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Sense Shaping Place: Interaction of Planning Actor’s Values in Social-Ecological Resilience

Case Study of Urbanizing Coastal Rural Communities in Pontian, Malaysia

Muhammad Farid Azizul

A thesis submitted in complete fulfillment of the requirements for the degree of Doctor of Philosophy (Planning), The University of Auckland, 2016.
Abstract

Drawing on the literature from bioregional planning that encapsulates theories on place, stewardship and conservation, this study explores the dynamics in the interaction between the various planning actors and how this contributes to the resilience of socio-ecological systems (SESs). Using the urbanizing coastal rural communities of Pontian as a case study, I have employed a mixed-methods approach to examine the sense of place held by three distinct planning actor groups involved in the local land use planning activities. The groups are Local Active Community, Civic and Institution, and Environmental and Cultural Advocacy. I analyzed qualitative interviews as well as quantitative surveys to elicit the sense of place structure across groups, the relationship between structures and stewardship attitudes and behaviors, and examined how these characteristics might shape the trajectories of landscape change. This study extends the examination of the people-place relationship and its impacts on resilience, as prior place research has focused on sense of place at the individual level but is limited when assessing group level outcomes. A number of distinctions were found. The sense of place structure was found to be comprised of four traits: place dependence, place identity, place attachment and community attachment. The latter appeared to emerge separately. The structure patterns were similar across groups in the survey, however, a more nuanced description in the interviews revealed that the place structure for each of the first two groups emphasized social and community aspect of place, while the latter emphasized functional aspect of place dependency. The relationship between sense of place, stewardship and visions was far more complex than reported in the literature, where stewardship was divided between affirmative and non-supportive attitudes towards rural landscape change. In contrast, in this study “place dependence” correlated with “concerned but supporting attitude” and was characteristic of the first two groups. The qualitative findings specified that this variability between groups is linked to specific worldviews and motivations and visions that are layered in social, cultural and political backgrounds. Multiple pathways to sustainability were observed from different place conception and attitudes among the groups, based on analysis that is grounded in a model of SES and resilience. The insights were critiqued in a bioregional planning context and justify further research on sense of place as an integrative concept for understanding societal impacts on ecosystems in a complex, rapidly changing world.

Keywords: bioregional planning, sense of place, environmental stewardship, social-ecological resilience, landscape change.
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Muhammad Farid Azizul

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Chapter 1. Introduction

This thesis explores the sense of place concept, including the related attitudinal and behavioral aspects, from the viewpoints of multiple planning actor’s perspectives. This allows for an assessment of the social drivers that determines the trajectory of future landscape change. The thesis focuses on how planning encompasses the uncertainties of social and ecological issues, from the perspective of social-ecological resilience.

This chapter begins with an overview of the uncertainties related to social and ecological issues in planning and conservation processes, before proceeding to the way social-ecological resilience offers a frame of reference to understand ecosystems dynamics. This includes the conceptualization of the human-nature relations bounded by the bioregional planning approach, which encapsulates the sense of place concept and social actions of conservation and development policies. Then, this context was summarized into a broad research interest and motivation to pursuing this study. The research idea section outlines the study’s aim, questions, significance and program designed to investigate the interaction of the study topics. The following sections reflect on the relationships between the researcher and the research subjects and concluded by a description of the structure of this thesis.

1.1. Planning for Social-Ecological Resilience: Sense of Place as an Integrative Concept

The inherent complexity of ecosystems is receiving increasing recognition in interdisciplinary platforms within the planning and conservation realm. In the past decades, the considerable uncertainty in terms of ecosystem behavior that existed was complicated by the social and ecological issues that interwoven in the spatial matrix which has challenged the traditional assumption related to stability and equilibrium (Holling, 1978) to a more adaptive governance (Gunderson & Holling, 2002). In the modern world, planning faced these “wicked” problems (Rittel & Webber, 1973). This was a shift from apparently “tame” or clearly defined problems of the 1970s (Baum, 1977) such as infrastructure improvements, sanitation system and housing settlement. Such understandable problems are approachable by a technical and scientific solutions. While such approach remain applicable where appropriate, planners have been called upon to address more subtle social and cultural perception of land use choices that
are shaped by past land uses. Planning theories struggle to cope with these complexities of problems.

New modes of governance have been emerging as a result of the failure of the traditional rational planning approach (Blair, 1996; Scott, 1998). The legacy of this modernist paradigm has been debated on whether it is the best option to protect public interest as it has been critiqued for a certain over reliance on the aspect of growth projection (Loveridge, 1972), an inability of local government to solve trans-boundary environmental problems associated with urban sprawl (Godschalk, Brower, McBennett, & Vestal, 1977) and the disempowerment of local communities in decision-making (Harris, 1994). More importantly, Diffenderfer & Birch (1997) further reiterated that these were rather symptomatic responses to the core issue regarding the inability of the centralized and command and control approach to counteract utilitarian views of certain actors in satisfying their needs. This signifies the transition into social-ecological systems (SESs) (Gunderson & Holling, 2002) and resilience (Berkes & Folke, 1998) which offers a conceptual ground to frame the above issues. Analysis that is grounded in this framework offers a more comprehensive view regarding transformation that is sustainable. This perspective presents a new lens within which to examine planning as an interdisciplinary governance process to respond to the multiple dimensions of ecosystem management.

Landscape change as a result of the urbanization process, in the context of developing countries especially, has led to a fundamental shift in the places they live, and subsequently to their connection to the natural world. This process is not deemed to be static, rather it is a dynamic process of transaction between human values and functions that have evolved as a consequence of past resource use, policy and social response. The process of landscape creation as a human territorial region is described by Mumford (1938, p.367) as “a complex of geographic, economic and cultural elements. Not found as a finished product in nature, not solely the creations of human will… the region… is a collective work of art”. Pertinently, the shift presents not only disengagement of human to the natural world – placeless (Kunstler, 1993), also equally important is the threat to ecosystems services on which they depend socio-economically (Nkhatu, Mosimane, Downsborough, Breen, & Roux, 2012). This brings forward the idea that in order to predict the uncertainty of social-ecological issues, planning must be able to embrace the relationship between societies and land, as this linking with sense of place could provide the basis to understand societal impacts on the evolution of ecosystems in our world which are experiencing rapid change.
As a result, a growing number of scholarly works have extended beyond the biophysical domain of ecosystem management, into having a more subtle societal influence on ecological transformation, particularly related to the cognitive and behavior dimensions. The governance of linked social-ecological systems underlines one of the key concepts that involve understanding human decisions regarding ecosystems that are shaped by their interaction with ecological systems. There is a growing amount of literature incorporating human behavior as key component (Bolte, Hulse, Gregory, & Smith, 2007) that progresses beyond the biophysical-scientific views in order to understand the dynamics of social-ecological change (Brunckhorst, 2005).

From a planning perspective, such movement saw the emerging approaches, in particular bio-regionalism that attempts to reposition the human-nature relationship in land use planning and ecological conservation. The conceptualization of human-nature relations in bioregional thinking is underpinned by the sense of place, as a foundation that derives from an assemblage of literature in the fields of geography, environmental psychology and behavior and community-development related studies. The interdisciplinary orientation of bio-regionalism has been bridging over topics that are often fragmented even though it is imperative. These include environmental ethics (Leopold, 1949), resource management (Brunckhorst, 2002), social and community development (Roseland, 2000) and biological conservation (Balmford & Cowling, 2006), and humanism (Parsons, 1985). In the context of regional planning and conservation, bio-regionalism offers an alternative form of governance that involves social and political restructuring. Birkeland (2008) and Diffenderfer & Birch (1997) assert that the transformation of governance implies a multi-faceted platform that can be designed to achieve ecological conservation which contribute to meet social, ecological and economic sustainability. Significantly, this orientation provides a basis that informs the governance, so much so that planning is framed as managing, coupled or linked with the social-ecological system.

Substantive literature in the fields of environmental psychology and behaviors, ecosystem management, resource management and other related disciplines have indicated a strong relationship between sense of place and pro-environmental attitudes and behaviors to protect the place (e.g. Lokocz, Ryan, & Sadler, 2011). However, despite the claims that a positive relationship exists between sense of place and mobilization of stewardship actions, the various concepts of place have not been adequately explored from the point of view of multiple planning actor groups in the land use planning process. In addition, the interplay and possible
contradictory actor’s values and behaviors pattern that shape the trajectory landscape change have not been fully explored, including the way planning guides and appraises this interaction and takes account of and measures the future social-ecological resilience.

1.2. Broad Research Interest and Motivation

The broad interest of this study lies on perspective of planning as managing socio-ecological resilience. This was conceptualized using a bioregional planning approach, which encapsulates people-environment relationships, conservation and development, and land stewardship. Specifically, this study is interested in manifestation of sense of place outcomes, with regards to specific attitudes and behaviors to openness or resistance to land use change, and visions among various planning actors in land use planning process. It is imperative that planning recognizes the intersection of these values and expectations, in which outcomes from land use planning process will generate a rippling effects on resilience of socio-ecological systems. As is explored in this study, this effect may be manifold; whether positive feedback and accepted positive changes as a result of protection of certain actor’s values, or negative feedback and thus resistant to change as a result of diminishing and harm of another actor’s values. This study seeks to emphasize the intersection and integrity of how they are recognized (or overlooked) and negotiated in the sphere of public participation process.

The motivation for me to pursuing this study came from an early exposure to undergraduate program in landscape architecture. As part of the program’s module on man-environment relationships, I was introduced to the various theories of place, and it became substantial readings in our program’s design-and-build school of thought. In our design studios, I became fascinated with how these theories played a role in guiding our design processes and how the design schemes proposed effects to overall place meanings. Although initially this exposures was mainly at site or project-level, I became inspired to undertake a broader examination of how planning grapples with human experience for existence, in which meanings embodied in the present landscape are an evolution of previous social, physical, cultural, economic and political experiences. This exposure led me to this study, in addition to my self-awareness of changing life experience with regard to the eroding cultural landscape and image falsification of development based on material world from my communications with rural communities.
Chapter 1 – Introduction

1.3. The Research Idea

1.3.1. Aim, Questions and Significance

The overarching thesis aim explores how the concept of sense of place among planning actors shapes the resilience of social-ecological systems. This is examined through the interplay of actor’s values and attitudes, how these intersect, and recognizing or repudiating the influence of the trajectory of landscape change in land use planning and conservation process. Here actors are separated into three groups that represent distinctive roles and capacities in the planning process. They are stakeholder and/or local steward of an individuals or a representative of an institution or organizations that partake on-the ground ecosystem management, whether directly or indirectly could facilitate or constraint practical implementation of conservation and land use planning.

The overarching thesis aim was approached by breaking it into three research questions that can be more readily assessed and synthesized using various theories of the overall theoretical framework (Section 2.1):

- Research Question 1: How different planning actor groups conceptualize sense of place in land use planning.
- Research Question 2: How a multitude of place values characterize stewardship attitudes and behaviors among the various planning actors.
- Research Question 3: How the trajectory of future landscape change and social-ecological resilience are shaped by the interplay of these sense of place and the attitudinal characteristics.

The core of this study is underlined by theories on sense of place, which encapsulates the cognitive, affective and conative dimension of humankind’s influence on the environment. This premise represents the key concept, in terms of a mechanism that integrates social-ecological systems and contributes to a further understanding of its impact on resilience. In relation to the notion of landscape change, understanding the way the different actors in planning perceive what their place means and what it would be in the future is imperative. It is because their attitudinal and behavioral responses will determine the trajectory of transformation, and will implicate resilience either by increasing or decreasing its vulnerability to disturbances. This study contributes to the understanding of social-ecological dynamics and resilience, from the
sense of place perspective that attempts to bridge interrelated theories into the context of land use planning and conservation.

This study is distinctive in and of itself because while sense of place is extensively covered in its own theoretical disciplines yet it is narrowly explored in terms of its application in understanding social-ecological dynamics in terms of land use planning and conservation. Research and practice of land use decisions have substantially relied upon tangible-economic based variables, with little attention placed on a socio-psychological framework. Particularly this is very important in the context of Malaysia, where rural and resource-dependent communities are ever receiving pressure for socio-ecological shift as a result of socio-economic orientations in tandem with urbanization. The positioning of this study in this context enables an extensive examination in the planning discourse that struggles to grapple with the uncertainties of landscape change as a result of planning actor’s attitudes and behaviors that are extremely embedded in a pluralistic view of place. This study offers insights into the planning realm, as a platform for dialogue between actors’ values that dictate the transformation of social-ecological systems.

1.3.2. Research Program

These central questions are investigated via a mixed method, case study approach that follows a sequential exploratory research design which allows for a triangulation of different methods. Specifically, the qualitative data from interviews inform the development of the quantitative survey and the convergence of results are examined within the single case study adopted. The research questions draws on three main theoretical backgrounds: sense of place, its application in planning and conservation realm, and resilience thinking. This exemplifies the interdisciplinary examinations which warrant an explorative study. Furthermore, the elusiveness and vague understanding of “place” within the different geographical context and planning instigate and call for a mixed approach to capture the subjective realm of place including the cognitive dimension within the lived experience of one’s sense of place or sense in place (Relph, 1976; David Seamon, 2000; Tuan, 1977).

Malaysia, as a developing nation has undergone rapid economic development since its independence in 1957. This can be attributed to the utilization of its rich natural resources and
the development of human capital driven by the national agenda, in particular Vision 2020\textsuperscript{1}. The transformation of the country’s landscape of biologically – diverse tropical forest has gone through several stages. From intensive agricultural commodities, it shifted to the opening of rural townships and new satellite towns to accommodate industrialization. The case study of the urbanizing rural coastal communities of Pontian was selected to illustrate the contextual reflection of socio-ecological systems dynamics, which received enormous pressure for landscape change corresponding to regional policy-making and shifting socio-demographic characteristics. Pontian, in which coastal mangrove ecosystems provide stability in terms of the southern Johore socio-ecological systems and to resource-dependent communities, is undergoing rapid pressure for urbanization. Located in the southern region of the Peninsula Malaysia, which is also partly of Iskandar Malaysia (IM), offers a contextual understanding of how regional development policies interact with local place values, attitudes and subsequently shape the trajectory of future landscape change (Barau & Qureshi, 2015).

An extensive review of the literature suggested sense of place as a “coupling” of the social-ecological system that underlines the linkages of the way human cognition of the environment or “place” affects ecosystems and their services through a set of attitudinal and/or behavioral characteristics. This provides the foundation for this thesis, in particular, to delve into the way ecosystems evolved from specific conceptions of ecosystem as “place” among planning actors in the land use planning process. The case study provides the context of how this phenomenon is examined, firstly, through semi-structured interviews and then followed by a survey with planning actors involved in the land use planning processes categorized by three main groups: [a] Local active community members, [b] Members of civic and institutional organizations, and [c] Environmental and cultural advocacy.

1.4. On Personal Note about Pontian

Qualitative tradition in studying social phenomenon relies heavily on the subjective interpretations of the participants’ own experience and evaluation of the subject. This may be influenced by the researcher’s relationship with the subject (Creswell, 1998), thus it is

\textsuperscript{1} An ideal proposed by the 4\textsuperscript{th} Prime Minister of Malaysia – Dr. Mahathir Mohamad during the Sixth Malaysia Plan (1991) to achieve a developed-nation status by year 2020. See: http://www.epu.gov.my/en/wawasan-2020-1991-2020.
important to provide the reader with a personal reflection related to his/her particular background. In the spirit of open scholarship, I offer the following reflection.

I have lived about 50 kilometers east of Pontian, in the Johor Bahru district for over 20 years in a suburban home. Before that, I had grown up in Kluang, a rural town where my playgrounds were at a nearby waterfall and creeks. During this time also, most of my weekends and school holidays were spent at my parent’s kampong in Malacca, where rubber-plantation, fish ponds and fruit orchards were at their backyard. After we moved to Johor Bahru, this experience was somehow “lost”, as growing up in a large urban area, my personal contact with nature was very much spent at the bushes around my parent’s home and the occasional trips back to Malacca and Kluang. I had never visited Pontian, despite usually crossing over its intersection while commuting on the local highways until in the early 90’s when my parents brought me to their friend’s Durian fruit orchard and occasional dinner outings at the mangrove floating restaurant.

Since then, I have become intrigued with Pontian, its rural landscape character and coastal ecosystems and from relationships with people from various cultural backgrounds who reside in and around the area of Pontian and with each other within the place. In fact, the location of the university and the bachelor degree that I pursued also coincidently led to my interest in Pontian. The university – University Technology Malaysia is located about 40 kilometers from Pontian, and in terms of my study, I perceived Pontian as a “living laboratory” in that it provides rich information of interest in regard to my studies. I began to closely follow any Pontian-related issues in the media, and kept track of social and environmental issues, especially when the RAMSAR status was accredited to part of its mangroves systems. Through my student activities, I became actively engaged in our mangrove conservation program as part of the student society, as well as participating in numerous case study field trips that were organized for local and international visitors who were coming to our university.

Immersed by these childhood and study-related experiences, I am aware that my perspective of Pontian reflected a cultural landscape that was ecologically fragile, which was a perspective I developed based on my interaction within the village setting, including its resources, ecosystems and memories. This image representation is somewhat privileged in my interpretation of Pontian, and what attracted me to conduct this study. This perspective also includes an understanding of the ways in which the resource-dependent rural communities interact with the ecosystems, with respect to place as a matter of survival and continuity, and these interactions have been included in my description of the dynamics between Pontian and
the local communities from the lens of three planning actor groups that affect and are affected by these interactions.

1.5. Thesis Structure

The corpus of this thesis is structured in seven chapters, in accordance with the traditional sequence of literature review, methodology, results presentation, discussion and conclusion. The following chapter, Chapter Two, employs the umbrella concept of bioregionalism that binds the different disciplinary backgrounds into a theoretical framework that is divided into three domains. First, topics that underpin this framework are related to transformation of ecosystem to place, including various theories on dimension of place and research approaches. Second, theories on environmental values and their recognition in planning-related disciplines were examined to provide contextual understanding of how bioregional planning bridges conservation and reconciling human needs in land use planning. Third, sense of place is grounded in the resilience of social-ecological systems perspective through land stewardship theories that related to attitudes and behaviors as one of social driver for landscape change. Chapter Three presents the study area, before proceeding to the research design, methodologies, methods and implementation for the study. The results of the case study examined are presented in Chapter Four for the qualitative phase, while Chapter Five elaborates on the results of quantitative phase. The qualitative and quantitative findings were integrated and compared in Chapter Six. The concluding chapter – Chapter Seven discusses the interpreted results in terms of the theoretical and practical implications, limitations and offers suggestions for future research directions.

1.6. A Glossary

The following are a list of terms and brief definitions that will be used throughout this study. Further explanation and applicability in use of these terms will be discussed in Chapter 2.

**Affection:** The affection domain in psychology refers to experience of emotion or feeling based on interaction with stimuli.
Chapter 1 – Introduction

**Bioregional planning:** Planning approach that is responsive to geographical terrain (combination of biophysical features) as well as terrain of consciousness (social awareness of appreciation, aspiration and care).

**Cognition:** In psychology refers to mental processes of knowing, judgment and reasoning and decision-making whether consciously or subconsciously.

**Conation:** In psychology refers to the impulse or natural tendency of humans to act based on thoughts (cognitive) and feelings (affection).

**Environmental stewardship:** An ethic for responsible use and protection of environment through sustainable actions and conservation.

**Mixed methods:** The blending of multiple methods to provide a rigorous assessment of a research problem.

**Resilience:** Defined into three concepts: engineering, ecological and evolutionary. The ability of system to bounce back into equilibrium state (engineering resilience) or bounce forward while maintaining the efficacy of function (ecological resilience) after a shock. More recently, evolutionary resilience proposes systems that are adaptable and transformable with or without disturbance are better equipped of future shocks.

**Sense of place:** Awareness to a locale developed from experience either independently or interaction of its physical and social characteristics.

**Socio-Ecological Systems (SESs):** A system consisted of interconnected people and environment that dynamically interact, are interdependent, and co-evolve across spatial and temporal scales.
Chapter 2. Literature Review

2.1. Introduction

This study strives to extend the existing body of knowledge in relation to the place-people relationship and its implications in terms of planning practices. With respect to the bioregional paradigm as it is grounded in various disciplines including geography, sociology, psychology and ecosystem sciences, it integrates the social, ecological and governance component within the system that is the place. In their work, Diffenderfer & Birch (1997) outlined that bioregional thinking constitutes the pragmatic way of thinking about societies’ relationship to natural environments. They pointed out that land management in the new millennia has been taken down a few pegs by the persistence of environmental problems associated with the inability of the growth-guided planning that eventually became disconnected from the place-based knowledge. This was applauded by Bott, Cantrill, & Myers (2003, p.100) in Place and the Promise of Conservation Psychology that touted “Relationship to place is a fundamental feature of human existence…” and adaptive management of the land imperatively built upon place-based knowledge.

Numerous researchers to date have demonstrated such prevailing evidence of the power of place-based knowledge in conservation measures within the realm of bioregionalism. It has been observed that people-place connection links with positive social response towards environment, indicated by a form of supportive actions and attitudes towards protecting the place (Orr, 1992; Pyle, 2002; Thomashow, 2002). Inevitably, this evidence shows an encouraging prospect that addresses the sense of place as a social process factor, which facilitates ecosystem functioning through the development of environmental stewardship, which empowers the community in terms of such actions.

This study adds to the growing body of resilience literature that is oriented to be interdisciplinary in essence and integrates within the umbrella concept of bioregionalism, by introducing the sense of place concept that characterizes specific awareness, attitudes and visions towards place. These themes often overlap and intersect as depicted in Figure 2-1. The rationale for linking sense of place, resilience and bioregionalism as conceptual framing in this study derive from the fundamental assumption that social and ecological system are interdependent and co-evolved through a governance process that enables transformations to
take place. The decision-making process in governance is determined by subtle societal values through sense of place that represent an understanding of human-nature relationships. It embodies views, values and behavior systems related to the material world in which bioregionalism as a platform for governance and culture necessitate transformation. Resilience provides a mechanism to assess these interactions and explain the emergent outcomes of the transformation. From this framing, the inherent complexities and uncertainties in planning can be investigated. Likewise, further understanding in regard to humankind as part of our persistent environmental problems can be addressed by outlining the social processes that govern interactions and emergent outcomes.

Accordingly, the literature review in this chapter is specifically structured to address the three thematic areas: [1] Transformation into a Place, [2] Bioregional Planning: Reconciling socio-cultural values [3] Bioregional Planning: Nurturing Social-Ecological Resilience. The discussion within the literature review commences with the bioregional movement as an umbrella concept that binds the context of this research in theory and planning practice. The first theme of the review examines the transformation of an ecosystem space into a place.
perceived by individuals and communities. Place-related literature in numerous fields, which includes geography, sociology, environmental psychology, among others, is examined to understand the various dimensions, which contribute to the development of one’s sense of place. The review of this theme is concluded with a discussion of the methodological approaches employed in measuring sense of place. The second theme of the review addresses bioregional planning as an operational model that bridges conservation and reconciliation of human objectives from a sustainable development perspective. This is examined through the lens of environmental values and its recognition in planning-related disciplines. The final theme reviewed the rise of resilience and planning as managing social-ecological systems. The characteristics of landscape change are discussed, including a focus on its social drivers. Finally, the review grounded sense of place as it relates to social-ecological system through land stewardship. This is discussed as it pertains to attitudinal and behavior characteristics associated with sense of place and as it relates to a community’s ability to respond to place change and empowerment to influence a positive trajectory in terms of landscape change.

2.1.1. Framing Bioregionalism

The fundamental rethinking of natural resource management and reconciling human needs in land use planning has led to a paradigm shift from rational planning into an ecosystem-based approach. Bioregions are defined by the unique interaction between social and biophysical features, which confound the social affection to place. Ecologically, a bioregion is grounded in ecological processes and species patterns which are accepted as the sustainable unit of conservation compared to politically-defined or man-made boundaries (Brunckhorst, 2002). Notwithstanding that bioregion refers to the biophysical delimitation, it also emphasizes the “terrain of consciousness” – a place where the inhabitants are aware and have their own idea regarding their existence or thoughts in terms of how to live in that place (Relph, 1976; Tuan, 1977). The bioregional movement distinguishes itself from eco-regions, which are directed more towards biodiversity conservation.

Corresponding to the fact that the earlier fragmented research and planning fields isolated society from resource use bioregionalism and in this circumstance it expresses the self-reliant characteristics of the multi-faceted components in the planning system. Sale (1993) noted that the core foundation of bioregionalism is represented by the individual’s in-depth understanding of the region’s resources and geography, in which the dynamic social and economic development operate within the ecological carrying capacity. This philosophy underlines the
importance of such an ecological-planning approach to be responsive to; people who inhabit the place (Thayer, 2003), community-empowerment in decision making (Harris, 1994) in order to facilitate long-term ecosystem conservation.

### 2.1.2. Bioregional Planning

Recent literature has emerged that offers contradictory findings about the traditional approach to conserving biodiversity, that is, through protected areas (PAs). This approach is no longer considered viable in a rapidly changing world where biodiversity protection should be incorporated into a wider landscape that is ecologically, economically and socially sustainable (summarized in Crofts, 2004). Several authors have emphasized that these PAs are not viable over the long term (Carroll, Noss, Paquet, & Schumaker, 2004; Maiorano, Falcucci, Garton, & Boitani, 2007; Martinoli et al., 2006), and that eventually each is destined to function as an isolated ecosystem (Bennett, 2003).

This is based on theoretical work in the conservation biology domain (Turner, 1989), metapopulation dynamics (Levins, 1969), and island biogeography (MacArthur & Wilson, 1967). There has been a broad trend toward integrating conservation goals into overall land use and management goals, considering both human & natural systems as ecosystems (Crofts, 2004). This represents a challenge for the conservation and planning realms, as it is possible that tensions may arise. It is critically important to manage ecological integrity (conserve the biological process and ecosystem patterns that allow such processes to take place) and equally important at the same time to secure socio-ecological sustainability beyond the existing system of PAs.

Various operational models have emerged in response to this, including the Biosphere Reserves launched by UNESCO in 1974 (UNESCO, 1974), the Ecological Network (EN) concept taking place in several European countries (Nowicki, Bennett, Middleton, Rientjes, & Wolters, 1996), Reserve Networks in Northern America (Noss & Cooperrider, 1994), Bioregional Planning in America (Miller, 1996), and Biological Corridors and Eco-regional Based Conservation (Dinerstein et al., 2009). Although these models differ in scope and emphasis, they share a common vision of reconciling biodiversity conservation and sustainable development through spatial allocation of specific functions based on their ecological value (Bennett, 2004).

The bioregional planning approaches that are used throughout this research aim to provide an integrated framework that will be able to relate the ecological imperatives with the social
system. Bioregional planning strives for an integrated environmental management structure in
meeting the convergence of conservation in land use planning. Brunckhorst (2002) refers to
bioregional planning as a “planning framework which allows for the variously defined and
tenured areas of land or sea within a bioregion to be managed in a complementary way to
achieve long-term conservation, resource use and human lifestyle objectives in concert with
local communities” (p.37). On the other hand, Miller (1996) suggested bioregional planning
from a social perspective is a social organizational process that provides a platform for people
to work collaboratively in achieving various social objectives through mutual decision-making.
These definitions share an obvious connection, that is bioregional planning recognizes both
natural environment and humans as dynamic components of the landscape. As such, it implies
an integrated ecosystem management system, where the plans for conservation (maintaining
ecological integrity) depend on sustaining human processes and vice-versa through co-
operative decision-making.

The theoretical groundings of bioregional planning lie on one hand in the discipline of ecology,
wherein it strives to combine human and ecological needs applied in the ecological land use
planning paradigm (McHarg, 1969). On the other hand, bioregions are also perceived as a
place, linking social and ecological systems to acknowledge the visions of people in shaping
the place and therefore in shaping the ecosystem (Brunckhorst, 2001). Therefore, it is
imperative in this chapter to examine bioregions as places, a common ground where people
interact with the biophysical components of the place. The review evaluated the cognitive,
emotive and co-active dimensions of sense of place including commentary on the
methodological approaches involved in studying the topic.

2.2. Bioregional Planning: Transformation into a Place

The bioregional planning approach explicitly addresses the need for conservation planning in
maintaining ecological processes and functions. Scientific knowledge of landscape ecology
indicates the set of principles used in modifying the spatial organization of the landscape
consequential to achieving balanced performance-based ecosystem outcomes. This may differ
from socio-cultural perspectives, inasmuch as opinions, perceptions and values that are
attached to particular landscapes are contingent on changes in the biophysical components.
This dual perspective of conceptualizing the environment is crucial, as the scientific view of
organizing the landscape is coupled with the reality of people’s involvement in the planning process. The reality of people’s opinions is not always aligned with the intended outcomes of conservation planning. Logically, this challenges planners to consider the dualistic realm of an environmental model such as that which has been described by anthropologist, Rappaport (1968) considering that:

Two models of the environment are significant in ecological studies, the operational and cognitive. The operational model is that which the anthropologist (scientist, planner, designer) constructs through observation and measurement of ecological entities, events and material relationship. He takes this model to present analytical purposes, the physical world of the group he is studying... The cognized model is the model of environment conceived by people who act in it... The important question concerning the cognized model, since it serves as guide to action, is not the extent to which it conforms to reality (is identical to operational model) but the extent to which it elicit behavior that is appropriate to the material situation of the actors, and it is against this function and adaptive criterion that we may assess it.


Humankind enters into the ecological system by their association as they assemble as another set of values or determinants. The cognitive model reflects on how people conceptualize and participate in the landscape by creating a specific meaning or values towards an ecosystem. In the context of this study, this phenomenon is coined by the “transactional concept” (Zube, 1987) and the “interactionism perspective” (Greider & Garkovich, 1994). The “transactional concept” describes the human-landscape relationship by suggesting the notion that “both the human and the landscape change as a function of the transactions” (Zube, 1987, p.38). He suggested humankind’s active participation and exploration in nature creates an experience that leads to a certain attribution of values towards nature. Within the discipline of sociology, Greider & Garkovich (1994, p.1) argue landscape is the process of the social construction of nature, that landscapes “are the symbolic environments created by human acts of conferring meaning to nature and the environment, of giving the environment definition and form from a particular angle of vision and through a special filter of values and beliefs”. These theories conceptualize the human-nature interaction where the human is an active participant in seeking, processing and making judgments about the landscape that leads to attribution or attachment to a particular place manifested by a unique set of cultural, beliefs or norms. Translating this
interaction in terms of bioregionalism, the multiple goals are not necessarily commensurable with the functional ecological underpinning of landscapes. Rather, they are shaped or modified by an assessment by people based on certain values and meanings. As a result of this developmental process, “sense of place” emerges as an overarching concept that encapsulates such values and meanings that explain the intricate relationship between land and people.

2.2.1. Place Theories

Over the last decades, the sense of place subject has attracted a variety in terms of an array of disciplines in terms of theoretical foundation and application including geography, sociology, the social sciences, and planning and conservation-related discipline. Originally, sense of place was conceived as a holistic concept that captures the humanistic view of complexities of relationship between human and environment. Often termed as a vague and contested concept which is generalized across human-nature relationship (Paradis, 2010), it has progressed in to a new territory of positivistic interpretation developed in line with the development of quantitative methods. Since then, the sense of place body of literature has expanded into vast theories that include a multiple number of accepted interpretations in terms of its construct and understandings.

The subject of place as an experiential place or sense of place has been explored from various disciplinary perspectives bounded by their own epistemological foundation in relation to a conceptual understanding. Sancar (1994) proposed three broad categories that distinguish the epistemological orientation in sense of place discourse including place interpretation, existential place and place perception as explained in subsequent Sections 2.2.1.1-2.2.1.3. This epistemological orientation provides distinct ways of knowing place as central to human existence and organizes the vast and diverse interpretation. Within these categories, each of the research paradigms, positivist and interpretivist can be applied and related to provide a contextual understanding of how sense of place developed. In as much as the following literature regarding sense of place theories are framed by first examining the three epistemological orientations including its theoretical model, it is followed by a review of the shared domains of place theories and methodological approaches in place-based studies.

2.2.1.1. The Place – Interpretation Model

The first epistemological orientation, place interpretation, focuses on interpretative knowledge as locus of place experience, and therefore emphasizes a location and its characteristics. The
“genius loci” concept is parallel to this idea, which literally means environmental “spirit of place”. The origins of the term dates back to the Romans that “stood for the independent reality of place [and] above all, it symbolized the place’s generative energy, and it pictured a specific, personal, spiritual presence who animated and protected a place” (Walter, 1988, p.15). The modern conception borrows the “supernatural” aspect from the old definition and translates into “spirit of place” that derives from the interpretation of unique characteristics of physical environment and activities in a locale.

