research and data collection in the field surveys.

9.4.1 Mapping of literature

The research was a study that crossed disciplinary boundaries and, as a consequence, required a carefully considered literature mapping, shown in Figure 2-1. This allowed for an effective to develop a theoretical framework for the research. The literature mapping was particularly useful to gain an understanding of how to look at the relationship between humans and natural processes.

Several sections were particularly important for creating a strategy and structure in the literature review. These included Section 2.2.7 - *Community participation in urban nature conservation*, which discovered the importance of people's interaction with natural processes; Section 2.2.8, - *Satoyama and satoumi concept in urban nature conservation in Japan*, which showed a traditional concept of the people–natural processes relationship which suggested to the study to focus on a socio-ecological view of the relationship; and Section 2.2.9 - *Example of socio-ecological interactions for landscape restoration project*, which led to the link between the focused topics of the study and the formation of a theoretical framework.

One of the most significant points in these sections was Harrison and Burgess's (2003) arguments for a socio-ecological viewpoint. This has reinforced the need for a theoretical framework for the research. It is worth repeating the quotation here (pp. 482–483):

‘Individuals are socially engaged actors whose environmental understanding and behavior is contingent on where they live, the history of events, their social networks and moral points. These approaches also recognize that the way society ‘works’ depends upon a reflexive process of mutual trust through which individuals and structures (e.g., organizations, legal process, right and responsibilities) come to constitute each other. ... A shared understanding of the inter relationships between lifestyles and environment. ‘

The research supports a similar notion to that of Harrison and Burgess. This research developed Harrison and Burgess’s idea further to consider historic contexts which were seen as significant in studying the relationship between people and natural processes in a particular location. The case studies identified the significance of the contexts of each place in a variety of aspects, historically as well as in the present day. The outcomes suggest that the study of historic built environments requires a socio-ecological view, in particular to examine the interaction between humanity and natural processes over time.

9.4.2 Theoretical framework for the research

The theoretical framework for this research; i.e. the theory of social capital (a network of individuals, groups and rules) and collective action regarding local environmental concerns was found to be useful and significant to interpret the importance of people’s collective actions. This was identified effectively in the case studies of Newcastle, UK and Hagi, Japan. Both case studies found this theory effective; further, that it was not just a tool to scrutinise people’s activities in practice. It has been shown that people’s collective actions with this concept being implemented continuously over a long period of time may be seen as a kind of legacy of the local community rather than social capital. For instance, this was seen in the field survey at the allotment gardens in Newcastle. Their continuous interactions with natural processes by cultivating the open land over the past 100 years show that these interactions have established the local cultures and traditions. This understanding is significant as an indication of one particular path to improved well-being in urban daily life.

9.4.3 Data collection: Residents’ views and opinions

One of the most important tactics for both case studies was how to obtain significant results. This research considered that it should include (1) a selection of appropriate sample cities, and (2) a method to obtain residents’ straightforward views and opinions about their actual daily interactions with natural processes. In this regard, the selections of Newcastle upon Tyne in the UK and Hagi, the former castle town in Japan, were successful, in particular for obtaining

diverse views, as both cities provided interesting but different contextual variables historically as well as in the present day.

The method of collecting the data progressed for a period of two years. This period of experience is an important point in itself, because it allowed the researcher to obtain a general overview first, and then to gradually get to know people's issues and concerns and the background behind them. This then enabled a focus on the topics for the actual fieldwork in both cities. A variety of tools were used to acquire people's diverse views – positives, negatives and issues regarding the local environment through the local residents' interaction with natural processes. The most valuable lesson was that the researcher maintained a good relationship with the respondents throughout the period. It played an important part in obtaining 'honest and lively data' from the residents in the field surveys.

Another important tactic was the preliminary studies, which included initial visits to Hagi for preparation work; in the case of Newcastle, carrying out pilot interviews with plot-holders and participating in monthly group meetings of the Allotment Working Group. These preliminary studies in both case study locations helped the researcher to create a kind of friendly relationship with the local people, which enabled him to gain fundamental knowledge about the local environmental issues in the particular places.

It was identified that the individual respondents' views, opinions and concerns were rather different according to age, gender, type of household and family structure in both field surveys. This was probably because their motivations for interacting with natural processes were attributed to individual awareness of the local environment, personal attachment with the place, family history, a way of life and lifestyle conditions. Therefore, diverse respondents have depicted different views and opinions, and positives and negatives were found to be the most valuable material for the research.

However, both field surveys had time constraints, which meant that the case study did not highlight some particular points. For instance, in the case of Newcastle, it sought to obtain opinions and views from young families, but did not gain enough data to make an argument about their viewpoints. This seemed rather different to the position of senior plot-holders. In the case of Hagi, it was found that the issue of the ageing society and declining population had been a serious concern in the city in recent years in many respects, including the protection of the local environmental characteristics, as volunteer workers had become fewer in number and were expected to reduce even further soon. The case study did not do enough work on this matter to debate it in depth because of the limited period of the stay in the city.

Nonetheless, the field surveys obtained a significant outcome. This was probably because of the methodology of the research using a qualitative approach rather than a quantitative one. The qualitative method was identified as a suitable method for this research as it appreciated in greater depth the respondents' views and opinions, including positives and negatives, as well as the reasons and the background behind the things they expressed.

9.5 Prospects for Future Research

Generally, it is recognised that both historic environments and the long-term existence of environmental characteristics represent the significance of historic places, and deserve to be protected together. Both should receive more attention from people in decision-making positions as well as from the general public than they do at present, as both identify the importance of the area, including the tradition and culture in the historic process.

From this notion, the researcher would expect to see similar studies to this thesis to explore further insights into discovering an ecology of land use in different contexts of historic built environments. In particular, considering the current environmental crisis and expanding urbanisation concerns, this research recommends that the following aspects should be developed further in future research.

A socio-ecological viewpoint may be significant in examining the values and characteristics of historic built environments. This is because historic cities and towns have demonstrated the outcomes of people's interactions with natural processes for many generations. Thus, an in-depth study may be important to look at desirable interactions between urban culture or people and natural processes.

This research suggests that a kind of ecological relationship between people and natural processes, which has been in existence since before the Industrial Revolution but has more latterly been underplayed, should be re-examined fully and investigated to create a current innovative method to improve biodiversity and ecosystems in historic built environments.

This research and this researcher tend to suggest that in any further studies, a strong and well-developed historical context of the research location is absolutely necessary for any local environmental study. It should be realised that environmental issues are complex concerns in the interaction between people and natural processes over time, and may be ongoing issues into the future. Local environmental studies for the people–natural processes interaction in historic places require a long-term perspective rather than a short one; this means hundreds of years rather than tens of years.

The research questions do not ask specifically about the importance of power dynamics and extent of agency in understanding both individual and collective actions with regard to land-use and natural processes. The researcher appreciates the importance of this point, and outlined some understanding of the nature of these aspects (Section 2.5.1). Some references were made in the case studies, including chapter 5, regarding the relationship between the landowner and tenants of the allotment garden communities in Newcastle, and Chapter 7 in relation to the different volunteer groups' collective actions in Hagi. The researcher recommend that this matter should be considered in future studies.

The theoretical framework of this research may be adaptable to similar studies, as it covers different contexts of historic places. The strategy and methods of this research may be applied to other case studies, but should be developed to meet each case study's particular characteristics. Perhaps one of the future studies should aim to focus on urban dwellers' desire to connect with the land in different contexts. Also, the researcher would like to see further studies in the area of cross-disciplinary studies, incorporating the input of cross-cultural studies.

As explained in this thesis, people's daily interactions with natural processes are extremely beneficial and valuable to society as a whole, as well as to the environment of the area, including health and safety, social well-being, ecology, biodiversity, and stability of the ecosystem. An ecology of land use, as shown in this thesis, should be appreciated and encouraged by policymakers at local and national levels. The issue of ecological deterioration and urbanism concerns requires in-depth studies of the interaction between people and natural processes to identify the local distinctive and characteristics, as shown in this research.

Bibliography

- Alberti, M. (2008) *Advances in urban ecology: integrating humans and ecological processes in urban ecosystem*, Springer Link
- Atkins, P., Simmons, I., and Roberts, B. (1998) *People, land & time: an historical introduction to the relations between landscape, culture and environment*. London: Arnold.
- Bandarin, F. and Oers, R. (2012) *The historic urban landscape*. Wiley-Blackwell
- Baron, S., Field, J. and Schuller, T. (2000) *Social Capital: critical perspective*, Oxford University Press
- Becker, G. S. (1962) Investment in human capital: a theoretical analysis, *Journal of Political Economy*, 70(5), pp. 9-49
- Bell, S., Herlin, I. S. and Stiles, R (2012) *Exploring the boundaries of landscape architecture*. London: Routledge
- Bimber, B., Flanagan, A. J. and Stohl, C. (2005) "Reconceptualizing collective action in the contemporary media environment", *Communication Theory*, Fifteen: Four, pp 365-388
- Bjornskov, C. and Sonderskov, K. M. (2012), Is social capital a good concept?
Soc. Indic Res (2013), 114, pp. 1145-1242, Published on line Spring Science + Business Media Dordrecht
- Bourdieu, P. (1983) "Forms of capital" in Richardson, J. G (ed.) *Handbook of theory and research for the sociology of education*, pp. 241-58, New York: Greenwood Press
- Bourdeau, Ph. (2004) "The man- nature relationship and environmental ethics" *Journal Environmental Radioactivity* 72, p. 9-15
- Briggs, A (1961), *A study of the work of Seebohm Rowntree*, London Longmans
- Brook, I (2010) "The importance of nature, green spaces, and gardens in human well-being" in *Ethics, place & environment: a journal of philosophy & geography*, Routledge
- Brooks, M. W. (1989) *John Ruskin and Victorian Architecture*. London: Thames and Hudson
- Charvez, DJ. and Olson, DD. (2009) "Opinions of Latino outdoor recreation visitors at four urban national forests" *Environ. Pract.* 11, pp. 263-69.
- Cherry, G. E. (1974) *The Evolution of British Town Planning; A history of town planning in the United Kingdom during the 20th century and for a Royal Town Planning Institute, 1914-74*. Lenard Hill Books
- Chronicle Live (2015) Decaying Nun's Moor allotment in Newcastle to be razed in major clean-up operation. [Online]. [Accessed 21 October 2015]. Available from <http://www.chroniclelive.co.uk/news/north-east-news/>

- Clifton-Taylor, A. (1972) *The pattern of English building*. Faber and Faber limited
- Coleman, S (1988) "Social Capital in the creation of human capital", *American Journal of Sociology* 94: pp. S95-S120
- Cooper, A., Arber, S., Fee, L and Ginn, J. (1999) *the influence of social support and social capital on health*. Health Education Authority, London
- Crouch, D. and Ward, C (1997) *The Allotment: its landscape and culture*. Five Leavers Publications
- Crouch, D. and Wildshire, R. J. (2005) "Designs on the plot: the future for allotments" in Viljoen, A., Bohn, K. and Howe, J. (eds.) (2005) *Urban landscapes: continuous productive urban landscapes*, Oxford: Architectural press.
- Creese, W. L. (1966) *The Search for the environment; the garden city: before and after*. New Haven and London: Yale University
- Creese, W. L. (1967), *The legacy of Sir Raymond Unwin*. The M.I.T. Press
- Dodson, S. I. et al. (1998) *Ecology*. Oxford university press
- Dahal, GR. And Adhiliki, KP. (2008) "Bridging, linking, and bonding social capital in collective action", *CAPRI Working Paper* No. 79
- Davis, B., Blackstock, K., Brown, K. and Shannon, P. (2004) *Challenges in creating local agri-environmental cooperation action amongst farmers and other stoake holders*. Aberdeen; The Macaulay Institute Row, Peterson
- Davis, P. (1999) *Ecomuseum: Leicester Museum Studies Series*, New York; Leicester University press
- Dinnie, E., Brown, K. M. and Morris, S. (2013) "Community, cooperation and conflict: negotiating the social well-being benefits of urban green space experiences" in *Landscape and Urban Planning* 118, pp. 103-111
- D'MOSS (1994) *Involving urban communities in the environment*, written for the MOSS (Metropolitan Open Space System) International Conference Durban, South Africa. [Online]. [Accessed 30 January 2017]. Available from www.ben-network.org.uk/upload-files/Ben-1/Ben-file 1-3.
- Douglas, I. (2013) *Cities: An environmental history*. London: I. B. Tauris Co Ltd.
- Dumbach, M. (2014) *Establishing cooperate innovation communities: a social capital Perspective*. Springer Gabler
- Duraiappah, A., Nakamura, K., Takeuchi, K., Watanabe, M. and Nishi, M (ed), (2012), *Satoyama-Satoumi ecosystems and human well-being; socio-ecological production landscapes of Japan*. Tokyo: United Nations Press

- ELC, European Landscape Convention, Available at:
http://en.wikipedia.org/wiki/European_Landscape_Convention (Accessed 07/04/15)
- Elmqvist et al. (eds.) (2013), *Urbanization, biodiversity and ecosystem services: challenges and opportunities: a global assessment*. Dordrecht: Springer
- Evans, P. (1976), *Raymond Unwin and Municipalisation of the Garden City*, Transactions of the Martin Centre for Architectural and Urban Studies. University of Cambridge
- Evert, A., Mitten, D. and Overholt, J. (2014) *Natural environments and human health*. Wallingford
- Festinger, L (1957) *A theory of cognitive dissonance*. Evanston, III
- Florgard, C. and Forsberg, O. (2006) "Residents' use of remnant natural vegetation in the residential area of Jarvafältet, Stockholm", *Urban Forestry and Urban Greening* 5, pp. 83-92
- FoJD archives, (1883), Friend of Jesmond Dene, *Deed of Gift of Jesmond Dene and Banqueting Hall for a public park etc*. The Corporation of Newcastle upon Tyne
- FoJD archives, (1976), Minutes
- FoJD archives, (1978), Newsletter January
- Freemen Magazine (2008), issue 5, The Town Moor Joint Working Group
- Freemen of Newcastle upon Tyne Web-site, [Online]. [Accessed 10 February 2016].
 Available from: <http://www.freemeofnewcastle.com/themoor.html>
- Fukuyama, F. (1995), *Trust: the social virtues and creation of prosperity*. New York: The Free Press
- Giddens, A (1990) *The consequences of modernity*. Cambridge: Polity Press
- Giddens, A (1991) *The modernity and self-identity: self and society in the late modern age*. Cambridge: Polity Press
- Gobo, G. (2007) 'Re-conceptualizing generalization: old issues in a new frame' In P. Alasuutari (ed.), *Social Research Methods*, pp. 193-213. London: Sage
- Goddard, M. A. et al. (2013), "Why garden for wildlife? Social and ecological drivers, motivations and barriers for biodiversity management in residential landscape", *Ecological economics* 86, pp 258-273
- Goulding, C. (1995), *Hidden Newcastle*. Newcastle City Libraries & Arts
- Govorushko, S. M. (c2012) *Natural processes and human impacts interactions between humanity and the environment*. Dordrecht: Springer
- Granovetter, M. S. (1973) The strength of weak ties, *American Journal of Sociology* Vol. 78, No. 6 (May, 1973), pp. 1360-1380, The University of Chicago Press

- Green, F. (1999), *History of Jesmond Dene*. Newcastle City Council
- Green, F. Pendlebury, J. and Jubb, P. (1995), *A guide to the historic parks and gardens of Tyne and Wear*. The Tyne and Wear Specialist Conservation Team, Development Department, Newcastle upon Tyne City Council in association with Gateshead Metropolitan Borough Council, North Tyne Council, Borough of South Tyneside and the City of Sunderland
- Grenvill, J (2007) “Conservation as psychology: ontological security and the built environment” in *international Journal of Heritage Studies* Vol.13, No. 6, pp. 447-461
- Guitart, D. A., Byrne J. A. and Pickering, C. M. (2013) “Greener growing: assessing the influence of gardening practices on the ecological viability of community gardens in South East Queensland Australia” in *Journal of Environment Planning and Management*, Routledge.
- Halla, M., Schneider, F.G. and Wagner, A. F. (2013) “Satisfaction with democracy and collective action problems: the case of the environment”, *Public Choice* 2013, Vol. 155, Issue 1-2, pp 109-137
- Halpem, D. (2005) *Social capital*. Cambridge: Plity Press, pp. 1-2
- Hanifan, L. J. (1916) The rural school community centre, *Annals of American Academy of Political and Social Science* 67, pp. 130-138
- Hanifan, L. J. (1920) “social capital – its development and use” in *the Community Centre, Chapter VI*, Boston, New York, Chicago, San Francisco: Silver, Burdett Compant, pp. 78-90
- Harrison, C. and Burgess, J. (c2008) Social science concepts and frameworks for understanding urban ecosystem (originally published in 2003, in *Urban ecology: an international perspective on the interaction between humans and nature*. Springer US
- Harmmersley, M. (1992) *What’s worry with Ethnography? Methodological and Explanations*. London Routledge
- Hawken, P. Lovins, A. and L. Lovins, H. (2010) *Natural capitalism: the next industrial revolution (10th anniversary edition)*. London: Earthscan.
- Holstein, J. and Gubrium, J. (eds) (2008) *Handbook of Constructionist Research*. New York: Guildford
- Hawkes, F. M. and Acott, T. G. (2013) “People, environment and place: the function and significance of human hybrid relationships at an allotment in south east of England” in *Local Environment: the International Journal of Justice and Sustainability*, Vol. 18, No. 10, PP 1117-1133.

- Hiller, J. and Healey, P. (2010) *The Ashgate research companion to planning theory, Part two: conceptual challenges for spatial planning theory*, University of Newcastle, Ashgate
- Healy, T. (2001) Health promotion and social capital, Conference paper, *International Evidence for the Impact of Social capital on Well Being*, National University of Ireland, Galway
- Henocque, Y. (2012), “Enhancing social capital for sustainable coastal development: is Satoumi the answer?” *Estuarine, Coastal and Shelf Science* 116, pp. 66-73
- Heynen, N., Kaika, M. and Swyngedouw, E. (2006) “Urban political ecology and politics of urban metabolism” in *the Nature of Cities*, London and New York; Routledge
- Hodge, I and McNally, S. (2000) “wetland restoration, collective action and the role of water management institutions”, *Ecological Economics* 35 (1) pp 107-118
- Hough, M. (2004) 2nd edition, *Cities and natural process: a basis for sustainability*. USA and Canada: Routledge
- Howard, E. (1898), *To-morrow: A peace full path to real reform*, re-issued with slight revisions in 1902 under the title “Garden cities of tomorrow“, a new edition edited by Osborn, F. (1946), Faber and Faber
- IFOAM (International Federation of international organic agriculture movement) Cultivated change. [Online]. [Accessed 9 February 2015]. Available from: <http://www.ifoam.bio/>
- Jacobs, J. (1961) “The uses of city neighborhood” in *The death and life of the great American cities*, Chapter 6., London; Jonathan Cape, pp. 112-40
- Jackson, F. (1985) *Sir Raymond Unwin: Architect, Planner and Visionary*. London: A Zwemmer Ltd.
- Jacob, J. (2011) *The death and life of the great American cities. 50th anniversary edition*. New York: Modern Library.
- J.C.O. (2016) Jesmond Community Orchard [Online]. [Accessed 6 January 2016], Available from: <http://www.Jesmondcommuityorchard.KK5.org>
- Jesmond Dene Old Mill, the old mill history. [Online]. [Access 30 January 2016]. Available from: <http://www.jesmonddeneoldmill.org.uk/dene/history.html>
- Jones, M. (2010), *Victoria Tunnel: Newcastle’s hidden heritage*. Tyne Bridge Publishing
- Karvonen, A. and Yocom, K. (2011) “The civics of urban nature: enacting hybrid landscapes” in *Environment and Planning* 43, pp. 1305-1322
- Kendle, T. and Forbes, S. (1997) *Urban nature conservation: landscape management in the urban country side*. E & FN SPON