The early tradition of “genius loci” was defined as more closely related from an abstract perspective in terms of art, beauty and poetry. This was illustrated by (Lee, 2013) and was pointed out in place milieu:

\[
\text{The Genius Loci, like all worthy divinities, is of the substance of our heart and mind, a spiritual reality. And as for visible embodiment, why that is the place itself, or the country; and the features and speech are the lie of the land, pitch of the streets, sound of bells or of weirs; above all, perhaps, that strangely impressive combination, noted by Virgil, of “rivers washing round old city walls. (p. 5)}
\]

In the twentieth century, the previous highlight on poetic “spirit of place” has been subsumed into a more pragmatic view of the phenomenological experience of place. This view distinguished the abstract and poetic aspect into one with more emphasis on the role of the physical environment in nurturing the symbolic meaning of a locale. Norberg-Schulz (1980) argued that sense of place, defined as “genius loci” represents the sum of the structure of interrelated natural and man-made elements that embodies meaning. Further, he elaborated on the four key thematic elements that are essential for this structure and meaning, that consist of earth’s surface configuration, the cosmological light conditions, buildings and man-made structure, and the symbolic meanings in relation to the cultural landscape (Norberg-Schulz, 1980). Similarly, seminal work by Cullen (1971) postulated the importance of the interrelated natural and man-made elements and the influence of aesthetics and meanings in regard to the experiential townscape.

Few scholars have attempted to deconstruct the structure of spatial qualities and meanings into physical man-made features and natural features that contribute to the experience of place. For Cresswell (2004), such an experience is composed of physical features of environment, which may include buildings, artistic masterpiece, towns and other tangible features. Spatially, the experience of these existing man-made physical features may or may not have been influenced
by the surrounding landscape (Green, 1999). This interpretation viewed that the spatial distinctiveness is created through the presence of these features, and thus is more perceptible as sense of place compared to other spatial settings. Consequently, the development and preservation of sense of place are more dependent on highlighting and maintaining unique, local vernacular features (Hester, 1993; Pocius, 1991). Whereas for others, the natural features are viewed as that which creates intrinsic meaning in terms of or in relation to a place, interpreted through social and cultural conventions yet the unique qualities of natural qualities still prevail (Sheldrake, 2001; Stedman, 2003a).

Clearly, sense of place from this epistemological orientation emphasizes the landscape composed of built and natural features as a source of interpretation and “sensing”. The experience is best conceptualized through recognition of physical qualities and visual qualities, which other aspects such as social interaction and activities are not considered. The “spirit of place” is believed to represent intrinsic meanings that are revitalized by the interpretation of a spatial setting’s physical qualities itself.

2.2.1.2. The Existential Model

The second orientation in understanding sense of place derives or originates from the discipline of cultural geography, which offers a humanistic view of place development. Prominent early thinkers appeared in the writings of “humanistic geographers” Relph (1976) and Tuan (1977) who grew dissatisfied about the inappropriate positivistic underpinnings of sense of place. Authors from this orientation mainly assert that humankind’s experience of place is a fundamental aspect of people’s existence in the world. These authors reposition the role of “lived experience” in understanding place, through the phenomenological research method that is an interpretive way to uncover human experience.

Contrary to the previous sense of place model that highlight inherent environmental attributes, authors working within the existential model proposed theory focuses on the “social construction” of place. For them, sense of place is based on symbolic meanings derived from experience in terms of the physical attributes within a setting (Greider & Garkovich, 1994; Hummon, 1992; Williams & Stewart, 1998). Tuan (1977) pointed to meaning-ascribed to a setting in defining sense of place as a “center of meaning or field of care”. He posits that spaces turn into places as they become imbued with meaning through lived experience (Tuan, 1977). This view is supported by (Ryden, 1993, pp.37-38) who states that “a place…takes in the meanings which people assign to that landscape through the process of living in it.” Thus for
these authors, meanings primarily are socially constructed, in relation to the actual way our landscape embodies our cultural identities. As Greider & Garkovich (1994) explained “landscapes are the reflection of these cultural identities, which are about us, rather than the natural environment.” (p.2). They continue to add on cultural identities that shape meaning and its influence on transforming the natural environment:

Any physical place has the potential to embody multiple landscapes, each of which is grounded in the cultural definitions of those who encounter that place. Every river is more than one river. Every rock is more than just one rock... Of course, humans reside in a natural...world that is there...but this world is meaningless. Meanings are not inherent in the nature of things. (ibid.)

Writing from these perspectives, authors suggest that meanings are not inherent to the environmental attributes of a specific locale on the contrary they are socially constructed through experience. In essence, space turns into places, when imbued by meanings that are expressive of cultural and social experiences people have had that are linked and connected with the physical qualities.

In explaining phenomenological sense of place, Jackson (1994) proposed three qualities associated with sense of place: a lively awareness of the familiar environment, a ritual repetition, a sense of fellowship based on a shared experience. He contended that sense of place developed from experience over time and contemplation of our inner selves:

What brings us together with people is not that we live near each other, but that we share the same timetable: the same work hours, the same religious observances, the same habits and customs. That is why we are more and more aware of time, and of the rhythm of the community. It is our sense of time, our sense of ritual, which in the long run creates our sense of place, and of community. (p. 160)

Essentially, time plays an important role in the development of one’s sense of place. Tuan (1980) coined the term “rootedness” which espouses that sense of place is only held by a person who is indigenous, and in terms of their sense of place, the distinguishing factor is that it has been developed over a long period of time. It is central to the notion of being at home in an unself-conscious way of everyday life, seen as a function of time. The temporal association of people and place is critical to rootedness, as a single person or group relate themselves to a point of reference of people-place-time interaction (Terkenli, 1995). Therefore, Tuan
Chapter 2 – Literature Review

distinguished between sense of place and rootedness, arguing about the conscious and unself-conscious meanings, taken-for-granted (rootedness) versus perceived (sense of place). In other words, this theory posits that as a result of being away from the context, one’s become aware and appreciative, thus developing sense of place. When one becomes rooted in place, this awareness or sense of place is concealed in the abstraction and generality of each and every day’s average understanding of people-place interactions.

2.2.1.3. The Perception – Meaning Model

The final epistemological orientation focuses on the psychological aspect of the people-environment relationship. And having originated from an environmental psychology discipline, substantial works from this perspective applied a positivistic framework in an attempt to deconstruct this relationship into cognitive, affective and conative domain. Studies on the theoretical construct of sense of place have been divided into two main lines of inquiry. The first approach conceptualizes three components of sense of place, constructed as place dependence, place identity and place attachment that overlap each other in one instance and subsequently override each other in another (Proshansky, Fabian, & Kaminoff, 1983; Vaske & Kobrin, 2001; Williams & Roggenbuck, 1989). Alternatively, others have viewed sense of place as a tripartite of three multidimensional constructs, with each construct representing the component of cognitive, emotive and conative in terms of human consciousness (Jorgensen & Stedman, 2006; Stedman, 2002). Organizing these constructs in alignment with human consciousness, place identity can be conceptualized as the cognitive component while place dependence is associated with the conative component and place attachment as the emotive component of sense of place. Place identity according to Proshansky (1978) refers to an intersection of personal values, beliefs and goals within the physical setting, and hence an idea of how a physical setting becomes purposeful and meaningful to life. Place dependence is a functional relationship illustrated when a place is instrumental in fulfilling certain needs of the individual (Stedman, 2002). Place attachment on the other hand reflects the emotive part of awareness, thus positive bonding develops between the individual and their natural world (Low & Altman, 1992). Other studies such as the study by Rollero & De Piccoli (2010), articulate constructs into distinct elements and found that the constructs are also correlated, comprising cognitive, affective and conative aspect of place.

Environmental psychologists have used place attachment as the denominator and symbol for a sense of place in their theory development and practice and their approach presents a stark
contrast to epistemological and research approaches (Graham, Mason, & Newman, 2009). Their primary focus has been involved with investigating an individual’s psychological process in relation to their mental cognition/development in connection with their physical context. This range of researchers has emerged concurrently with the objective to inform the behavioral process in planning. Low & Altman (1992) define place attachment as "the symbolic relationship formed by people assigning culturally shared emotional/affective meanings to a particular space or piece of land that provides the basis for the individual's and group's understanding of and relation to the environment" (p.165). A symbolic relationship is experienced at the scale of individual, group or culture inculcation, through the “interplay of affect and emotions, knowledge and beliefs, and behaviors and actions in reference to a place” (Low & Altman, 1992, p.4). However, the study of place attachment in environmental psychology has been criticized for its sole emphasis on the psychological process of development of place (Sime, 1995). In contrast, humanistic geography emphasizes the phenomenological experiences regarding how people understand places and shape the role places play in their life, while research into environmental psychology has tended to separate the composite experiential aspect of place into discrete elements that are measured in a positivist approach.

Even so, the contribution of place attachment and identity in environmental psychology has been widely accepted in planning practice due to its ability to conceptualize the emotive bonds between people and place- a subject that many planning realms strive diligently to manage. Regardless of various disciplinary orientations in understanding place, they are underpinned by the core principle of human beings well established in a particular environmental context that involves interaction of experience and physical components. Therefore this thesis employs sense of place as a broad concept (Figure 2-2) to capture the tripartite construct of place attachment, place identity and place dependence rather than articulating the constructs into distinct individual elements.
The geographical space turns into a place when individuals assign a value corresponding to the geographical characteristics and their interaction. The human conception of space involves a process of categorization and discrimination of geographical discrete elements (Burnett, 1976) and this subsequently influences attitudes towards how or by which method or means it should be managed (Cheng, Kruger, & Daniels, 2003; Kruger, 2001). This suggests that the combination of psychological domains as illustrated in Figure 2-2 can better understand how humans ascribe values to the natural world including the processes taking place and predicting the attitudinal responses that can influence the future landscape.

2.2.2. Shared Domains of Place Theories

2.2.2.1. Place Setting

Sense of place relates to a material world, a context to be somewhere and to be someone. Sack (1992, p.1) asserts that places serve as a “fundamental means by which we make sense of the world and through which we act”. In other words, places are a context in which people position and shape themselves. Literature indicates physical environment as “raw materials” and provides ground for sense of place, by turning a “blank space” into a “meaning place” (Stedman, 2003a, 2003b; Tuan, 1977). “A knowledge of place is grounded in those aspects of
the environment which we appreciate through the senses . . . color, texture, slope, quality of light, the feel of wind, the sounds and scents carried by that wind” (Ryden, 1993, p.38). Numerous authors have suggested that places as a context, are composed of a physical (Eisenhauer & Kra, 2000; Shamai & Ilatov, 2005) and social dimension (Scannell & Gifford, 2010a) in which the context could be delimited at different geographical scales, ranging from a house, neighborhood, city, region or country (Cuba & Hummon, 1993; Low & Altman, 1992).

The role of physical environment that contributes to sense of place has been explored from the perspective of various characteristics that afford the experience of places. These include biophysical features and natural process such as a lake and wildlife (Stedman, 2003a), and built or man-made features such as religious buildings or a village (Kellert, 2005). Others viewed anthropogenic qualities and its dynamic process within a setting such as a recovering degraded environment also contributing to sense of place (Broto, Burningham, Carter, & Elghali, 2010; Trentelman, 2009) which is maintained as long as its meaning is preserved and plausible in purpose (Relph, 1976). These physical features also have been linked to social and cultural manifestations, such as man-made heritage sites (Beckley, Stedman, Wallace, & Ambard, 2007) and natural heritage sites (Wynveen, Kyle, & Sutton, 2012), and memories (Marcus, 1992). On the other hand, the sensory experience of physical attributes related to appreciation of visual aesthetic, ambience and atmosphere also have been identified to characterize sense of place (Korpela, 1989; Ryden, 1993).

Importantly, the overall foundation of the role of the physical environment in sense of place is encapsulated under the subset of place dependence (Jorgensen & Stedman, 2006), place satisfaction (Sack, 1997) and place amenities (Shumaker & Taylor, 1983). People rely on certain places which can afford them the opportunity to achieve or attain their goals and which give them the chance to take part in the activities they like, based on the physical qualities of the place, which evidently or apparently have been shown in prior research under a few different subsets. These subsets represent the functional aspect of physical attributes or resources that enable people to fulfill their certain requirements in terms of their goals and activities and it is for these reasons that people depend on certain places.

2.2.2.2. The Process

The process dimension encompasses various questions in terms of human interactions in a physical setting. Literature oriented especially with respect to the existential epistemology, has
explored the causes of more complex interactions, in relation to who is attached, to what extent and how socio-cultural factors influence sense of place. These studies establish a complex picture of sense of place derived from uniquely individual experiences as well as a composite of shared social processes. These examinations however, appeared to have been centered depending on the discipline involved in each research study, with natural resource management focusing on the experience of individuals (Stokowski, 2002; Williams, 2002), sociology on shared social processes and meanings (Gieryn, 2000), and cultural geography on cultural and political traces (Anderson, 2010).

As all human are in contact with a particular physical setting, the interaction is uniquely encountered as an individual, and this personal experience shapes the particularity of place meanings (Relph, 1976; Tuan, 1977). The process of one’s familiarity with the places developed over long period of time (Relph, 1976) through repeated visitation that fulfill desired activities or experience (Gustafson, 2001), creation of memorable experience (Hay, 1998; Manzo, 2005), an organized pattern of thought or a schemata (Scannell & Gifford, 2010a) which in all leads to strengthen one’s ties to places (Stedman, 2003b). In a much more mobile society, place can reflect settlement identity in which is the process of an individual to maintain distinctiveness or uniqueness (Feldman, 1990). Place attachment also can manifest into several components related to experience – active, passive and conceptual (Ryan, 2005). These processes reflect the psychological framework in relation to the cognitive, affective and conative aspect in place perception epistemological orientation and associated theoretical constructs of sense of place.

As a result, insofar as studies that focus on individual experience have examined mainly demographic variables to decompose one’s interaction with places over time and its influence in shaping sense of place. For example, Moore & Scott (2003) found that the connection to place is higher for those in close proximity to places or resources which they are likely to experience directly and frequently. Empirical evidence in natural resource management studies have shown that frequent or experienced visitors/users to a sites shown a greater level of attachment compared to first-time visitors or resource users (Hammitt, Backlund, & Bixler, 2004; C. D. Jones, Patterson, & Hammitt, 2000). Other studies also have shown that socio-economic status has an influence on sense of place. Studies by Williams & Kitchen (2012) for example, illustrated that sense of place level was highest among residents of the high socio-economic status as compared to residents in mixed and lower socio-economic status group. In addition, homeowners as well as those with a long period of residency were a major predictor
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to high level of sense of place. These studies support the notion that as the personal experience accumulates over time the higher the level of attachment will develop.

In contrast, the creation of sense of place also has been viewed as shared socio-cultural processes. Sociological studies emphasize a community context of interaction with places (Hummon, 1992) by which the social processes of place meanings are shared or imposed (Gieryn, 2000). Unlike the psychological framework of individual experience, this perspective defines sense of place in terms of cultural manifestation of place interactions that are common to a group of people (Low, 1992, 2000; Yung, Freimund, & Belsky, 2003). As Stokowski (2002) pointed out on the creation of place as a result from social interactions as:

... the “social place” known and understood across sets of people is created and reproduced through interpersonal interaction, formalized in social behavior, and ultimately persists in collective memory...Much of what a person knows about places, or feels about places, or does in places, is initially mediated by others. (p.372).

Thus the position of oneself in place describes much about the person and how one’s behavior is shaped from continuous social interactions and practices.

Studies looking into “inscription” of sense of place through socio-cultural processes are mainly articulated via cultural-based processes, social interactions and networks within a place, and the political-economic involvement dimension. The cultural processes that are mainly of interest in anthropology and cultural geography refer to recognition and identification of shared symbolic cultural symbols to a specific social group. Landscape provides a vital repository of cultural meaning in the form of heritage and historical landmarks (Waterton, 2005; Yeoh & Kong, 1996), traditions, religious and rituals (Mazumdar & Mazumdar, 2004; Ruback, Pandey, & Kohli, 2008), or even unreflective daily activities (Low, 2000). These symbols were used and associated with specific social groups to create and recreate their places through narrative process (Derrien & Stokowski, 2014; Johnston, 1990; Ryden, 1993).

Social interaction and network grounded in sense of place studies have been explored from the perspective of “community” in which it is geographically located. Eyles (1985) suggested that the term “community” comprises three salient elements “place or area, people and their institutions, and sense of belonging, which helps enrich our notion of place” (p. 63). At its broadest sense, community defines a social and cultural relationship between a set of people in which places are an expression of community’s ideology and sentiments (Butz & Eyles,
1997). Thus, those that view sense of place as a social construction (Brehm, Eisenhauer, & Krannich, 2006; Eisenhauer & Kra, 2000; Greider & Garkovich, 1994) argued that the places which afford social interaction and identity are contributing to development of sense of place rather than the connection to the physical world. In other words, Relph (1976) asserts that "a place is essentially its people, and appearance or landscape are little more than a backdrop of relatively trivial importance" (p. 33). Such proponents viewed connection to physical environment merely as a symbol of social bonds and networks exist in place (Lalli, 1992; Woldoff, 2002) which include personal connections between individuals within the group or to the group it represents (Scannell & Gifford, 2010a). Consequently, when a place becomes distinct for a person due to the social representation of where one belongs, it reflects the individual’s self-identity and influences place identity (Twigger-Ross & Uzzell, 1996).

The political and economic dimensions of socio-cultural processes in sense of place studies highlight the struggle to manage and negotiate contested meanings on places between social groups (Gieryn, 2000; McAvoy, 2002). Studies that focus on political economies context of place eschews the concept of static place (Agnew, 1987) and put place meanings within the larger context of socio-political power to manage contested resources (Stokowski, 2002; Yung et al., 2003). According to Agnew (1987), "Active socialization in place produces particular political outcomes" and "...it is in specific places that the causes of political behavior ... are to be found" (p.44). Works from these authors underline that place meanings although appear individually, are in fact the product of larger social, economic and social realities (Manzo, 2003). She further elaborates on the current progress of place politics that moved beyond an individual level to the group level in order to have a better understanding of specific policies and action processes which are driven by place meanings – mediated or enforced by certain social groups to achieve desired goals. Questions on how power plays important role in shaping places and reinforcing dominant cultural ideologies exemplified in studies for example by (Dixon & Durrheim, 2000; Preston-Whyte, 2002; Saff, 1994). These studies illustrate how physical alteration of places and activities are changed to synergize within certain group’s vision and requirements.

2.2.3. Methodological Approaches in Place-Related Studies

The expanding body of knowledge in sense of place research has been as a result of having been largely contributed to by the development of more sophisticated approaches and methods.
These studies are generally underpinned by either the positivist or the interpretivist research paradigm approach (Shamai & Ilatov, 2005; Stedman, 2003b). Due to the fact that sense of place remains a vague concept, these paradigms apply a different way of unpacking its interpretation more clearly based on each strength and weakness. The approach in sense of place study is divided into two traditions: quantitative which follows the positivist paradigm, and qualitative which relates to the interpretivist paradigm.

### 2.2.3.1. Quantitative Tradition

The positivistic and associated quantitative traditions perhaps is the oldest approach in deciphering sense of place (Moyer, 1992). Parallel to “objectivity” underpinnings in positivistic approach, it assumes the reality can be dissected into measurable phenomena in which when properly analyzed, can represent the “truth” of the reality. Stedman (2003b) suggest that positivist approach should be built on testable hypotheses developed from phenomenological view of the reality, in which to support the “relative lack of construct clarity and an avoidance of hypothesis testing” in phenomenology (Stedman, 2002, p.562). Research in this sphere explores sense of place based on theoretical quantitative models that are mainly emphasizing the relationship between components and overall strength of the model. The components or latent variables, is an underlying phenomenon or construct that act as a proxy (DeVellis, 2012). Researchers mainly employ survey methodologies that enabled measurement of strength, validity and correlation between constructs. Survey research when associated with positivistic approaches therefore incorporates the systematic and “scientific” method of theory building, through the analysis of causal relationships and repeatability (Singleton & Straits, 2005).

Literature indicates that the development of the psychometric model to measure sense of place is divided into two streams – sense of place as a unidimensional and a multidimensional construct. Studies that approached the empirical model of sense of place as a unidimensional construct (Cuba & Hummon, 1993; R. Hay, 1998; McAndrew, 1998; Shmuel Shamai, 1991) focused on measuring whether sense of place and the strength of attachment exist (Hernández, Carmen Hidalgo, Salazar-Laplace, & Hess, 2007; Hidalgo & Hernandez, 2001). These studies developed a unidimensional scale based on the theoretical underpinnings of place identity, attachment, and dependence or on other associated concepts (place satisfaction, meanings, and rootedness) intending to address the broader spectrum of sense of place. Understood as a continuum the empirical investigations of unidimensional sense of place range from “objective
outsideness” to “existential insideness” (Relph, 1976) owing to their phenomenological emphasis.

Following on with the theoretical progress of the sense of place studies, the second stream attempts to highlight the multidimensionality aspect in the empirical measurement (Jorgensen & Stedman, 2001; Williams, Patterson, & Roggenbuck, 1992; Williams & Vaske, 2003). The sense of place scale developed from these studies varies, as indicated by the number of dimensions identified and the meaning associated with the type of component. For example, a study by Jorgensen & Stedman (2001; 2006) utilized three-dimensional subscales model measurement consistent to sense of place constructs: place identity, place dependence and place attachment. Although their scale-specific constructs provide support to the multidimensionality aspect, the overall component of sense of place is explained better utilizing a more evaluative approach. In addition, other studies have also correlated the overarching sense of place concept into subscales, for example, adding social bonding (Kyle, 2005), familiarity, belongingness and rootedness (Hammitt, Backlund, & Bixler, 2006) among others as reviewed by Lewicka (2011).

The results from the sense of place models, however, suggest mixed results in terms of the relationship between the theoretical level and the empirical measurements. Apart from the technical challenges involved in the agreement as to whether sense of place is considered unidimensional or multidimensional, an issue of greater importance is that such an approach has been questioned as to whether it is able to articulate theoretically the relationships between the dimensions in terms of defining sense of place (Stedman, 2003b). This could have implications regarding the accuracy of the findings as it could increase the chances of operationalized instruments that may not entirely measure or be representative of what it is that they are theoretically intended to represent (McAndrew, 1998).

2.2.3.2. Qualitative Tradition

In relation to the epistemological orientation of sense of place theories discussed in Section 2.2.1, the interpretivist approach embraced the subjective realm of place conception from lived experience. Substantial theorist in humanistic and cultural geography (Heidegger, 1971; Relph, 1976; Tuan, 1977) who advocate the place interpretation and existential model stressed the necessity for more flexibility and “openness” in terms of a way to uncover sense of place. They argued that place embodies values and meanings that are developed through social and cultural processes that emerge from the interaction with the physical features within the setting. As
Geertz (1973) stated, sense of place is formed based on the meanings, chronologically developed and integrated in places through social and cultural perceptions and experience of physical qualities. Relph (1976, p.141) further asserts that “Places are not abstractions or concepts, but are directly experienced phenomenon of the lived-world and hence are full of meanings”. While for others, place is conceived as a “shared symbol” of cultural manifestation and experience (Low, 1992) and “a dialectic way of thinking and experiencing biophysical and cultural place” (Derr, 2002, p.125). These theoretical underpinnings suggest meanings are intrinsic, which “cannot be discerned independently of the places from which they emerge” (Cheng, Kruger, & Daniels, 2003, p.99).

Unlike the positivist – quantitative approach, understanding the people-place relationship from these theoretical perspectives requires the researcher to delve into place and experience the interactions and meanings. Interpretivist inquiry views of social reality are constructed and inseparable from time and context. Therefore the researcher is required to immerse into the lived experience of research subjects to unpack the subjective realm of meanings (Maxwell, 2013). This method of inquiry requires the interpretive approach in order to discern the meanings that are entailed to a place (Lewicka, 2011) and relies on qualitative methodologies as research design (Denzin & Lincoln, 2013). Qualitative research explains patterns of real-world situations through inductive analyses (Taylor & Bogdan, 1998), explores meanings of the experience from participant’s viewpoints (Hammersley, 1992), and interprets these meanings of experience in the milieu of natural and man-made features (Creswell, 1998).

Phenomenology as one of the methodologies in this tradition, fulfills these criteria in investigating human experience (Creswell, 1998) and offers an alternative to other methodologies associated with positivistic approach in environmental-behavior inquiry (Seamon, 2000). Particularly, it attempts to elaborate on the essence of human consciousness and perception of a given phenomenon or object that relate to experiencing it. “Any object, event, situation or experience that a person can see, hear, touch, smell taste, feel, intuit, know, understand, or live through is a legitimate topic for phenomenological investigation” (Seamon, 2000, p.158). From phenomenological investigations, (Stedman, 2002, p.562) a synthesis, amalgam or composite regarding the development of sense of place is based on “length or depth of experience with a setting (Tuan, 1980), social mobility that allows abstraction necessary to develop a sense of place (Tuan, 1980), or social relationships in the setting as the basis of attachment rather than the physical landscape itself (Relph, 1976)."
However, both the quantitative and qualitative approach as discussed above, have been critiqued in relation to their juxtaposition within the theoretical and methodological aspect. The quantitative approach has been debated in terms of its disengagement from the theoretical framework and that it does not reflect local context and meanings (Stedman, 1999). On the other hand, even though the qualitative approach often brings forward interesting and testable-looked prepositions it lacks methods of scientific inference in its formation (Stedman, 2002). Moreover, the common ground these two approaches share, has contributed to expanding the knowledge in regard to sense of place, as they have been able to extend a rich understanding of the concept. These include an expansion of the theoretical components and factors as well as the role of the meanings and experience in shaping sense of place. Numerous researchers from different backgrounds have argued regarding sense of place as a holistic concept (Bricker & Kerstetter, 2006; Eisenhauer & Kra, 2000) in which it combines the physical (natural and man-made), social, cultural interactions to create unique meanings in terms of experience. Consequently, an attempt to combine both approaches may present an opportunity to understand the richness of the concept in which the quantitative and qualitative data can be reconciled to preserve the theoretical underpinnings and at the same time to examine them systematically.

2.2.4. Summary of Sense of Place Literature

Over the last five decades sense of place studies have expanded into a vast amount of literature comprising a number of diverse theories that have been developed from the various epistemological groundwork and evidence. Early development in geography indicated place as a locale of physical properties in a geographical context. Since then, humanistic geography studies have enriched the concept by suggesting that place is not merely a physical entity, it is composed of complex experiential and psychological dimensions attached to a particular physical continuum. This particular discourse is endowed by humanistic geographers such as Relph, (1996, pp.907-908) asserting that place is not just a mere connection to physical properties of the natural environment, it is a “tightly interconnected assemblages of buildings, landscapes, communities, activities, and meanings which are constituted in diverse experiences of their inhabitants and visitors”. Drawing on this phenomenological experience, he further suggests that development of place evolves from individual-meaning that is presented as a collective form of inter-subjective complexity in conceiving and establishing a clear development of place which has been highlighted by Butz & Eyles (1997, p.1) as “rooted in
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theories of social organization and society, and as being variably and contingently ecologically emplaced”.

Considering these circumstances, a “sense of place” is therefore associated with the idea of experience that turns the ecosystem space into a place. Tuan (1977, p.6) in his seminal work pointed out that space turns into place "as we get to know it better and endow it with value". In a similar manner, Relph (1996, p.909) suggests a sense of place is an awareness of the "inherent and unique qualities of somewhere". Implicitly, this understanding imposes a dimension of awareness or a sense that qualities (environmental or social) can be achieved and maintained (Tuan, 1980). In other words, sense of place is composed of "personal memory, community history, physical landscape appearance, and emotional attachment" (Galliano & Loeffler, 1999, p.2); places therefore, in addition to a physical setting, represents an amalgamation of meanings and values (Sampson & Goodrich, 2009), and socio-psychological processes (Gieryn, 2000; Stedman, 2002). Consequently, qualities that can be classified as subjective in terms of the meaning of anything – culture, own identity, imagination or memory – influence the identification of physical or social properties while describing one’s sense of place. Therefore, the challenges to capture subjective meanings inherent in objective physical qualities can be comprehensively addressed by combining qualitative and quantitative methods.

2.3. Bioregional Planning: Reconciling Socio-Cultural Values

As conservation actions are integrated with the human dimension as a matter of course in land use planning, inevitably the process is influenced by the social actor’s capabilities in the decision-making process. Their capabilities in influencing ecological outcomes in land uses are conditioned by specific values in determining their specific behavioral actions. In experiencing everyday life, people construe the implications, significance and meaning of ecosystem by placing specific values that form their connection to the place. Therefore, in order to understand how a social actor behaves in a bioregion it is worthwhile exploring by what method or to what degrees values result in actions, and how those actions in turn result in pro-environmental behavior and policies that support that behavior, and are accepted by those involved.

More importantly in the context of bioregional planning, which emphasizes place-based governance, an understanding of such distinctive values offers some plausible explanations regarding individuals’ or community’s motivation and sentiment. Information on such values
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provides an alternative consideration in addition to the commodity values in land management (McIntyre, Moore, & Yuan, 2008) which in economic terms have been mainstreamed as primary justification for environmental management investment (Daily et al., 2009). However, non-commodity form of services combined with the utilitarian values of nature, constitute the natural capital that has a direct influence on peoples’ well-being (Constanza & Folke, 1997; Fisher, Turner, & Morling, 2009; MA, 2005). Therefore this section attempts to deconstruct the various types of values or meaning associated with the term “ecosystem” and examines the appropriate values typologies (or designations or classifications) for the purpose of ecosystem management.

2.3.1. Theories of Environmental Values

Values in the abstract are conceived to be “standard guiding principles of thought and conduct in moral, aesthetic and related situations, offering a basis for preference and choice” (Bentley cited in Udy, 1995, p.7) or more accurately defined “a value…reflects personal dispositions towards action” (p.7). Put simply, value denotes the degree of importance or desirability of something. In terms of this explanation, essentially the concept can become complex, as it can refer to absolutely anything. This takes into consideration that values are dynamic and vary among individuals, community or culture.

In the broad field of literature related to environmental psychology and management, Schultz, Shriver, Tabanico, & Khazian (2004, p.32) define “those values that are specifically related to nature or that have been found to correlate with specific environmental attitudes or concerns”. The notion of value in guiding specific social behavior towards the environment was further echoed by Dutcher et al. (2007, p.2) as “fundamental orientations, life goals, or guiding principles, which serve as a basis for organizing an individual’s beliefs and attitudes and guiding their behavior”. (Kellert, 1996) asserts environmental values as “basic structures of human relationship and adaptation to the natural world developed over the course of human evolution”. He further suggests that human coexistence with nature embeds humanity’s innate biological affinity for nature, which is inculcated through everyday life experience.2

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2 Grant (1994) outlines that human’s in-going life experience; which through the processes of socialization and learning contributed to individual’s and shared values.
The environmental values topic remains subtle by adhering to various perspectives and a philosophical paradigm in regard to defining the nature of values. A number of authors offer a different set of definitions and philosophical views of social values regarding the environment (Brown, 1984; Fisher et al., 2009; Kellert, 1996; Lockwood, 1999; McIntyre et al., 2008; Rokeach, 1979; Rolston, & Coufal, 1991). Ewert (1996) noted that the variety of meanings reflecting differences in technical usage, disciplinary operational points of view has contributed to confusion in regard to the type of environmental values that should be incorporated in integrated land management.

The theoretical approach in classifying the meanings of environmental values are divided into two perspectives which although they are different are closely related, expressed by held values and assigned values (Burgess & Gold, 1982). Inherent in the subject, “held value” exists independently in one’s cognitive structure (Brown, 1984) in which the modes of behavior or abstract ideals express the conception of goods (Bem, 1970; Rokeach, 1979). Brown (1984) further added principles such as responsibility and justice that further inform one’s conative dimensions - opinions on how the ecosystem should be managed translate into their behavioral attitudes. In addition, people do attach a certain value to a subject comparatively and preferably to others. These “assigned values” are classified as “the expressed relative importance of an object to an individual or a group” (Brown, 1984) and refer to the “values for things” (Brown & Manfredo, 1987). With respect to environmental research, people ascribe a certain “worth” to natural resources such as the scenic beauty of a particular scene; that the value is contingent to the held values that form one’s behavioral actions towards the environment. As different types of values can be assigned to a particular ecosystem, it is worthwhile at this point of the review, to describe the basic typology in terms of environmental values.

2.3.2. Typology of Environmental Values

In *Biophilia Hypothesis*, Kellert (2005) postulates that human well-being is dependent on the continuous biological relationship with the environment. Rooted in biophilia, he interprets the human -nature relationship as “presumably inherent biological affinity for the natural environment” (p.49). He establishes that our biological affinity to the natural world is represented by the “nine fundamental aspects of our species presumably biological basis for valuing and affiliating with the natural world” (p.43). The dependency of humankind on the environment is manifested by a positive functional dependency, resulting from the human’s biological tendency to be allured and nourished by the environment. Although these values are
considered as “weak genetic tendencies”, he further reiterated that they “depend highly on sufficient learning experience and cultural support to become functionally manifested”. This biophilic tendency may be transformed into a basis of cognitive, affective and conative construct of sense of place when fully functioning that are manifested through the nine values typology outlined by Kellert (2005):

- Naturalistic: Builds on direct experience and explorations of nature which in turn contribute to curiosity, discovery and often resembled by recreation as a result of one’s frequent contact with nature.
- Scientific: Assembled by a systematic study of ecosystem structure and function through a closed observation that enhances one’s cognitive skill. These include knowledge, understanding and observation of the biophysical components of nature.
- Utilitarian: In a most narrow sense this posits or positions the commodification of physical properties of nature into an exploitative value. This pure emphasis on a utilitarian view of the place, may greatly lead to a place where social or cultural values are not appreciated.
- Aesthetic: Refers to physical appeal and beauty of nature that lead to inspiration, harmony or security in that place.
- Symbolic: Places emphasis on the ways nature is used for language or thought expression through the creation of art and literature among others that are helpful in communication and mental development.
- Humanistic: Embody the feeling such as “love” and strong emotional attachment to nature, which fosters bonding and companionship among others between people and nature.
- Moralistic: Suggests spiritual reverence and ethical concerns for nature, which may encourage conservation-minded behaviors based on the belief of human co-existence with nature.
- Dominionistic: Refers to sense of mastery, physical control and dominance over nature, which benefits human by enhancing mechanical skills, strength to subdue challenges.
- Negativistic: Manifested through experience of fear, aversion and alienation of nature that enhances one’s awareness of safety, security and protection.
2.3.3. Application in Planning

In the discussion of ecosystem as socially meaningful places, the assigned value approach has been prominently discussed broadly in the context of planning-related disciplines. Historically, planning decisions have abandoned the consideration of environmental values by individuals or community that reflect subjectivity and is unmanageable in nature. This is because of the prominent roles of planners in the 20th century to retain their instrumentalist and objective-neutrality standing in the planning process (Thomas, 1994; Udy, 1995). In parallel to social movement rise in 1960s and ‘70s, planning theorist such as Davidoff (1996); Friedmann, Nisbet, & Gans (1973) have noted that several planning movements, notably advocacy and the trans-active movement, among others have emerged to counteract the claim of values-separation in the planning process.

In the realm of planning practice, often the values of those who are affected by planning exert more force upon planners and planning process. This progress in tandem with the recognition and demand for more public participatory processes which consequently Grant (1994) underlines as driven by the ideological development of the social justice movement in the 1960s. The recognition of values in planning-related disciplines complies with its philosophical paradigms, including conservation, development and management, which will be discussed in the following section. Anticipating that there will be overlap in the contribution of environmental values theories, and that for all practical purposes this review is not intended to be comprehensive, the focus will be on demonstrating the applicability of environmental values across planning disciplines.

2.3.3.1. Natural Resource Management

Although much work in environmental resource management and the latter ecosystem management explicitly addresses the management of biophysical processes and human objectives, there are on-going debates and arguments as to whether it is possible to balance ecological and human considerations (Endter-Wada, Blahna, Krannich, & Brunson, 1998). These debates are based on different philosophical stances. The bio-centric position stresses that the objective for ecosystem management should prioritize ecological integrity rather than human objectives, assuming that human influence is pervasive within an ecological system (Bell, 1994; Noss & Cooperrider, 1994; Stanley, 1995). In contrast, the anthropocentric position emphasizes the utilitarian values of natural resources (Lackey, 1998), whereby ecological systems are assumed to be resilient to such use and change (Wiant, 1995).
In the broadest sense, social dimension in resource and ecosystem management seeks to \[1\] develop an understanding of people’s opinions, attitudes and values regarding the environment (Rokeach, 1979; Zube, 1987); \[2\] recognize that these sets of experiences are subject to dynamic evolution through social-political processes (Rappaport, 1977); \[3\] generate environmental ethics (Leopold, 1949); and \[4\] account for aesthetic and visual qualities (Gobster, Nassauer, Daniel, & Fry, 2007; Steinitz, 1990). Because land use patterns are the outcomes of human-nature interactions, understanding people’s attachment to landscape reveals information as to the reason certain resource use occurs and persists, as well as how humans respond and adapt to shifts in resource conditions (Brandenburg & Carroll, 1995).

In recent years, there has been an increase in the quantity of literature that has attempted to examine perspectives on visual and aesthetic qualities and recreation, among other things. Franco, Franco, Mannino, & Zanetto (2003) investigated the impact of agro-forestry networks on scenic quality and found that the networks have had a profound negative influence on the value of scenic beauty. Similarly, studies have indicated that the visual quality has to be integrated in nature conservation to facilitate its long-term success (Burel & Baudry, 1995; Clay & Daniel, 2000; Kent & Elliott, 1995; Zanon & Geneletti, 2011). Natori, Fukui, & Hikasa (2005) argue that integrating biological and visual quality as the human dimension of the environment produces a shared venue that addresses biotic and societal needs in nature conservation.

Social landscape values and an ecological performance model have been integrated into conservation planning in order to identify relationships between an ecological space and mapped social values for land management purposes. For example, Alessa, Kliskey, & Brown (2008) examine the convergence of a spatial area with high ecological and social values using a method of mapping hotspots. A kernel density method was used to generate the hotspots where social (represented by mapped community’s values towards place) and ecological values (represented by net primary biological productivity) overlapped. With respect to the method employed to identify socio-ecological spatial convergence, it was discussed in relation to its implication for landscape management.

Where ecosystem management and land use planning intersect outside the protected areas, several studies have noted that the experience-based values of the community have a profound impact on the direction of planning activities (Galliano & Loeffler, 1999; Williams et al., 1992; Williams & Stewart, 1998). With an emphasis on several concepts developed in environmental
psychology, leisure studies, resource management and humanistic geography, these studies have explored the symbolic and emotional ties to places. Such studies have found that people’s connection to place has shifted from commodity-based values to emotional and spiritual-based values related to natural resources. This shift pointed to several planning methodologies such as the *transactive* approach (Alexander, 1994), which was initiated to collaborate and negotiate such values towards the places and transformed them into an innovative planning and management strategies.

As trans-active and collaborative planning method adopted in ecosystem management, Williams & Patterson (1996) argue that inclusion of community-meaning bridges the disconnection between the social, physical and meaning in a place towards a more holistic form of management. They describe that such environmental values and meaning are not supported by the rational scientific model which they believed cannot accommodate the “intangible, expressive, or spiritual meanings of the environment…and how they are created, shared, communicated and destroyed” (Williams & Patterson, 1996, p.512).

### 2.3.3.2. Urban and Regional Planning

Mumford (1938), one of the acclaimed “grandfathers” of modern planning once said:

> We must create in every region people who will be accustomed, from school onward, to humanist attitudes, cooperative methods, and rational controls. These people will know in detail where they live and how they live: they will be united by a common feeling for their landscape, their literature and language, their local ways, and out of their own self-respect they will have a sympathetic understanding with other regions and different local peculiarities. They will be actively interested in the form and culture of their locality, which means their community and their own personalities. Such people will contribute to our land planning, our industry planning, our community planning the authority of their own understanding, and the pressure of their own desires. And without them, planning is a barren externalism (p.386).

His vision clearly provoked the composition or constituent of feelings and meanings of landscape to be an important factor to be considered in planning, although the terminology he used did not explicitly capture the environmental values that were persistently used in this review. His endorsement of successful planning is underscored by the civic roles, place-based knowledge and unequivocal cooperation and commitment to “place”. The latter progress in this
circumstance, MacKaye (1962) echoed Mumford’s statement on the place of subjective values in regional planning, although his affection to “hinterlands” confined the place of subjective experience only in rural areas. He suggested that “hinterlands” provided a discourse of aesthetic experience that enriched the human psyche.

With the shortfalls of rational planning, in the 1990s planning theorists began to realize the opportunities to manage the issue of social values that they struggled to cope with. At the outset of the rational planning, the emphasis was on the ability of planners to derive optimal solutions based on purely scientific approaches, and the criticism of its shortcomings lies on the alternative environmental values as noted by Hillier (1999):

> Planning as the site of mediation of environmental values not only tends to adopt utilitarian philosophy, but also promulgates a managerial approach to nature (or the environment, as planners would term it). Rooted in Enlightenment tradition of scientific rationality, planners often employ techniques such as environmental impact assessment and utilize forms of cost-benefit analysis (CBA) to calculate mechanically the “optimum” environmental land use. Such approaches implicitly value “arguments of sense” (Burchell, 1998), science, quantification, economics and instrumental values above aesthetics, spiritual and intrinsic ones (p.180).

In the manner of each planning methodology that failed or rather was unable to capture the sentiment, she observes that the realm of planning refused to address the charter in regard to the intrinsic, aesthetic value and so on which had been a trade-off up against the commodification values in a “truth measurement” of nature. The challenge of planning to be able to embrace Mumford’s vision further strengthened by Ndubisi (2002) in the context of ecological planning stressed that an understanding of place-based values in effective land planning is crucial, writing that there is a need “to determine whether there is a consistent fit between what people experience and how the functioning of natural processes and spatial organization of the physical environment support the experience” (p.113).

In reality, discrepancies exist in regard to the multitude of environmental values among social actors in planning process, for example, planners, politicians, developers, “expert” consultant and residents. Hillier (1999) points this out in an exploratory interview study in Australia,
where the outsiders\(^3\) preferred the lean approach towards instrumental and economic values compared to insiders, as the latter placed greater emphasis on non-commodity values in relation to nature such as intrinsic, aesthetics and symbolic which theoretically are encapsulated in the sense of place, community identity and emotional well-being concept. She also observed that the positioning of some planners and consultants in their “rational” professional capacity seems to deter them in their effort to accommodate the visioning of social values, and to share the same sentiment with the residents.

The discussion regarding how people have different viewpoints regarding environmental values and issues relate to the normativity characteristic of planning. These different rationalities are based on the idea that there are no single truths in planning, but pluralism (Hendriks, 1999) because people have different answers relative to how they perceive the world (Baum, 1977). Planning therefore is seen as “situated ‘in between’ conflicting or at least disputing parties” (Forester, 2004). The theory of polyrationality (Davy, 1997, 2008) provides a way to understand four distinguished rationalities based on two dimensions of grid and group: egalitarianism, individualism, hierarchism and fatalism (see details in Hartmann, 2012). This theory suggests no “true-or-false” solutions exist, rather to recognize the four manageable rationalities as a “clumsy solution” (Hartmann, 2012), in which looking at the rational motives not the content of the argument is to participate in planning process.

In reconciling and managing socio-cultural values, various planning methodologies have emerged in last two decades in term of theory and practical application. In particular, collaborative planning (Healey, 1997) developed mainly based on the Habermasian theory of social discourse and interactive process of identifying common priorities and developing strategies. It aims to encourage pluralistic views of decision-making process through a more transparent, consensus-building model of different rationalities. She argues that the style and the tone of the process is critical in engaging different social divides into a more trustable cooperation which does not merely as a matter of inviting for participation. While this theory have emphasized the style in which the substantive content is communicated and argued, its effectiveness as a theoretical basis for practical application has been debated. The criticism is framed relating to its capability to cope with the highly political, power relations and access to public participation process (Allmendinger, 2000). This is especially relevant for less powerful

\(^3\) Lockhart (1982) labelled the term insider and outsider dialectically referring to the different viewpoints illuminating at least two ways of knowing and perspective on social reality.
actors or stakeholders whose views are less likely to permeate. Often, the decision-making process is entrenched with self-interest, discrepancy in community structure and institutional arrangements and powerful dominant group or interest coercing agenda (Jones, 2003) – conditions that questioned the Habermasian ideals of power-neutral arenas and consensus-based decisions (Davies, 2005). Yiftachel & Huxley (2000) argue that the collaborative process should not be separated from the underlying material and social construction of place. In a much more contemporary and contested place, the attractiveness of arguments and communicative therefore must be balanced with political realities.

In the urban context, some research has been carried out to investigate the impact of creating a connected open space system for human recreational uses. For example, Coutts (2012) in his exploratory study found that not only was the community able to realize the ecological importance of connecting their park into the wider region, they also increased their recreational use as a result of having more space to utilize. Several attempts have been made to identify and examine people’s perceptions and recreational use in urban greenways (Asakawa, 2004; Gobster & Westphal, 2004; Shafer, Lee, & Turner, 2000). Imam (2006) has proposed an integration of natural, recreational and cultural greenways in designing and planning residential communities.

In another study, Yabes, Shetter, & Schneeman (1997) recorded the evolving social values of urban waterways that resulted from land use changing from farming into residential and commercial areas. The canal system has played an important historical role for older residents. Whilst in earlier times it supported their agricultural activities, now it is an important venue for communal social interaction. Antonson, Gustafsson, & Angelstam (2010) provide a new perspective on ecological connectivity that views it from the perspective of present needs and also in relation to “historical connections that still remain” (p.3). Although ecological connectivity is more applicable at a local or regional level, Lee, Ellis, Kweon, & Hong (2008) interestingly found a positive correlation between neighborhood satisfaction and certain landscape structures at site (neighborhood) scale. The overall level of resident’s satisfaction, measured by a mixed of construct related to physical, emotive and personal preferences, increased when tree patches in the neighborhood were less fragmented, less isolated, and well connected.

The targeting of environmental planning and management has typically been based on ecological resources and economic effectiveness, while social values have received less
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consideration due to the lack of systematic approaches to record these values, which often are not marketable. Bryan, Raymond, Crossman, & Macdonald (2010) proposed a method to elicit social values that will inform the management of ecosystem services using various spatial metrics. Utilizing a natural capital and ecosystem services framework, communities with different environmental concerns were asked to assign positive and negative values (threats) to associated natural capital assets. The heterogeneous social values were then analyzed spatially by adopting four ecological metrics including value abundance, rarity, diversity and risk. This pragmatic methodological approach enables identification of what should be focused on, in regard to the management of ecosystem services, and how these services can be managed based on metrics.

2.3.3.3. Landscape Ecology and Landscape Planning

Landscape ecology as a discipline focuses primarily on the structure and function aspect of natural system to achieve ecological integrity. Landscape planning in the applied sense of landscape ecology as defined by Cowel, Mirek, & Taylor (1996) is “the application of an ecological approach to land use planning and land/water management. In other words the landscape (biotic and abiotic constituents) is viewed in terms of the framework of ecosystem function and structure, in order to identify areas which have ecological integrity” (p.74). This draws particular attention for planners, in terms of the necessity to plan a land use framework to conserve and enhance ecological processes as opposed to ecological entities (van Roon & Knight-Lenihan, 2004).

While some of the ecological imperatives remain relevant in the context where landscape patterns only affect biophysical processes, a focus on humans as subjects that value landscape patterns is missing from this discussion. The early progress in landscape ecology and ecological planning, which substantially ignored the social dimension in regard to directing the vision has been critiqued by several authors. According to Antonson (2009), research on understanding and linking the ecological and social dimension has concentrated on assessing and describing individual components, either the ecological, or the social aspects. Whereas, in the realm of landscape contending with ecological and social issues, Ryan (2011) argued communities who inhabit such places have their own perceptions and attitudes speaking in terms of planning issues, and that these responses will influence development policies and shape the ecosystem. Arguably, natural processes will continue to regulate the stability of ecological conditions, although it depends greatly on social processes to determine the direction they will take.
(Linehan & Gross, 1998; Wu & Hobbs, 2002). Further, community and stakeholder empowerment through the inclusion of social values in the planning process will increase the benefits of a typical valuation of biophysical and economic values in decisions involving targeted management objectives (Cowling et al., 2008). These scholars have aligned their argument to shift to a humanistic view of landscape ecology, by specifying the impact of human activities on landscape structure and function.

The change of paradigm from the traditional ecological roles of conservation planning to an approach of sustainable development that integrates nature conservation and socio-cultural values is gathering speed. In practice however, the information on ecological and social and cultural values is rarely captured and integrated into the decision-making process (Brunetta & Voghera 2008). Setting up the spatial priorities for conservation has relied mostly on biological assessment with little consideration of “values-based” or place-based values. Brown, Smith, Alessa, & Kliskey (2004) compare the local perception of biological values to expert-oriented biological assessment. The participatory GIS method was selected to record the local values of biological resources, and a scientific assessment of potential biological areas was examined from the scientist’s point of view in a workshop. An obvious geographic area shows a moderate spatial coincidence between what holds high values for the locals and an expert’s assessment. The authors argue that the inclusion of local perception of biological resources in an explicit model creates an iterative land planning process that complements and further strengthens both methodologies.

Several authors have argued that in regard to ecological planning a combination of the range of ecosystem values is fundamental in order to achieve a sustainable development paradigm. For example, when combining landscape ecology and environmental aesthetics, such a union could create an affirmative ecological planning, by designing the spatial composition and configuration that “appeals to the senses, to our emotions and feelings and finally to our sense of symbolic meaning invoked by perceptions of caring and stewardship” (Thorne & Huang, 1991, p.61). Granting all this, Nassauer (1995) added ecological values might be better accepted by the public at large if we suppose cultural theory is adopted to instill people cognition, perception and values roles in shaping the natural world.
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2.4. Bioregional Planning: Nurturing Socio-Ecological Resilience

2.4.1. Resilience, Socio-Ecological Systems and Planning

The resilience theory that emerged from ecology in the 1960s and early 70s was based on the capacity of systems to undergo change in order to maintain a desirable state. The fundamental work of Holling (1973) attempts to explain the dynamic ecosystem change within the adaptive cycle framework that includes the process of renewal, abrupt shifts and uncertainties. Instead of agreeing to the mainstream consensus regarding the idea of balanced and stable nature during that time, he argued that systems persist in multiple states to maintain and renew in the face of disturbance or shift to new equilibrium. In the early definition of resilience, Holling distinguished between two concepts of resilience. Engineering resilience referred to the ability of ecosystem to return to the state of stability or equilibrium after a disturbance or shock (see e.g. Holling, 1996; Pickett, Cadenasso, & Grove, 2004). The second concept, “ecological resilience”, refers to “a measure of the persistence of systems and of their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables” (Holling, 1973, p.17). The state of “stability or equilibrium” are contrasted between these two notions; where the former stressed maintaining the efficacy of function, whilst the latter strives for the existence of the function (Holling, 1996). The commonality of the ability of both notions to bounce-back to achieve stability as argued by Davoudi (2012, p.301), is “the belief in the existence of equilibrium in systems, either pre-existing as a resilient system bounces back (engineering) or a new one to which it bounces forward (ecological).”

More recently, an “evolutionary resilience” was proposed into this discourse that distinguished it from the earlier concepts. This view of resilience relates to the evolutionary perspective (Simmie & Martin, 2010), while others suggest socio-ecological resilience (Folke et al., 2010). Evolutionary resilience challenges the idea of equilibrium by suggesting that the possible transformative capability of systems over time with or without external disturbances are better equipped in terms of future shocks (Scheffer, 2009; White & O’Hare, 2014). The evolutionary perspective of systems to systematically adapt and transform was supported by social and ecological systems connectivity. Here, systems are comprised of complex socio-ecological systems that interact in a non-linear way; “they are permeated by uncertainty and discontinuities” (Berkes & Folke, 1998, p.12).
Planning scholars have applauded this perspective in a timely manner, in managing a situation that is surrounded by uncertainties related to “wicked problems” (Rittel & Webber, 1973) as well as addressing “post-normal” threats (Funtowicz & Ravetz, 1991), where “facts are uncertain, values are in dispute, stakes are high and decisions are urgent” (Ravetz, 2004, p.349). Non-linearity means small changes in systems may trigger sudden and cascading effects while intervention may have little or no effect. The applicability of this in planning theory and practice has questioned the role of conventional mechanisms to reduce uncertainties regarding land use decisions. This is because the “past behavior of the system is no longer [serve as] a reliable predictor of future behavior, even when circumstances are similar” (Duit, Galaz, Eckerberg, & Ebbesson, 2010, p.367).

Despite its early application in ecology, the new resilience perspective progressed to provide a theoretical foundation in other disciplines, for example, economies (Perrings & Walker, 1997), psychology (Masten, 2001) and engineering (Bodin & Wiman, 2004) among others. The theory began to attract other disciplines due to its inherent positive characteristic associated with rejuvenation and recovery (Müller, 2011) that explains common occurrence in nature (Swanstrom, 2008) and provides flexibility strategies to address a growing sense of uncertainty in a rapidly changing world (Christopherson, Michie, & Tyler, 2010).

Understandings of resilience emerge generally through adaptability as the source and change in social-ecological systems. Redman & Kinzig (2003) suggest three important characteristics for adaptability which include cross-scale interactions over space and time, information flow, and nested hierarchical systems. Therefore, in an adaptive cycle, dynamic interactions and flow of information are created through an interlinking of subsystems that is functioning discretely independent of time and space, yet overall has a direct or indirect influence on the rest of the system. “Panarchy”, a concept introduced by Gunderson & Holling (2002), captures the evolutionary structure of these interlinked series of systems and subsystems. Dynamic interactions in the form of memory and revolt within the tangle of interconnectedness in panarchy provide adaptive capacity building and resilience (Gunderson & Holling, 2002). Hence, through the panarchy concept, understanding the dynamic of change (and uncertainties) of a system, at a particular time, is contingent on the dynamics and cross-scale influences of processes above and below it (Walker et al., 2006). Research has shown that maintaining redundancy in terms of overlapping scale can increase the resilience of systems to absorb shock from pressures within and external to the systems. For example, a governance system that is comprised of a variety of organizations such as government departments, Non-Governmental
Organizations (NGOs) and community groups which have overlapping functions are likely to respond to the dynamics of social, economic and political change (Lebel et al., 2006). This is because the multi-layered scale of groups is responding to varying internal and external problems and redundancy in roles and functions increases the resilience of SESs by augmenting each other’s strengths and weaknesses.

Considering the structures and interactions as a whole and in a broader context, resilience thinking is bringing societies and ecosystems together as an integrated unit of social-ecological systems in which the social systems and ecosystems are coupled, interdependent and co-evolving (Berkes & Folke, 1998). This implies that humankind is part of our environmental problems and solving it requires understanding the social context in which they interact (O’Brien, Hayward, & Berkes, 2009). Accordingly, previous ineffective management regimes and unintended outcomes due to separation of human and nature in ecosystem management (Holling & Meffe, 1996) has led to a new way of conceptualizing the human-nature relationship as integrated social-ecological systems with an emphasis on the dynamic interaction between the two domains interact and behave in a co-evolutionary manner. Adaptive governance and adaptive co-management are being developed to recognize this dynamic interaction (Gelcich et al., 2010).

In terms of governing social-ecological systems, resilience thinking perceives the complexity of social-ecological systems as adaptive systems (Norberg & Cumming, 2008) and recognizes the dynamic co-evolutionary behaviors of change and governance response to it (Duit & Galaz, 2008). A review of the literature indicates several studies that have developed a new approach in governance from a social-ecological resilience perspective. A study by Ommer (2007) introduced social-ecological health approach, by linking functioning ecological systems and communities well-being that includes the social, cultural and psychological dimension. Similar works by Parkes et al. (2010) and (Waltner-Toews & Wall, 1997) attempt to re-conceptualize governance as managing social-ecological systems and as a basis for foster resilience, socio-economic sustainability and health. These studies viewed communities’ health and well-being as emergent outcomes of interacting sub-systems – ecosystems, social, political and economic that are organized and arranged so that both social and ecological integrity are promoted.
2.4.2. Grounding Sense of Place in Social-Ecological Resilience: Land Stewardship

Environmental stewardship is one of the core principles of community planning articulated in bioregionalism as people who live in a specific place, consciously develop their own idea and way of living in relation to that particular place. As outlined earlier, the disintegration of people and place in rational planning approaches tends to hold community members back from their civic role and responsibility towards the protection of their living environment. In contrast it is apparent that developing the competency of community-based-decision-making is founded on residential understanding of local resources availability. Bioregionalism under these circumstances becomes a decentralized planning exercise, underscoring the importance of economic and political decision-making to be delegated at a local level, which inherently gives rise to personal and community empowerment (Harris, 1994). Moreover, community empowerment is translated into active participation in decision-making that fosters a shared learning process – a quality legitimated by the interaction between experiential and technical knowledge (Aberley, 1993; Diffenderfer & Birch, 1997).

Such mobilization of empowerment is determined importantly by understanding the connection of humans with their natural world and stewardship of the land. The emphasis on consideration of human connection and values in planning potentially can be the turning point for more directive actions towards a resilient social-ecological system. Concurring with bioregional thinking, it advocates the re-envisioning of people-place relationship translated into “repairing…the damage done to natural systems, and recreating human cultures capable of flourishing in an ecologically sustainable manner through time” (Plant & Plant, 1990 cited in DePrez, 1997, p.43). Human culture in this sense is parallel to the land ethics that Aldo Leopold espoused, which works toward intensifying the sense of care, commitment and concern with respect to how the place should be. He eloquently suggests that in developing a land ethic, the role of humanity is transformed from conqueror of ecological system to an egalitarian view that a human is “just a plain member and citizen of it” (Leopold, 1949, p.240). He further asserts that culture which then drives societal action can be assessed in relation to one’s connection or association to the natural world: “A thing is right when it tends to maintain the integrity, stability, and beauty of biotic community, it is wrong when it tends otherwise” (p.262).

One of his supporters, Worrell & Appleby (2000), suggest that environmental stewardship is a form of land ethic, defining it as a deeply held moral obligation interpreted into actions of
“responsible use (including conservation) of natural resources in a way that takes a full and balanced account of the interests of society (and) future generations … as well as private needs, and accepts significant answerability to society” (p.269). Considering that society must confront multifaceted issues related to land management, a compelling question arises. In what way are social actions directed towards achieving social, economic and ecological sustainability? It has been suggested that the land ethic should provide a conceptual foundation for environmental stewardship that can guide the action and response of society towards addressing the threat of ecosystem degradation and resources depletion (Knight, 1996). This segment will articulate and characterize certain qualities promoted by ethical social action that would qualify as environmental stewardship, which are initiated from planning and conservation decisions.

The majority of research into planning, resource management, environment and behavior have made connections between place-based values and stewardship, although in each case it has been explored within its own paradigm. Studies in landscape and urban planning for example, have explored the role of local resident attachment to rural and urban landscapes in determining their motivation for stewardship and land protection (Lokocz, Ryan, & Sadler, 2011; Walker & Ryan, 2008). These studies have found strong connections between place attachment and stewardship engagement. This quality is manifested through several forms of supportive attitudes towards conservation strategies that promote ecological stability. This presents evidence that residents are more concerned about their connection to place by sustaining the local economic and landscape character, studies have shown that social actions through several mechanisms in development planning directly contribute to social embeddedness in a physical context. Cantrill (1998) indicates that sense of place constitutes a major role in influencing individual capacity and involvement in environmental advocacy for sustainable resource policies. Similarly, a study by Lerner (2005) examined how attachment to a place empowered a community for a positive change against a local contamination issue. The study concluded with how sense of place defines people and the environment through the process of the creation of “change maker”, that is, a person who is empowered to make positive changes in regard to local land use issues through active participation. Kruger & Shannon (2000) assert that citizens who developed awareness of their local context seem to “grasp the opportunity to create knowledge, benefits, and new opportunities for social action” (p.475). Drawing on a review of the literature in environmental psychology and behavior, it has been demonstrated that volunteer motivation for engaging in stewardship programs depends on whether they can view
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it as a process of social learning, care-taking of the environment, as well as developing a sense of belonging to that place, or not (Bramston, Pretty, & Zammit, 2010). These studies demonstrate that an ability to practice attitudes which heightens the idea that the protection of ecosystems are highlighted by an awareness of place-based knowledge.

As the people-place connection is inextricably embedded in the ecosystem context, previous studies suggest emotional bonding with the place can mediate the way people respond and react to ecosystem change through several mechanisms. For example, people who exhibit a strong sense of place demonstrate more commitment to problem solving and are more likely to react to environmental issues. This is a predictor of a resilient characteristic of dynamic landscape change (Burley, Jenkins, Laska, & Davis, 2007; Kaltenborn & Bjerke, 2002; Lai & Kreuter, 2012). These studies have suggested that the role of communities within themselves can make clear how the policy should be oriented towards their needs. Pertinent to that, resident acceptance of proposed landscape changes are inclined to legitimize and enhance their meaning of place in the planning process (Stewart, Liebert, & Larkin, 2004). According to Stedman (2002), this finding, as an example, illustrates where place-based values are incorporated into the decision-making process, thereby mobilizing a protective behavior that seeks to maintain and enhance values attributed to place. Similarly, Vaske & Kobrin (2001) found that local attachment to natural resources could be a valuable mechanism to predict whether an individual acts in an environmentally responsible manner (or not). These studies, when applied within various fields related to environmental policy-making, have demonstrated that the people-place connection and community attachment have played a significant role in guiding specific social actor behavioral responses, either positively or negatively, in relation to environmental decision-making.

Navigating the range of literature along these threads, however, a deeper understanding is required to further expand upon the way in which the behavioral aspects of sense of place deliver feedback into the ecological system. Recent studies on how humans conceive their place values and subsequent actions that shape their ideas regarding the use of future resources have gained momentum. Studies in, for example Alessa et al. (2008); Brown et al. (2004); Donovan et al. (2009) have explored the convergence between social and ecological system and how this implicates planning and conservation which considers the community’s values in relation to the place. These findings suggest that socially and ecologically assigned values may overlap which can assist planning processes in regard to ensuring sufficient support from the communities with respect to meeting their socio-economic goals.
Even so, in terms of the reality of the realm of planning and conservation, the inclusion of values or sense of place per se has been sporadically considered, due to the ambiguity of multiple perspectives (Kaltenborn, 1998) and the complexity of inherent values or sense of place that is not necessarily spatially explicit (Bott et al., 2003). Where specific place values for a specific group are favored over others in land use decisions, this can disrupt the other group’s values. Research has shown that the disruption and erosion of the values and meanings of place represents a significant threat to one’s associated socio-psychological functions (Brown & Perkins, 1992; Burke, 1991; Erikson, 1994) including at the extreme of social displacement or forced migration (Fried, 2000; Milligan, 2003). In terms of the result of place values disruptions, affected individuals or groups loss of capacity to take action and become disempowered is mainly due to the failure to recognize and negotiate various group’s views, values, and expectations in the land use planning process. Inalhan & Finch (2004) characterized this attitudes process as including an initial shock and denial, followed by psychological stress and other mental issues, and finally by acceptance. This directly affects the resilience of the so-called social-ecological system, as the important motivator for place-protective behavior stems from people attempting to prevent the loss of assigned place meanings (Twigger-Ross & Uzzell, 1996).

Hence, from both a theoretical and practical perspective, the sense of place concept can be used to clarify possible mismatches of views and attitudes about place. This could frame the uncertainties regarding land use decisions, as sense of place can serve as a feedback and response mechanism. Values and attitudes can be the function of interacting social ecological systems, and this can be clarified through land use planning. Sense of place when applied, could improve the functioning of SESs and lead to better future change.

2.4.3. Landscape Change and Social Driver

Based on a review of the literature mentioned above, land use planning, resource and biodiversity conservation can be observed as activities that manage biophysical components, and also manage the creation or destruction of human territorial regions, which are composed of complex values, interactions and meanings. Congruent with the development of system and complexity theory, more models are being developed to assess the human impact on landscape change (see for example in Hersperger, Gennaio, Verburg, & Bürgi, 2010). These include environmental aspects (Wu, Shen, Liu, & Ding, 2008), economic (Irwin & Geoghegan, 2001), political and institutional influences (Clement et al., 2006), in addition to attitudinal
considerations (Karali, Rounsevell, & Doherty, 2011). While most of these factors largely involve definitive and measurable indicators, the less perceptible gauge of human well-being or satisfaction, the attachment to place, has received little attention. This type of value system is seen as less defensible as it is regarded as far more difficult to measure, with an “unseen” physical impact in managing sustainable land use practices. In other words, “it is easier to oppose land uses when there is hard evidence that these practices will have tangible, measurable, objective and widespread impacts” (Stedman, 2005, p.121).

The relationship between sense of place and stewardship has so far demonstrated protective behaviors and visions to maintain the setting. However, it is possible while different conception of place are held by different groups, this can generate conflicting views and attitudes that can influence a different path of sustainable landscape change. Although people resemble a positive and high level of sense of place, this does not necessarily transform into collective attitudes and visions about the place, which depends on the underlying structure of their place values. This peculiarity perhaps is the most challenging aspect of planning problems, when the representations of place among groups are not clearly articulated in land use decisions. Stedman (2005) asserts that place attachment can be a catalyst in terms of determining the choice and activities in land use outcomes. In his study, these differences were observed whereby the impact of shoreline development on sense of place between two groups of property owners was assessed. The end result revealed that the degree of lakeshore development significantly influenced the residents’ considerations about their lake. While the property owners on lightly developed lake shores associated their sense of place with that of a pristine, natural-based setting that is peaceful, this view for the residents on highly developed lake shores was held to a far lesser extent. The residents of highly developed lake shores were more likely to consider their place as residential-suburbia, packed with related urban services and recreational opportunities with the consequential pollution problems. In a similar manner, a study of whitewater recreationists in California found that individuals who believed their personal identity was shaped by their natural resources held different views and attitudes regarding how the place should be managed compared to individuals who valued the resource more so as a functional setting (Bricker, 1998).