- Keller, D. R. (ed.) (2010) *Environmental ethics: the big questions*. Wiley-Blackwell
- Kirk, J and Miller, M. (1986) *Reliability and Validity in Qualitative Research*, London: sage
- Kirkcaldy (2017) Beautiful Scotland Growing Kirkcaldy. [Online]. [Accessed 30 January 2017]. Available from <http://www.keepsotlandbeautiful.org/mrdia/156991/Growing-Kirkcaldy-Kirkcaldy-4-A1>
- Knight, C (2010) “The discourse of ‘en-cultured nature’ in Japan: the concept of Satoyama and its role in 21st century nature conservation”, *Asian Study review*, 34, 4, pp 421-441
- Kohsaka, R et al. (2013) “local assessment of Tokyo: Satoyama and Satoumi – traditional landscape and management practices in a contemporary urban environment”, Chapter 8 in Elmqvist et al. (eds.) (2013), *Urbanization, biodiversity and ecosystem services: challenges and opportunities: a global assessment*, Dordrecht: Springer
- Lamber, T. (2016), A brief history of Newcastle upon Tyne. [Online]. [Access 8 February 2016]. Available from: <http://www.localhistories.org/newcastle.html>
- Larsen, K. (ed.) (1995) Nara Conference on Authenticity, 1994 Nara; UNESCO world Heritage Centre, Government of Japan Agency for Cultural Affairs, International centre for the Study and Preservation and Restoration of Cultural property & ICOMOS
- Laski, H. L. (c1967) *A grammar of politics*, London; G. Allen & Unwin
- Leopold, A. (1949) *A sand county Almanac*. Oxford University press
- Louv, R. (2008) *Last child in the woods: saving our children from nature-deficit disorder*. Algonquin Bookshop of Chapel Hill
- Loury, G. (1977) “A dynamic theory of racial income differences” in Wallence, O. A. and LeMund, A. *Women minorities, and employment discrimination*, pp. 153-88, Lexington, MA: Lexington Books
- MacFadyen, D. (1970), *Sir Ebenezer Howard and the town planning movement*. Cambridge, Massachusetts: The M.I.T. press
- Mandres, F. and Potts, R. (2001), *Crossing the Tyne*. Tyne bridge Publishing
- Marshall, C. and Rossman, G. B. (2006) *Designing Qualitative Research*. Fourth Edition, London: Sage
- Marshall, G. (1998) *A dictionary of sociology*. New York: Oxford University Press
- Mason, J. (1996) 3rd edition, *Qualitative researching*. SAGE Publication Ltd.
- Marzluff, J., Shulenberger, E., Endlicher, W., Alberti, M., Bradley, G., Ryan, C., Simon, U., and ZumBruennen, C. (c2008) *Urban ecology: an international perspective on the interaction between humans and nature*. Springer US

- McHarg, I. (1969) *Design with Nature*. New York: Doubleday/natural History Press.
- McPhee, E (2007) "Community environmental action: the plumstead common experience", *Local Environment: the International Journal of Justice and Sustainability*, 1:2, pp. 183-196, DOI: 10.1080/13549839608725491
- Meinzen-Dick, R., Gregorio, M. D. and McCarthy, N (2004) "Method for studying collective action in rural development" *CAPRI Working Paper* NO. 33, International Food Policy Research Institute
- Morgan, A. (2007), *Victorian Panorama: A visit to Newcastle upon Tyne in the reign of Queen Victoria*. City of Newcastle upon Tyne Newcastle Libraries & Information Service, Tyne Bridge Publishing
- Morgan, A. (2010), *Jesmond: from mines to mansions*. Tyne Bridge Publishing
- Morgan, A. (2012), *Heaton: from farmer to foundaries*. Tyne Bridge Publishing
- Morse, E. S. (1972) *Japanese homes and their surroundings*. Rutland, Vermont and Tokyo: Charles E. Tuttle Company
- Mumford, M. (1966) *The city in history: its origin, its transformation, and its prospects*. Penguin Books in association with Martine Secker and Warburg.
- National Statistics (2001) *Social capital a review of the literature*. Social Analysis and Reporting Division Office for National Statistics
- Nettle, C. (2014) *Community gardening as social action*. Ashgate
- Newcastle City Council (2010) *Our land: the Newcastle allotment strategy 2010-2015*. Newcastle City Council
- Newcastle City Council (2015) Briefing note, Nuns Moor Allotment, 08/01/2015, Newcastle City Council
- Newcastle University (2012) The social, health and wellbeing benefits of allotment: five societies in Newcastle. Electronic Working Paper No. 47, 2012,
- Newcastle University (2016), *Newcastle Allotment lead Biomonitoring Study*. Institute of health & Society.
- Noy, C. (2008) 'Sampling knowledge: The hermeneutics of snowball sampling in Qualitative Research, *International Journal of Social Research Methodology*, 11, (4), pp. 327-344
- Olson, M. (1965) *The logic of collective action*. Cambridge; Harvard University Press
- Ostrom, E. E. (1990) *Governing the commons: the evolution of institutions for collective action*. New York; Cambridge University press
- Ostrom, E. E. (2000) "Social capital: a fad or fundamental concept?" in Dasgupta, P. and Sarageldin, I (eds) *Asocial capital a multifaceted perspective*, Washington; The World

Bank

- Ostrom, E. E. and Ahn T. K. (ed. 2003) *Foundation of social capital*. Cheltenham UK, Northampton MA USA: An Elgar Research Collection
- Ostrom, E. E. (2007) "Collective action theory" in Bix, C. Stokes, S. (eds) *The Oxford handbook of comparative politics*, Oxford University Press.
- Ostrom, E. E. (2010) "Polycentric system for coping with collective action and global environmental changes" *Global Environmental Changes* 20, pp. 505-510
- Palamer, C. (2010) From the ground up: Why urban ecological restoration needs environmental justice, *Nature and Culture* 5(3) Winter pp. 277-298, Berghahn Journals
- Parliament home page 2015 "The Chartist movement" [Online]. [Access 18 November 2015]. Available from:
<http://www.parliament.uk/about/living-heritage/transformingsociety/electionvoting>
- Pendlebury, J. (2009) *Conservation in the age of consensus*. New York: Routledge.
- Perakyla, A. (2011) 'Validity in Research on naturally occurring social interaction'. Cited in D. Silverman (ed.), *Qualitative Research: Theory, method and practice*, 3rd edition, (pp. 365-82). London: Sage
- Poole, S. (2006) *The allotment chronicles: a social history of allotment gardening*. Sliver Link Publishing Ltd.
- Pretty, J. and Ward, H (2001), "Social capital and the environment", *World Development*, Vol. 29. No. 2, pp. 209-227, Elsevier Science Ltd
- Pretty, C. (2003) "Social capital and the collective management of resources", *Science* 30, pp. 1912-1914
- Punch, K. (1998) *Introduction to Social Research: Quantitative and Qualitative Approaches*. London: Sage
- Putnam, R. (with Leonardi, R. and Nanetti, R.) (1993) *Making democracy work*, Princeton NJ: Princeton University Press
- Ratcliffe, D.A. (1977) 'Nature conservation: Aims, methods and achievements'. *Proceedings of the Royal Society of London. Series B, Biological Sciences*, Vol 197, pp. 11-29
- Record of the Royal Visit - Jesmond Dene compiled by Town Clerk Newcastle, Andrew Reid 1884.
- Reeve, W. (1951), *Jesmond Dene, a documentary film of Jesmond Dene*, North East Film Archives No. 16483
- Robson, C. (2011) 3rd edition, *Real world research: A resource for users of social research methods in applied settings*, John Wiley & Sons Ltd.

- Roe, M. and Taylor, K. (eds.) (2014) *New cultural landscapes*. London: Routledge.
- Rossman, G. B. and Rallis, S. F. (c2003), *Learning in the field: An introduction to qualitative research*. SAGE Publications.
- Rowe, S. (1999/2000) 'The Ecology of Cities', *The Structurist*, No. 39/40, pp.17-24, University of Saskatchewan, Canada. [Online]. [Access 15 April 2016]. Available from: <http://www.ecospherics.net/pages/RoweCities.html>
- RSPB (Society for the protection of birds) (2013) *Connecting with nature*. [Online]. [Accessed 7 April 2015]. Available from: <http://www.rspb.org.uk/connecting-with-nature>
- Rudd, M. A. (2000) "Live long and prosper: collective action, social capital and social vision", *Ecological Economics* 34 (234), pp 131-134
- Russell, R. et al. (2013) 'Humans and nature: how knowing and experiencing nature affect well-being' *Annual Review of Environment & Resources*. 38(1) pp. 473-502.
- Ryder, J. and Silver, H. (1985) 3rd edition, *Modern English Society*, London and New York: METHUEN
- Sagolini, M. (2003) *Urban landscape: environmental networks and quality of life Italia*: Springer-Verlag
- Saito, O. (2004), "Quantitative and special changes in woodland vegetation for the last 40 years in the Kanto region, Japan". *Theory and applications of GIS*, 12 (2) pp 146-154 (in Japanese with English abstract)
- Saldivar-Tanaka, L. and Krasney, M. E. (2004) "Culturing community development, neighborhood open space, and civic agriculture: the case of Latio community gardens in New York City" in *Agriculture and Human Values* 21, pp. 399-412, Kluwer Academic Publisher
- Schafft, K. and Brown, D. (2003), Social capital, social networks, and social power *Social Epistemology*, Vol.17(4), p.329-342 Routledge, Taylor & Francis Group
- Schneider et al. (1996) *Encyclopedia of climate and weather, volume 2*, Oxford University Press
- Schroeder, H. W. (2007) "Place experience, gestalt, and human-nature relationship" *Journal of Environmental Psychology* 27, p. 293-309
- Select Committee on Environment, Transport and Regional Affairs Fifth Report 24 (June 1998), *Minuets of Evidence* (May 1998). [Online]. [Accessed 15 September 2015]. Available from: <http://www.paliament.the-stationery-office.co.uk/pa/cm199798/cmselect/cmenvtra/>

- Selman, P. (2012) *Sustainable landscape planning: the reconnection agenda*. London: Routledge.
- Seoul Metropolitan Government, In-Keun (2006) *Cheong Gye Cheon restoration project – a revolution in Seoul*. World Congress
- SHAA, South Highbury Allotment Association Archives (1918)
- Signton, S. ND Taylor, M. (1992), Common property, collective action and community, *Journal of Theoretical Politics*, 07/01/1992, Vol.4 (3), pp. 309-324, Sage Publications
- Silverman, D. (2013) *Doing Qualitative research*, fourth edition, London: Sage
- Smith, K. Yellowley, T. (2012), *The great walls of Newcastle: Exploring the city's ancient defense*, City of Newcastle upon Tyne Newcastle Libraries & Information Service, Tyne Bridge Publishing
- Smith, K. Yellowley, T. (2014), *The Town Moor: Newcastle's Green Heart*, Tyne Bridge Publishing
- Smith, K. Yellowley, T. (2015), *The story of the Tyne and the Hidden rivers of Newcastle*. Tyne Bridge Publishing
- Spangenberg, J.H., Gorg, C. Trung, D. T., Tekken, V. Bustaman, J. V. and Settele, J (2014), provision of ecosystem services is determined by human agency, not ecosystem function, in *International Journal of Biodiversity Science, Ecosystem Services and management*, pp. 40-53, published online 06 Feb. 2014
- Spirn, A. W. (1984) *The granite garden: urban nature and human design*. Basic books a member of the Perseus Books Group.
- Stake, R. E. (c1995), *The art of case study research*, SAGE Publications.
- Standish, R. et al. (2012), "Improving city life: options for ecological restoration in urban landscapes and how these might influence interactions between people and nature", *Landscape Ecol* 38, pp 1213-1221
- Stefanovic, I. L. and Scharper, S. B. (eds.) (2012) *The natural city: re-envisioning the built environment*. Toronto, Buffalo, London: University of Toronto Press.
- Sugiura, Y. and Gillespei, J. K. (1993) *A bilingual handbook on Japanese culture*. Natume-sha
- Swyngedouw, E (2010) "Trouble with nature: Ecology as the new opium for the masses, cited in Hillier, J. and Healey, P. (ed.) (2010) *The Ashgate Research Companion to Planning Theory: part two: conceptual challenge for spatial planning*. University of Newcastle 2010, Ashgate
- Takeuchi, K. et al (2004) "using sustainability science to analyse social –ecological