The discrepancies between the different individuals’ values of place demonstrate that human cognition has a pivotal and measurable impact on future land use pattern and consequent impact on associated resources. Negotiating the meaning of place by various social actors inevitably implies a different direction for future actions. Although some studies indicate that while an
attachment to a place substantially expresses a strong support to maintain the setting, an understanding of the way in which the place is or can be perceived by various different actors may imply a different course of action that further determines the future of the spatial pattern. Hence, the repositioning of our sense of place through bio-regional thinking is imperative, emphasizing its importance to nurture and empower human culture towards a positive landscape change.

2.5. Summary

This chapter has reviewed the development of the core concept of sense of place within the realm of bioregionalism, in particular with attention to planning involving the place-based idea. It also examines socio-cultural values and the intersection of social-ecological resilience. Sense of place literature can be oriented into distinct models and methodological traditions that encompass the shared attributes of the physical, social and psychological framework. The review then explored environmental values theory and its application in the context of environmental and land use planning. Finally, social-ecological resilience theory provides an integrative lens for planning, to amend, improve and adjust land use and conservation activities which recognize and take into account the power of people-place relationship that shape future ecosystem services in the face of uncertainties.

The review has so far demonstrated sense of place as a process of interacting SESs in a framework to understand the uncertainty regarding planning (Figure 2-3) by acknowledging that human’s values and meanings are important to make conservation or development goals viable. It captures the idea that ecosystem functioning evolves as a result of human understanding of the place across social structure and institutions; specifically, it is manifested in an amalgamation of social attitudes and behaviors in influencing land use outcomes. This process can be conceptualized into three interrelated domains: transformation of place, generation of planning outcomes and implications on resilience and sustainability.
A geographical space comprised of functioning ecosystems benefit people in the form of various environmental values. A geographical space becomes “place” when these values were transformed into perceived valuable meanings that make humans aware and oriented in their surroundings. This awareness develops from one’s lived experience based on intricate relationships of physical, social and processes dimension. While place theories exhibit commonalities in terms of the shared influence of these dimensions in their theoretical underpinnings, it is not clear in planning. This is especially how it manifest at the group level of various actors. In the simplest terms, which place theories constitute the actor groups and what is the role of these dimensions in terms of the development of each actor group’s sense of place development. In order to understand the applicability of values in planning, an assessment of each actor group’s place model could help to clarify the intersection and contestation of place that could generate a wide range of planning outcomes.

Findings from this literature review demonstrate that people strongly attached to a place are more likely to show stewardship attitudes and behaviors to protect the place. While these
characteristics are relevant to a specific context or situation, for example, in encountering environmental issues, the incorporation of sense of place in planning where contradictory conceptions between actors may exist could generates a various possible outcomes. This means it does not necessarily transform the high level of place connection into collective attitudes, behaviors and visions by and of itself. A divergence could exist due to the underlying differences in place idea, as well as underlined by a specific motivations, goals or worldviews that rationalize such views and expectations. Land use outcomes based on the actor’s behaviors and visions determine the resilience and sustainability of ecological (and social) systems as the feedback trajectories shape future landscape pattern, process and functions. This process relates to the question of resilience of what and for whom, which is determined through a negotiated, dominated or ignored sense of place in planning process. This framework is used to understand the dynamic cycle of interactions, which can illuminate a new perspective with respect to planning theory and practice relating to the intersection of various values, attitudes and visions and managing possible outcomes. In the context of this thesis, the interactions and relationships are operationalized through data collection methods explained in the next chapter.
Chapter 3. Methodology

3.1. Introduction

This chapter presents and describes the methodology applied to achieve this research goal and objective as outlined in Chapter One. The first section provides the rationale for the selection of the case study and the definition of the case study boundary. Subsequent sections outline the overall research design framework including the research design adopted, methods and instrumentation. The chapter concludes by outlining the implementation of the proposed research program and the validation processes for data gathered. This aim is to ensure that a range of different world-views of various participants and documents are addressed through research utilizing a mixed methodology.

3.2. Justification for the Identification of Boundaries

Bioregion localities defined by a geographically based community, are characterized by biocultural manifestations, regardless of man-made boundaries. This suggests that traditional rational planning, which has adopted cities, townships, villages or rural areas as units of analysis for policy formulation, has failed to see that perceived boundaries and concerns amongst communities extend significantly beyond these positions. Hence, in order to operationalize the case study area in this research, the local community was employed to scope out their interpretation of place that may include the broader region. This was clarified through procedures in Section 3.5.1. It is further anticipated that this strategy offers some insight into the articulation of community identity in the broader context of the region, which furthermore fosters their process of understanding with regards to the environment. The underlying strategies were in keeping with the awareness and understanding that environmental values should be multi-scalar, adaptive to socio-political constraint and sensitive to place-based values (Norton & Steinemann, 2001). As explained in Section 3.5.1 this was achieved by incorporating various criteria in the sampling strategy.

Ideally, the boundaries of bioregions are defined by the characteristics of natural systems for conservation (Omernik & Bailey, 1997) and articulated by people living in that place (Brunckhorst, 1995; 2002). This means using multiple criteria to define the boundaries which Aberley (1993) described as a “layering” process of physical, human, economic and political features. Although there is prolonged debate in the literature over the specific criteria to
determine the bioregional boundaries (Birkeland, 2002), watersheds are important ecological spatial units used in ecosystem-based land use planning to, in the main, define a bioregion. Located in the southern part of Peninsular Malaysia in the state of Johore, Iskandar Malaysia (IR) is a regional development that illustrates a combination of geographically unique areas that were shaped by past resources use during the old era of Johore Sultanate and the colonial influences (Figure 3-1). This region is continuously being shaped by the present modern government due to its strategic location at the Straits of Malacca, connecting the enterprise of Malaysia, Indonesia and Singapore. This multiple use landscape matches the description of that which Brunckhorst (2005) claims to be an interacting social-ecological system incarnating a multitudinal expression of social and economic connectedness.

Figure 3-1: Key and location plan of Iskandar Malaysia (IM) (KN, 2006).

In the absence of pre-defined bioregions and sub-bioregions in the Malaysian ecological planning context, therefore, the proposed case study area has been selected as a surrogate of an area of a sub-bioregion that represents the manifestation of the physical, social and governance
systems. The regional economic growth corridor established during the 9th Malaysian Plan\(^4\) aiming to create a widespread equitable economic growth between the developed and less-developed areas (Government of Malaysia, 2008). The economic development corridor was intended to accelerate economic growth beyond existing concentrated capital cities into more widespread and balanced development that includes rural areas. Territorially, this implied the trans-boundary integration of spatial frameworks that include social, ecological and administrative features. The current shift in incorporating sustainable development through a predefined regional development corridor, presents a catalyst for a cross-sectoral approach of natural resource, land use and social planning (Bender, 2001) at the level where ecosystem governance operates (Brunckhorst, 2005). Therefore, it is possible to argue that the economic development region provides opportunities for a more integrated planning approach that matches social and ecological functions which cannot be addressed at a local or municipal level. To set limits on the research and ensure the case study matches with the broad dimensions of bioregional thinking, four specific limitations and characteristics are defined to justify the case study area selection:

- **Limitation of Traditional Planning Boundaries**

  In the realm of globalization and urban-rural migration, the traditional planning boundaries based on administrative and political jurisdictions have created disconnections between regional ecosystems limiting their potential for human sustenance. However, bioregional thinking recognizes that human cultures are intertwined and co-evolved with ecosystems operationalized within the natural system’s carrying capacity. This does not always align with socio-political boundaries. This reflects a pattern of increasing concern by the community over socio-ecological qualities not limited to and contained within the specific “imposed” man-made boundaries (Thayer, 2003). The selected case study area transects 5 local administrative boundaries (Figure 3-2) which is more likely to capture a community’s meaningful place “context” in which planning operates. This could illustrate a wide range of place interpretations where social and biophysical features may transcend social and political-defined boundaries.

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\(^4\) A 5-year national development blueprint prepared by the Economic Planning Unit (EPU) of the Prime Minister’s Department and Ministry of Finance Malaysia to manage economic resources for that term.
Spatial Framework of Ecological Planning

The ecological premise of bioregion is it offers an extended spatial unit which captures the broad system of ecological processes (Brunckhorst, 2002). The extended unit operates at the level where it connects with landscape and local scale ecosystem in nested hierarchical scales. This spatial framework is based on landscape ecology theory (Forman, 1995) and the linkages are built by the landscape connectivity principle in meta-population (Levins, 1969) and island biogeography theory (MacArthur & Wilson, 1967). A bioregion is comprised of several sub-bioregions that are distinctive in terms of biophysical features and are linked up into a spatial framework to create a coherent and heterogeneous landscape. The selected area represents groupings of five catchment areas (Figure 3-3), which are important features of sub-bioregions in nested hierarchies of ecological systems. The Environmental Sensitive Area (ESA) is the main instrument through which the conservation of important areas of biodiversity and life support systems is incorporated in the development plan. It has been defined in the National Physical Plan as “areas that are of critical importance in terms of the goods, services and life-support systems they provide such as water purification, pest control and erosion regulation… harbor the wealth of the nation’s biodiversity” (FDTCP, 2010, p.95). ESA is the main planning tool to define sensitive areas that then need to be taken into account under the Town and Country
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Planning Act (TCPA) 1976 (Act 172 amended in 2001-Act A1129). It is comprised of a composite map of overlaid centrally important environmental protection such as biodiversity, life support and hazards. Areas that fall under this classification are provisioned under the TCPA to be limited to certain activities and land uses depending on its sensitivity ranking. In land use plans, ESA was used as the main spatial framework that has been strategized to guide development growth that is responsive to the conservation of these critical resources. Water catchment areas are one of the ecological features that were used to determine the ESA, along with existing Protected Areas (PAs). This criterion provided the basis for choosing the case study area which facilitates the land use planning integrated with the protection of PAs and regional open spaces plan through the ESA instrument. The spatial organization of landscape at catchment level enhances ecosystem connectivity that allows for capturing the broad range ecological processes.

Figure 3-3: Main river catchment areas within the region (KN, 2006).
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- Community Types

Research elsewhere has shown that the difference among community residents of urban, sub-urban or rural influences the strength and scale of place attachment. However, the findings have been inconclusive (e.g. Soini, Vaarala, & Pouta, 2012). The literature on rural development offers a contradictory perspective that these different settings play a role in determining how the residents perceive the place (e.g. Wirth, 1938). Therefore it is important to incorporate the combination of residents from urban and rural areas embedded within the sub-bioregion selected. The case study area covers from urban centres to peri-urban residential townships to rural landscapes (Figure 3-4). The rural area is mainly made up of traditional Malay villages, FELDA5 settlement schemes and aboriginal villages.

Figure 3-4: Distribution of community types across urban-rural area (KN, 2006).

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5 Federal Land Development Authority (FELDA) was established in 1956 to facilitate and implement development, management and economic, social, agricultural, settlement, industrial and commercial services in rural areas.
Cultural & Ethnicity Types

It also has been shown that communities of different ethnicity and cultural group may also share the same sense of place and perception within a place (Palang et al., 2011), although the significance and associate meaning of place may be different (Hay, 1998). Accordingly the sub-bioregion selected represents a mosaic of meaning based on cultural and ethnic diversity (Figure 3-5). This may offer an interesting insight of how these community variants visualize and develop sense of place across the bioregion landscape character. The mean population income level from the Census 2014 is approximately NZD 1834 per person in the study area, compared to the state of Johor at NZD 2192 and country at NZD 2354 per month.

![Figure 3-5: Composition of inhabitants (KN, 2006).](image)

3.3. Methodology and Research Design

3.3.1. Justification of Using Mixed-Methodology

Guba (1981, p.76) suggests that in selecting appropriate research methodology, “it is proper to select that paradigm whose assumptions are best met by the phenomenon being investigated”. Synthesizing from the literature reviewed under the bioregional planning approach, the main aim of this study is concerned with how people shape ecosystems that are determined by certain relationships that specified their behaviors in planning process. These relationships are related to the concept of sense of place, community empowerment and stewardship. The assumption highlighted that these interactions are to be uncertain and complex, due to the intersection of specific values, meanings, attitudes and visions in deriving planning outcomes. The research methodology adopted for this context of research, therefore, should capture the subjectivity of
these interactions from one’s lived experience, even though these interactions can be systematically organized and assessed. Correspondingly, a mixed-methodology approach is proposed for this study that combines the qualitative, and the interpretative with the quantitative approach, which can reflect the values of the collaborative and interactive bioregional planning approach. Through a mixed-methodology exploration of this phenomenon, the cognitive and conative component of the topic is recognized, in order to process the way in which the event is developed rather than the outcomes.

Many authors (e.g. Relph, 1976; Seamon, 2000; Tuan, 1977) argue that human cognitive models of understanding, in relation to an ecosystem, are diverse and are contained within the subjective realm of their lived experience. As such, sense of place as a concept is conceptually rich but somehow remains elusive, vague and variously understood amongst both individuals and context. Therefore, it is contended that the employment of an interpretive approach captures the subjective meaning of place from the participants’ perspective. The fact that a positivistic approach has been applied in order to understand sense of place and explain social behavior has also been criticized for not generating or contributing to an explicit understanding of the significance or experiences of living in a place (Hay, 1998). However, the phenomenological research design adopted in this study is well placed within this situational context, whereby the exploration of underlying factors in regards to sense of place, encourages a response to conservation planning initiatives without the creation of pre-assumptions or theory-testing.

Given the nature of the research questions in this study, which emphasize how the social process is developed rather than asking why, it is possible to argue that the inductive approach seems to be a more appropriate method of investigation in the exploratory phase. The following points provide a justification for the use of the inductive method followed by a quantitative method, which conforms to the reasoning of Creswell (1998) for conduction of mixed-methodology research.

Firstly, the chosen approaches present a pragmatic way of understanding the reality of people and behavior that are subjective and unpredictable through an induction and deduction process (Creswell, 1998). Secondly, while each method individually can address the nature of research questions forwarded, an amalgamation of these methods will supplement and yield a more comprehensive representation, in a structured and systematic manner (Creswell, 2008). Thirdly, by initiating the inductive process as a first phase of inquiry, it will avoid any
substantial measurement oversights of factors that contribute to the phenomenon. Finally, by linking data from the qualitative approach with the quantitative measurement, a mechanism provides for the achievement of an inter-methodology triangulation thus validating the results. Morse (1991) defines methodological triangulation as employment of a multiple measurement method, addressing similar research problems, whereby findings from either method will strengthen and complement each other. Merging data from a qualitative and quantitative inquiry can exist in several ways. Creswell (1998) suggests three particular methods by which the dataset could be mixed: through merging or convergence, through connection by way of building one from one another; and by embedding one on top of another so as to provide a supplementary role. For this research, findings revealed from the phenomenological approach were used to inform and develop the survey instrument.

The multiple measures of inquiry adopted in this study provide a better understanding of a perceived reality compared to using a single measurement that may be fallible to error and researcher bias. This research strategy presents a methodological triangulation of findings from the interpretive stage and a quantitative measurement that enhances the trustworthiness of results and thus enables a better understanding of the investigation. Literature concerning research methodology (Creswell, 1998; Seamon, 2000) suggests that a sequential exploratory research design is appropriate in order to understand the research on subject matter such as sense of place and human behavior.

3.3.2. Research Design

The data collection and analysis process follows a sequential exploratory research design strategy without committing to a single model in order to understand the phenomenon (Figure 3-6). This study uses a combination of qualitative and quantitative techniques encompassing both data and methodological triangulation enabling a convergence of results. Central to the notion of a person’s construct of awareness, developed from their locality, the rendering of meaning and experience involves not only human and emotional aspects, but also the contextual physical setting in which all of these components congregate. Therefore, a single case study was adopted utilizing multiple methods consisting of two main phases: phenomenology, and was followed up with a survey.

Firstly, an inductive process of in-depth, semi-structured interviews with selected participants explores the factors that potentially contribute to developing sense of place. These interviews further explore behavior-related implications for a developed sense of place in relation to a
participant’s characterization within stewardship quality through an attitudinal response to conservation and development strategies. Secondly, a survey was developed aligning the factors identified from the interviews findings and was “cross-checked” with established measurement variables as in the literature. This methodology examined the combined factors or variables that contributed to the development of sense of place in a more systematic and structured manner. Finally, this component of the research addressed the earlier question relating to how a social actor’s perception and ensuing attitudes feedback in the ecological system by linking these characteristics with a vision for future place. The contribution of this design fits into establishing the process, as well as deriving the relationships between the research topics. That is, the study establishes a method, in addition to describing the outcome, in terms of investigating how sense of place shapes ecosystems.

Figure 3-6: The sequential exploratory mixed-methodology research design adopted in this study.
3.3.3. Phase 1: Phenomenology Methodology

The first phase of this research design is framed as a phenomenological study, and as one approach in qualitative-interpretive research design. This methodology emphasizes the existential dimension of a participant’s experience, thus gaining insights into people’s motivations and attitudes toward the object of study. The general concept of phenomenology, first coined by Kant (1934), separates entities into “phenomena” and “noumena”. Kant describes phenomena as generated from perception and experience while noumena stands purely as an intellectual concept without a concrete presence. This approach draws upon the philosophical underpinnings of the idea that conscious human experience is the main source of knowledge (Husserl, 1970). The goal of phenomenology is to study the essence of human perception; the essence of which is defined by the consciousness of social experience (Merleau-Ponty, 2002).

The subjective meanings underlying the experience can be revealed using the existential approach, which aims “to determine what the experience means for the persons who have had the experience and are able to provide a comprehensive description of it” (Moustakas, 1994, p.13). Findings from the individual, situated within deep structures of emotion, affection and cognition, in relation to the investigated phenomenon are interpreted and analyzed for their unifying features and themes.

Therefore this study refers to a process that describes rather than explains a certain phenomenon from the perspective of participants and researcher, based on their lived experience. The primary focus of this research design is the emphasis placed on experience underpinned by questions such as; what is it like to be in certain places? What senses are in action and what kind of emotive feelings are engaged? The intention is to interpret and reflect the meaning of a participant’s experience and the researcher’s position and role in phenomenology, which is in essence embedded in philosophy. Munhall (2007) describes the importance of “being phenomenological” and immersing oneself in the philosophy of phenomenology and before even beginning to ask research questions: “We must know how to ‘be’ phenomenological in our own being” (p.147).

The existential-phenomenological inquiry involves four main sets of procedures, which can be grouped into two phases (Giorgi & Giorgi, 2003; David Seamon, 2000). The first phase requires the researcher to capture a participant’s subjective experience and perspectives in respect of the object of study and then transcribe the meaning into identifiable recurring
structures and themes. The second phase involves analysis of the transcribed qualitative data to accentuate data regularities and patterns. Generating a theory based on identification and reconciliation of “deep structures”, the way in which participants viewed the specific phenomenon, succeeds this.

Although the sequential steps are common to a positivist approach employing a “reductionist” method of inquiry, the non-linear inductive nature of the qualitative approach still dominates the overall process compared to “deductive” inference. As a result, it is more important for the researcher to determine the appropriate set of procedures and tools to be adopted depending on the nature of phenomenon (Seamon, 2000). Therefore, the specific methodological steps and techniques are described and discussed sequentially in the following Sections 3.4.1 and 3.6.1

3.3.4. Phase 2: Survey Methodology

By way of applying the findings identified in the initial inductive process, the second phase of data collection utilizes a survey methodology to effect the triangulation. According to Groves et al. (2004), a survey methodology aims to “identify principles about the design, collection, processing and analysis of surveys that are linked to the cost and quality of survey estimates” (p.30). The approach involves a systematic and standardized way of collecting data about people, their preferences and behavior. In contrast to a qualitative-interpretive methodology, this approach is rooted in a positivist paradigm, which “assumes the reality can be reduced to measurable phenomena and that when analyzed, the results should accurately represent an objective truth” (Wells, 2009, p.114). The impartiality of validation is concerned with the application of quantitative measurement of the cause and effect relationships, theories and hypotheses and repeatability (Singleton & Straits, 2005).

This study uses a survey methodology as an approach to the exploratory research design, which is predominantly applied in quantitative social science studies, inserting human dimensions into ecosystem management and planning research areas. The adoption of the survey method is in line with the increasing need to represent human characteristics (sense of place and behaviors) and decision-making processes in model of SES resilience (Dearing, Braimoh, Reenberg, Turner, & van der Leeuw, 2010). The conceptual framework proposed for this study encapsulated under the bioregional planning approach is grounded on the SES framework, in which it seeks to characterize people and their dynamic interactions with the environment (Dawson, Rounsevell, Kluvánková-Oravská, Chobotová, & Stirling, 2010). These interactions are operationalized in the survey methodology, which allows for the relationships between
variables to be modeled and systematically assessed. This method therefore is fundamental to link the human dimension and empirically grounds their influence in SES, by setting parameters of conditions, and by identifying plausible behaviors that can predict alternatives outcomes. As a quantitative measurement, emphasizing the internal and external validity, the survey methodology is chosen because it is an excellent technique “for gathering information from [a sample of] entities for the purposes of constructing quantitative descriptors of the attributes of the larger population of which the entities are members” (Groves et al., 2004b).

3.4. Methods and Instruments

3.4.1. Interviews

Data collection techniques in relation to interpretive research, frequently employs interview or/and observation. Specifically for the purpose of this study, the descriptive account of place meaning and participant’s attitudes and visions about their place has been obtained through in-depth interviews with the key informants (Moustakas, 1994b). The guiding interview script was created from a literature review where questions were related to the three central themes, which this study is investigating: the structure of meaning and value in development of each group’s sense of place; characterization of their stewardship attitudes and behaviors regarding change; and vision for place. Each theme was followed by a set of probing questions that were specifically directed to address the sub-concepts. The wording and nuances of the questions were mainly adopted from previous extensive studies of place-related topics (e.g. Galliano & Loeffler, 1999; Hidalgo & Hernandez, 2001; among others).

The semi-structured interviews were guided by a set of open-ended questions (Appendix A), which are deliberately designed to direct and probe the conversations (Charmaz, 1991). The strategy of asking these particular types of questions and subsequent probing allow a greater flexibility for the participants to freely express their views on the topic interrogated (Dunn, 2000). More importantly, conducting the interviews within the study constraints enabled the conversation to be bounded within the research framework. The benefit of an interview-guided format, highlighted by Patton (1990), ensures that the interviewer “… has carefully decided how best to use the limited time available in an interview situation…. [It] helps make interviewing across a number of different people more systematic and comprehensive by delimiting in advance the issues to be explored” (p. 283). The questions conceptualized in this
study were used to stimulate the conversation with prompts (to probe) that encourage the participant to express their own expertise, reflecting important understandings, concerning creation of place.

The role of the researcher in phenomenological studies is conceptualized as the researcher is part of the process of producing, identifying and capturing the data (Moustakas, 1994b). This is realized by integrating the subjective experience of participants and subsequently is reflected by the researcher’s own experience in order to find the objective truth in the background behind the subjective data. The placement of the researcher in and as part of the interrogation continuum, facilitating a shared-responsibility with the participants, can eliminate personal bias or preconceptions. Therefore, the employment of the semi-structured interview was conceived as a means to guide the conversation, in order to allow each participant to reflect on his/her own personal internal experience in terms of what they felt to be important in regard to the research topics.

In addition, a secondary data source in the form of government and non-government records, which include an historical account of human activity within the region, conservation plans, historical publications on land use, and community-engaged actions regarding concerns about development changes were collected to support the interview data collection method. Content analysis, based on these sources, focused on whether the documents present a consistent meaning and relevance in relation to the primary data gathered. Comparing the secondary data sources with the qualitative interview data matched the “triangulation sources” (Patton, 1990), which further increased the validity of findings by providing different perspectives of the central issues under investigation.

3.4.2. Surveys

A standardized survey instrument was adopted from established literature on sense of place that includes general theoretical constructs and measurement of place dimensions as well as attitudes and behaviors characteristics to changes. Since the design of the survey instrument was justified to be exploratory rather than explanatory, the survey items were adopted from previously tested and validated instruments (e.g. Brehm, Eisenhauer, & Krannich, 2006; Shamai & Ilatov, 2005; Williams & Roggenbuck, 1989; Williams & Vaske, 2003) and were specifically adapted to address the research questions for this study. These items then were compared with the pattern of variables that emerged in the qualitative phase and were retained if they corresponded to the underlying factor identified. Therefore, the result of this integration
addresses the factors that intersect, as well as the emergent variables that ensure accuracy in terms of measuring the important and underlying factors.

The conceptual framework based on the earlier literature review in this thesis, helped illuminate various key themes that were important to the composition of the survey questions. These themes include sense of place constructs, stewardship attitudes and behaviors regarding place change, and place visions. The measurement of these specific themes is represented by several indicator questions (See Appendix B for the list of key themes/attributes and its corresponding survey questions). As a result, 41 items constitute the survey instrument that measures the variables identified earlier in the conceptual framework and qualitative findings.

The cross-sectional survey questionnaire consists of four parts. The first part of the survey is comprised of a set of questions developed from place-related constructs in order to elicit the respondent’s level of attachment to the place. For the second part, it measures stewardship attitudes regarding place change. The third part consists of various behaviors and descriptions of place visions to measure a variety of possible alternative trajectories of land use change. Basic demographic questions constitute the fourth part. The survey items were constructed wherever possible in a closed-ended format, thus facilitating a straightforward transfer of collected data to the analysis stage. Types of data include a five-point Likert scale, representing an ordinal data and/or enumerated list, from which the respondent selected that which they considered suitable for their answer.

3.4.3. Pilot Study

Pilot studies were conducted for both the interview and the survey in the community selected for the case study prior to the administration of the survey. The goal was to pretest the relevancy of the developed instruments in terms of anticipating possible errors – vague questions that might be skewed from the original intention. The intention of a pilot study is highlighted by (Babbie, 2010) as the “surest protection against such errors [vague or unanswerable questions] …in full or in part” (p.267). Although a pre-testing sample might not be representative of the target population, he stressed that this strategy is somewhat helpful in providing a more accurate picture of emerging issues with the instrument- from the perspective of sample relevancy to the issue of interest (ibid.).

The standardized interview schedule was pre-tested in July 2013 with a planner from the district council and two luminaries who were actively involved in local issues and community
advocacy. The aim was to test whether the question terminology was understandable from the local perspective and to determine whether the flow and length was appropriate for the two hour time limit. The interview procedure followed the actual recruitment protocol and was conducted at the district office and community center library. All of the participants were supportive and comfortable with the structure and format of the questions. The process allowed opportunities for clarification and reorganization of some of the terms that were revised accordingly in the actual interview schedule.

Subsequently, in May 2014 a pilot test was conducted for the survey. Ten of the respondents from the “actual population” participated. They were selected at random from the sample frame. This process allowed the respondents to evaluate the structure and order of the items, the type and choice of answers and potentially vague contents. Modifications were made accordingly based on their suggestions and prepared for the final survey instrument which was later submitted for approval to the University of Auckland’s Human Participants Ethics Committee (UAHPEC).

3.5. Research Procedure

3.5.1. Sample of Community

As highlighted in Section 3.2, the complexity of one’s perceived geographical boundaries of place, which consciously or subconsciously transcend political boundaries, determined which communities were to be targeted for this research and the boundaries were therefore divided into two pathway alternatives. The first option was to choose one area with several communities that inherently shared socio-demographic characteristics and environmental-based concerns for landscape change. If selected, this path presented an extensive coverage of one area although the applicability of the place-based values would not be transferable to the region as a whole. The practicality of this selection is questionable, as it would require the same research strategy to be repeated in each of the other areas. Alternatively, by way of a second path, one community in each of the different sub-bioregions, defined by the interaction of biocultural components, would be designated. Shannon (1998) postulated that human communities’ actions and choice are contingent to their interaction with local biophysical landscapes through creation of a place. The pattern of landscape similarity manifest by the unique combinations of present and past biophysical components concurrent with land uses,
cultural and social interaction result in a bioregion (Brunckhorst, 2002; Hardin, 2009; Slocombe, 1993). Pursuing this line in principle, arguably presents more opportunity for perceiving future studies underpinned by the initial study of different areas. As such, the second pathway was chosen in which one sub-bioregion was chosen for the purpose of conducting an intensive study, in order to test the methodology as well as to generate an outcome. The applicability of the method and findings can provide a long-term opportunity in assessing a collaboration of interdisciplinary research that focuses on the issue of planning, conservation and community-based development to the other areas of the region.

Challenges to the identification of community place meaning in planning, evidenced within the complexity of a communities’ fabric in a geographical context, encounters its own environmental issues. In order to operationalize the path chosen and to instigate a selection of potential case study communities, a previous study that employed several criteria that described the uniqueness of each community, was used (IRDA, 2011). Initially, published material concerning the regional landscape character assessment was utilized (Figure 3-7). This formed an analytical foundation guiding the community selection owing to the absence of extensive studies regarding the regional landscape.

Figure 3-7: The regional landscape characters which are the sum of interaction between biophysical features, history, traditions and cultures (IRDA, 2011).
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The study outlined five regional landscape characters as a composite for natural, man-made and social interaction. Although this may present a reductionist approach, in relation to the exploration of community values and meaning, findings from this study presented a distinctive delineation of communities based on geographical locations originating from biophysical and socio-cultural manifestation. As this study endeavors to choose communities that can represent the broadest spectrum of population, it is important to include various criteria that influence evidence of place meaning in both social and physical context. Consequently, the landscape character assessment was overlaid with a list of criteria (Box 1). These criteria were set to include the broadest possible spectrum of characteristics in relation to bioregional theory, which is concerned with the interacting variables of people-place relationships. These include socio-economic characteristics (US EPA, 2002), governance systems (Edge & McAllister, 2009), spatial framework (Jorgensen & Stedman, 2011), land uses and activities (Cross, Keske, Lacy, Hoag, & Bastian, 2011). These characteristics are measured as shown in Figure 3-8 to Figure 3-10 and communities that fall under the composite measurement of these criteria could represent how these interacting variables manifest on the ground.

The term “communities” has been described differently in various disciplines. Scholars of sociology and community psychology differentiate between communities and community, where by the former is bound within a geographical context (community of place) and the latter in respect of specific interest (aspatial communities) (Nasar & Julian, 1995). The particular focus of this study is concerned with communities of place. As such, the selection for the communities case study aims and intends to cover the broadest spectrum of characteristics as outlined in Box 1, while at the same time operating and working within the time and financial resource constraints. Major biophysical features of the region are predominantly characterized by the remnant dry land forest (Gunung Pulai; Bukit Hantu and Sedenak Forest) and mangrove forest (Sg. Pulai Forest Reserve; Sg. Johor Forest Reserve) along the coastal areas shown in Figure 3-8. As the comprehensive development plan of the area is built upon the five flagship zones that spread out from each other, the inevitable concern in relation to urban sprawl and respective issues such as social and ecological aspects are illustrated in Figure 3-9. These issues are connected to

<table>
<thead>
<tr>
<th>Box 1: Criteria for case study communities’ selection</th>
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<tbody>
<tr>
<td>• Ethnicity composition</td>
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<tr>
<td>• Range of government’s departments administration</td>
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<td>• Community type (urban-rural)</td>
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<tr>
<td>• Dynamic land use patterns and issues</td>
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<tr>
<td>• Geographical relationship to existing protected areas</td>
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<tr>
<td>• Biophysical features</td>
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<tr>
<td>• Distribution along the regional boundaries</td>
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<tr>
<td>• Rapid conservation activities and environmental sensitivities</td>
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</tbody>
</table>
Chapter 3 – Methodology

intense development activity and the urban footprint occurring between the protected areas, thus applying more pressure on ecological processes and residents facing rapid land use changes (Figure 3-10). The distribution of communities within this area was understood to be important in relation to the way these communities relate to the place, which could be used to predict their actions either to support the protection of encroached protected areas from threat or otherwise. The community that was chosen was based on the composite measurement of these criteria that would be able to illustrate the intersection of various variables in people-place relationship. This relates to the focus of bioregional planning, as well as fits into socio-ecological systems approach in understanding the dynamic change of the community.

Figure 3-8: Biophysical features of the case study area which are dominated by the remaining protected dry land forest and remnant mangrove forest along the coastal zone (IRDA, 2011b).
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Figure 3-9: Impressionistic illustration of key flagship development zones, current land use patterns and issues established based on literature review of secondary sources & conversation with local planners.

Source: Base map: Iskandar Malaysia (KN, 2006) overlay sketch (Author).
After an extensive review based on secondary sources, primarily drawn from the comprehensive development plan and report publications of Iskandar Malaysia, Pontian was chosen as an initial scoping study. The composite assessment of characteristics suggested Pontian represents the breadth of criteria indicated by the cumulative patterns of social and...
ecological themes. The relationship between these communities and their significance in terms of social and ecological functioning within the Iskandar Region are outlined in the following section.

In order for me to engage with each of the selected communities, documentary sources were reviewed and undertaken prior to the interviews. This approach provided me with good support during the interview process by affording me initial background information concerning chronological development of the area, planning issues and visions. This in turn facilitated a shared learning process during the interviews between the researcher and participants, providing a platform for the researcher to exchange information interactively and address topics that are of particular importance from the participant’s perspective. This manner is considered to be more appreciative of and respectful to the participants who committed to the interviews.

3.5.2. Case Study Description: Urbanizing Coastal Rural Communities in Pontian, Malaysia

3.5.2.1. Context From Past to Present

Pontian, a district in the southwest of Johore state is located approximately 62 kilometers from the state capital – Johore Bahru and 300 kilometers from Kuala Lumpur, the capital of Malaysia. The district covers an area of about 920 km², with two distinct islands located near to its coastline – Pulau Kukup and Pulau Pisang (Figure 3-11). Noted for its geographical location at the southernmost part of Peninsula Malaysia, Pontian also is internationally known as the land of the southernmost tip of the Asian continent. The name “Pontian” is believed to originate from a Malay word of “Perhentian” which means to “Stop”. This reflects the strategic geographical location of the place that was historically used as a stop over for both traders and pirates who were using the Straits of Malacca. Kukup was established as the main entrepôt for merchants who travel along the Malacca Strait from Singapore, Malacca and Malay Archipelago. During this time, a rapid opening of the land can be divided into three main phases; first by the Riau Malays and the Bugis (1820’s – 1900’s), second by the land opening and exploration of Syed Muhammad Bin Alsagoff (1878 – 1926), and third by opening of the Javanese people (1900 – 1930) (Dirhan, n.d.).
During the first phase, the Riau Malays and the Bugis people with the support from the chiefs opened up forest in the vicinity of the river confluence, which represented the only mode of transportation that enabled access to those areas by boat. The land opening reached its peak when Syed Muhammad Alsagoff, of Arabian descendent from Singapore was given concessions by Sultan Abu Bakar to develop a massive 60,000 acres of agricultural land in 1879 (Tamrin & Bohari, 1980). Consequently, Javanese labourers that are well-known for their hardwork and skill in agriculture were brought into Kukup (Pontian) through the
“Syeikh/Javanese Contract”\(^6\) labour system. Later on the third phase, the news of these laborers living in prosperity in Kukup (Pontian) immediately spread out to their homeland. More Javanese especially relatives to the early settlers were attracted and were brought into Pontian and given their own ownership of the land. Often affected by the flood, the Javanese built a system of irrigation channels elongated to their land and village. Later on, they named their village with the prefix “Parit” (Channel) and devoted the name of their district of origin (in Java) or the name of the settler leader (Dirhan, n.d.). The Javanese land exploration mainly concentrated on the remote forest areas as the ones near the river had already been explored by the Bugis and Riau Malays, nevertheless, the importance of Kukup declined due to the rampant piracy activities and further with the opening of the road connecting Pontian and Tanjung (Cape) Puteri. Slowly, the main economic and daily services shifted to Pontian Kechil, which up until now has become the main town in Pontian.

### 3.5.2.2. Biophysical and Natural Resources Endowment

Pontian is located at the western coastline of Johore off the Strait of Malacca, which stretches about 100 km from a northwest to southeast direction. The coastal environment consisting mainly of mangrove swamps and mudflats with several estuaries breaks up the monotony of the coastline. Due to its location facing the Strait of Malacca, the low action wave promotes sedimentation and muddy beaches compared to the east coastline that faces the South China Sea, which has high wave action and longshore currents. Peat swamps extend in a broad coastal plain from the mangrove swamps. Further inland, the plains are undulating and broad alluviated valleys with Gunung Pulai as the highest isolated mountain peak (common administrative boundary with two other districts). The mangroves that comprise the ecosystems are found extensively at the estuaries of Sungai Pulai, which constitutes the largest system, along with other rivers – Sungai Pontian Besar, Sungai Pontian Kechil, Benut and Pulau Kukup. These areas are mostly sheltered from heavy winds and waves. This shelter, in addition to suitable soil conditions (high water-retaining capacity due to clayey characteristic and the ability to hold nutrients) creates an environment conducive environment for the growth of the mangroves.

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\(^6\) Javanese immigrants were brought to Pontian (and other parts in Malaya) as a labor by a “Sheikh” or an agent based in Singapore to open up forest into agriculture land based on certain period. After their contract labor ends, they are free to work by themselves and mostly established their own agriculture land and village (Dirhan, n.d.)
The diversity of ecosystems in Pontian endows the natural resources that are beneficial to the local communities. The combination of mangrove, peat, lowland and hill forest that can be found in Pontian constitute some of the richest ecosystems in the world in terms of biological diversity. Particularly, the Sungai Pulai mangrove forest and its associated seagrass beds represents a rich biodiversity, including 24 mangrove species, 7 amphibians, 12 reptiles, 55 birds, 26 mammals and 111 fish species (Maimon, Wan, Norhayati, & Shukor, 2008). Gunung Pulai forest on the other hand may contain as many as 4,300 individual plants holdings to 100-200 different species (ASEANI/US CRMP, 1991). The inland forest also is widely known as a water catchment area to meet domestic water supply requirements, as well as to Singapore in a joint-managed treated freshwater uptake (Poh Onn, 2003). Coastal resources also are abundant and diverse. The muddy coastlines and esturaries off the Strait of Malacca provide a suitable ground for fisheries, especially finfish, shrimp, shellfish and crabs. As testament to their socio-ecological importance, three mangrove forests have been awarded the RAMSAR status in 2003; Sungai Pulai, Pulau Kukup and Tanjung Piai (Jusoff & Taha, 2008) which ensure a long-term commitment from the government to maintain its ecological and social significance.

Figure 3-12: The river basins in Pontian and its regional system (MCRST, 1992).
3.5.2.3. The Communities

As illustrated by the history, the mass immigration of people from Riau, Sulawesi and Java during the early development of the place, formed the core of its communities. These ethnicities clumped as a Malay community in modern society. Even so, they still retain their original identity in terms of language and other customary practices. Besides the Malay, the Chinese also constitute the main ethnicity in the communities. Their mass immigration to Pontian was illustrated during the modernization of Johore’s economic development through commercialized agricultural activities administered by a “Kangchu” system (Trocki, 1979).

The outmigration of the Pontian population to nearby cities such as Johor Bahru was prevalent prior to the 1990s, due to several push-pull factors that resulted due to the national political context and agendas. The spatial distribution of the population according to ethnicity also reflected the structural segregation of economic functions. This can be observed inasmuch as the Malays associated with peasant economy living predominantly in rural and coastal areas whereas the Chinese and Indians mainly occupied the cities or towns where they were involved in the capital-intensive sector (McGee, 1972). The human population is currently approximately 142,697 (DOS, 2010). The ethnic composition is diverse as is expected from the above context as illustrated in Table 3-2. The annual population growth is 2.36 percent and the urbanization rate is 42.72 percent (JTCPD, 2011). The urban hierarchical centre is classified into three scales including semi-regional state centre, main residential centre and small residential area. The population is mainly concentrated in Pontian town, which represents the semi-regional centre followed by Pekan Nanas and Benut as the main residential centres and other small residential centres such as in Ayer Baloi and Permas Kechil. Except for the population concentrated in these centres which are under the aegis, guidance or control of the municipal administration, the majority of the population lives in rural areas or villages.

3.5.2.4. Economics and Landuse

Agriculture, forestry and fisheries represent the main economic activities for Pontian population, numbering to 32.31 percent (PDC, 2002). Although the agricultural crops that

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7 A land administration system whereby Chinese immigrants who want to open a clove or black pepper plantation in Johore will be given a land leasehold letter from the Sultan of Johor, also known as “Surat Sungai”, the holder of this leasehold is known as “Kangchu” which has five rights of monopoly in their area, namely; the selling of liquor, pork, establishing a gambling area, pawnbroking and getting commission from the export of clove or black pepper and rice imports (Thukiman, 2005).

8 Refer to McGee (1972) who discusses the context and factor of rural-urban migration of a plural society in Malaysia.
were grown evolved, due to market values and other factors, rubber was the main commodity, followed by coconut and pineapple which are grown by small holders or an estate. Many of these crops have been converted into oil palm due to market values and controls (PMO, 1991). The agricultural sector has been the focus of government policy, which takes into account the issue of poverty in the rural areas. This is translated through the implementation of integrated agricultural development projects, which aim to increase the productivity of farmers (PMO, 1981). In the context of Pontian, the West Johore Integrated Agricultural Development Project\textsuperscript{9} was implemented in two phases (The World Bank, 1996). Forestry activity mainly harvests mangroves for charcoal production and building materials logged on a 20-year rotation (ASEANI/US CRMP, 1991). Fisheries on the other hand, are divided into capture fishery which involve artisanal inshore fishermen and aquaculture including pond and cage culture for a total of 3797 tonne fish landing in 1997 (FAO, 2001). These activities in total cover an area comprising 75,629.479 ha or 82.84 percent of overall land use in 2002 (PDC, 2002).

The continuing rise of Johore’s economic prominence in the southern region represents an increasing trend of industry-based activities. This can be observed through the manufacturing sector which stands firm at 26.01 percent in 2002 comprising industries related to chemical, cottage, engineering and metal, and food and furniture covering a total land use area of 1511.389 ha or 1.65 percent (PDC, 2002). This is followed by 10.90 percent of the population employed in the construction sector, 9 percent in financial, insurance and business services and 7.20 percent employed in governmental services (PDC, 2002). The industrialization trend is projected to increase the demand of planned residential areas by 2020, which in 2002 represented 3741.3 ha or 4.08 percent and is expected to increase by 59.12 percent in 2020 (PDC, 2002). With the proximity of Johore to Singapore, tourism has emerged as an important sector in Pontian as recognized in the district’s development direction (JTCPD, 2011). Tourism development in Pontian emphasizes a cultural concept to experience village’s lifestyle which includes the exploration of agricultural, cultural or ecologically-based activities.

3.5.2.5. Current Trends on Environmental Threats and Conservation Efforts

The anthropogenic impact from the development and economic pressure has led to socio-ecological changes in Pontian. The trend in relation to the changes can be observed at a local

\textsuperscript{9} The project extends over an area of 345,000 ha in the southwestern area of Johore wherein most of the area is a flood-prone and poorly-drained area. The project, funded by the World Bank, was divided into 2 phases (1974-1984 and 1986-1996). The main objective was to control floods and improve drainage by constructing irrigational canals and other flood mitigation civil works.
and regional scale. Pontian in which a part of its area is included in IM is under pressure for land use change as a result of the urbanization process. The coastal area, which is largely driven by a resource-based economy, is affected by over-exploitation and socio-economic development especially in the mangrove ecosystems (Anonymous, 2003). IM is planned as the southern conurbation centre where it aims to strengthen the national spatial development plan through the creation of balanced economic development in the southern region (KN, 2006). Although the area in Pontian included in IM is promoted as a green spine of ecological importance, the implementation of several mega industrial projects at the estuary of Sungai Pulai (Figure 3-13 and Figure 3-14) illustrate that its vulnerability to change has given rise to the issue of sustainable development.

In regard to the large scale of the encroachment of the natural resources-based economy as a result of the implementation of these projects, this has led to the environmental destruction of the mangrove ecosystems (Ramakrishna, Murugadas, & Sim, 2001), sedimentation problems resulting from intensive sand mining-reclamation activities (Jusoff & Taha, 2008; Kuang, 2012), loss of critical biodiversity species such as seaweed, seahorse and seacow (Chong & Sasekumar, 2002) and associated riverine and marine pollution (SOS, n.d.). In addition to the natural causes, the intensive shipping activities have further accelerated the coastal erosion resulting in the loss of the mangrove and wetland ecosystems (Ahmad, 2009). Although the regional economic plan aims to balance the socio-economic dimensions of development, its benefit to the local communities in terms of economic participation and quality of life has been questioned. Studies have shown that the urbanization from IM affects the socio-economic welfare of local communities in terms of the influx of foreign workers that disestablishes and destabilizes the local values and safety (Choy, Rostam, Mohamed, Sakawi, & Nor, 2009; Rostam et al., 2011) and creates shifts in the socio-economic activity of coastal communities (Ngah, 2010).
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Figure 3-13: Two heavy industrial projects bordering mangrove and wetland ecosystems at the estuary of Sungai Pulai: Tanjung Bin Petrochemical and Maritime Industries and Port of Tanjung Pelepas. The color coded zones indicate the development components of the Tanjung Bin project including coal power plant, oil rig, shipyard, refinery and storage. (SOS, n.d.)

Figure 3-14: Other two ongoing coastal reclamation projects at the Sungai Pulai estuary (Gomez, 2014)
Malaysia is a constitutional monarchy consisting of 13 states and 3 federal territories. In response to the staggering coastal erosion problems prior to 1984, coastal management became a national concern and agenda which can be observed through the establishment of several studies and institutions, for example, the Coastal Engineering Technical Center (CETC) and the National Coastal Erosion Control Council (NCECC) to coordinate coastal management over the long-term (Cicin-Sain & Knecht, 1998). To date, several coastal management plans have been undertaken such as in South Johore (1992), Sabah, Sarawak and Penang (1996) and Port Klang (2001). Other commitments to international conventions and treaty also can be observed through the signing of Convention on Biological Diversity (CBD) in 1992 and 1994 (ratified), RAMSAR Convention on Wetlands in 1995 and Cartagena Protocol on Biosafety in 2000 and formulation of National Policy on Biological Diversity in 1998. These suggest that the government has undertaken preliminary initiatives to protect coastal areas, even though currently there is no comprehensive plan, legislation, or single statutory body administering coastal management in the Malaysian Peninsula (Che Omar, 1992; Mokhtar & Ghani Aziz, 2003). More recently, a physical plan in terms of the coastal zone at the national level (FDTCP, 2010) was prepared to strengthen the spatial framework of coastal areas to create synergies between socio-economic and ecological aspects of the resources.

Specific plans for coastal areas are mainly managed on a program or project basis and are complicated by the sectoral government agencies’ development plans in which often the scope of the plans are redundant in nature thus creating a conflict of interest. Illustrative of this, an integrated coastal resources management plan was undertaken in the south of Johore (in which Pontian is part of the region) to examine sustainable development on the rapidly changing environment (MCRST, 1992). The integrated coastal management plan underlines several impediments to sustainable development. None of the laws explicitly incorporate environmental consideration with the exception of the Environmental Quality Act (Act 1974), which calls for a federal mandate to conduct an environmental impact assessment (for development falling into certain criteria) although the state government does not necessarily enforce this in most cases (MCRST, 1992). The sectoral development plans to optimize specific activity rather than uniting the sustainable use of natural resources which results in a specific agency ignoring the conflicts arising from optimization of individual resources (MCRST, 1992). The fact that such a study is dated, as well as a more recent study that only emphasized shoreline development (see for example in IRDA, 2011), indicates that a relative lack of studies exists that addresses the integrated coastal management as a whole and in parallel with the
changing policies, demographics and environmental context. Further, the achievement of the existing coastal plans has been limited (Basiron, 2000) which is attributed to the disempowerment of local communities in capacity building, due to centralist political influence in favour of short-term economic interest (Pomeroy & Carlos, 1997; Siry, 2006).

In this context, land use planning is deemed as an important tool to regulate and control the mixed uses in coastal areas. The development planning system in Malaysia is a 3-tier hierarchy plan, which is the responsibility of both the federal and state government. The jurisdiction and legislative power of the state government in terms of “land-related matter” fundamentally signifies that planning is at a regional or sub-regional scale – or explicitly local level is wherein planning activities are intensively conducted and administered by the state government. The Town and Country Planning Act 1976 (Act 172) and its Amendment 1995 (Act A933) stipulate the land use planning activities (or locally referred as “town and country planning”) are under three main domains; planning administrative system, development plan system and development control system. The development plan at the local level (or referred as district local plan) incorporates environmental consideration in terms of the preparation of development plans and during development control, though coastal-related issues are implicitly addressed (Ahmad Termizi & Haruo, 1997). The integration of ecosystem conservation in the land use planning framework is also identified in the National Physical Plan (NPP) as one of the objectives: “to optimize utilization of land and natural resources for sustainable development and biodiversity conservation” (FDTCP, 2010b, p.27). Environmental Sensitive Areas (ESAs) is a planning tool established to define sensitive areas of various natural and social resources to be taken into account under the hierarchical development plans. The level of sensitivity of those areas will guide growth from encroaching into the areas. The Sungai Pulai basin which includes the RAMSAR sites and Gunung Pulai Forest Reserve, for example, identified in the IM and Pontian Local Plan as ESAs Rank 1 within which development is strictly not allowed, require a permit for logging and agriculture except for low-impact nature-based tourism, research and education activities (KN, 2006).

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10 The legislative lists of federal constitution in Malaysia comprise Federal List, State List and Concurrent List. For full items, see Federal Constitution of Malaysia 1957 – 9th Schedule.
3.5.3. Interview

3.5.3.1. Sampling Design

Attempts to interpret social processes through subjective views of participants, embedded within the context of where it is situated, is the epistemological foundation of a phenomenological-interpretive research approach. This is founded on the idea “that there is a certain equivalence of meaning for the respondents whose experience the researcher probes” (Seamon, 2000, p.166). This interpretation is highly subjective to a particular people and place, which requires them to express themselves through their own experience of the phenomena examined. Methodologically, this condition advances a non-random sampling of respondents that are purposively selected to reveal their own experience and thus enable them to articulate their views and attitude towards the object of study (ibid.).

In the context of this research, a non-probability purposive sampling technique was employed in identifying and selecting the targeted participants. In contrast to random sampling used in the quantitative approach, which generalizes population and research findings, this technique enabled the recruitment of a sub-set of the population that was assumed to have experienced the phenomena (Miles & Huberman, 1994 cited in Creswell, 1998). This technique has frequently been exercised in qualitative research that requires subjects to be chosen because of shared characteristics (Silverman, 2010).

In this study, identification of participants for interviewing was principally oriented around recruiting participants who could offer a more meaningful perspective and understanding of local resources, activities and effective roles in a public participatory planning process. A list of criteria (Box 2) was used a guideline to further narrow down interview participant’s selection. Following Miles & Huberman (1994) suggestion on sampling strategies for qualitative research, these criteria were selected as relevant in terms of the conceptual framework, ability to generate rich information, ability to enhance analytic generalizability and potential to generate believable explanations. These criteria were purportedly to capture the role of the physical, social and process dimension in sense of place, as well to explain specific

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<th>Box 2: Criteria for interview’s participants</th>
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<td>- Age above 30</td>
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<td>- Education level</td>
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<tr>
<td>- Gender</td>
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<tr>
<td>- Cultural background</td>
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<tr>
<td>- Dependency on natural resources</td>
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<tr>
<td>- Civic capacity of occupation</td>
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<tr>
<td>- Geographical distribution within the site</td>
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<td>- Length of residency from 5 years and above</td>
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<td>- Active role in community-based development and environmental advocacy</td>
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attitudes and visions generated in the planning process that are layered by socio-economic and political influences. This was the case during the actual recruitment process since some of the participants indicated indirectly their functions and involvement spanned beyond the initial criteria, such as business activities and politics.

The participants fulfilled these criteria described as luminaries who theoretically can reveal the contextual understanding on the local landscape resources, issues and conservation activities. The broad characteristics of participants purposively fulfilled the criteria of research’s interest which can be organized into three main social actor categories in the planning process as outlined in Table 3-1. These participants were primarily selected based their instrumental role in shaping the land use decision-making outcomes, demonstrated by their broad awareness of place, issues and the community’s vision towards the landscape. The cross section and reasons for participant selection are illustrated in Table 3-1.

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<tr>
<th>Group</th>
<th>Reasons for Selection</th>
<th>Number of Participants</th>
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<tr>
<td>A</td>
<td>Knowledgeable/ Active in Local Community Development in General (Village Development &amp; Security Committee (JKKK), Resident’s Association Representative, Historians)</td>
<td>9</td>
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<tr>
<td>B</td>
<td>Civic role and institutional arrangement of social actors involved in the planning process (local council member, planner, developer, consultants, as well as local government and district agencies, and other stakeholders)</td>
<td>14</td>
</tr>
<tr>
<td>C</td>
<td>Knowledgeable/ Local advocacy group/individuals of nature and conservation organizations (Non-Governmental Organizations, environmental activist)</td>
<td>8</td>
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Table 3-1: Breakdown of participants according to category and reason for selection.

As a result, the pool of informative participants for this study represents a heterogeneous collection of social agents that are influential in land use decisions. This sub-group was also expected to be more incumbent and responsive in discussing the environmental concerns compared with the general public (Wellstead, Stedman, & Parkins, 2003). The sample was not intended to be statistically representative of the diverse background of communities in the study area. The participants who were selected, who fitted the criterion, were informed residents who identified themselves as important stakeholders in the planning process. Although not fully
representative of the area’s full population spectrum, they do represent a cross-section of society that is interested in and connected to local issues and vision (Davenport, Leahy, Anderson, & Jakes, 2007).

3.5.3.2. Method of Selection

Accordingly, initial contact with the Johore State Town and Country Planning Department, which acts as a gatekeeper, allowed me to gain access to stakeholders involved in previous planning processes. A list of participants was compiled from previous planning processes related to the Pontian District Plan and Action Area Plan from 2000-2010. The list included those who attended and/or who made objections during the publicity stage or SERANTA\(^\text{11}\) in the draft development plan proposal. In order to ensure that the sampled respondents represented a broad community structure, especially within the Malaysian context, the snow-ball sampling technique (Patton, 2002) was used to locate further participants from the initial list. The primary informants obtained from the gatekeeper, were simply asked, “Who else should I talk to?” This is a question, which is often used in qualitative research, to locate potential informants that are able to reveal contextual information on subject matter. This strategy was employed to ensure that a robust sampling of participants encapsulated the majority of target population characteristics (Singleton & Straits, 2005).

To secure an adequate representation of participants from the case study community, the same procedure as was subsequently implemented with a second tier of identification, made by way of contacting the local authority and district office. The intention of this approach was to select individuals from the specific community of place, rather than depend solely on an arbitrary selection from the regional plan formulation. To avoid connections between the participants, a multi-mode approach of entry was established so as to contact potential participants. Each of the parties listed below were contacted and the individuals involved were asked to recommend an additional person to take the survey:

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\(^{11}\) SERANTA is a public participation process provisioned under The Town and Country Planning Act 1976 (Act 172) before and during the preparation of development plans (structure, regional or local level) in the form of a series of public exhibition, focus group discussion, forum or dialog and media communications (Kamariah & Dolbani, 2006).
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- The planner from the local authority was asked to recommend other planners, local council members, consultants, developers and other stakeholders who they thought may have satisfied the criteria in Box 2
- The district office/local authority connection was utilized so as to gain access to the head/representative of village/residential group
- District office/local authority relationship was exercised as a means to obtain access to the local advocacy group related to conservation and natural heritage

Creswell (1998) outlines that eight to twelve interviews are adequate for a phenomenological study. This figure served as arbitrary, guiding the total number of interviews conducted, until I reached the level of saturation\(^{12}\) in the data collection process.

It is possible to argue that in the context of multiculturalism in Malaysia, the identification of participants from this approach may create bias against certain minority ethnic groups that are not included. However, the issue of inclusiveness by the representation of cultural differences is unique in the Malaysian context; it is an intriguing blend of divisions and compromises, and of restrictions and freedom that interacted well to maintain unity among the varying classes and levels of social and economic backgrounds (Hashim & Mahpuz, 2011). This is indicated by an open invitation to all community sectors, regardless of their role or background, to participate in the Malaysian development process. In this way citizens, pursuing a participative goal, make Malaysia a peaceful and developed nation (ibid.). The common perception that certain races exhibit lower levels of environmental concern also has been noted as inaccurate. For example, this has been indicated by Mohai (2003) in the case of African Americans who partake equally in environmentally conscious behavior comparable to the overall population.

3.5.3.3. Implementation

Once the pool of participants was identified and details gathered they were initially contacted by telephone and email. During this elementary stage, the researcher was formally introduced to the participants, where they were briefed on the project outline and were asked whether they were interested in voluntarily participating (Appendix C). Once they had shown their interest in participating, they were given the project’s explanatory document via email or personally delivered. The research package consists of a letter of intent attached with detailed project brief

\(^{12}\) Saturation in qualitative research refers to a phase during data collection where data collected become repetitive, shed no further direction or insight thus warrant for no further sampling (Morse & Richards, 2002).
and scope (Appendix D), consent form (Appendix E) corresponding to either individual or organizational capacity and a copy of the interview schedule (Appendix A). The intention of supplying the interview schedules/guides to the participants prior to the actual meeting was to provide them with more information and a clear picture ahead of time. This strategy, for example, has been proven to be an effective way to manage time, readiness and openness in regards to the topic or issues that are to be examined (see for example, Gill, Stewart, Treasure, & Chadwick, 2008).

In all, a total of thirty one interviews were conducted mostly at participant’s workplace or home, although there were a number of interviews conducted at public places such as restaurants and community centers subject to the participant’s preference. All of the interviews were in Bahasa Malaysia, except for one, which was conducted in English as requested by the participant. The interviews were tape-recorded upon participant’s consent, the length ranged from an hour to four hours, which in total generated approximately fifty nine hours of audio recording. Handwritten notes also were taken by the researcher to encourage preliminary thinking around the themes.

The interviews were electronically transcribed verbatim using QSR NVivo 8\textsuperscript{13} developed comparatively with “grounded theory” in qualitative research (Lonkila, 1995). In order to protect the participant’s identity, randomly generated pseudonyms were uniquely assigned to each participant interviewed and subsequently used throughout this study in terms of data management as per UAHPEC requirements. Upon their request as indicated in the consent form, the completed transcripts in Bahasa Malaysia were returned to those participants who wished to modify the script appropriately. Once the participants had validated the transcripts they were translated into English by an independent translator who is registered with the Malaysian Institute of Translation and Book.

3.5.4. Survey

3.5.4.1. Sampling Design

The sample population of this study is composed of three units of analysis as in Table 3-1: [a] Local Active Community Members, [b] Members of Civic and Institutional Organizations, and [c] Environmental and Cultural Advocacy. Determining the actual population and size for each

\textsuperscript{13} NVivo is a computer assisted qualitative data analysis software (CAQDAS) developed by QSR International\textsuperscript{©}
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The unit of analysis was somewhat difficult and remains impractical in the context of this research. Therefore, a list of actors who attended the SERANTA events of local plans formed the sampling frame. Under this sample frame, the potential respondents “wore several hats”, namely; politicians, local councilors, representative from government technical departments (for example, Forestry Department, TCPD and Department of Environment), Non-Government Organizations (NGOs), housing developer, town planning consultant, academicians and local community representatives. The sample size was determined via the current Malaysian Population and Housing Census 2010 and was equally distributed among the three units of analysis. The sample size was determined based on guidelines by (Singleton, Straits, & Straits, 1993). They proposed the size should be determined by; “[1] heterogeneity of the population, [2] desired precision, [3] type of sampling design, [4] available resources, and [5] number of breakdowns planned in the data analysis” (ibid, p.167). The ideal sample size of 383 was derived considering the overall population of the case study community. It was calculated based on above criteria in conjunction with the desired confidence level and interval. Table 3-2 below outlined the desired sample size based on the current population and actual number of surveys completed.

<table>
<thead>
<tr>
<th>Population* 142,697</th>
<th>Desired Sample Size</th>
<th>Sub-sample size (rounded)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malay 92,332 (65%)</td>
<td>Chinese 42,860 (30%)</td>
<td>383</td>
</tr>
<tr>
<td>Indian 1,284 (1%)</td>
<td>Others 5732 (4%)</td>
<td></td>
</tr>
</tbody>
</table>

*Based on the Malaysian Population and Housing Census 2010.

Table 3-2: Survey sample size

The stratified systematic sampling design was applied to the study population. Random sampling was implemented within each stratum that is proportional to the sample size and population characteristics. The sampling design was chosen to ensure that the sample is representative of the subset of population demographic and criteria indicated in the literature to influence the strength of sense of place. Surrogate measures were used due to the nature of some factors that can impact the strength and scales of sense of place are extremely difficult to stratify within complex social fabric. Babbie (1990) suggested that the use of such measures is appropriate where they can indirectly surrogate the variables under investigation. The sampling intensity was stratified by two strata; urban versus rural area and socio-economic status.

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14 The desired sample size based on 95% confidence with 4% interval calculated using an online sample size tool: www.surveystem.com/sscale.htm
Chapter 3 – Methodology

The first stratum was an urban versus rural area. This factor was imposed based on the assumption that urban versus rural living environment has a profound effect on how people develop awareness of their surroundings. Literature on sense of place indicated that this geographically-bounded living situation plays a role through the daily exposure to the natural world (frequency and intensity), outdoor setting for recreational activities, social connectedness developed from such exposure or activities and among others (Eisenhauer & Kra, 2000). The stratification of urban versus rural area was operationalized based on population density. Guided by the Malaysian Statistical Department’s classification of urban/rural area, the collection of high density (or commonly regarded as “town center” or “township”) and low density sites (“rural” or “village”) are identified based on the District Local Plan. The process of narrowing down of the several urban and rural areas into the actual survey administration area was carried out in consideration of evenly distributing the urban and rural areas along the biophysical boundaries.

The second stratum of socio-economic status has been addressed as it could potentially have an effect on the development of place connection. Within the stratified urban and rural areas, the sample populations were stratified according to socio-economic status, ethnicity, gender and age. The sample was proportionately stratified according to the demographic profile as in the Census 2010 wherever such information is available in the SERANTA list.

3.5.4.2. Administration

Data collection process for the survey was conducted through self-administered mail survey to respondents from June until August 2014. A cut-off date was set out for the returned questionnaires – 15 July 2014 to guide future audit for analysis of possible non-response bias. The survey administration was conducted in three stages:

- Recruitment by telephone call wherein respondents were asked whether they would like to participate in the survey voluntarily
- Those respondents who agreed were sent the project’s explanatory package consisting of its information, consent form and a self-addressed stamped envelope.
- Reminder and/or appreciation postcard (Appendix F) were sent to all respondent a week later

The administrative process was assisted by a number of research assistants hired due to manage the large sample size and the required multi-approach contact with respondents. The research
assistants selected from the local graduate university programs, were given a full-day training session along with an overall explanation of the study itself, the survey process including administration technique, practice session on telephone recruitment and a review of UAHPEC requirements and regulations (Appendix G). They were also closely supervised during the actual administration to ensure consistency and accuracy of the process. Due to the sample frame sources dated as early as 2010, some of the identified respondents where their address was missing were unable to be contacted as their telephone contact had already lapsed. Effort was taken to replace the respondent from the sample following the same aforementioned guides.

3.6. Data Organization & Analysis

3.6.1. Interviews

The inductive nature of the study process requires the vast qualitative interview data to be organized and interpreted. Although phenomenology, as well as other departures in research design, exists under the methodological rubric of qualitative inquiry, Patton (2002) argues that in the broadest sense that these variations are built upon the “grounded theory” of Glaser & Strauss (1967). He reasons that this perspective affects “methods that take the researcher into and close to the real world so that the results and findings are “grounded in the empirical steps in existential phenomenology research design, further refined by Giorgi & Giorgi (2003), to guide the analysis stage of the transcribed data.

The transcribed conversations were then organized into a specific order and further categorized under “nodes” or “codes” corresponding to specific themes questioned. New emergent themes were grouped iteratively under the parent or child tree as the data was compared. The parent and child tree is a hierarchical structure of nodes organization in which at the top is a parent node representing a broad and common topic, to more specific or sub-groups of topics (child nodes). Within the N-Vivo, it is possible to mechanize these processes simultaneously between the organization and interpretation of the data without switching to another third-party extension.

Initially the first step of data interpretation commenced with the researcher reading the transcripts repeatedly to procure a sense of the entire conversation and to become familiar with
the participant’s nuances or the “gestalt”\(^\text{15}\). Each statement was approached with openness to whatever themes emerged. They were then considered and coded to highlight the most significant statements, sentences or quotes that the participants expressed in respect of their own experience of the bioregion landscape. This phase of “horizonalizing”\(^\text{16}\) established parts consistently represents the subjective meaning of participant bonding with place. This process results in a collection of coded text passages, which are translated in the software environment as “free nodes”.

The second step requires the researcher to reduce the “free nodes” of statements or “phenomenological reduction”\(^\text{17}\) in order to eliminate redundant passages or vague statements. The remaining coded passages are qualified as unit of significance, defined by Moustakas (1994) as unique qualities representing “invariant constituents” of the phenomenon. A judgment of this process was carefully considered taking account of the number of times the meaning mentioned the literal content and the way in which it was stated (Groenewald, 2004). The “isolated” statements, not situated with this criterion, remained as “free nodes” and were not considered further in the process. The research data (recordings and transcripts) were approached with openness, suspending (bracketing) any presupposition that the researcher’s interpretation might have. Keen (1975) describes this guideline as:

\[\text{The phenomenological reduction is a conscious, effortful, opening of ourselves to the phenomenon as a phenomenon.} \ldots \text{We want not to see this event as an example of this or that theory that we have we want to see it as a phenomenon in its own right, with its own meaning and structure. Anybody can hear words that were spoken, in order to listen for the meaning as they eventually emerged from the event, as a whole is to have adopted an attitude of openness to the phenomenon in its inherent meaningfulness. It is to have “bracketed” our response to separate parts of the conversation and to enable the event emerge as a meaningful whole. (p. 38)}\]

This allowed the researcher to enter the unique world of the person interviewed and let the image emerge from the whole description, which avoids the possibility of losing meaning during this process. Merleau-Ponty (1968) argues that objective truth is just a matter of

\(^{15}\)“Gestalt” is a school of thought in psychology that involves looking at things as unified whole rather than summation of its part (Carlson, 2010).