- restoration in NE Japan after the great earthquake and tsunami of 2011”, *Sustain Sci* 9, pp 513-516
- Tarn, J. N. (1969) *Working-class housing in the 19th century Britain*. A.A. paper Nos. 7
Lund Humphries
- Tazawa, T., Matsubara, S., Okuda, S. and Nagahata, Y. (1973) *Japan's cultural history-perspective*. Ministry of Foreign Affairs, Japan
- Thayer Jr, R. L. (1994) *Gray world great heart: technology, nature, and the sustainable landscape*. New York, Canada: John Wiley & Sons
- Thesaurus web-site [Online]. [Accessed 30 January 2017]. Available from: [http://thefreedictionary.com/natural processes](http://thefreedictionary.com/natural%20processes)
- The Japan Craft Forum (1996) *Japanese Crafts*. Tokyo, New York, London: Kodansha International
- The World Bank (1999) *Social Capital* [Online]. [Accessed 11 December 2016]. Available from <http://infed.org/mobi/social-capital/>
- Thompson, I. H. (2000) *Ecology, community and delight: sources of values of Landscape architecture*. New York: E & FN ESPON.
- Thompson, I. H. (2009) *Rethinking landscape: a critical reader*. USA, Canada: Routledge
- Thompson, I. H. (2012) “Gardens, parks and sense of place”, cited in I. Convery, G. Corsane and P. Davis (eds) *Making Sense of place: Multidisciplinary Perspectives*, Woodbridge: Boydell & Brewer, pp. 159-168
- Tocqueville, Alexis de (1840) “Of the use which the Americans make of public associations in civil life”, “of the relation between public associations and newspapers”, “Relation of civil to political associations” and “How the Americans combat individualism by the principle of self-interest rightly understood” in Bradley, *Democracy in America*, Volume II, Chapters V-VIII, New York: Alfred A. Knopf, pp. 106-24
- Tod, I. and Wheeler, I. (1978) *Utopia*, P. 73-79. Orbis Publishing Ltd.
- Total Research (2010), a survey was made for the City Council, Newcastle City Council and the NAWG.
- Turner, B. (2011) “Embodied connections: sustainability, food systems and community gardens” in *Local Environment: the International Journal of Justice and Sustainability*, Vol.16, No. 6, pp 509-222. Routledge
- Yin, R. K. (2014) 5th edition, *Case study research: Design and methods*, SAGE Publication Inc.
- Tyler, C. (2016) “Public goods” the Concise Encyclopedia of Economics, Library of

- Economics and Liberty, [Online]. [Accessed 12 May 2016]. Available from:
<http://www.econlib.org/library/Enc/PublicGoods>
- Unwin, R. (1909) *Town Planning in Practice: an introduction to the art of designing cities and suburbs*. T. Fisher
- Vanni, F. (2014) *Agriculture and public goods: the role of collective action*. Springer
- Vitousek, P. M., Harold, A., Mooney, J., Lubchenco, J. and Melillo, J. M. (2008), “Human domination of earth’s ecosystem” cited in Marzluff, J. et al., (c2008) *Urban ecology: an international perspective on the interaction between humans and nature*. Springer US, Springer Link [Online]. Newcastle University Library (2012).
- Wackernagel, M. and Rees, W. (1996), *Our ecological footprint*. Gabriola Island, BC: New Societies Publisher
- Wade, R. (1988) *Village republics: economic condition for collective action in South India*, Oakland; ICS Press
- Wadsworth, J. (2011), *Tyneside flats: a paradigm tenure for interconnected dwellings*, PhD thesis. Newcastle University
- Walker, R. F. (1996?), *The institutions and history of the Freemen of Newcastle upon Tyne*, Stewards’ Committee of the Freemen of Newcastle upon Tyne
- Wates, N. and Knevitt, C. (1987), *Community architecture: how people are creating their own environment*, London; Penguin
- Watsuji, T (1935), *FU-DO: A climate, a philosophical, Study*, Translated by Geoffrey Bownas, Lecturer, Iwanami (1978)
- Way, T. (2009), *Allotments*. Shire Publication
- William, R. (1973, 2011), *The country and town*, Spokesman, (Chatto Windus 1973)
- Wilson, E. O. (1984), *Biophilia*. Cambridge, Massachusetts and London, England: Harvard University Press
- Wiltshire, R. and Burn, D. (2008), *Growing in the Community*, 2nd edition, Local Government Association
- WJAA, West Jesmond Allotment Association archives, an exhibition note (c1921)
- Woolcock, M (2001) ‘The place of social capital in understanding social and economic outcomes’, *Isuma: Canadian Journal of Policy Research* 2:1, PP. 1-17
- Wylie, J. (2007) *Landscape*. London and New York: Routledge
- Yli-Pelkonen, V. and Niema, J. (2005) Linking ecological and social systems in Urban planning in Finland as a case, *Biodiversity and Conservation* 14: 1947-1967 Springer

Japanese

- Architectural Institute of Japan (ed.) (2010) “地域環境デザインと継承: 第二シリーズ地域環境建築・専門編 1 Environmental design in the regional contexts for generations、彰国社
- Asano, K. (1970) Koji-Kaitai, Gakusei-sha 浅野 清 ‘古寺解体’
- Chikuzen Asakura Agriculture Co-operation, the calendar of rice field work 2015
筑前あさくら農業協同組合 ‘稲作ごよみ’
- Civic Center (2015), List of volunteer groups in Hagi, Civic Collective Action Center, Hagi
- Dosako, S. (2010), Chosyu Five: challenge of samurai for industrialization, Vol. 28
Hagi-monogatari. 長州ファイブ、萩物語
- Hagi Board of Education (c.1994), A Study for histori Environment and conservation of Hagi, Hagi City
萩歴史的環境とその保存策に関する調査研究、萩市教育委員会
- Hagi City (1994), 藍場川散歩、Aiba-gawa Sanpo, [Online]. [Accessed 3 August 2015].
Available from: <http://www.city.hagi.lg.jp/hagihaku/aiba>
- Hagi City (2001), 萩市都市計画プラン及び萩市緑の基本計画 2011, 第3章住民意向調査、Hagi Town planning and Green master plan: Chapter Three Resident Opinions.
[Online]. [Accessed 3 August 2015]. Available from: <http://www.city.hagi.lg.jp>
- Hagi City (2014), これまでの萩市民会議提言及び活動報告書及び行政からの回答,
平成14年度ー平成25年度 Combined Community Group Meeting (CCGM)
“Hagi Citizen Conference” [Online]. [Accessed 4 August 2015]. No. 11- No. 10.
Available from: <http://www.city.hagi.lg.jp/soshiki/12/781>
- Hagi City (2015), Population Data, [Online]. [Accessed 4 August 2015]. Available from:
<http://ecitizen.jp/Population/City/35204>
- Hagi City (1970), History of Hagi – First Volume, Hagi City 萩市史 第一巻
- Hagi City Environment (2015), 萩市環境担当レポート Hagi Beautification Scheme,
One-day-Clearing for Rivers, Canals and Beaches, Environment report.
- Hagi-Fukue (2015) 萩・福栄 水と緑を守る会、会報 第1号ー第17号
Protecting Water and Life, in Hagi, Fukue, Newsletter, Vol. 1-Vol. 17
- Hagi Glass Art Studio (2015), 幕末の萩ガラス物語、Bakumatu no Hagi Glass Monogatari,
[Online]. [Accessed 15 August 2015]. Available from: <http://www.studiohagiblass.jp>

- Hagi Love (2015), 萩 Love, 地域密着コミュニティサイト [Online]. [Accessed 12 August 2015]. Available from: <http://www.hagi-love.jugem.jp>
- Hagi Museum (2015) 萩まちじゅう博物館、[Online]. [Accessed 10 August 2015]. Available from: <http://www.cityhagi.lo.jp>
- Hagi Open Garden (2015), 萩オープンガーデン [Online]. [Accessed 3 August 2015]. Available from: <http://www.hagishi.com/search/>
- Hamakaze-dayori (2009), Kikugahama-Beach Beautification Group, Vol 3, Hamakaze-dayori, 浜風日より、菊ヶ浜を日本一美しくする会
- Hagi City (2013), Story of Natsu-mikan, Hagi City 夏みかん物語
- Hagi Museum (2005), Story for Shoin Yoshida, Hagi Muse. 吉田松陰、萩博物館
- Hagi Museum (2010), Masaru Inoue, Father of Japanese Railways, Hagi Tourist Board
- Hagi Museum (2016) The secret of Hagi castle town, Hagi Museum 城下町萩の秘密
- Hagi Tourist Board (2010), Toward a real Tourist town of Hagi, H.T.B. and others
- Higuchi, N. (2006), 樋口、萩城下の水環境と治水、 Hagi Eco-museum
- HJCC, Hagi Junior Chamber of Commerce (1978), 萩ずし Hagi illustrated History
- Ichisaka, T. (2012) 一坂、萩ぶらり散歩, West publishing
- Ishizaki, Y (2003), *Hagi Tea Pot*, Story of Hagi Vol 41, Hagi-Monogatari
 石崎泰之、茶陶萩ーその伝統と革新性、萩ものがたり
- Ito, T. (1965) Japanese Arts No. 21 House Heibon-sha
 伊藤 ていじ ‘日本の美術 21 巻、民家’ 平凡社
- Japan Climate, Hello School 2014 日本の気候 社会 地理 [Online]. [Accessed 18 September 2015]. Available from: <http://www.hello-school.net/harochili004.html>
- Japan Policy Institute ‘共生と循環の世界’ [Online]. [Accessed 10 October 2015]. Available from: <http://www.seisaku-centre/node/60>
- Japan national Rail ways (1997), 日本国有鉄道史百年、100 year history of the Japanese railways, JNR
- Kajimoto, S. (1999), 梶本、歴史的都市における警官要素の把握に関する研究：萩を対象として、修士論文、九州大学、A Study on grasp of the landscape elemnets in the historic city; case study of Hagi City. Master Thesis, University of Kyusyu
- Kawashima, C. (1963) 川島宙次 ‘民家の旅’、人物往来社
- Kitaura-Web (2015), 北浦ウエブ、北浦リレーションシップ Kitaura relationship, from Nov. 2011 – July 2015, Kitaura-Web [Online]. [Accessed 6 August 2015]. Available

- from: <http://hagiweb.com/kitauraweb>
- Kitaura-Web (2013), Kitaura relationship, N0. 33, 6 June 2013, Kitaura-Web [Online].
[Accessed 6 August 2015]. Available from: <http://hagiweb.com/kitauraweb>
- Kitaura-Web (2012), Kitaura relationship, N0. 17, 20 August 2012, Kitaura-Web [Online].
[Accessed 6 August 2015]. Available from: <http://hagiweb.com/kitauraweb>
- Kohara, J (1972) SD Selection 67、 Wooden Culture、 Kajima-press
小原 次郎 ‘木の文化’ 鹿島出版会
- Ministry of the Environment ‘自然との共生を目指して’ [Online]. [Accessed 10 October 2015]. Available from: <http://env.go.jp/nature>
- Miura, M. (1997), 萩城、歴史群像、学習研究社、Hagi Castle – History and Castle Town, cited in Futomaru, N. Gakusyu Kenkyusha
- Miyamoto, M. (2010), 宮本、金沢城下町の研究、金沢市、Research for Kanazawa-castle town, Jyokamachi Kanazawa, Kanazawa City
- Miyamoto, M. (2012), 宮本、都市遺産の保存研究、中央公論美術出版 Toshi-isan no hozon-kenkyu, conservaton study for town heritage、Chuoukouron Art Publisher
- Murakami, K. (2011) 村上、エコミュージアム概念に基づいた文化資源マネジメントに関する研究、日本建築学会九州支部研究報告論文集、第 4 7 号。
A Study on cultural resource management based on the Eco-museum concept
- Nishikawa, K (1972) 西川、日本都市史研究、日本放送出協会、 Research for Japanese Historic City, Nihon Housou Syupankai, NHK Publishing
- Nishioka, T. (2003) Sougakukann-bunko 552 ‘木に学べ、法隆寺・薬師寺の美’
- Nishiyama, N. (2015) Report of bamboo paper & Komorebi, Bamboo Paper Studio
西山 紀子、竹から紙ができるまで、立ち上げ趣意書、活動報告書
- Nishiyama, N. and Murakami, K. (2010) Study for Hagi Machijyu hakubutukan
萩市における文化資源の発掘と都市遺産構想について・歴史文化まくづくり
おける文化資源マネジメントに関する研究, Vol.75, No657, 日本建築学会論文集
- Nishiyama, N. (2004) 西山、萩エコミュージアム、Hagi-Eco-museum, Hagi Museum
NPO Hagi Eco-Museum, (2015) N P O 萩まちじゅう博物館、NPO Hagi Machijyu hakubutukan [Online]. [Accessed 15 August 2015]. Available from:
<http://www.npomachhaku.com>
- Onishi, N. (2003) 大西、萩堀内・平安古伝統的建造物群保存地区見直し調査委員会及び計画委員会、九州大学、Report for the survey by questionnaire for revising the

- conservation area at “Horiuchi and Hiyako” districts in Hagi, Kyusyu University,
Regional Economy Laboratory (2011), Fruit Production ‘果物の収穫ランキング’
地方経済研究.
- Sasaki, T. (1988) 佐々木 高明 ‘東アジア農耕論：焼畑と稲作’ 弘文, pp.359-361
- Sato-umi net, Ministry of the Environment in Japan 里海ネット, 環境省. [Online].
[Accessed 10 August 2015]. Available from:
<http://www.env.go.jp/water/heisa/satoumi/en/endx>.
- Shimizu, M. (2010), 清水、萩物語 2 4、萩博物館、Hagi monogatari, Hagi monogatari No.
24, p.p. 8-9, Hagi Museum
- Shizukiyama Protection Group (1994), 指月山アンケート結果のまとめ、指月山の自然
と美しさを守る、Report of the survey by questionnaire for “Shizuki-yama”, the
protection Group.
- Tamai, T. (1977), 玉井、町人地の研究、252, 日本建築学会、Establishment of choninchi
(townmen’s residential district) in Edo、 Institute of Japanese Achitecture, No.252, pp.
137-149
- Taut, B. (1950, 2008) and H. Shinoda, Japanese House and Life, Syunjyu-sha
篠田 英雄 訳 ‘日本の家屋と生活’
- Tazawa, Y., Matubara, S., Okuda, s. and Nagahata, Y. (1973) Japan’s cultural history – a
perspective, Foreword, Ministry of Foreign Affairs, Japan
- Umehara, T. (1996), Sougakukan. 梅原 猛 ‘共生と循環の哲学’ 小学館
- Watsuji, T (1935) FU-DO A climate, a philosophical, Study Translated by Geoffrey
Bownas, Lecturer, Iwanami (1978)
和辻 哲郎 ‘風土：人間的考察’ 岩波出版.
- Yamori, K. (1972), 矢守、城下町、学芸社、Castle Town, Gakugei-Sha

Appendix

Appendix A: Building Guidance; encompassing sheds, green houses, poly-tunnels, temporary covers and internal fences

The objective has been to keep guidance to a minimum consistent with maintaining and improving the standard of allotment building.

Approval

The erection of any building is dependent upon 'prior' approval by the Site Committee. Advice if necessary may be sought from the Allotment Officer and /or Allotment Working group representatives. Prior Approval is sought by making an application in writing, including a diagram, measurements and materials. Materials should not be ordered or delivered prior to approval. Access – a pathway should not be kept around buildings for maintenance and access purposes.

Location

Due regard must be given to neighbours and proximity to site perimeters in locating buildings. Due regard must be given to overall Site plan and environmental impact. Uniformity of location and materials should be considered. Uniformity needs to be balanced against expression of individuality. Some sites specify no sheds, or sheds/greenhouse in line, or only aluminium greenhouses only, or that poly-tunnels must be commercially produced standard. It is now accepted practice that new plot-holders be allocated half-plots, the location of structures should be such as to facilitate this, that is buildings should be not straddle the mid-line.

Dimensions

The apex of any structure shall not exceed 8ft 6in. maximum dimensions of sheds are 10ft x 8ft. No more than 25% of an allotment may be taken up by structures. A minimum of 75% of an allotment should be under cultivation; this excludes working or sitting out areas.

Materials

Sheds must be of sound treated timber or pre-formed commercial construction. Timber should be treated or painted in discreet or subdued colours specified in the approval application. Greenhouse may be timber or aluminium. UPVC is not allowed, likewise recycled windows and doors (except for cold frames) thus avoiding structures which convey a ramshackle appearance. Poly-tunnels should be regarded as a variation of greenhouses. NB the 25:75 rule applies. There is no requirement to remove the polythene covers at season's end,

this practice shortens life of an expensive structure. Chrysanthemum covers and similar – height should not exceed 7ft, timber should not exceed 2 in x 2 in, covers to be allowed 01.08 -30.11 These covers are regarded as temporary structures and may be in addition to the 25% permanent structure rule.

Glazing

Shall be glass (preferably toughened) horticultural Perspex or clear polythene, or clear acrylic/PVC. Corrugated or opaque materials are not recommended. Adequate glazing bars must be used.

Maintenance

All structure should be regularly maintained. No stipulation is made other than that identified during bi-annual site inspections.

Heating

Shall be by paraffin or bottled gas. Due regard will be given to safe storage and regular disposal of gas bottles.

Internal fences

Maximum height 3 ft, construction post and wire. Post 2 in x 2 in in two or three strands of wire, galvanised.

Water Collection

Plot-holders are encouraged to collect water from building roofs. Water storage should be in containers which are not sunk into the ground and thereby avoid potential danger. Site inspections should be monitor water features and storage in light of risk.

Appendix B: The Newcastle allotment garden survey

1. Survey by Questionnaire

The questions that were asked in the field survey and the interviews were as follows.

Question 1: What do you think are the values of your allotment community?

Question 2: What are your concerns regarding your Allotment gardens and the Association?

Question 3: Do you have any idea to help to improve the problems or issues?

Question 4: How would you like to see your allotment in the future?

2. Respondents of each Allotment Association (AA)

Index:

M. Male, Fe. Female, Age range, [**] : Years of holding a plot,

Br. British, Eur. European

⊙ Individual interview ● Group interview

West Jesmond AA: individual interviews 4 and questionnaire responses 4

M. 60s, [15], Br. ⊙

Fe. 30s-1, [3], Br. ⊙

Fe. 70s over, [50-], Br. ⊙

Fe. 30s-2, [1], Eur. ⊙

Highbury South AA: individual interview 5 and questionnaire responses 7

M. & F. 60s, [40+], not mentioned ⊙

M. 40s, [5], Br.

M. 50s-1, [10], Br.

M. 70s over-1, [20+], B. ⊙

M. 70s over-2, [20+], Br. ⊙

M. & Fe. 60s, [10], Eur. ⊙

Fe. 50s-2, [8], Br.

Highbury North AA: individual interviews 7 questionnaire responses 17

M. 70s over, [20+], Br. ⊙

M. 60s, [16], Eur. ⊙

M. 50s, [23], Br. ☉

Fe. 60s-1, [15], Br. ☉

Fe. 60s-2, [15], Br. ☉

Fe. 70s over, [7], Br.

M. & F. 70s over, [44], Br. ☉

Highbury North - People below talked briefly at the working day and received responses

M. 20s, [2], Br.

Fe. senior, [31], Br.

M. & F. 60s & 70s-, [not mentioned] Br.

M. 50s-1, [12], Br.

Fe. 60s-1, [10], Br.

M. 60s-1, [5], White

Fe. 60s, [5], Br.

Fe. 50s, [not mentioned], Eur.