\(^{16}\)“Horizontalizing” is the process of highlighting significance statements that provides understanding of how the participants experience the phenomenon (Moustakas, 1994b).

\(^{17}\)In contrast to positivist “reductionist” approach, phenomenological reduction is a deliberate and purposeful opening by the researcher to the phenomenon “in its own right with its own meaning” (Hycner, 1999).
Chapter 3 – Methodology

perspective that is created by an ambiguity of descriptive nuances and relational unfolding of meanings, and phenomenology embrace this inter-subjective knowledge by recognizing that participant and researcher co-create (Marion, 2002). This anticipates and proposes that the researcher is inseparable from the phenomenon, where the essence is “universal”, hence the objective “truth” must be true for both participant and researcher. Therefore, the usefulness in regard to the “bracketing” of the researcher’s experience is to reflect on his/her own perception with those described by the participants.

The next step of the existential phenomenological analysis developed clusters of meaning by combining the identified units of significance into layered emergent themes. Specific participant experience was related and identified according to units of significance and underlying themes. This textural description emerged from the interpretation of descriptive accounts based on the participant’s experience. Moustakas (1994) further reiterated that imaginative variation is used to narrate the way in which the context or place influenced the participants’ experience of the phenomenon. This method extracts underlying structures and relationships from emergent clusters of meaning and obtains additional information from the coded descriptive accounts of the interview.

Drawing from the composites of textural and structural description, the final sequence of the analysis stage interpreted the “essence” or “deep structure” of sense of place for the selected participants in relation to the specified context. The “essence” or invariant structure in phenomenological studies primarily represent a thread of coherence among multiple descriptions amalgamating into a customary explanation of the phenomenon (Moustakas, 1994b). Consequently the results, derived from the composite descriptions, treated as a synthesis of meanings inherent to the participant’s experience (Creswell, 1998; Moustakas, 1994b), would not exist in the same capacity without the objective and stated elements (descriptive accounts) in the given context.

The inductive process, to identify recurring themes, is underpinned by a collection of understandings in regards to the experiences of different socio-cultural groups within the participant pool. The impending issues, of different socio-cultural preferences towards interpretation of place in this study, are controlled by the phenomenology approach in contrast to a myriad interpretation of individual experience that may be inclined towards certain socio-cultural variables. In other words, phenomenology studies the “parts in order to describe the whole” (Seamon, 1979). Therefore, this investigation does not intend to prioritize individual
voices but rather seeks to discover a coherent thread amongst individual experiences across multiple participants that may be situated within different socio-cultural groups.

Although the interviews were guided by the schedule, it was inevitable that several broad planning and local-related themes emerged based on the initial questions. These themes significantly revolved around the core interests of this research thus warranted further exploration from a theoretical and primary source perspective. As these themes were considered in the nodes analysis and provide substantial weight in this dissertation, an extensive analysis revealed that these themes proved to be complex and the initial investigation only scratched the surface. Still, they have been added to the presentation of interview findings, which are intended to explain the variation of participant’s ideas regarding the research interests. Finally, these themes are interpreted in the concluding chapter and discussed in terms of prospective future research.

3.6.2. Surveys

Various statistical analyses were performed which have been divided into three parts that correspond to the three research questions as outlined in the Table 3-3 below.

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Data</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>How different planning actor groups conceptualize sense of place in land use planning?</td>
<td>▪ Survey items addressing the dimensions of sense of place</td>
<td>▪ Exploratory Factor Analysis (EFA)</td>
</tr>
<tr>
<td></td>
<td>▪ Sense of place factor structure</td>
<td>▪ Cronbach’s Alpha</td>
</tr>
<tr>
<td></td>
<td>▪ Classification of stewardship attitudes in response to place change</td>
<td>▪ Kruskal-Wallis H</td>
</tr>
<tr>
<td></td>
<td>▪ Planning actor group classification</td>
<td></td>
</tr>
<tr>
<td>How a multitude of place values characterize stewardship attitudes and behaviors among the various planning actors?</td>
<td>▪ Sense of place factor structure</td>
<td>▪ Frequencies and summations</td>
</tr>
<tr>
<td></td>
<td>▪ Classification of stewardship attitudes in response to place change</td>
<td>▪ Pearson’s Chi-Square</td>
</tr>
<tr>
<td></td>
<td>▪ Planning actor group classification</td>
<td>▪ Multinomial Logistic Regression</td>
</tr>
<tr>
<td>How the trajectory of future landscape change are shaped by the interplay of stewardship attitudes based on sense of place characteristics?</td>
<td>▪ Stewardship attitudes classification</td>
<td>▪ Frequencies and summations</td>
</tr>
<tr>
<td></td>
<td>▪ Various place vision descriptions</td>
<td>▪ Multinomial Logistic Regression</td>
</tr>
<tr>
<td></td>
<td>▪ Planning actor group classification</td>
<td></td>
</tr>
</tbody>
</table>

Table 3-3: Outline of statistical analyses required for research questions
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The first part compares the underlying dimensions of place development between the groups and assesses its contribution to overall intensity in terms of the level of sense of place. The structure and alignment of sense of place items were first checked using Exploratory Factor Analysis (EFA). This tool was used to ensure the validity of the scale developed and as a method of data reduction and identifying latent factors (Rietveld & Van Hout, 1993). Thus, a clear picture of the underlying factors pattern can be established and the output can be used in subsequent analyses (Field, 2000). Then the reliability of the factors identified from the EFA were checked using Cronbach’s Alpha to ensure the summated items of factor were eliciting the same responses. The coefficient value range from 0-1, where alpha value of .60 is considered as acceptable in exploratory research. For the primary analysis, the established factors were compared among groups using the Kruskal-Wallis H test (the non-parametric alternative to one-way ANOVA). It determines if any significant differences exist between two or more groups on continuous variables (where EFA has transformed the ordinal Likert-scale into a continuous type). A composite sense of place index was created based on the summated factors and compared across groups using the Kruskal-Wallis H test.

The second part examined the relationship between sense of place structure and stewardship attitudes classification among the groups. First, bi-variate analysis using cross-tabulations was conducted to explore the variability of attitudes and behaviors between groups, as well as the relationship between attitudes and actual behaviors. This was to determine which variable should be used as the outcome variable in the subsequent analysis. Once established, a multinomial logistic regression was developed. Multinomial Logistic Regression (MLR) is used to predict the probability of a value or a membership placement of more than two categorical dependent variables based on multiple independent variables (Chan, 2005). This model was used to predict the probability of sense of factors in regard to attitudes or behaviors, as well as membership of the planning actor group on attitudes or behaviors.

The third part explored the various descriptions of place vision and determined the relationship between attitudes on these descriptions. The various visions were tabulated according to the groups based on an ordinal preference of “Most Likely” to “Less Likely” score. These visions then were categorized into themes that proposed or presented an alternative path of landscape change trajectories. The primary analysis then utilized this as the outcome variable in the primary analysis model. Again, MLR analysis was conducted to predict the probability of attitudes or behaviors and membership of planning actor groups and the effect they have on the landscape change trajectories. Data processing and analyses were performed using SPSS v.17.0
(SPSS, 2008). The applicability of these statistical methods was checked with a third party to ensure their veracity in the context of this study.

3.7. Summary

This chapter has discussed the research program and implementation strategies to explore the research questions in Chapter 1 that are central in understanding the concept of place among social actors and its role in shaping the environment. The mixed-methodology approach was proposed to confirm, establish, identify and verify the place connection and its behavioral perspective in the case study, in Pontian, Malaysia. Three broad categories of planning actors were established as a unit of analysis, which includes the local knowledgeable community members, civic roles and institutional arrangements and local environmental advocates. The sequential exploratory design started with a phenomenological inquiry via interviews and then followed with a survey.
Chapter 4. Interview Analysis and Findings

This chapter describes the qualitative findings of the interviews, which centres on three main broad themes; sense of place, stewardship attitudes and behaviors, and place vision. These were examined from the perspective of three groups of social actants in the planning and conservation of the chosen case study area – Pontian as part of IM. The chapter begins with a description of the interview participant’s characteristics. Then the qualitative findings based on the phenomenological methodology are presented which illustrate the breadth of perspective among the participants related to the themes investigated.

4.1. Interviews’ Participants Characteristics

The previous chapter have so far described the place dynamic, in terms of changes through time that have been influenced by the demographics, policies, and economic and physical development factor. In addition the planning system and policies that have been included are in response to the increasingly complex issues related to the socio-economic and conservation goals in land use planning. The strategy for interview sampling participants as explained in Section 3.5.1 is expected to be able to demonstrate the breadth of the interaction of these characteristics in shaping the terrain of awareness in terms of the place.

Interviews were conducted with a total of 31 participants (N=31) from July until September 2013. A number of participants representing each of the groups as outlined in Table 3.1 in the previous chapter included: 9 participants for group [a] Local Active Community Members (n=9), 14 participants for group [b] Members of Civic and Institutional Organizations (n=14), and 8 participants for group [c] Environmental and Cultural Advocacy (n=8) who have lived in Pontian from 5 years to an entire lifetime.

The participants consisted of 28 males (90.3%) and 3 females (9.7%), which are grouped into three main ethnicities including 25 Malays (80.6%), 5 Chinese (16.2%), and 1 Indian (3.2%). These numbers are not quite representative with respect to the actual population in the Census 2010 as in Table 3-2, where Malay (65%), Chinese (30%), Indian (0.8%), and Others (4%) respectively. More male participants were recruited based on recommendations from key informants. Further, a substantial number of prospective female participants who had been
identified were unable to participate due to personal and work related matters. For ethnic grouping, more Malays were recruited which basically represent the predominant workforce in the context of public service and local affairs. The original sample size was intended until it meets the saturation level, in which the participants selected thus far have been able to cover meaningful perspective about the place based on the criteria in Box 2.

Aside from these issues, participant distribution was fairly equal in terms of age, type of residency, and highest qualification level. Five participants (16.1%) age from 30-39 years, 11 participants (35.5%) age 40-49 years, 9 participants (29%) age 50-59, and 3 participants (9.7%) for both age range 60-69 and more than 70 years old. These are fairly close to the actual population as in the Census 2010. Twelve participants (38.7%) perceived their type of resident as rural, 13 participants (41.9%) as urban, and 6 participants (19.4%) as rural-urban interface. These reflect the inclusion of the overall geographical distribution of the area that covers a wide range of land uses. The highest level of education completed included: Secondary Level (10 participants, 32.25%), Diploma (8 participants, 25.8%), Bachelor’s Degree (10 participants, 32.25%), and Postgraduate’s Degree (3 participants, 9.7%). A more detailed sample of the characteristics is tabulated in Appendix H.

4.2. Findings

The full transcripts were analyzed firstly by coding the text passage within into “free nodes” that correspond to the research questions. These nodes then were categorized hierarchically according to their similarities and significance of the phenomenon of interest. The next process involved reanalyzing and reorganizing the nodes into a “parent node”, “clustered theme” and “theme” which grouped and described the overall significance of selected descriptive accounts. In terms of this abstraction process of statements corresponding to research questions, it was conducted by linking them to the researcher’s theoretical and personal knowledge. In a similar manner, the data structure for each subgroup was formulated and compared, to seek similarities. Then by reading and re-reading the texts to elaborate and clarify their interactions and relationships the hierarchical structure of the themes was synthesized. The iteration process of moving through the text passages backwards and forwards as well as relating them to the literature created an evolution in regard to the overall picture in terms of the research questions. This step was done by breaking up the passage down and sections were navigated.
Chapter 4 – Interview Analysis and Findings

independently as well as in the context of full replies. As a result, a conceptual model was developed and simplified in Figure 4-1 below.

Figure 4-1: Simplified conceptual model outlining the hierarchical nodes structure corresponding to the research’s domains.

Four parent nodes were developed: sense of place, stewardship attitudes, behaviors and vision for landscape change which reflected the breadth of the three research questions. A more detailed structure according to each group is appended in Appendix I-K that illustrates a range of responses. The weight of the themes or meaning units which explain the descriptive account of phenomenon are indicated by their recurring in responses and are specified in the text. No major differences were found between the overall patterns of responses of the three participant groups based on the three research questions, although the meaning units of the different themes in the various groups vary. Because of the close resemblance of the responses pattern,
the total dataset was merged in order to increase the detection of the broad image of the interactions between themes. The difference between the groups including the differentiation of the themes and meaning units are illustrated and highlighted consecutively in detail using selected verbatim excerpts.

4.2.1. Research Question 1: Sense of Place Structure between Groups

The overall pattern of sense of place structure was found to be similar between the groups. The phenomenological analysis resulted in five recurring sense of place factors: [1] personal identity, [2] community attachment, [3] place attachment, [4] place character, and [5] different from elsewhere. These factors resemble the role of physical and processes dimension in one’s place development, which provide a legitimate foundation to explore their interactions in the context of “bio-regional” planning. Although this pattern is broadly similar between groups, in terms of the descriptive meaning unit of the factors, some of them varied and some were weighted differently by the groups. The following five subheadings are correspond to the five clustered themes of the parent node - sense of place structure as indicated in the diagram. Codes representing individual responses were used to link where they are discussed and how they are applied. This format is consistently used throughout in subsequent sections.

4.2.1.1. Personal Identity:

The role of the place in shaping one’s personal identification was perceived as important across groups. The uniqueness of place affecting inhabitants’ identities stemmed from the combination of physical qualities and processes dimension, which is congruent within the various contexts as is explained in Section 3.5.2. The place which reflects one’s belief system was perceived as important by group [a] Local Active Community Members and [c] Environmental and Cultural Advocacy. This belief was associated to meanings that include history (YG9), patriotism (GC8) and religion (KW7). In contrast, group [b] Members in Civic and Institution Organizations synonymously associated themselves through socio-economic factors, including their profession (TH8), economic and education status (UW4), and property (FE6).

The populations here are from Javanese descent and originated from Kudus district located in Central Java. If we study the history, Pontian actually used to be a jungle. Those who first came to Pontian were the people from Riau (the Riau Malays) and the
Chapter 4 – Interview Analysis and Findings

Bugis. They came, explored the area and made Pontian as their hometown... so if you need to conduct a historical study with regard to the Javanese or the Bugis, please come to Pontian. (YG9)

Yes. It is a landmark in Pontian. There is a lighthouse there. That is the place where our Malaysian heritage needs to be maintained. We need to maintain the lighthouse. There is patriotism within us if we want to relate it to Pulau Batu Putih. We want to defend the lighthouse. (GC8)

When I’m in the middle of giant waves, it makes me feel small and closer to God. When I lie down in my boat at the open sea during the night, gazing upon the twinkling stars, I feel as small and humble as a human being. Such experiences make me feel closer to God.” (KW7)

...I feel that whatever I want exists here. This place provides opportunity for my line of work (agriculture). For example, if I went to Perak, I’d only know one sort of crop/plantation, but when I work in Johor, I learn about coconuts, pineapples, palm, bananas and varieties of crops. In other words, I’d choose a place where I can gain more knowledge. (TH8)

I tell you, I’m not an educated person, so I don’t have any other option, so I can only stay here. (UW4)

...It is still affordable to purchase a house here compared to the city which will cost me around three hundred thousand or four hundred thousand more. (FE6)

Other themes that emerged consistently throughout the groups were related to processes dimension, which contributed to their identity. This encompasses individual or shared social experiences that developed through time. The self-identity seems to be developed from one’s interaction with others, including family (KD6) and other socio-cultural reasons such as friends (BS9) and functions in the community (RL2/TS8).

When they have a family here, there is family relationship. Most of the family members are here at this place. (KD6)

That’s human touch. Nowadays, friends, (business) cards are aplenty. Even though our project had been completed, but we still come over, just to take a look and talk with our
friends. We usually have chat over a cup of coffee. I think it’s because we have developed a kind of friendship all this while. (BS9)

The reason why I’m still here is because I’m in charge of a lot of NGOs and societies. That’s why I’ll remain at this place. Besides, no matter what posts I hold in various societies, a lot of my friends are also there. Even though I’m the Secretary General of National Cooperative, which is centered in Kuala Lumpur, I chose to remain here and people still know where to look for me. Since I used to work at Municipal Council, members from all races knew me. For example, today, I went to the Pontian fish market. I no longer work with Municipal Council. I’ve retired from my position but when I went there today, a Chinese came and reported to me that there’s a leak in the market. I told him that I no longer work for the Municipal Council, but he said that I still have the power to voice this problem. (RL2)

I believe my contribution to the local community is ingrained within my blood and it’s not possible for me to leave this place. (TS8)

An emphasis on a certain aspect of socio-cultural factors depends on whether the participants were ethnic Malay or had a different background. This can be illustrated in PX3 where a rootedness was conceived as living and growing up in the same place that can be related to one’s past ancestral struggle, which was further echoed by a racial sentiment (FE6).

We can assume that most of the areas were opened by our ancestors. It’s safe to say that most of them are neither among the living nor those who are currently residing here. The people who explored and opened this place were our ancestors, including this village that we live in. This village was opened in 1920 and my late grandfather was responsible for it. Those values that we hold in high esteem means that their hard work in pioneering this place are still appreciated and the fruits of their labor can be passed on to the next generation. (PX3)

Then, most of the area is under the Malay reserve land, hence my neighbors are all Malays and there’s no Chinese within this area. (FE6)

4.2.1.2. Community Attachment

Community attachment emerged as an important sense of place factor in group [a] and [b] in which participants mostly relate to the strong bonds that are developed based on their
profession as well as spatial setting that enable such social interactions to occur (TS8). This strong bond was developed with people of diverse cultural backgrounds who are able to learn from each (BQ6) based on their friendly characteristic (RL2). This seems to be in contrast to previous comments of those who are comfortable living with others of similar cultural background.

*This is important as it seems we are growing with them (the communities). For an example: there is one lecturer Johan, who is working in UTM (University Technology Malaysia). His mother is working with PCM (Pineapple Cannery Malaya). Even though I do not have a relationship with them since I worked with his mother until she retired, it is as if I was part of the family. I assisted here and there with their applications including her children’s university application. (TS8)*

*Its uniqueness is in the form of its diverse community, such as the Javanese, Bugis and Banjars. Other than that, we also have Tionghua community and a small community of Indians. So, we’ve been living as a multiracial community for a long time and we’ve lived as one big family even though we’re made up of different races. (BQ6)*

*When we compare Pontian with other districts, it stands out because of its people, who are friendly and nice folks, and when people from the northern region came to work in Pontian, many of them preferred to stay in Pontian because the environment and the natural surrounding is great. It’s great here; the people are not overbearing. (RL2)*

### 4.2.1.3. Place Character

Place character reflects participant’s awareness of the place’ distinctive features, ranging from biophysical and cultural, way of life, commodities, natural resources, and products which they are dependent on. This awareness can be observed as having been shaped by each group’s interdependency with the place and emphasized by Group [c]. This is because their survival was determined by a spatial setting that sustains a way of life (KW7) and resources (FU8 and JN4).

*Going out to the sea is my hobby...from this hobby I support my family. I do not see this as a work that I have to do. It is my hobby, and as I have been very keen on this for a long time, I love the environment, catching prawn and fish... (KW7)*
Chapter 4 – Interview Analysis and Findings

The source of this river is from Gunung Pulai. The advantage of the Straits of Tebrau is that they contain one of the largest seaweed areas. Hence, there is tremendous protected aquatic life, which is under a protection act, such as, dugong (sea cow), and sea horses. This area has become sensitive because when there are such lives, they relate with us indirectly. (FU8)

...And the last time I still can tell them that we have a lot of pineapple, pineapple is very fantastic. Then now...no more pineapple (JN4)

While for other groups, their dependency was framed from living in a coastal area that is characterized by special biophysical features, including natural (RL2) and cultural landscape (YG9) that create unique aesthetical experiences (BQ6). These characteristics are seen to be important factors in generating economic outcomes, especially related to tourism activities (RK2), marine foods (BQ6) and traditional cuisine (DF6).

In terms of the surroundings, this area is still untapped. Its mangrove swamps are still intact, still good, still exist, really beautiful. (RL2)

Pontian is not entirely urbanized. This area is tranquil; there’s a bit of the city and there’re also villages. So, Pontian has villages with modern facilities. (YG9)

...The views are beautiful because we are facing the straits of Malacca. (BQ6)

Based on the terrain, in Pontian we have several areas which are located by the beach, on the hill and on flat ground. It is really special. I think Pontian has potential for tourism. We can excel in agriculture as we have peat land for organic fertilizer whereas the hill country can be developed for tourism. Having these two areas will be great for the tourists. (RK2)

One of the difference since I have been living here is the food. We can have fresh food anytime we want. We can go to Kukup, and we can have fresh fish caught by cages, such as sea bass, grouper and many more. Apart from that, we too can have fresh fish from the fisherman. That is the reason why I like living here in Pontian. (BQ6)

Here, Bugis people are famous with their traditional food which is Burasak and Lepat Duwe. Every time there is an event, these foods become the main dishes. (DF6)
While the above quotes explicitly scoped place dependency on a physical dimension, in a more subtle way each sub-group’s dependency was specified differently as an effect of a temporal characteristic. From a theoretical perspective, the Local Active Community Members and Civic and Organization Members were observed to manifest rootedness, distinguished from sense of place as an effect of the long-term association with geographic space and subsequent mental consciousness of place creation. Most of the participants in the Local Active Community Members group had longer, historical ties with the region and as a result are engrossed in the political and traditional community structure (TS8). Meanings attached to physical entities were concealed behind the generality of everyday life-experience and were taken for granted (GC8). This affected their attitudes toward development, that is, they were more likely to remain in the place no matter what the future may hold and cited certain motivations, such as, socio-political survivability, which is discussed in the following sections. Also, the effect of temporal dimension on place dependence among the Advocacy group could be noticed, although it was expressed from one’s being away and then returning to a place can result in one’s being more conscious and appreciative of the physical characteristics of the place (KW7).

...I was born in Pontian... I have always felt that my contribution is in socio-economic. It has been part of myself as I always wanted to develop the village community...I am born and bred here...I am used too (involved in community and local decision-making process), as before this I am part of the committee in (UMNO). (TS8)

Local community does not presuppose Tg.Piai as an asset. To them, nothing is change. This is because the mentality, those who appreciate it-probably just the tourist or people who treasure the environment... As an example, the fisherman or the local people are used to the sea and their surroundings. They just look at the tree as it is, no special feelings. (GC8)

When I used to study and work at the city, the environment was like a labyrinth of narrow roads, concrete jungles are everywhere and neighbors who does not recognize each other. It makes me think how lucky I am to be back here (Pontian) because I still can enjoy the pleasant environment where I can breathe the morning dew, to be able to walk down the river while looking for extra earnings (seafood) and mingle with the people around me... (KW7)
4.2.1.4. Place Attachment

Attachment to place refers to the emotive part of awareness, where individual participants develop positive bonding with the physical world in which they relate and understand the place. This involved various psychological processes depending on how each group’s contact with the physical world is framed. For group [a] and [c], most of the participants relate to the calming landscape experience and enjoyment (PX3 and DZ4), and other responses are based on nostalgic memories, spiritual, contact with nature is different.

So, if we talk about why I’m staying at the village, those values are the reason why I love to stay here. Those values like what I’ve mentioned before. No hilarious laughter, no sound of cock crowing, no birds chirping, no sound of crickets at dusk, that’s our culture... it’s something we can’t buy. (PX3)

We need this place. Why I said so? There are people, when they get bored and tensed, they read diaries, and some even end up committing suicide. Some other people, if they are tensed and their souls are like mine, they like to go to the beach, searching for little fish and sea shells, fishing, and relaxing, though with only noodle, or pancakes. (DZ4)

4.2.1.5. Different from Elsewhere

While previous clustered themes focus on individual psychological processes, this theme is derived from the summation of those processes with physical and social interactions that the participants viewed in comparison with other places in terms of their experiences. Among the three groups the typical responses were a peaceful feeling and a culmination of positive sensory experiences (GC8). The feeling of being different from elsewhere was also contrasted with their previous life experiences, wherein participants related to the different culture and pace of life (TH8) and people (SK8) with a positive connotation. Other than that, the descriptions of this feeling were centered on the experiences of living in rural communities where population density is low thus the aspects of more privacy, safer, and less traffic congestion and pollution were highlighted.

Whoever used to live in the cities or used to regularly travel to big cities like Johor Bahru or any other cities abroad, when they’re back to underdeveloped area like in Pontian, they’ll feel the difference in their inner peace. I’m not saying there’s no traffic jam here (in Pontian), there is. But the environment is calming. The ambience, this aura is really hard to describe. (GC8)
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...I begged him (the Chief Director); I said I can’t live there, so I asked for a transfer. Life there is like going to work in the morning, then coming back late at night just to sleep. My mind felt suppressed that way. Doing office works, people submitting reports for us to analyze the data... I just can’t. (TH8)

The people of Kluang and Pontian are not the same. In Pontian, if outsiders come, they still can accept them. If it’s in Kluang, the Chinese in Kluang, if any outsiders come and hold an important position or something, they won’t like it and they’ll envy you. They consider us as outsiders. The Chinese in Kluang are just like that. They consider us as outsiders. And they’re the locals so they do what they want. That’s their feelings. How they look at you and how they think of you... not the same. (SK8)

4.2.2. Research Question 2: Stewardship Attitudes and Behaviors

The second research question examines how a multitude of place values characterize stewardship attitudes and behaviors among the various planning actors. In the interviews, participants were asked whether they viewed their place as changing and whether it is a concern, specifically addressing any issues that they thought could threaten the special qualities of the place. If yes, then they were asked whether they were capable of doing something to overcome the issues and if not, what circumstances constrained them from thinking so. It is important to note that in order to launch the discussion, queries about the concerns were intended to stimulate discussion regarding manifestation of stewardship attitudes, rather than compiling a list of issues. Regardless of the thematic issues identified by the participants, the examination of their attitudes focused on their views as well as their capacity to address these concerns.

4.2.2.1. Place Issues and Concerns

Among all the issues identified by participants across the groups, they can be organized into six broad themes, that is, activities, character, policy, development and biophysical and socio-economic. The changes on character, biophysical and development emerged as the main themes that were emphasized differently by each group. For group [a] Local Active Community Members, the result suggests that the change of character along with the diminishing rural-based lifestyle was highlighted to be among the main concerns (YG9 and PX3).
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Traditional villages have changed a lot with new housing estates. (YG9)

Actually, we've told them that the traditional activities are dwindling. (PX3)

This was associated with the negative effects of the development process (YG9), either from the perspective of quality of life, infrastructure or socio-economic (XP3), though equally in a much more affirmative tone, some others realized that development is inevitable for the progress of rural communities.

There is a possibility... when there are more factories... when more workers from the outside come... maybe... something negative will happen... for a developing town. So, there is a possibility Pontian will be that way. (YG9)

But now, everything is developing. It is really different nowadays. In Pontian, there are more petrol stations, McDonalds, not to mention housing areas and industrial areas. Pontian itself will become more like Johor Bahru although it will take time... It means if the sprawling development similar to Johor Bahru comes to Pontian this could be a positive thing. (XP3)

The professional and administrative understanding by group [b] Members in Civic and Institution Organization suggested that they are more articulate about the concern related to the development and biophysical changes. This can be illustrated by the fact that they were able to express their opinions regarding the issues with respect to the sprawling development initiated by several big-scale developments projects (GC8) and their possible implications in terms of the integrity of ecosystems and resources (GC8). However, similar to the previous group, land use changes from this process were commented positively, with the possible benefits such as socio-economic growth and the accessibility of services, which among other topics was commented on (TG8 and KD6).

Since the flagship in Iskandar Malaysia or specifically in Nusajaya doesn't allow certain industries, all the disallowed industries are built at the outskirt of Iskandar which is Pekan Nanas, for example, heavy industries and manufacturing industries. So you can see that this place is developed and there are many factories. (GC8)

Of course there was also some [coastal] erosion here last time. But at that time, it wasn’t so bad. Now they have reclaimed (nearby areas) and now this place is affected. It is in Tanjung Bin and Tanjung Pelepas. When we change the natural environment, it
will come back to us. I may not know how to explain it scientifically, but it simply means if we embank a certain area, other area will be affected. Eventually, someone’s farm might be eroded as well. (GC8)

...Development is increasing...Development more or less will affect the lives of local community however I think the disturbance is not from the negative side. It is from the positive side... (TG8)

...Development is giving us improvements, as we do not have to live our lives primitively, we can just open the tap with hot and cold showers. We used to cycle and nowadays we can drive a car on the road. People will say you are stupid if you still want to walk like the old times. These kinds of changes are acceptable. (KD6)

Typical of the responses among those in the group [c] Environmental and Cultural Advocacy were also observed to comment on the possible implications of development. Inasmuch, they are skeptical about the positive progress, in contrast with the previous groups, this was framed by their awareness of the existing fragile ecosystems, on which they are dependent on and when destroyed (YL6 and (KW7), could pose rippling repercussions on the environment and on the people themselves.

And this is exemplified by the increasing issues related to pollution and the encroachment to the mangrove ecosystems.

When the government does the reclamation, they build breakwater along the Pontian. The government also builds irrigation and barriers by the sea. So when there are high tides, the water will not rise. There are only a few mangroves left. Nowadays the mangroves are coming to an end because of the erosion. (YL6)

There have been a few roads and places which the reclamation has been completed. There is an old market by the jetty. From the jetty, we can see the mangrove trees are gone. When the reclaimed area in Pontian has been extended, the water energy is going to hit another area. Trees will topple as well. This occurrence will be repeated at other areas. The water energy will keep bashing on resulting in destruction. (KW7)

Other themes that emerged across the groups also relate to the effects of development and biophysical changes. Typical responses from Malay participants focused on the socio-economic impacts, such as the influx of foreign workers and the impact on the local values
(YG8) and the changing demography and politics (YG9) as the main issues. This seems to suggest that a relationship exist between xenophobia and opposition to certain types of development and associated ecological harm.

The threats are the waste that I mentioned earlier. Other than that, the foreign workers could also be a threat to the society because these people such as from Bangladesh and Vietnam could have brought diseases and social influence, and increased the population density. (YG8)

Most of the housing projects were developed by the Chinese. Malays just couldn’t afford it. So the Chinese ended up buying it. Perhaps it’s a political objective to break up the voting block here, which is currently dominated by Malays. For example, say there were 40 houses that were built, and 30 of those houses were bought by the Chinese who could afford them, thus, there’d be 30 Chinese people there. (YG9)

The direct involvement of group [b] participants showed that they are particular about the issues regarding policy-making related to the issues and concerns mentioned earlier. This was critiqued in terms of the effectiveness of policy in place, especially in terms of the lack of continuity and direction between policies as a result of changing administrators (RK2), as well as the imbalance between the sustainability of the people and the environment (KT8).

What I’m trying to say here, for instance, the local authorities. The decision maker, D.O (District Officer) or YDP (Head of District Council), has a very short contract period. After 9 months or 1 year, they will be transferred. That’s why the policies are inconsistent. If we want a suggestion or opinion that meets the people’s needs, the most important thing is the local authorities. Since I ran my business for almost 30 years now, I’ve met 16 different D.Os so far. (RK2)

The truth is, the Johor economic and social policies are somewhat contradicting with the environmental policies. We want to preserve the environment but at the same time, many economic interests are in the areas where environmental assets reside. So, we don't know which one should be prioritized, either the environment or the economy, because the living cost in our country and state is getting higher. In simple words, the economy needs more and more money flowing in and if it doesn't happen, Johor can't survive. It can't be more money going out than coming in. That's why I said, there must be a sacrifice. So... what's the sacrifice? Is it the environment, economy or social? To
me, the victim is the population. Do you know why? The reason is because the distortion of the environment will also affect the populations. (KT8)

4.2.2.2. Capacity to Address Concerns

Stimulated by the above discussion, participants then were asked about their attitudinal responses to address the issues identified. The result suggests that most of the participants from all groups relate the capacity of the place changes in the affirmative. Specifically, they framed the conservation of place values rely on creating other opportunities and are aligned with their interest (RL2 and YL6). In other words, the opportunities were conceived in relation to the socio-economic benefits that generated from conservation of the place (XP3).

For this, we go through UMNO\textsuperscript{18}. That party is the ruling party, so we can press our cause through the party. For Pulau Pisang too, we pressured for a ban on tall buildings. We want to maintain the natural environment that exists today and prevent Singapore from conquering the area. In the Planter’s Association’s plan for Johor, they outlined plans to rear cows and swiftlets, which is good. We maintain the area as it is. That adds value. (RL2)

I think I put forward my own my effort in relation to my own capacity from an historical point of view. I will write on the historical aspect. My hope is when I care about it, people can see it is important. (YL6)

...We have to enlighten the society that we cannot avoid development but we must take part as well in maintaining and conserving the environment. The meaning of taking part is, if we have land, we have to plan what can we do and we have to inform people regarding the immensity of this development. (XP3)

This was emphasized from the perspective of the social improvement of the livelihoods of those in the rural communities, in which their resilience is dependent on how they can adapt to the changing local conditions, for example, by creating certain add-on values related to the village and mangrove conservation (FE6 and EC4). In addition, the general capacity of the group was related to their profession and civic responsibility (KT8) and they called for further collective

\textsuperscript{18} United Malays National Organization (UMNO) is the main ethnic-based, Malay political party within Malaysia’s ruling coalition since national independence in 1957 (Gomez, 2004).
views from all of the groups in the communities and governing institutions to address the issues (FU8 and EC4).

When we set up controlled areas and regulations, and we say that certain things couldn’t be taken, there were conflicts at first. In the early stages there were conflicts but after we explained how it links to ecotourism, that we have villages with homestays and all other products there, after a while they understood why we restrict access to the RAMSAR area. Even early on we organized briefing and dialogue sessions. Usually, in Kukup we will bring the residents to courses and guided tours. This will help them to understand why this area is important and requires conservation, and at the same time to make sure it gives good returns. (FE6)

It’s the socioeconomic. Perhaps changing their careers from fishing to agro tourism is the key... Change the approach they take, but at the same time maintaining their income. Perhaps rather than catch fish, they should rear fish. We wouldn’t want there to be no fishermen at all. (EC4)

For me, I can’t do my job by myself. I need to work together with the people around me and with those I work with... I have above me the federal and state governments, as well as the locals here. I can’t make my own moves, which would be self-conceited. (KT8)

There are communities that if we push and elevate their morals, they will feel proud. We don’t even need to pay them a salary for them to be committed. That’s the nucleus of humanity that we need to elevate their morals. We don’t have to wait for the geniuses only as there are people who are already aware of the situation there and we can use them as our agents. (FU8)

We have to change but who will do the changes? Everyone this includes all levels, from the number one leader to the authorities. But it has to be the number one foremost as he is the one who will give the orders. (EC4)

4.2.2.3. Involvement and Actions Taken

Encouraged by the above discussion, participants were asked to deliberate as to the kind of involvement or action they had taken or plan to take to address the issues. In the previous section they were asked about their capabilities to manage these issues, and the focus is on their
cognitive disposition towards the issues rather than the conative aspect associated with the interests of this section. Participants across groups reported some kind of actions that were taken either personally or professionally, ranging from involvement in an organization or society, sharing concern with others, conservation behaviors, participation in local events, active participation in development, political, and research and publication.

The majority of participants in group [a] commented on their active participation in the organization, although such action focused specifically on certain issues that matches their interest, for example, historical and cultural values (QE2 and YG9). This was pursued in such a way that they believed that people with a common interest and view can communicate and address the issues strongly, as opposed to acting individually.

...on the name of History Association I discover the history of Pulau Pisang to prevent it from any erosion. (QE2)

... I’m also involved with the Johor Heritage Foundation, which looks at matters concerning history. (YG9)

In contrast, the involvement of most of the participants in group [c] evolved around their professional capacities, and similar to the previous group, expressing that those issues can be communicated broadly in the hope that the higher authorities will act accordingly (UW4). Although the way the participants who are members of local agencies interacted in the planning-related activities was restricted in the meetings (TH8), while others who have civic responsibilities had more freedom to take action, such as through political action (UW4).

...We can see this is important, we must let more people know the importance of this initiative. If more people can see the importance, the government will guard it heavily and thoroughly. (UW4)

We can only be in the meeting platform, not elsewhere. (TH8)

...When we meet the Honorable (local representative), we see other people, we try to say this place is significant to us, our daily lives are here in Pulai Mount. As I said earlier, when we talk too much, we are becoming restless. But we have to keep emphasizing it when talking to the higher authorities. In my opinion, that is the only thing I can do. (UW4)
As anticipated, the typical responses of the participants in the group [c] were through their involvement in non-governmental organizations, which provide them with a platform to share the issues effectively and create awareness at the broad community level (FU8 and JN4).

I’ve launched a movement that combines NGOs and individuals that I see can add value to the group and the outside community. That’s how SUJUD (Friends of the End Land) was established. (FU8)

For us what we can do is because a lot of user at Gunung Pulai, we always keep tell people that they those environment awareness that we always give to them... (JN4)

Although it is beyond the scope of this study, the issue of the stewardship of the local culture also emerged especially in the qualitative data. Insights revealed that although there are commonalities between the Malay and Chinese ethnic groups regarding their harmonious multi-cultural relationship within the place, to a certain extent there appear to be tension regarding how different ethnic groups conceptualize their place regarding physical dimension and interdependency on resources and subsequent behaviors. The stewardship differences between the ethnicities were not pursued in depth and hence have limited reliability in terms of interpreting the results. This was due to the limitation of sampling bias in reference to the Chinese participants and reaching saturation level of main research focus.

From a broad perspective, it can be observed that stewardship responses were dependent on scale of place. For example, participants that conceptualize place across residential, agricultural areas and the protected areas were more sensitive and willing to partake an on-ground ecosystem management and practice. In contrast, while degrading environmental conditions such as disappearing mangroves seems to be a concern, participants who indicated place as oriented around settlement and community dimension appeared to prioritize socio-economic development as the main stewardship goal. Again, the effect of scale on the stewardship responses was not pursued extensively as it was limited by the sampling strategy.

4.2.3. Research Question 3: Vision for Landscape Change

The final research question examines the relationship between the stewardship attitudes and behaviors linked with sense of place and visions among the planning actors in terms of conception of future place. This part of the study aims to link back to the framework of social-
ecological interaction, underlining the theoretical and practice aspect of sense of place as social
process that drives landscape change. Participants were encouraged to speak about how they
envisioned the place and what it would be like in the next thirty years. This question basically
includes the meanings the participants ascribe to the place. This is even though there are a
number of challenges associated with ensuring the vision that they hold will be able to manifest.

4.2.3.1. Vision for Place Change

In regard to their vision, the responses were divided between the groups and their visions were
spoken of in explanations that were positive, negative or neutral. In regard to the positive
explanations, the descriptions revolved around the image of urbanization, highlighting the
physical and socio-economic development. In contrast, the negative explanations were visions
that were contrary to the factors leading to place attachment. In a much more neutral note, a
stagnant place was visualized that corresponded to the existing meanings they attached to the
place.

From the positive viewpoint, development emerged as the main theme emphasized by most
participants in both group [a] Local Active Community Members and [b] Members in Civic
and Institution Organization. This was associated with the regional force of IM (XP3), in which
it will accelerate growth in terms of transforming the rural landscape into more planned housing
estates and industrial areas (YG8 and DF6). This was further concurred with from the
perspective of human capital, where participants citing more job opportunities mean
outmigration will be curbed thus the local communities will drive the development and
progress of the place independently (RL2).

As I have mentioned earlier Pontian probably has become a city. That is why I said it is
better if Iskandar Malaysia becomes part of the Pontian district. Not just a quarter of
it, if nothing else, half of the Tanjung Piai parliament. Now, it seems only the Kukup
state assembly is in it. Kukup state assembly and Pekas Nenas State Assembly are just a
mere part of it, not even half of Tanjung Piai. Both areas will experience more rapid
growth if they become a part of the Iskandar regional. Pontian district will join
together with the Iskandar regional. It will overflow. (XP3)

...If I am not mistaken, there is a proposal to build a bridge crossing Pulai River at
Gelang Patah. If it is true, it will generate more development to the south district of
Pontian. The changes such as the land use will probably be modified to industrial use.
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From these industries and support from the near port, many facilities will be developed. (YG8)

...It will change especially to a more proper placement in terms of land use. The housing and industrial zone will become more efficient. (DF6)

...I believe it will become more prosperous. That is why we are suggesting the income per capita should be higher by 2020. If so, there should be one or two universities near here. If people are able to pursue their higher education here, they will not have to go far. They will not have to go to Kuala Lumpur since the development is good. Pontian will become more progressive. That is what I see in the future. The future generation will have children and their children eventually will follow in their footsteps. (RL2)

In contrast, a negative note that associated with the diminishing place values were weighted heavily by most of participants in the group [c] Environmental and Cultural Advocacy. This vision was linked to the sprawling development (KW7 and YL6) and its effects on eroding the rural identity and loss of natural landscape through rapid coastal reclamation (KG2).

I think Pontian will go through a major change in 10 years’ time. I might be able to witness one change upon another in the Pontian town. But it will not be centralized around Pontian town only. It will spread around... I assume this area will be unsafe for the fishermen. (KW7)

I think the climate change will change together with the landscape resembling Iskandar Malaysia. It has elevated Tanjung Bin, petrochemical (industries) and will turn to an industrial area. It will be an industrial area. (YL6)

Looking at the coastal economy, we would not probably have any problems since they will build the causeway by the beach. The greenery will be gone and changing to something else. The beach will not be eroded. This is what has been happening at Tanjung Bin and Tanjung Piai. The reclamation produces interest to a single party and other parties, not to society as a whole. They are going to have the benefit before anyone else. (KG2)

Despite the prior vision of urbanization-related developments, on a neutral note some other participants in group [b] still captured the image of their place in terms of remaining as it now (DN5), although it seems to be framed from the ethnicity-based survival. This was visualized
from the point of view of the preservation of the existing rural-based economy and Malay land ownership in order to remain affordable (GC8).

...I believe it, the place, it still remains the same, the changes are there but the fishing still goes on, the activity is unchanged but the gears might be difference. The same pen, same function, diverse design. Maybe now you can use it for a month and in the future for two years. The ink may not any refill, perhaps using water to charge it. I do not know, but the function is still equivalent. (DN5)

Pontian is better left as it is so the Malays are still capable to have the power of buying. We are not going to talk about politics. If it is not being developed, we might be able to afford any garden at half a million or two hundred thousand. To compare it here, if we do not meet the expense, we are just able to watch. (GC8)

4.2.3.2. Disempowerment

Disempowerment relates to the way in which participants express some causes that deter them from being able to take action over their concerns, regardless of the note on visions. Two clustered themes emerged that synthesized these interrelated causes: capacity building and governance. Disempowerment for capacity building refers to obstacles that inhibit an individual’s capacity to meet the place changes, ranging from political, socio-economic, profession-related constraints and to the extreme their concerns were totally ignored. The typical responses of participants in both groups [a] and [c] were that their capacity was restricted due to a complex political context. This could be based on the erosion of the place values that were justified possibly by a political agenda (QE2). Moreover, in a broad sense this could be related to the context of the ethnic and the political polarization, where development and conservation initiatives are highly dependent on garnering political support (XP3 and KG2).

...Lately I restrained myself from politician as politics seems to drown the history either facts or even physically. They only focus on material and physical development. They do not care about the history. Everything must be destroyed such as the traditional Malay villages in Johore...this is from the authorities and the leaders. Thus, if more leaders are not keen on politicking and causing damage to the history it is a good thing. (QE2)
If you were a politician here, being a candidate of party A and representative of village A, when you want to develop or restructure the village to make it more modern and competitive, if it means moving some parts of the village outside of your constituency, then this will not happen as this constituency is your support base. So, from a political point of view, any development plans you want to make have to consider this. (XP3)

For me the local government agencies is not weak, they are good at sustaining, it is just that they propose favoritism...All of the decisions are made by the execs and they are giving many kinds of answers, such as; certain actions may need to be done later, this area is filled by the PAS\textsuperscript{19} people or this area has a majority of Chinese. When these reasons keep coming up, nothing will be done. We have problematic coasts and trees are destroyed. For an example: we cannot have too many trees as this is under DAP\textsuperscript{20} rules. We have to do it later. This is the cause. Even though we are from a different political party, we must take precautions for the environment. It seems that nature has become a victim of the political process. (KG2)

On the other hand, most of the participants who worked in the governmental agencies noted their capacity to act on those issues was restricted to their profession. They reported the lack of a platform to voice their concern as they are constrained by institutional regulations \textsuperscript{(TH8)} and restricted to their implementation scope \textsuperscript{(YG8)}.

This is not possible, because we as individuals have no platform. What power do we have given that we are merely civil servants? (TH8)

...We as government officers must not be involved in any action conflicting with our orders. We cannot oppose. We as the administrator must oblige to the assigned guidelines. We cannot go above and beyond the instructions. (YG8)

Another perspective from participants in local agencies was that someone might be labelled as an antagonist when they voiced their concerns on specific issues if they were not aligned with the government policies. Whereas the practicality of this means that their opinions and actions remain unheard and unrecognized.

\textsuperscript{19} Parti Islam Se-Malaysia (PAS) or Pan-Malaysian Islamic Party established in 1951, is a Malay-Muslim based political party that espouse a hybrid of “modernist” and “fundamentalist” in its ideal as opposed to its main principal rival, U/ANNO (Miller, 2004).

\textsuperscript{20} Democratic Action Party (DAP) established in 1966 as a branch of the Singaporean People’s Action Party (PAP), is a secular, social democratic that predominated by urban Chinese (Ufen, 2009).
Those who scream and shout in support of environmental protection usually condemn the government policy because sometimes the policy is not in line with what’s best for nature. So, the impression of condemnation is the stumbling block here. (GC8)

Just because we condemn the government, it doesn’t mean we hate it; this is a misconception. If I’m against something that’s against our wellbeing in the future or doesn’t guarantee our quality of life, does that mean I’m against the government? When we argue about the quality of life here, it’s a way to help the government, as the government might’ve missed this issue. When those who want to protest, or rather, criticize, the government, they are lambasted. This is my research, and if I want to enhance the quality of life, build human capital, and improve the environment, then I have to do it. You can listen to me or otherwise, but my responsibility is fulfilled. (TH8)

A number of participants also discussed the over reliance on outside professionals or experts to plan for them which are very much influenced by specific interests and less consideration in terms of interacting with and listening to the local people and citizens.

As I said just now, we don’t have the power. We only see that, but maybe there are those who have more expertise, who knows what to do and might do it differently. In the future, they won’t live here anymore. We, as residents of the area, are the ones who will suffer the consequences. What have they built so far? A factory, a factory results in the dumping of wastes here. Other countries wouldn’t want it, but this ends up destroying the environment here. (UW4)

Governance emerged as a theme that synthesized several processes that the participants believed to be hindering them to address their concerns and achieve the visions they described. These processes are grouped into three themes: policy-making, public-input process and effectiveness of policy implementation. All of the groups highlighted policy-making as the main theme, from the perspective of various aspects: economically oriented policies, top-down decision making and even government not adhering to the policies. Each group weighted these aspects differently. With respect to groups [a] and [b], most of the participants emphasized top down decision-making, which evolved around the struggle of the hierarchical structure between the Local, State, and Federal government departments in the context of their authoritarian policy-making and administration (GC8).
Each agency has its own respective policies to care for the environment. However, the final decision is up to the State Secretary, Chief Minister, and Exco. (GC8)

Respondents claim that this is so much so that the planning at the local level is just a matter of implementing policies from a higher administrative structure, which is inevitably prone to specific interests and an imbalance between the sustainability of socio-economic and environmental policies (PX3). This could be illustrated by the ultimatum that was given to choose either economic or nature-focused policies (KT8) the consequence of which is that most participants in group [c] felt powerless as they perceive higher levels of bureaucracy will determine the outcome, even if it contradicts existing policies and regulations (FU8 and KW7).

What matters now is that the whole process of development is focused more on development and the economy. The economy is not for the locals. The developers are expecting to have fast results from this development. (PX3)

...The economic policy in Johor together with social policy is in contradiction with our environmental policy. We yearn to care for the environment but most of the economic interests are focused on the development in the area. As for that, we do not know how to choose between the rising economy standards or to care for and look after our environment. We base our economy on how much the money comes in to survive. Thus, we must sacrifice the environment the economy or the social aspect of society. The real victim is the population. The local authorities have done their part to obey and implement even though we already have the Local District Plan and Environmentally Sensitive Areas as well as the National Physical Plan. However when a research study is conducted comparing the economy and the environment, Johore chooses the economy. Johore State Government believes the economy is far more important than the environment. (KT8)

We can make people aware but what if the government itself is pursuing to abolish the regulations protecting the environment for the sake of the economy. (FU8)

How many mangrove swamp forests were cut down for Iskandar Malaysia? I wasn’t able to stop it. All the work put into EIA and DEIA are futile for megaproject approvals in Malaysia. No matter how you do the EIA, no matter how many comments you give, if the state government approves it, the project will proceeds. The overall power is in the state government’s hands. What is the use of all these government agencies, experts,
Chapter 4 – Interview Analysis and Findings

"academics, guidelines, laws and physical plans for the country if everything can be bulldozed by the government? (KW7)"

Public-input in planning was highlighted as part of the governance process in which they were not able to assert themselves. This was framed mainly for the participants in groups [b] and [c], although their perspective was shaped from each group’s social and professional function. The concern for group [b] was the effectiveness of the way the existing mechanism to include the local aspirations in the planning process had evolved around the aspect of information delivery and localized exhibition (KT8). Whereas, group [c] focused on participation in planning process that was self-selecting due to political patronage (KW7 and FU8). This was especially so for those who may present different views, even though they are people who were keen on having their say and putting forward their perspective.

"...I just feel that they (development plans) came without prior notice and since we don’t have much exposure, we tend to view things (plans) negatively. For example, in current discussion, they tell us their agendas and we tend to oppose the agendas. But, if we were given exposure and were able to do more research, we (the locals) may consider the matter to be good or beneficial to us. We may accept the agendas but we need to ensure that’s the best for Pontian because not all development agendas can be executed in Pontian. (KT8)"

"Those known as penghulu or village head... During hearing sessions, they would call village head, penghulu, muezzin, tok siak and 4–5 UMNO representatives who hold positions, without involving the local community. That’s where it’s wrong. Even though I hold a position as a chairman of the NGO known as JARING, I’ve never been invited to the meeting. (KW7)"

"The local community has never been given a priority and is viewed as those who cannot assist them. The locals are viewed as unimportant. The locals feel that the place is detached from them—detached from their lives & culture. The locals should be given the opportunity to voice their opinions but are often ignored. They tend to do things in their own manner. When they want to execute any development agenda, they’ll seek opinions only from the village head, JKKK, penghulu, UMNO representatives or UMNO head. The selected people’s opinions are considered as whole local community’s opinion, even though their opinions may not represent the locals’ opinions. (FU8)"
Chapter 4 – Interview Analysis and Findings

The effectiveness of policy implementation was emphasized group [b] as they mentioned the lack of inter-agency coordination (UW4).

I see these government agencies as distorted in doing their work. They each work in silos. They need to sit down at the same table. I’ve seen this happened. Some are just irresponsible. (UW4)

4.3. Summary of Findings

As we have seen, sense of place is an important characteristic that influences attitudes and the vision of what the future place would be. The data that I have presented paints a rich picture of the phenomenological experience of being in Pontian from the point of view of a different planning actor’s perspective. By performing a separate analysis of planning actor groups wherein the primary difference is their engagement in the planning process, my intention has been to explore the negotiation of place meanings and subsequent action that influence the landscape change. The results of this qualitative phase indicate that overall, there is a strong and coherent sense of place structure across groups, with social dimension weighted heavily for group [a] Local Active Community Members and [b] Members in Civic and Institution Organization, while physical dimension was valued more by group [c] Environmental and Cultural Advocacy. However, variability in terms of attitudes and visions for landscape change was observed across groups that are rationalized based on a certain values, belief and motivations.

The experience that engenders connection among the participants primarily derives from the character of the place, which is composed of the linked biophysical, activities and lifestyle, socio-cultural and economic aspects. My participants across groups were strongly connected to the experience of village or rural setting where the traditional lifestyle, activities and dependency on natural resources still remain. This experience was perceived as important in shaping their personal identity, which is essentially not comparable to other places. For them, living in a place where diverse communities can live together and create a strong bond has made the place unique, and special psychological and emotional feelings are attached to it.

While questioned about whether they had concern about place changing in terms of the biophysical and character (cultural, social and political) aspects, the participants consistently
described them as the main issues across all of the groups. These issues evolved around the causal effect of the urbanization process in which a certain socio-political interplay was also identified. Their capacity to address this concern was divided though. For participants under group [a] Active Community Members, their attitudes to act on these issues were primarily subjected to matching their area of interest and belief that in order for the conservation of the place to be viable, opportunities (for example, economic return) should be created. On the other hand, participants for group [b] Members of Civic and Institutional Organizations mainly described their capacity to address those issues as contingent on profession and institutional scope. This was translated into actions that they were involved with professionally. Whereas, participants for group [c] Cultural and Environmental Advocacy viewed that it requires collective actions from the grassroots level to the institutional level in order to manage issues comprehensively. This seemed to fit into their advocacy role wherein the importance of sharing their concerns among the communities was highlighted so they could then move forward and take action.

Finally, although there are commonalities in terms of the way the participants across groups ascribed meanings to the place previously, the extended question on the future with regard to the way the place should be, revealed there was a divided response. The response was split into two voices, the positive that denote development and urbanization and the negative voice which associated the loss of place meanings as previously mentioned. Many participants under group [a] and [b] described the sprawling pattern of urbanization dominated by the land use change from villages to residential and industrial estates as progressive development. This view was rather contradictory in terms of the earlier description of place meanings. In contrast, most of the participants under group [c] and some for [a] and [b], described this development negatively by associating it to the loss of place meanings primarily pointing to the loss of the natural ecosystem and its psychological effects.

Regardless of the above views, the participants across groups discussed factors leading to their disempowerment to preserve the setting, which is categorized into two themes – capacity building and governance. Political constraint and top-down approaches were consistently identified by participants across the three groups as the main factor that deprives them of their ability to affect, influence and have an impact on issues. As anticipated, group [b] identified professional constraints as the problem while [c] places responsibility on the government. These findings clearly underline that even though the groups related to the shared meanings of the place, they do not necessarily imply a similar response for what it is that the place should
be and consequently a contrasting action to preserve it. The variation of the various themes and meanings that correspond to the research questions presents an intriguing result and their incorporation in the survey allows for a more systematic assessment of the relationships. This is illustrated in the following chapters by questionnaire design that captures the characteristics.
Chapter 5. Survey Analysis and Findings

This chapter is structured into three sections. It presents the results from the quantitative data derived from the mail survey instrument reported in Chapter 3. Firstly, the survey response rate and descriptive statistics of survey items are presented. Secondly, the scale development of the survey items is presented through factor analysis. This is followed by a reliability test of the instrument. Finally, the third section presents the results corresponding to the three research questions that are examined by this study including [1] sense of place among social actors in land use planning, [2] environmental stewardship attitudes and behaviors, and [3] visions of landscape change.

5.1. Descriptive Statistics

5.1.1. Response Rate

The self-reply mail survey was administered to 384 potential participants (N=384), divided equally (rounded) into the three of the planning groups subsamples (n=128) including [a] Local Active Community Members, [b] Members of Civic and Institutional Organizations, and [c] Environmental and Cultural Advocacy. The number of responses recorded comprises a total of 150 participants for the combined groups, representing a 39.16% response rate wherein the individual group-based response rate is equal to [a] 46.09% (n=59), [b] 35.94% (n=46), and [c] 34.38% (n=44).

5.1.2. Demographic Summary

Overall summary characteristics of the respondents are presented as follows, while between-group characteristics are tabulated in Appendix L.

- **Reason to be in Pontian**: Reason to be in the place due to being resident in the area: 23.3% (N=35), 14.7% (N=22) due to work, and 62% (N=93) both working and living.

- **Gender**: The respondents were 62% (N=93) male and 38% (N=57) female.

- **Age**: Age range shows that 46.7% (N=70) were between 40 to 54 years of age, followed by 26.7% (N=40) 25 to 39 years of age, 19.2% (N=29) 55 to 70 years of age, 4.7% (N=7) were 18 to 24 years of age, and 2.7% (N=4) were above 71 years of age.
Chapter 5 – Survey Analysis and Findings

- **Ethnicity:** Whilst the Malays constitute the large number of respondents of 73.3% \((N=110)\), Chinese were at 22\% \((N=33)\), and Indian were at 4.7\% \((N=7)\).

- **Length of Stay:** Respondent’s length of stay in the place ranged from two years to entire life, with a mean of 29.47 years and standard deviation of 47.73. Regarding the number of respondents indicating they resided their entire life there were \(N = 17\) (11.3\%).

- **Education:** The highest education level respondents have completed equals 43.3\% \((N=65)\) for secondary level, 22\% \((N=33)\) both for degree and diploma-equivalent, 7.3\% \((N=11)\) for vocational level, and 2.7\% \((N=4)\) both for post-graduate degree and primary level.

- **Employment Status:** 85.3\% \((N=128)\) respondents were currently working, 8\% \((N=12)\) retired, 5.3\% \((N=8)\) unemployed, and 1.3\% \((N=2)\) are students.

- **Type of Residence Location:** In regard to participants’ perception of residence location type, 46\% \((N=69)\) were in rural areas, 29.3\% \((N=44)\) were in semi-urban areas, 16.7\% \((N=25)\) were in semi-rural areas, 10.7\% \((N=16)\) were in urban areas, 0.7\% \((N=1)\) was unknown.

- **Location during Childhood Upbringing:** Respondents reported their location during their childhood years, 46\% \((N=69)\) in rural areas, 29.3\% \((N=44)\) in semi-urban areas, 16.7\% \((N=25)\) in rural areas, 7.3\% \((N=11)\) in urban areas, and 0.7\% \((N=1)\) was unknown.

### 5.2. Validity

#### 5.2.1. Internal Validity

Internal validity of a survey concerns how accurately it measures what it is designed to measure. In regard to the psychometric measurement of concept such sense of place, this phenomenon can exist as multidimensional constructs. It is important that an operational measure for a construct in a survey accurately correlates to the theoretical concept investigated (construct validity). The relationships between each of the items representing each construct are often examined by looking at their pattern of variance and correlation (Bryant & Yarnold, 1995). This is often examined by using factor analysis, which is a group of statistical methods.
(for example, principal axis factoring (PAF), principal component analysis (PCA), and image factor extraction) that collectively is known as exploratory factor analysis (EFA). One of the fundamentals of this analysis is that multiple observed variables can be reduced into a latent construct or factor (that is, hidden, not directly measured) since they have a similar pattern of responses which could be assessed by those methods. In other words, the purpose of EFA is not only a form of data reduction technique to produce a coherent scale as what it is intended to measure; it also essentially identifies the underlying theoretical structure of a phenomenon.

The structure and alignment of the factors for sense of place identified from the previous chapter (Chapters 2 and 4) were checked using EFA. A principal axis factoring (PAF) was performed employing a 26-item questionnaire that measured sense of place characteristics. This method of extraction was selected as it enables theoretical explorations of the underlying factor structure in relation to the context of this study where pattern of items are uncertain between qualitative findings and existing literature. The suitability of PAF was examined prior to analysis. Inspection of the correlation matrix showed that all items had at least one correlation coefficient greater than 0.3, which indicates that items are correlated with at least some other items and therefore appropriate for EFA (Tabachnick & Fidell, 2012). The overall verification of sampling adequacy by Kaiser-Meyer-Olkin (KMO) measure of 0.913 points to or suggests classification of "marvelous" according to Kaiser (1974) whereby an acceptable value is 0.5. Bartlett’s test of sphericity was statistically significant ($\chi^2 = 2239.581, df = 325, p < .0005$) indicating that the data was likely factorizable.21

Four factors were extracted based on a final solution with eigen values greater than one. The respective factors were explained by 43.5%, 6.4%, 4.5% and 3.1% of the total variance. Although the scree plot (Cattell, 1966) only indicated one factor (Appendix M), the four factor solution was retained as it met the interpretability of the data. The four factors produced an efficient structure that reflects the multidimensionality of sense of place constructs, supported by the qualitative findings.

The four-factor solution explained 57.5% of the total variance. A Promax oblique rotation was assigned to assess the interpretability of underlying structure of the data, wherein loadings

21 These methods used to detect sampling adequacy for the overall data set can indicate whether the association between variables is factorable. KMO (Kaiser, 1974) is an index of whether a linear relationship exist between the variables, where value close to 0 indicates diffusion in the pattern of correlations between variables and value close to 1 indicates compact pattern of correlations which factor analysis is likely to yield distinct factors. Bartlett’s test of sphericity (Bartlett, 1954) tests the hypothesis that all variables are uncorrelated, so that rejecting the null hypothesis means there are correlations in the data set, and it is therefore suitable to proceed to EFA.
Chapter 5 – Survey Analysis and Findings

below 0.4 were suppressed to improve clarity. The rotation exhibited "simple structure" (Thurstone, 1947) as presented in Table 5-1, although there are readjustments made to enhance its interpretability.

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Communalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q23_SoP_CA</td>
<td>.900</td>
<td></td>
<td></td>
<td></td>
<td>.692</td>
</tr>
<tr>
<td>Q24_SoP_CA</td>
<td>.884</td>
<td></td>
<td></td>
<td></td>
<td>.706</td>
</tr>
<tr>
<td>Q25_SoP_CA</td>
<td>.711</td>
<td></td>
<td></td>
<td></td>
<td>.734</td>
</tr>
<tr>
<td>Q27_SoP_CA</td>
<td>.707</td>
<td></td>
<td></td>
<td></td>
<td>.522</td>
</tr>
<tr>
<td>Q26_SoP_CA</td>
<td>.581</td>
<td></td>
<td></td>
<td></td>
<td>.598</td>
</tr>
<tr>
<td>Q21_SoP_PAa</td>
<td>.572</td>
<td></td>
<td></td>
<td></td>
<td>.572</td>
</tr>
<tr>
<td>Q22_SoP_PAa</td>
<td>.569</td>
<td></td>
<td></td>
<td></td>
<td>.594</td>
</tr>
<tr>
<td>Q20_SoP_PAa</td>
<td>.550</td>
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<td></td>
<td></td>
<td>.662</td>
</tr>
<tr>
<td>Q19_SoP_PAa</td>
<td>.472</td>
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<td></td>
<td></td>
<td>.492</td>
</tr>
<tr>
<td>Q18_SoP_PAa</td>
<td>.472</td>
<td></td>
<td></td>
<td></td>
<td>.485</td>
</tr>
<tr>
<td>Q14_SoP_PD</td>
<td>.809</td>
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<td></td>
<td></td>
<td>.587</td>
</tr>
<tr>
<td>Q28_SoP_PC</td>
<td>.762</td>
<td></td>
<td></td>
<td></td>
<td>.676</td>
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<tr>
<td>Q29_SoP_PC</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Q13_SoP_PD</td>
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<td></td>
<td></td>
<td>.541</td>
</tr>
<tr>
<td>Q30_SoP_PC</td>
<td>.442</td>
<td></td>
<td></td>
<td></td>
<td>.517</td>
</tr>
<tr>
<td>Q12_SoP_PD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.275</td>
</tr>
<tr>
<td>Q17_SoP_PI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.197</td>
</tr>
<tr>
<td>Q5_SoP_PEI</td>
<td></td>
<td>.738</td>
<td></td>
<td></td>
<td>.598</td>
</tr>
<tr>
<td>Q11_SoP_PDb</td>
<td></td>
<td>.597</td>
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<td>.669</td>
</tr>
<tr>
<td>Q15_SoP_PI</td>
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<td>.616</td>
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<tr>
<td>Q9_SoP_PI</td>
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<td></td>
<td></td>
<td>.542</td>
</tr>
<tr>
<td>Q10_SoP_PDc</td>
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<td>.547</td>
<td></td>
<td></td>
<td>.563</td>
</tr>
<tr>
<td>Q8_SoP_PEI</td>
<td>.420</td>
<td>.539</td>
<td></td>
<td></td>
<td>.677</td>
</tr>
<tr>
<td>Q16_SoP_PI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.437</td>
</tr>
<tr>
<td>Q7_SoP_PEIc</td>
<td></td>
<td></td>
<td>.862</td>
<td>.759</td>
<td></td>
</tr>
<tr>
<td>Q6_SoP_PEIc</td>
<td></td>
<td></td>
<td>.833</td>
<td>.675</td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization, converged in 9 iterations.
a. Items separated into individual factor (later factor 2)
b. Item excluded for further analyses
c. Items merged to factor 3 (later factor 4)

Table 5-1: Pattern matrix for PAF with Promax rotation of a four factor sense of place measurement that later readjusted for theoretical consistency

First, factor 1 that grouped together community attachment and place attachment subscale was separated into two individual factors in terms of its relevance in theory. Second, factor 3 has two items (Q8 and Q10) that load on more than one factor from which the later dropped. Item Q10 which measures Place Dependence (Q10_SoP_Pladen) construct was excluded.
following the criteria by Hammitt, Backlund, & Bixler (2006) where items loading on more than one factor had to differ by ≥ 0.10 in loading in order to be retained. Item Q11 measures that Place Dependence (Q11_SoP_Pladep) construct was dropped as it duplicated or resembled “contaminant variable” from the overall thematic description of factor 3. Third, item Q6 and Q7 in factor 4 were merged into factor 3 (later factor 4) due to their overall thematic similarities with factor 3.