M. 60s-2, [not mentioned], Br.

M. 50s-2, [4], Br.

School House AA: individual interviews 8 and group interview with 4, responses 9

M. 70s over, [50+], Br. ☉

M. 60s-1, [6], Br. ☉

Fe. 70s over, [3], Br. ☉

M. 60s-2, [3], Br.

Fe. 60s, [6], Br. ☉ ●

M. & Fe. 60s, [5], Br. ☉

M. 60s-3, [30], Br. ☉

Fe. 30s, [1], Br. ☉

Fe. 50s, [20+], Br. ●

Armstrong AA: group interview with 6, questionnaire responses 7

Fe. 40s, [11], Eur. ●

Fe. 50s, [3], ●

M. 40s, [20] Br. ●

M. 70s, [20], Br. ●

Fe. 70s over, [40], Br. ●

Fe. 60s, [30], Br. ●

High Heaton AA: Group interview with 5 and questionnaire responses 6

M. 60s, [38], Br. ●

Fe. 40s, [37], Br. ●

M. 60s, [4], Br. ●

M. 60s, [30+], Br. ●

Fe. 40s, [18], Br. ●

Thropton Terrace AA: individual interviews 2, group interview with 6, responses 3

M. 60s, [6], Br. ☉ ●

Fe. 50s, [25], Irish ☉ ●

M. 50s, [30], Br.

Tweed Street AA: Group interview with 2 and questionnaire response 1

Fe. 60s, [8] Br. ●

Fe. 50s, [8] Br. ●

Fairways AA: Group interview with 7 and questionnaire responses 3

M. 50s, [4], Br. ●

M. 50s, [not mentioned], Br.

Walkergate Hospital AA: individual interview 1, group interview with 4, and Resp. 7

M. 70s over-1, [34], Br. ☉ ●

M. 60s-1, [14], Eur. ●

M. 30s, [1], Br. ●

M. 70s Over-2, [8], Br. ●

M. 60s-2, [1], Br.

M. 70s over-3, [20], Br.

Iris brickfield AA: Ondividual interview 1 and group interview with 4, and response 2

M. 70s over, [24], Br. ☉ ●

Fe-1, 3) Fe-2, and 4) M-2. ●

Others: individual interview 1 and questionnaire responses 7

M. 60s, Rectory Road AA, [3], Br.

M. 70s over- Ernie Brown, Rectory Road AA, [30+], Br.

M. 50s, Coxbridge AA, [12], Br.

M. 60s, Ridgewood Crescent AA, [37], Br.

Fe. 60s, Ridgewood Crescent AA, [5], Br.

Fe. 50s, Blaney Raw AA, [20], Br.

Fe. 50s, [25], Br. ☉

Group Interviews

- 1) High Heaton AA (total 5 members)
- 2) Armstrong AA (total 6 members)
- 3) Fairways AA (total 7 members)
- 4) Walkergate Hospital AA (total 4 members)
- 5) School House AA (total 5 members)
- 6) Tweed Street AA (total 2 members)
- 7) Iris Brickfield AA (total 4 members)
- 8) Thropton Terrace (total 6 members)A

Appendix C

Face to Face interviews – Relationship in Kitaura-Web, published 11/2011 – 10/2015.

All the outcomes of the face to face interviews are available on the web-site <http://hagiweb/kitauraweb>. However, no analysis and discussions over the results have been conducted. The articles are Japanese only, therefore, the field survey have made translations and an analysis.

Questions

The following three fix questions out of ten are concerned with the survey.

- 1) *What do you like most in Hagi?*
- 2) *What do you think the problem of Hagi?*
- 3) *What do you consider the solution/s?*

Data:

Interviewee' ages and professions are at the time of the interview.

1), 2) and 3) are responses of each question: main points of the interviewee views and standpoints

Date	Interviewee	Gender	age	Profession
01. 03/11/11	Mr. N. Shiomitsu	Male	28	Guest house <i>Ruko</i> and Shop owner
	1) Characteristics of four seasons			
	2) Less social communication			
	3) To learn human interaction from younger age			
02. 17/11/11	Mr. T. Masui	Male	32	Potter
	1) Historic city with natural environment			
	2) Less vitality in High Street			
	3) Revitalization for flow of people in High Street			
03. 01/12/11	Mr. M. Okazaki	Male	36	Chef, Tourist guide with <i>jinrikisha</i>
	1) Sea, mountain and river, rich natural foodstuff, produce			
	2) Introverted, less hospitality for tourists			
	3) Making an atmosphere for changing in one's awareness			
04. 15/12/11	Mr. H. Nakahara	Male	37	Wood furniture design and craft-man
	1) Rich in natural environment			
	2) People tend to long for the urban life because of too much TV watching			
	3) Making more human interactions			
05. 19/01/12	Mr. H. Takai	Male	56	Artist, Crafts work, studio <i>Yume-kukan</i> owner
	1) Townscape			

2) People's less awareness for local significance put a brake on vitalization

3) To leave things even smaller for next generations to enjoy in community

06. 02/02/12 Mr. M. Hakatue Male 51 Chief priest of *Sumiyoshi* Shrine
1) Good taste of fishes, a lot of interesting people
2) Less younger generation
3) To provide job opportunities for young
07. 16/02/12 Mr. M. Inoue Male 36 Director of Inoue marine product company
1) Rich in natural environment and resources for tourism
2) Young people who grown up in this wonderful city have gone away
3) Education to let young people to know about the distinctive of Hagi
08. 01/03/12 Mr. T. Ooshima Male 38 Director of *Dondon* restaurant
1) History and Hagi people are proud of it
2) Taking a long journey and time to the nearest airport
3) Difficult for us
09. 15/03/12 Mr. H. Hatano Male 40 Potter
1) Country side, good for the work
2) Closed society, conservative, very slow development, so remain the culture
3) Taking the characteristics as an advantage for making Hagi distinctive
10. 05/04/12 Mr. M. Nagata Male 50 Bicycle shop owner
1) Living outside of Hagi, *Nagato*, located an appropriate position for the job
2) Declining birth rate
3) More big families as the past time
11. 14/04/12 Mr. O. Ishimoto Male not mentioned Director of construction firm
1) Rich in natural environment, night stars
2) Passive
3) Positive thinking, talking
12. 03/05/12 Mr. H. Awa Male 70 Ex-junior high school teacher
1) Country side landscapes
2) Declining birth rate and difficulties of primary industry for living
3) Opportunities for younger generation to live in this area
13. 16/05/12 Mr. K. Tsubota Male 48 Astronomical researcher and guide
1) Beautiful night stars
2) Least job opportunities for younger generation
3) Diverse people get together and work together
14. 07/06/12 Mrs. M. Abe Female not mentioned High school teacher
1) In the Japan Sea, rich in natural environment, good for children's

- growth
- 2) Shops are not adequate for children's development
 - 3) Needs for family oriented city policies and schemes
15. 06/07/12 Mr. H. Mito Male not mentioned Teacher for Martial art *Aikidou*
 - 1) Beautiful sea, and night sky, stars
 - 2) Inadequate cares and schemes, difficult for old citizen to live
 - 3) Old people measures
 16. 19/07/12 Mr. T. Nagaoka Male 36 Learning Martial Art
 - 1) Volunteer activities
 - 2) Less hospitality, less friendly compare with other cities
 - 3) Raise awareness other people's position and interests
 17. 02/08/12 Dr. A. Watanuki Male 45 Director of Watanuki medical clinic
 - 1) Sea, mountain, seasons, community ties
 - 2) Depopulation, declining child rate, etc, the most of all is medical issues
 - 3) To protect local medical cares
 18. 16/08/12 Mr. K. Uchida Male 35 Executive director of U construction firm
 - 1) The unity of Hamazaki (living area), the area cultures and traditions
 - 2) Declining birth rate, closed society
 - 3) Do best with cooperation, tackle with district as a whole
 19. 20/09/12 Mr. N. Isejima Male 44 Mason
 - 1) Blue sea, green mountains, relatively few earth quakes natural disaster
 - 2) Lack of risk management
 - 3) Family ties, community interactions, cooperation's
 20. 18/10/12 Mr. K. Takesasu Male 45 Hagi Brass band master
 - 1) Locality, rich in natural environment, neighbourhood communication
 - 2) Not active
 - 3) In declining birth rate environment, need to do thing actively to lead young
 21. 15/11/12 Ms. H. Sasaki Female not mentioned Hairdresser
 - 1) Love Hagi as the place I was born
 - 2) Old society, depopulation,
 - 3) Needs for increasing independent revenue resources, human resources
 22. 20/12/12 Mr. N. Kusumoto Male 45 Gardener
 - 1) Rich in natural environment, time moves slowly, good for children's growth
 - 2) Strong individuality, inconvenience of distribution in the area
 - 3) To promote distinctive characteristics
 23. 17/01/13 Mr. K. Miyagawa Male 38 Owner of Seven eleven shop

- 1) Small city, many acquaintance, casual communications
 - 2) Higher tax, concerns with declining birth rate
 - 3) Need for pre-informing system to citizens for spending budget
24. 07/02/13 Mr. M. Nakamura Male 31 Sake Brewer
- 1) Many people have interesting personalities
 - 2) Less working generation
 - 3) Making attractive regeneration schemes
25. 21/02/13 Mr. T. Yamagata Male 30 Staff at lumber-mill firm
- 1) Warm-heartedness
 - 2) Least job opportunity for young generation
 - 3) Regeneration scheme to attract young people to come back
26. 07/03/13 Mr. K. Shimada Male 28 Managing director of company
- 1) Unlike big city, remains warm-heartedness and district community sense
 - 2) Least attractive places for young
 - 3) To promote tourism not sightseeing but participating
27. 21/03/13 Mr. T. Harada Male 33 Company staff
- 1) Good environment for enjoying all kind of sports locally
 - 2) Least job opportunity for young
 - 3) To provide better systems for U-turn and I-turn people
28. 04/04/13 Mr. Y. Mitsu Male 34 Architect
- 1) Time moving slowly, peaceful as country side
 - 2) Less attractive for young to make dream to fulfil
 - 3) Scheme of public and private partnership
29. 18/04/13 Mr. K. Oohira Male 38 Leader of Hagi-Love
- 1) Sea, mountain, while wall, peaceful landscapes
 - 2) Depopulation, declining birth rate, lower salary than the *Sanyo* area
 - 3) To promote job opportunities of the city firms and public relations
30. 02/05/13 Mr. Y Ishida Male 28 PR staff of ABU Water Boys
- 1) Natural environment here offers many activities
 - 2) Young can do anything but they do not act
 - 3) Needs for new system, place, making appreciation to let young to move
31. 16/05/13 Mr. T. Shigekari Male 63 Fisherman
- 1) Many close friends, get along with them
 - 2) Less job opportunities not just for young but also whole generations
 - 3) To make efforts for inviting U-turn and I-turn people
32. 06/06/13 Mr. J. Fukushima Male 44 Restaurant master
- 1) Remains mythology
 - 2) Worsen economy by closed habit, thinking, narrower views, etc.

- 3) To give through opportunities and financial support for people who have enthusiasm and energy for the vitalisation, including information and places. To train facilitators, send them outside the town continuously to cultivate their visions and learn them in the community. To use the IT tools more effectively to interact people.
33. 20/06/13 Mr. T. Takahashi Male 49 Chief priest of *kyousonji* Buddhist temple
- 1) Mountain, sea, beautiful landscapes. Talented artist, craftsmen and women
 - 2) Depopulation, aging society, declining birth rate, inadequate measures
 - 3) Making cooperative grave, use environmental significance to create opportunities, get people together to tackle the issues
34. 04/07/13 Mr. S. Nakamoto Male 48 Café master
- 1) Rich in natural environment, good food, natural produces, better place to live, people do not realize those
 - 2) Less energy, less productive, gloomy people and town
 - 3) To make one step further each other, it can generate movement for re-vitalising the town
35. 18/07/13 Mrs. Y. Shimizu Female 55 Leader of flamenco dance and lecturer
- 1) Beautiful landscapes, sea, mountains. Many female are productive
 - 2) Aging society, declining birth rate. Less medical care facilities
 - 3) Making PR to promote significance of the environment
36. 01/08/13 Mrs. M. Umechi Female 44 hand-made fabric shop master
- 1) Warm-hearted people of the area
 - 2) Least appropriate places for productive discussion
 - 3) Making links between senior and young
37. 15/08/13 Ms. A. Morita Female 38 Nail-artist
- 1) Clear sky, stars
 - 2) Less attractive places for young generation
 - 3) To provide a place to attract young such as a college
38. 05/09/13 Mr. Y. Matsuoka Male 36 Restaurant owner chef
- 1) Peaceful birth place
 - 2) Depopulation, least job and living opportunities for young
 - 3) To let children to know significance of the area, interaction cross over ages
39. 03/10/13 Mr. T. Shimada Male 39 Company director
- 1) Calm and gentle, warm-hearted people
 - 2) Declining birth rate
 - 3) Making job opportunities for young to live and have a family
40. 01/11/13 Mr. D. Morita Male 30 Managing director
- 1) Living safely, closeness to people around

- 2) Less younger generation and children
3) To provide facilities and places where young people are able to live
41. 21/11/13 Mr. N. Masuyama Male 31 Building company manager
- 1) Sense of distance between friends
2) Closed society
3) Reasonable connection with others
42. 05/12/13 Mr. S. Matsuno Male 35 Potter
- 1) Sea, rich nature, natural environment
2) Less tourists than before
3) Vitalisation
43. 19/12/13 Mr. A. Kaneko Male 39 Potter
- 1) Quiet town
2) Least young people, declining birth rate, further depopulation
3) To provide attractive measures for young people
44. 12/01/14 Miss A. Nagaoka Female 28 Pianist
- 1) Many interesting people in Hagi, connection each other
2) Need for PR
3) To use the IT networks and tools
45. 06/02/14 Mr. K. Shori Male 63 School teacher
- 1) A quite historic castle town, tradition, culture, beautiful cultural landscapes
2) Less opportunities for young people
3) Needs for U-turn people, and places for them to act and grow
46. 20/02/14 Mrs. Y. Murota Female 61 Gallery café owner
- 1) History, feel in daily life with remaining houses and the canal in the area I live
2) Less green compare with child age, need a sense for good green planning
3) To make street people like to walk, connect the attractive spots in Hagi with pedestrian networks
47. 20/03/14 Mrs. S. Matsumoto Female 51 School teacher
- 1) Compact city, appropriate to move around with bicycle
2) Less places for younger generation to come
3) U-turn people, assist young people
48. 03/04/14 Mr. M. Male 47 Curator
- 1) Peaceful townscape, waking round *Natu-mikan* (orchard) sites
2) Disappearing historic features
3) To appreciate importance of old houses
49. 17/04/14 Mr. I. Muraoka Male 54 Chemist
- 1) Not like big city, quiet, peaceful, feel a relief as return to Hagi

- 2) Lack of education for an alternative/new sense of value
3) Many experience, flexible thinking, education to act one' way
50. 15/05/14 Mrs. F. Yoshii Female 64 Restaurant master
1) Values including historic town scape, cultural landscapes, food, people
2) Few places for young people to act
3) To have open mind, to protect and support for young people activities
51. 05/06/14 Mr. I. Oya Male 59 Japanese lantern artist
1) Remaining historic houses and places
2) Few repeaters
3) System for coordination, connection, community as a whole
52. 03/07/14 Mrs. M. Nakahara Female 53 Restaurant owner
1) *Natu-mikan* (orange) blossom season, a sweet sour small
2) Fixed view, conservative, too serious to act freely
3) Flexible thinking, cooperate with young people
53. 17/07/14 Mr. Y. Kunimoto Male 56 Gallery owner
1) Remaining old houses, feel 100-200 years history
2) Safety for old people, young children, traffic in the historic core
3) To control visitor's cars, measures for vulnerable people and bicycles
54. 21/08/14 Mr. N. Kanno Male 57 Gardener
1) Unique environment, cultural landscapes
2) Depopulation, least job opportunities for young people
3) Need for making vitalization, opportunities, PR
55. 04/09/14 Mr. T. Fujii Male 50 Managing director
1) Remaining historic streetscape
2) Depopulation, declining birth rate, regulation too old to vitalise
3) To consider resident lives, new regulation to meet resident needs
56. 18/09/14 Mr. T. Shinohara Male 50 Road-station Master
1) People to protect traditional cultures
2) Aging society, declining birth rate, depopulation, lack of hospitality
3) Hospitality
57. 02/10/14 Mr. H. Oshima Male 72 Chairperson of the board of director
1) Historic street scape and houses
2) Many vacant houses, no vitality, many young people gone out
3) Collaboration work between City administration and Residents
58. 20/11/14 Mr. M. Hashimoto Male 38 City officer
1) History, foods
2) Lack of people's interaction
3) Collaboration, interaction
59. 04/12/14 Mrs. S. Tsuchiya Female 38 Shop keeper

- 1) Four seasons, sea, mountains
- 2) Least opportunities for young people to speak up the City Administration
- 3) Collaboration, interaction, communication

- | | | | | | |
|-----|----------|---|------|---------------|-----------------------------------|
| 60. | 01/01/15 | Mr. K. Fujita | Male | 40 | Shop keeper |
| | | <ol style="list-style-type: none"> 1) Warm-hearted people 2) Depopulation 3) To develop and enhance the distinctive of Hagi including beautiful culturl landscapes, rich natural environment, volunteer activities | | | |
| | | | | | |
| 61. | 15/01/15 | Mr. M. Itoh | Male | 38 | Construction manager |
| | | <ol style="list-style-type: none"> 1) Local small bar/restaurant, can calm down 2) Least job opportunities for young people, depopulation 3) Regeneration to vitalise the city | | | |
| | | | | | |
| 62. | 05/03/15 | Mr. M. Fukiage | Male | 37 | Company director |
| | | <ol style="list-style-type: none"> 1) Quiet place, time slowly moving 2) Few places for children to play ball-games, declining birth rate, aging society 3) To provide new measures for children to play | | | |
| | | | | | |
| 63. | 02/04/15 | Mr. N Okamoto | Male | 38 | Roofing work specialist |
| | | <ol style="list-style-type: none"> 1) Townscape 2) Declining birth rate, depopulation, least young trainers 3) PR | | | |
| | | | | | |
| 64. | 16/04/15 | Mr. K. Kijima | Male | 39 | Construction company staff |
| | | <ol style="list-style-type: none"> 1) Quite at night 2) Depopulation, least job opportunities for young people, have gone away 3) To provide places for young people to work and live | | | |
| | | | | | |
| 65. | 08/05/15 | Mr. N. Tamura | Male | not mentioned | <i>Teppanyaki</i> (barbecue) chef |
| | | <ol style="list-style-type: none"> 1) Townscape 2) Depopulation, least young generation 3) Promotion and PR | | | |
| | | | | | |
| 66. | 21/05/15 | Mr. T. Yamamoto | Male | 29 | Licenced bonesetter |
| | | <ol style="list-style-type: none"> 1) Many people love Hagi as home-town 2) Depopulation 3) Measures and schemes for new-comers | | | |
| | | | | | |
| 67. | 04/06/15 | Mr. N. Nakajima | Male | 29 | Construction company staff |
| | | <ol style="list-style-type: none"> 1) Unlike big city, connection with people 2) Few shopping opportunities for young, spend money at the outside Hagi | | | |

- 3) To provide shopping mall of big firm
- | | | | | | |
|-----|----------|--------------|------|---------------|-------------|
| 68. | 18/06/15 | Mr. Y. Otani | Male | not mentioned | Hairdresser |
|-----|----------|--------------|------|---------------|-------------|
- 1) Many warm-hearted people
 - 2) Not looking at those who are not remarkable but working hard for Hagi
 - 3) PR for those
- | | | | | | |
|-----|----------|-------------|------|----|------------------|
| 69. | 02/07/15 | Mr. S. Itoh | Male | 43 | Tyre shop manger |
|-----|----------|-------------|------|----|------------------|
- 1) Natural environment, good for children growth
 - 2) Least job opportunities for young people, depopulation
 - 3) To provide new schemes to vitalise

Summary of analysis

[**] are numbers of people expressed those categories opinions

People like

Natural environment [27]:

Distinctive cultural landscapes, four season, sea, mountain, sky, stars, nature, rich natural foods, produces, nature

Home town [22]:

Unlike big city, country side environment, quiet, warm-hearted, community tie, time moving slowly,

Historic appearance and significance [15]:

Remaining historic houses, street-scape, townscape

Interviewees concerns are mainly those social aspects

A large number of people [27] expressed aging society, depopulation and declining birth rate

Many said least opportunity for younger generation [19]

Other main social issues [13]: lack of people's interaction, narrow views, conservative, closed society, less productive, etc.

Their ideas to deal with the issues are varies. Yet, many express needs for making re-generation scheme, re-vitalization, job opportunities, PR., some suggest promoting the distinctive of the city including the beautiful cultural landscapes. Also, social aspects: needs for people's interaction, links between senior and young, cooperation, hospitality, flexible thinking, open mind, support young people, consider the resident's views, tackle as a whole.

Appendix D: Questionnaire research questions and analysis

1. Research Questions

- *Do you have any connections with or carry out any activities connected to nature/sub-nature in your daily life, such as gardening, growing vegetables or fruits, or fishing?*
- *Do you focus on care for the environment of your surroundings or your area by yourself or with other people/in a group?*
- *Have you ever been involved in any activities/actions with others for the protection, conservation or improvement of the environmental characteristics of the city?*
- *Can you say anything about the environment of the city through the activities in which you have been involved?*
- *What can you identify about things that have improved or worsened concerning the environment of the city in the past 20–30 years?*
- *Regarding the future of Hagi, how would you wish to see the city to develop?*

2. Analysis

Specific Positive Topics

- A) *Interest in conservation of historical and cultural significance*
- B) *Belonging to volunteer group(s)*
- C) *Participate in collective action(s) on environmental concerns*
- D) *Appreciate beautiful and distinctive long-term existing environmental characteristics*
- E) *Use of local natural produces*
- F) *Enjoyment of gardening; flowers, fruits, vegetables*

Specific Negative Topics

- G) *Generation gap and other gaps*
- H) *Conservative, no creativity and no flexibility*
- I) *Few opportunities for younger generation*
- J) *Unsustainable future with problems of aging society, depopulation and fewer children*
- K) *Younger generation required for settlement and vitality*
- L) *Deteriorating environments, empty houses, safety*

Index

L: Total living years in Hagi

W: Working years in Hagi

V: Visiting Hagi often N: not mentioned

Female: mentioned specific topics and other important opinions

<i>Respondents</i>			<i>Mentioned topics</i>	<i>Other</i>
<i>important points</i>				
80s	1	L 80	A C D G I K L	Declining neighborhood
	2	L 80 over	A C D G H	Lost Hagi's vitality
70s	3	L 70 over	B C D	Wish to see Hagi as a sustainable city with natural produce and desirable environment
	4	L 70	F I J K L M	Most important issue is a scheme for settlement of younger generation
	5	L 35	B C D E H I K L M	Vitalization by arts and crafts with natural materials, more jobs without degrading environments
	6	L 10	H K L M	Wishing to see developments enhancing nature values
	7	L 18	A B C D G I M	Vitality in various places found, wishing to keep the present environment.....
	8	L 65	C E F G	Gained better life with more street light, public facilities like museum, gallery, library, central park, Gardening generate social communication and personality, Wishing to see continuity of this environment
	9	L 50	B D E J K	
60s	10	L 40	A D	
	11	L 60	B E J K	
	12	L 65	A B D F	
	13	L 23	A B F M	May consider non-motorized sohistoric area
	14	L 30	C D E F	Need for more flowersand more arts in Hagi
	15	L 69	A B D I K	

	16	L 63	D G I L	Appreciated New Library and Central Park
	17	L 52	E F I L	Many big disappointment, lost memorial places and great trees, landscapes have been deteriorated by tourism
	18	L 10	E F G	Care for disables and disadvantages, worsening road layout
	19	L 40	A D M	
50s	20	L 50	A H I K	Important to continue present activities
	21	L 30	B I	Environment friendly offers a better child-rising
	22	L 53	C D E F G L	Knocking down trees, disappeared birds, lost native plants Wishing to see <i>Satoyama</i> environment in Hagi
	23	L 30	F L	Enjoying contact with earth, less children playing field
	24	L 27	A D I	
	25	L 55	B H I	Volunteer works provided elderly jobs Listen to youth's opinions and assist their ideas
	26	L 30	B D G H K	Met youths with great wish in the city and realized my own task
	27	L 52	J M	Vitalization should not for tourists but residents' life
	28	L 25	D E F L	Very pleased for Central Park offers playing with children, Gain more interests in nature through making contact with nature, Wishing to see bicycle safe roads
	29	L 30	L	Wish to make contact with nature after retirement
	30	L 50	B C D E F G H	Improved for tourist, less places for social communications
	31	N	G H	Need for change in Hagi residents'

				way of thinking, City Officer, Councilors are mostly yes-man for Mayor
	32	L 23	G H I	
	33	L 35	A B C I	Lack of contact with nature, Small city with more individual's participation offers community enhancement, wish to see slow-life in all generations
	34	L 27	C D I J K	May appreciate super market but very sad for closing down stores in central shopping street
	35	L 30	A B D L	Values of sea and mountain be appreciated
	36	L 45	A B G H I	
40s	37	L 12	E F	Natural environment as well as history of Hagi are heritage
	38	V	A H	
	39	L 30	H I J	
	40	L 34	C H	Neglected in tourism to encourage values of cultural landscape
	41	L 5	A D	" <i>Ruko</i> ", a guest house, as a wonderful place for meeting and enhancing human-relationship
	42	L 30 or so	C G I K L	Need for growing interests in participation
	43	L 41	A D L	Need for appreciation of geographical significance
30s	44	N		Wishing to see good restaurants and hotels
	45	L 16	A K	
	46	L 39	D K	Central Park and Wellness Park are great
				Need for people contact with nature offers warm-hearted personality and values for lives
	47	L 6	A B D K	
	48	L 30	A B J M	

	49	L 27	E F	Wish to see
Hagi with Nature				
20s	50	L less a year	D H	To see changes better with flexibility and history
	51	L 0.1	D	“ <i>Ruko</i> ” is great for new comers, open, ease and kind
	52	L 0.7	L	Changes made both advantages and disadvantages
	53	L 22	E	Tourists manner worsen with parking,
				Wishing to see Hagi for people like to return for living
	54	L 22	D H I	Expect Hagi is a home to U-turn after college.
	55	L 0.5	F	Future, wishing my children to say “glad boned in Hagi”
	56	L 1	D J	Wishing to see Hagi for children to respect
	57	L 0.2		Improved physical condition for fresh air and ventilation, Need for better public transportation
	58	L 20	A C K	

Male: mentioned specific topics and other important opinions

<i>Respondents</i>			<i>Mentioned topics</i>	<i>Other important points</i>
70s	1	L 30 over	A B C D I J K	Joined volunteer works made new friends and relationships, enjoying after the works.
				Wishing to see new schemes to use of resources of history and environment for vitalization to ease aging problem
	2	L 68	B C D E I J L M in Hagi	Time is passes slowly

				Need for vitalizing with prime industries and tourism
	3	L 5	A C D F G H J L	Contact with nature, it offers human to educate, Responsible to convey Hagi legacy to posterity
	4	L 38	C D I J L	Concern badly for sustainability of Hagi with tourism alone
	5	L 5	D E G H I	Effective use for rich local natural produces
	6	L 12	A B C D I J M	Residents' concern is their own life, not protecting nature
	7	L 55	B C D G I J	Help each other not within own area but the city as a whole
60s	8	L 25	B C D G J	Need to consider lively life environment to include other lives
	9	L 60	A B C D	Wish to see Hagi repeater, sustainable town
	10	L 53	A B D E I J	<i>Hamazaki</i> provide community tight with “ <i>Sumiyoshi</i> ” shrine and its traditional festivals
	11	L 33	B C D F	Wish to see in future for preserved beautiful and moderate cultural landscape
	12	L 28	A E M	Continue to recite “words of <i>Shouin</i> ” at Primary School
	13	N	C D L	Small electric car may be ideal for historic area guide
	14	L 41	A B I M	Keeping try for revitalization, awareness, job opportunity
	15	L 21	A B C E F H	Present popularity of Hagi owe to TV program “ <i>Hanamoyu</i> ”, it's short-lived, should find a way out from that, need for hospitality and repeater
	16	L 33	G H J L	Many concerns with Hagi's present city policy and future, Wondering about nature for lives of all or humankind

	17	L 63	A B C D I J K	Residents should have pride living in Hagi is a base for re-vitalization
	18	L 55	J	Aging now, rather prefer less nature area to the present as it needs constant maintenance and involved money and security risk
	19	L 24	D E F I J	Wondering two daughters may be not living in Hagi
	20	L 16	A B C D J L	Need for arts and culture, also aging friendly city for future
	21	L 24	D E F J L	Expect to see local natural produce and product for re-vitalization such as bamboo and timber
	22	L 55	A D I J M	
	23	L 23	C D H I	Urgently needed for re-vitalizing economy with the present cultural landscape
	24	N	A D J	It is important to conserve the Hagi's heritage, but more important how it can be convey to next generations, Hagi Should be a compact city
50s	25	W	D E	Necessary for training to follow cultural skills with local materials, such as bamboo arts and crafts
	26	W	D	Teaching the importance of forests at schools in Hagi
	27	L 54	C D	Time passes slowly and convenience of Hagi is not comparable with big cities but keep this environment
	28	L 40	B C D J L	
	29	L 57	K	
	30	L 56	A B C D I J	
40s	31	L 8	A B C D I K	Diversity and mobility are key words for the regeneration
	32	L 38	B C D E	

	33	L 14	A B	Hagi provides many advantages that big cities cannot offer
	34			Why is the city still in depression, despite of many heritages?
	35	L 40	G H M	People in Hagi do not wish to spend money locally
	36	N	D J	Wish to see Hagi to be an internationally popular tourist city
30s	37	V	A	
	38	L 30	A L	
	39	L 18	D E	Challenging revitalize Hagi through the rich landscapes
	40	L 8	D E F J K	Wish to see Hagi as an ecologically sustainable compact city, did not know disadvantages of Hagi until moving in
	41	W	D J K	Hagi is needed for regeneration but with the significant history and landscape
	42	L 32	A D I M	Wish to see the cultural landscapes preserved
20s	43	L 0.1	A D	Without car the access to Hagi is limited preventing tourists
	44	L 19	D	Climbing up <i>Shizuki-yama</i> (Hagi Castle mountain) in New Year Day customary
	45	L 0.3	B D	“Ruko” provides social communication for new comers
	46	W		Enjoy participating in traditional boat race “Oshikurago” at Matsumoto-River in June

Appendix E: List of the Interviewees

	Age range					Profession	Birthplace	
	70s & over	60s	50s	40s	30s		Hagi	Other
Male	○					Architect, firm director	○	
	○					Eco-museum volunteer	○	
				○		Editor, football coach for schoolboys	○	
			○			Curator of Hagi Museum		○
				○		Conservation officer of the city hall	○	
	○					Director of an estate agent business	○	
	○					Director of the city library		○
	○					Chief director of Hagi fishery	○	
				○		Director of a company	○	
		○				Retired businessman	○	
		○				Owner/master of a restaurant and pub	○	
					○	Owner/chef of a restaurant		○
				○		High-school teacher, 'Hagi-love' leader		○
		○				Director of an agricultural firm	○	
		○				Retired business man		○
	○					Local historian	○	
					○	Guest house owner/master	○	
		○				Director of Shiseikan University		○
		○				Director of Shiseikan Museum	○	
			○			Potter	○	
		○				Mayor of Hagi	○	
	○					Potter	○	
	○					Traditional bamboo screen craft/artist	○	
	○					Eco-museum volunteer	○	
	○					Photographer/artist	○	
			○			Farming business		○
		○				Owner/master of a café	○	
		○				Company director	○	
		○				Accountant	○	
			○			Priest		○
		○				Deputy director of Eco-museum	○	
			○			Officer, city agricultural department	○	

		○				Director of a clinic		○
Female		○				Café owner, company director	○	
	○					Bamboo paper craft/artist	○	
					○	Pianist	○	
			○			Librarian	○	
	○					Japanese tea-room owner/master	○	
					○	Eco-museum staff		○
		○				Company deputy director	○	
			○			Librarian	○	
		○				Eco-museum volunteer	○	
			○			Deputy director of a firm		○

Groups:

- (1) Forest Department of the Yamaguchi prefecture: three officers and one female involved in bamboo craft work.
- (2) Environmental Department of the city hall: three officers.
- (3) *Hagi-love* members: three males and two females.