The interpretation of scale post-EFA as shown in Table 5-2 revealed that the latent factors of sense of items changed comparatively with the original scale that were grouped into six subscales; personal identity, place dependence, place attachment, place identity, community attachment and place character.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Sense of Place Scale (Post-EFA)</th>
<th>Items Original Scale (Pre-EFA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1</td>
<td>I mix easily with the communities here, and I am accepted as part of the community</td>
<td>Community Attachment (CA)</td>
</tr>
<tr>
<td>(Community Attachment)</td>
<td>This place is where I consider the community to be part of my family</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I feel the culture and tradition of the communities here are part of my life</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I feel needed and appreciated by the communities when I am here</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This place is where my friends are close by and are connected to my life here</td>
<td></td>
</tr>
<tr>
<td>Factor 2</td>
<td>I feel safe here</td>
<td>Place Attachment (PA)</td>
</tr>
<tr>
<td>(Place Attachment)</td>
<td>I can identify with the human values here</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I feel peaceful when I am here</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This place brings my old memory back</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This place matches my emotional feeling</td>
<td></td>
</tr>
<tr>
<td>Factor 3</td>
<td>This place allows me to connect with nature in a way that other places could not</td>
<td>Place Dependence (PD)</td>
</tr>
<tr>
<td>(Place Dependence)</td>
<td>No other place can be compared to this place where I can get urban services with ease</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I think the landscape here is beautiful</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The plant and animal life in this place is really fascinating</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I like living here surrounded by natural landscape</td>
<td></td>
</tr>
<tr>
<td>Factor 4</td>
<td>I identify strongly with this place's natural resources and commodities</td>
<td>Place Identity (PI)</td>
</tr>
<tr>
<td>(Place Identity)</td>
<td>Living in this place reflects my personal beliefs and values</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I am comfortable here because this place matches my socio-economic standard</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The communities in this place are part of my life</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Being in this place reflects my origin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This is somewhere I connect with my family</td>
<td></td>
</tr>
</tbody>
</table>

Table 5-2: Sense of place factors post-exploratory factor analysis (EFA)

Each factor of the final scale combined items from two of the original subscales, except for factor 1 and 2 that retained its existing items. For example, factor 3 consists of five items from both place dependence and place character. Factor 4 combines one item from place identity and five items from personal identity. The measurement items factorized under these factors
Chapter 5 – Survey Analysis and Findings

were aligned and matched with the thematic ideas of items clumped under the original sense of place scale and therefore were named accordingly as initial subscales.

5.2.2. External Validity

External validity refers to how accurate the responses beyond the sampled respondents are, in other words, the generalizability of a survey to the populations and across the various contexts. Due to the relatively low response rate as reported in Section 5.1.1, it is imperative to assess the potential of non-response bias. It is concerned with the extent to which the response from respondents who did not return the questionnaire might differ from the responses of the respondents who did return the questionnaire. Normally, two methods were used to check for non-response bias by comparing: [1] the responses before and after the cut-off date and [2] the demographic characteristics of the population with the respondents.

Questionnaires returned after the cut-off date (Section 3.5.3.2) were, in effect, considered as “non-respondent” and are assumed to be representative of respondents who don’t returned the questionnaire.22 From the total responses, 75.3% (N=113) responded before the cut-off date, which means that 25% (N=37) who responded after this date were considered in the above group. The key items that were compared include the sense of place outcome variables from the EFA, stewardship attitudes towards place change and landscape vision. The demographic characteristics were compared whenever such information was available from the sample frame.

For method [1], comparison of before and after the cut-off date responses for sense of place factors (Table 5-3), stewardship attitudes and visions of change (Table 5-4) were not significantly varied.

22 This assumption is based on resistance model (Lin & Schaeffer, 1995) that theorizes the propensity of sampled respondents can be inferred from the level of effort required to elicit their responses. In other words, people who take considerable time after a few solicitations only to complete the survey resemble non-respondent’s behaviors and interest.
Chapter 5 – Survey Analysis and Findings

### Table 5-3: Comparison of sense of place factors based response before and after the cut-off date

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sense of Place Factors</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor 1 (Community</td>
<td>Median</td>
<td>p</td>
<td>Factor 2 (Place Attachment)</td>
<td>Median</td>
<td>p</td>
<td>Factor 3 (Place Dependence)</td>
<td>Median</td>
<td>p</td>
</tr>
<tr>
<td>Respondent (before)</td>
<td>4.0</td>
<td>0.14</td>
<td></td>
<td>4.0</td>
<td>0.12</td>
<td></td>
<td>3.6</td>
<td>0.36</td>
<td>4.0</td>
</tr>
<tr>
<td>“Non-respondent”</td>
<td>4.2</td>
<td></td>
<td>4.0</td>
<td></td>
<td>3.6</td>
<td></td>
<td>4.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 5-4: Comparison of stewardship attitudes and vision based on response before and after the cut-off date**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Stewardship Attitudes Regarding Place Change</th>
<th>Vision of Place</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median</td>
<td>p</td>
<td>Median</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondent (before)</td>
<td>2.0a</td>
<td>0.56</td>
<td>3.0b</td>
<td>0.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Non-respondent”</td>
<td>2.0</td>
<td></td>
<td>3.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. a “Concerned but support change”. b “Urbanization”

For method [2], a comprehensive comparison of demographic variables measured in the survey with actual population was not possible due to unavailable or limited access to complete census. Hence, only three variables were compared: ethnicity, age and gender (Table 5-5). A comparison of the ethnicity of respondents with the census shows that while there is a general congruence, the survey data has a slight bias since there are more Malays respondents and an under-estimation of Chinese respondents. However, the general shape of ethnicity plots (Figure 5-1) is noted to be similar. Regarding age comparison (Figure 5-2), although the general pattern is fairly similar, there is clear bias especially for age group 40-54 that over-estimates and 18-24 that under-estimates the percentage in population. Both census and survey data indicate that there are slightly more males than females, although the survey data slightly over-estimates the male respondents than female however the general pattern is consistent with both sources (Figure 5-3).
### Table 5-5: Comparison of ethnicity, age and gender respondents to Census 2010 data

<table>
<thead>
<tr>
<th>Variable</th>
<th>% Population&lt;sup&gt;a,b&lt;/sup&gt;</th>
<th>% Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malay</td>
<td>65</td>
<td>73</td>
</tr>
<tr>
<td>Chinese</td>
<td>30</td>
<td>22</td>
</tr>
<tr>
<td>Indian</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>26</td>
<td>5</td>
</tr>
<tr>
<td>25-39</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td>40-54</td>
<td>24</td>
<td>47</td>
</tr>
<tr>
<td>55-70</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>71-above</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>52</td>
<td>62</td>
</tr>
<tr>
<td>Female</td>
<td>48</td>
<td>38</td>
</tr>
</tbody>
</table>

<sup>a</sup> Percentages do not always add to 100% because of rounding

<sup>b</sup> Non-citizens excluded from counts

Figure 5-1: Comparison of ethnicity of survey respondents to Census 2010 data
While in method [1] the comparison of key variables is perfectly congruent, results in method [2] are generally close, if not very close in some instances. There is an age bias and this needs to be taken into account in discussion later. In addition, due to the limitation of other demographic variables that were not possible to be compared due to inaccessible or non-existent information from the census, it is difficult to determine if any potential non-response bias exists for demographic variables indicated in the literature to be significant, such as education status, residential and childhood growth type. Based on these results, it is possible to suggest that generalization is possible, with caution.
5.3. Reliability

Regarding the reliability of the original sense of place (pre-EFA) measurement it was tested by computing Cronbach’s alpha in relation to the items that formed the six constructs. The first construct, "personal identity", consisted of five items. The scale had a high level of internal consistency and was therefore reliable, as indicated by a Cronbach’s alpha of 0.813. The second construct, “place dependence” consisted of five items, similarly indicating a high level of internal consistency of 0.815. On the other hand, the three items that were summed to create the third construct, “place identity” yielded a low internal consistency of 0.659. The fourth construct, “place attachment” which is comprised of five items had a high internal consistency of 0.846. Meanwhile, the fifth construct “community attachment” consisted of five items also indicated a high reliability of 0.893. Finally, the 6th construct, “place character” consisted of three items demonstrated high internal consistency of 0.844. Overall, the combined sense of place constructs, comprising 26 items had a Cronbach’s alpha of 0.948, which equates to high internal consistency reliability.

Following the EFA, the final sense of place scale (post-EFA) extracted the four factors that as shown in Table 5-1 and Table 5-2. Only factor 3 (place dependence) and 4 (place identity) as reported earlier were changed as they are partially aligned with the items batched or bundled together under the original sense of place scale, where some items were either dropped or rearranged. Therefore, only Cronbach’s values of factor 3 and 4 were reported, with 0.845 and 0.855 respectively. The overall post-EFA combined sense of place constructs measurement comprising 21 items had a Cronbach’s alpha of 0.941. These values demonstrated that the reliability of post-EFA scale demonstrated a very good internal consistency.

5.3.1. Index Measurement

In order to prepare for the subsequent analyses, four composite indexes were created corresponding to the four factors established in the EFA. These indexes represent respondent’s overall intensity of sense of place based on the factors. The indexes were computed based on the mean score values of all items grouped under the EFA.
5.4. **Research Questions and Corresponding Variables Relationships**

Due to the exploratory design of this study, no formal hypotheses were formulated in regard to the three research questions examined. Although sense of place and its behavioral characteristics were widely explored in various disciplines, the intersection of the topics within the context of socio-ecological framework remained scarce. Therefore, the relationships among variables addressed through the following research questions were explored to develop a working hypotheses and operational point of view.

5.4.1. **Research Question 1: Sense of Place Structure between Groups**

The first research question explored is how different planning actor groups conceptualize sense of place in land use planning. This question focuses on two important parts. First, it explores whether there is a difference in regard to sense of place structure comprising the various aspects of physical and social dimension among planning actor groups. Second, if so, how does this contribute to their overall sense of place intensity? For the first part, a Kruskal-Wallis H test was used to compare the three planning actor groups; [a] Local Active Community Members (n=56), [b] Members of Civic and Institutional Organizations (n=40), and [c] Environmental and cultural advocacy (n=36) on each of the sense of place factors; *factor 1 (community attachment), factor 2 (place attachment), factor 3 (place dependence), and factor 4 (place identity)*. The factors were applied as dependent variable (scale measurement) and the three groups were treated as independent variables (nominal measurement). The summary of results is presented in Table 5-6.
### Chapter 5 – Survey Analysis and Findings

#### Group Sense of Place

<table>
<thead>
<tr>
<th>Group</th>
<th>Factor 1 (Community Attachment)</th>
<th>Factor 2 (Place Attachment)</th>
<th>Factor 3 (Place Dependence)</th>
<th>Factor 4 (Place Identity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[a] Local Active Community Member</td>
<td>Median 4.2, p = .721</td>
<td>Median 4.0, p = .480</td>
<td>Median 3.8, p = .265</td>
<td>Median 4.0, p = .221</td>
</tr>
<tr>
<td>[b] Members in Civic and Institutional Organizations</td>
<td>Median 4.0, p = .41</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[c] Environmental and Cultural Advocacy</td>
<td>Median 4.2, p = .721</td>
<td>Median 4.0, p = .480</td>
<td>Median 3.6, p = .265</td>
<td>Median 4.0, p = .221</td>
</tr>
</tbody>
</table>

**Table 5-6: Summary of Kruskal-Wallis H test on latent sense of place factors between 3 planning actor groups**

The distribution of all sense of place factors scores was similar for all groups, as assessed by visual inspection of a boxplot. In terms of factor 1 (community attachment), the median scores increased from Civic and Institutional group (4.0), for both Local Active Community Member and Advocacy groups (4.2) the differences were not statistically significant, $\chi^2(2) = .654, p = .721$. For factor 2 (place attachment), the median scores were similar for both Local Active Community and Advocacy group (4.0), and increased to (4.10) for Civic and Institutional group, hence the differences were not statistically significant, $\chi^2(2) = 1.469, p = .480$. For factor 3 (place dependence), median scores increased from Advocacy group (3.4), to both Local Active Community and Civic and Institutional groups (3.8) yet the differences were not statistically significant, $\chi^2(2) = 2.656, p = .265$. Finally, as factor 4 (place identity) included median scores similar for all groups, it does not differ statistically, that is, $\chi^2(2) = 3.020, p = .221$.

And for the second part of the analysis, by combining all four latent factors, a new composite variable was created. For the 59 ($n=59$) respondents in Local Active Community group, the median sense of place index was 4.0 (on a scale of 1 to 5, where 1 represented a strong, negative sense of place and 5 represented a strong, positive sense of place). Similarly, 45 ($n=45$) respondents in the Civic and Institutional group had a median score of 4.08. For 41 respondents ($n=41$), the median scores were 3.88. While the median scores are different, it was not statistically significant; $\chi^2(2) = 2.926, p = .232$. The results illustrate that each group
shares a similar underlying structure and strong overall sense of place intensity. Nevertheless, the comparison of factor structure and composite index of sense of place among the planning groups should be carefully interpreted, as the method was data driven due to the limitation of sample size for each subsample. Even so, the results were informative given the exploratory nature of the questions that were addressed.

5.4.2. Research Question 2: Stewardship Attitudes and Behaviors

The second research question assessed the way in which a multitude of place values characterize attitudinal and behavioral change related to place change among the various planning actors. Firstly, a composite measure of multitude attitudes and behaviors related to place concern were developed. Respondents were asked whether they believe that their place is changing and the majority (94.7%; N=142) indicated that their place is changing while just 5.3% (N=8) believe it was not changing. From this question on, three attitude groups were established; [1] “place change and not concern”, [2] “concern about place changing but support the change”, and [3] “concern about place changing and do not support” the change. For the behavior characteristics, three groups were; [1] “do not take action as satisfied” with the land management, [2] “do not take action and are not satisfied” with the land management, and [3] “action taken or plan to take action”. Next, a bi-variate analysis utilizing cross-tabulations was carried out to explore how attitudes and behaviors vary by planning actor groups.

Results indicate that the attitudes regarding place changes vary to a degree with the planning capacity of the actor groups (Table 5-7). In summary, aggregate score shows that 36.6% (n=52) of the respondents were not concerned about place change, while 33.8% (n=48) of the respondents were concerned yet support the change, and 29.6% (n=42) were concerned and do not support the change.

<table>
<thead>
<tr>
<th>Group</th>
<th>Not Concerned</th>
<th>Concerned but Support Change</th>
<th>Concerned and Do Not Support Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>[a] Local Active Community Member</td>
<td>22 (39.3%)</td>
<td>26 (46.4%)</td>
<td>8 (14.3%)</td>
</tr>
<tr>
<td>[b] Members in Civic and Institutional Organizations</td>
<td>20 (43.5%)</td>
<td>15 (32.6%)</td>
<td>11 (23.9%)</td>
</tr>
<tr>
<td>[c] Environmental and Cultural Advocacy</td>
<td>10 (25.0%)</td>
<td>7 (17.5%)</td>
<td>23 (57.5%)</td>
</tr>
</tbody>
</table>

Table 5-7: Difference in attitudes regarding place changing among planning actor groups
A Pearson Chi-square test of association proved a statistically significant relationship exists between planning actor groups and attitudes for place changing, as exemplified by $\chi^2 (4) = 23.450, p < .001$ All of the expected cell frequencies were greater than five. There was a moderate association between the two variables, Cramer's $V = 0.287, p < .001$. The results suggest that the attitudes towards place change are moderately associated with the planning capacity of actor groups.

The results of environmental behaviors and characteristics show that more than half of the respondents indicated they have taken certain action or at least stated intention. Aggregate scores show that 11.1% ($n=10$) respondents do not take action and are satisfied with the current land management, 33.3% ($n=30$) respondents do not take action and are not satisfied, and 55.6% ($n=50$) respondents who have taken action or plan to take action regarding the place change. Detailed scores according to the sub-groups as tabulated are shown in Table 5-8 below. The variability of stewardship behaviors among the sub-groups are compared. No significant relationship exists, as indicated by the Pearson Chi-square measure: $\chi^2 (4) = 1.593, p = .810$. These results suggest that the actual behaviors are not associated with the planning capacity of the actor groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Do Not Take Action and Satisfied</td>
</tr>
<tr>
<td>[a] Local Active Community Member</td>
<td>2 (5.9%)</td>
</tr>
<tr>
<td>[b] Members in Civic and Institutional Organizations</td>
<td>4 (15.4%)</td>
</tr>
<tr>
<td>[c] Environmental and Cultural Advocacy</td>
<td>4 (13.3%)</td>
</tr>
</tbody>
</table>

Table 5-8: Difference in actual environmental behaviors regarding place changing among planning actor groups

A closer examination of the relationship between attitudinal and behavioral characteristics was conducted by using the cross tabulation in Table 5-9 below. The results show that the attitudes and actual behaviors towards the place protection vary among the planning actor groups. Respondents in Local Active Community group who were taking action were the majority who support changes (47.1%, $n=16$) compared to those who do not support changes (11.8%, $n=4$) in terms of all of the respondents in the group. Respondents from Civic and Institutional group
who were taking action were nearly equally divided in whether they supported (30.8% of all respondents in groups, \(n=8\)) or didn’t support (23.1% of all, \(n=6\)) the change. Referring to the Advocacy group on the other hand, the majority who are taking action or are considering taking action are concerned and do not support the place change (43.3% of all respondents in the group, \(n=13\)). Pearson Chi-square test revealed that no statistically significant relationship between attitudes and actual behaviors exists for all groups: Local Active Community group \((\chi^2 (2) = 1.395, p = .498)\), Civic and Institutional group \((\chi^2 (2) = .174, p = .916)\), and Advocacy group \((\chi^2 (2) = 2.958, p = .228)\).

<table>
<thead>
<tr>
<th>Group</th>
<th>Attitude</th>
<th>Total (Within all respondents in group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[a] Local Active Community Members</td>
<td><strong>Behavior</strong></td>
<td>Do Not Take Action As Satisfied</td>
</tr>
<tr>
<td></td>
<td>Do Not Take Action And Are Not Satisfied</td>
<td>8 (23.5%)</td>
</tr>
<tr>
<td></td>
<td>Action Taken Or Plan To Take Action</td>
<td>16 (47.1%)</td>
</tr>
<tr>
<td>[b] Members in Civic and Institutional Organizations</td>
<td><strong>Behavior</strong></td>
<td>Do Not Take Action As Satisfied</td>
</tr>
<tr>
<td></td>
<td>Do Not Take Action And Are Not Satisfied</td>
<td>5 (19.2%)</td>
</tr>
<tr>
<td></td>
<td>Action Taken Or Plan To Take Action</td>
<td>8 (30.8%)</td>
</tr>
<tr>
<td>[c] Environmental and Cultural Advocacy</td>
<td><strong>Behavior</strong></td>
<td>Do Not Take Action As Satisfied</td>
</tr>
<tr>
<td></td>
<td>Do Not Take Action And Are Not Satisfied</td>
<td>4 (13.3%)</td>
</tr>
<tr>
<td></td>
<td>Action Taken Or Plan To Take Action</td>
<td>3 (10%)</td>
</tr>
</tbody>
</table>

Table 5-9: Frequency distribution of actual behaviors by attitudes towards protecting place change among three planning actor groups

A multinomial logistic regression model was used to predict attitudes toward addressing place changes using the sense of place factors developed earlier in Section 5.2.1 and compare among the planning actor groups. The attitudinal responses were used as an outcome variable instead of the actual behavior as the previous analysis revealed that the attitudes vary among the
groups, even if the behavior did not vary. If a behavior variable was to be used as the outcome variable, then the model wouldn’t be able to include all people who skipped the responses in terms of place change as they weren’t concerned in the first place. Furthermore, no significant relationship was found between the attitudes and behaviors as reported earlier. The reference group for the dependent variable was attitude [1] – not concerned about place changing. The model fitting was statistically significant such as $x^2(12) = 31.144, p = .002$; Nagelkerke pseudo $R^2 = .232$ \(^{23}\). The model classification accuracy was 48.8%, which exceeded the proportional by a chance accuracy rate of 42.13%. Overall significance of sense of place factors in the model show that they have no significant effect on the attitudinal characteristics, except for factor 3 (place dependence) which relates to this model, $(x^2(2) = 7.818, p = .020)$. Planning actor groups represent a significant predictor, $(x^2(4) = 20.941, p < .001)$.

<table>
<thead>
<tr>
<th>Independent Variables:</th>
<th>Sense of Place</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[2] Concerned BUT support the change</td>
<td>[3] Concerned about place changing AND do not support the change</td>
</tr>
<tr>
<td>B Wald Sig. OR</td>
<td>B Wald Sig. OR</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-1.837 1.419 .234</td>
<td>.131 .007 .934</td>
</tr>
<tr>
<td>Factor 1</td>
<td>.213 .137 .712 1.237</td>
<td>-.451 .508 .476 .637</td>
</tr>
<tr>
<td>Factor 2</td>
<td>-.797 1.727 .189 .450</td>
<td>.527 .666 .414 1.694</td>
</tr>
<tr>
<td>Factor 3</td>
<td>1.190 7.056 .008* 3.288</td>
<td>.494 1.253 .263 1.639</td>
</tr>
<tr>
<td>Factor 3</td>
<td>-.115 .056 .813 .891</td>
<td>-.312 .432 .511 .732</td>
</tr>
</tbody>
</table>

Note. Predicted variable reference group: [1] are not concerned about place change (n=47).

\(^{a}\) Reference group [3] (n=33). B = Logistic coefficient for each predictor. Wald = Chi-square test that tests the null hypothesis that the estimate equals 0. Sig. = P-values of the coefficient. OR = Odds Ratio. *p≤.05

Table 5-10: Multinomial logistic regression analysis of sense of place factors associated with attitudes to place change among planning actors

\(^{23}\) Nagelkerke pseudo $R^2$ (Nagelkerke, 1991) is one of goodness of fit measure for logistic regression that compute the correlation measures to explain the model. Ranging from 0 to 1, it provides the strength of the relationship between predictor and prediction variables, although this correlation does not explain errors and accuracy of the model.
Panel A in Table 5-10 above refers to the model distinguishing those who were concerned, but supported the change, from the reference group, those who were not concerned about the place change. The results suggest that although sense of place factors 1, 2 and 4 had no significant effect on the predicted attitude [2], factor 3 was a significant predictor. Higher levels of factor 3 ($OR = 3.288$) were associated with an increase in the likelihood of respondents to show concern but support the change. The planning actor groups were not a significant predictor of this attitude.

Panel B refers to the model distinguishing those who were concerned about the place changing and did not support the change, from the reference group, those who were not concerned about the place change. The model reveals that the sense of place factors were not significant predictors of the predicted attitude [3]. In general, the Local Active Community group ($OR = .145$) and those in the Civic and Institutional group ($OR = .212$) were less likely to be concerned and do not support the change compared to the Environmental and Cultural Advocacy group.

5.4.3. Research Question 3: Vision for Landscape Change

The analyses to answer research question 3 is divided into two parts. The first part utilizes descriptive statistics to provide in-depth information regarding vision with respect to the sample population description of future place. In regard to the second part which represents the primary analysis, it consists of the multinomial logistic regression model in which two or more categorical outcome variables exist. The model explored the connection of stewardship attitudes and planning actor’s group with landscape change descriptions.

The respondents were asked “What kind of place do you think this place will be in the next 30 years?” and to rank the top three descriptions out of seven options based on “1st most likely (value-3)” – “2nd most likely (value-2)” – “3rd most likely (value-1)” scale. Table 5-11 below provides a detail of the scores related to the likelihood of a visualization of landscape change among the planning actor groups. Overall, the most likely description was associated with urbanization, indicated by 30% ($n=45$) respondents who stated “residential and industrial development” followed by the likely prediction of “natural and ecosystem loss” by 28.7% ($n=43$) and the less likely prediction of “socio-economic development” by 18.7% ($n=28$) respondents. The majority of respondents (62%; $n=36$) from the Local Active Community group predicted a description associated with urbanization and growth as “1st most likely”, indicated by “socio-economic development” (32.8%; $n=19$) and “residential and industrial development” (30%; $n=18$).
development” (29.3%; $n=17$). With reference to the Civic and Institutional group, the majority of respondents indicated “residential and industrial development” to be “1st most likely” (38.3%; $n=18$). The Advocacy group, on the other hand, reported the “overgrowth” description as “1st most likely” (36.4%; $n=16$).

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Vision</th>
<th>1st Most Likely</th>
<th>2nd Most Likely</th>
<th>3rd Most Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
</tr>
<tr>
<td>Local Active Community</td>
<td></td>
<td>Remain as now</td>
<td>9</td>
<td>15.5</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remain rural</td>
<td>2</td>
<td>3.4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop industrial and residential</td>
<td>17</td>
<td>29.3</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coastal ecosystems loss</td>
<td>7</td>
<td>12.1</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conservation</td>
<td>1</td>
<td>1.7</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop socio-economic</td>
<td>19</td>
<td>32.8</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Overgrowth</td>
<td>3</td>
<td>5.2</td>
<td>10</td>
</tr>
<tr>
<td>Civic and Institutional</td>
<td>47</td>
<td>Remain as now</td>
<td>1</td>
<td>2.1</td>
<td>2</td>
</tr>
<tr>
<td>Arrangements</td>
<td></td>
<td>Remain rural</td>
<td>3</td>
<td>6.4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop industrial and residential</td>
<td>18</td>
<td>38.3</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coastal ecosystems loss</td>
<td>3</td>
<td>6.4</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conservation</td>
<td>1</td>
<td>2.1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop socio-economic</td>
<td>12</td>
<td>25.5</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Overgrowth</td>
<td>9</td>
<td>19.1</td>
<td>7</td>
</tr>
<tr>
<td>Environmental and Cultural</td>
<td>44</td>
<td>Remain as now</td>
<td>4</td>
<td>9.1</td>
<td>2</td>
</tr>
<tr>
<td>Advocacy</td>
<td></td>
<td>Remain rural</td>
<td>3</td>
<td>6.8</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop industrial and residential</td>
<td>10</td>
<td>22.7</td>
<td>6</td>
</tr>
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<td></td>
<td></td>
<td>Coastal ecosystems loss</td>
<td>4</td>
<td>9.1</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conservation</td>
<td>2</td>
<td>4.5</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop socio-economic</td>
<td>5</td>
<td>11.4</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Overgrowth</td>
<td>16</td>
<td>36.4</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 5-11: Distribution of the likelihood of landscape vision description by planning actor groups

For each of the likelihood landscape change descriptions, a multinomial logistic regression model was developed. Ordinal logistic regression was investigated it was not used because the initial test revealed a validity issue in which the outcome variable categories should be merged. For the primary analysis, the seven categorical outcome variables above are grouped into three thematic categories; “Urbanization”, “Conservation-Ecosystem Loss”, and “Remain Existing”. The likelihood landscape change descriptions were combined into the thematic outcome
variable according to a set of rules. Recall that if a respondent designated a landscape vision as “most likely” that option was assigned a value of 3, and if a respondent designated a landscape vision as “second most likely” that option was assigned a value of 2, and if a respondent designated a landscape vision as “third most likely”, that option was assigned a value of 1. The following rules were used to assign each respondent to one of the three categories in the new variable: “Urbanization”, “Conservation-Ecosystem Loss”, or “Remain Existing”:

If the value of “Develop industrial and residential” plus the value of “Develop socio-economic” added up to a total of three or more then the respondent was assigned to the “Urbanization” category. For example, a respondent could have designated “Develop industrial and residential” most likely (value of 3) and not chosen “Develop socio-economic” at all (a value of 0) and they would be placed into this category (3 + 0 = 3). Or a respondent could have designated “Develop industrial and residential” second most likely (a value of 2) and chosen “Develop socio-economic” to be third most likely (a value of 1) and they would be placed into this category (2 + 1 = 3). And there are many other combinations that would give a respondent a value of 3 or more to place them in this category.

If the value of “natural and coastal ecosystems loss” plus the value of “conservation” plus the value of “overgrowth” totaled three or more then the respondent was assigned to the “Conservation-Ecosystem Loss” category.

If the value of “remain as now” plus the value of “Remain rural” totaled three or more then the respondent was assigned to the “Remain Existing” category.

These categories were used as an outcome variable where “Urbanization” was employed as a reference category. And overall the model is statistically significant - $\chi^2(8) = 43.999 = .000$; Nagelkerke pseudo $R^2 = .316$. The model classification accuracy of 65.5% exceeded the proportional by a chance accuracy rate of 55.25%. The overall significance of stewardship attitudes in the model shows that they have significant effect on the landscape change description, ($\chi^2(4) = 30.464, p < .000$). In contrast, being part of a planning actor group is not a predictor of landscape change description, that is, it is not statistically significant; ($\chi^2(4) = 6.179, p = .186$).
## Chapter 5 – Survey Analysis and Findings

### Independent Variables:

<table>
<thead>
<tr>
<th></th>
<th>Panel A</th>
<th>Panel B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stewardship Attitudes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
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<td>1.244</td>
</tr>
<tr>
<td></td>
<td>1.170</td>
<td>7.724</td>
</tr>
<tr>
<td></td>
<td>.279</td>
<td>.005</td>
</tr>
<tr>
<td>[1] Place change AND not concern</td>
<td>-.824</td>
<td>-3.061</td>
</tr>
<tr>
<td></td>
<td>1.164</td>
<td>19.060</td>
</tr>
<tr>
<td></td>
<td>.281</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>.439</td>
<td>.047</td>
</tr>
<tr>
<td>[2] Concern BUT support the change</td>
<td>.139</td>
<td>-670.67</td>
</tr>
<tr>
<td></td>
<td>.033</td>
<td>1.705</td>
</tr>
<tr>
<td></td>
<td>.856</td>
<td>.192</td>
</tr>
<tr>
<td></td>
<td>1.149</td>
<td>.512</td>
</tr>
<tr>
<td>[3] Concern AND don’t support the change</td>
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<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning Actor Group</td>
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</tr>
<tr>
<td>[a] Local Active Community Members</td>
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<td>-1.228</td>
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<tr>
<td></td>
<td>.918</td>
<td>4.576</td>
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<tr>
<td></td>
<td>.338</td>
<td>.032*</td>
</tr>
<tr>
<td></td>
<td>.503</td>
<td>.293</td>
</tr>
<tr>
<td>[b] Members in Civic and Institutional Organizations</td>
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<td></td>
<td>1.697</td>
<td>4.049</td>
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<td></td>
<td>.193</td>
<td>.044*</td>
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<td></td>
<td>.367</td>
<td>.317</td>
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<td>[c] Environmental and Cultural Advocacy</td>
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</tbody>
</table>

Note. Predicted variable reference group: [3] Urbanization (n=82). 5 Reference group [3] (n=42). 6 Reference group [3] (n=40). B = Logistic coefficient for each predictor. Wald = Chi-square test that tests the null hypothesis that the estimate equals 0. Sig. = P-values of the coefficient. OR = Odds Ratio. *p≤.05

### Table 5-12: Multinomial logistic regression analysis summary predicting landscape change description based on stewardship attitudes and planning actor groups

Panel A in Table 5-12 above refers to the model distinguishing those who visualized place remain unchanged, from the reference group, those who visualized landscape changes associated with urbanization. The results suggest that both stewardship attitudes and planning actor groups did not represent a significant predictor of this future landscape change description. Panel B refers to the model distinguishing those who visualized ecosystem loss, from the reference group, those who visualized landscape changes associated with urbanization. The model revealed that the respondents who feel the place changing and are not concerned were less likely than one who is concerned and does not support the change to predict ecosystem loss (OR = .047) relative to predict urbanization. That is, those who feel their place is changing and are not concerned are more likely to visualize urbanization compared to the other attitude, concerned and do not support the changes.
5.5. Summary

Research Question One explored the structure of sense of place among the planning actor group. The four latent factors established suggest that sense of place as a multi-dimensional construct. The scale developed prior and post to the EFA reveals that it is a reliable instrument for assessing sense of place. The study found that the factors are not statistically different among the planning actor groups. The valance of overall sense of place intensity was revealed by positive scores, which were statistically similar among the groups.

Multi-attitudinal and behavioral responses towards protecting place change were developed through Research Question Two. While a significant relationship was found between the planning actor group and their attitudes towards the place change, their attitudes were not associated with the actual stewardship behaviors. A model combining sense of place factors and planning actor group was found to predict stewardship attitudes. Only sense of place factor 3 served as the significant predictor for attitude [2], that is, concern while supporting the change. The factor – place dependence relates to the functional aspect of connection to a place, which was created by physical attributes that fulfill or satisfy certain needs or goals. The model predicts that, in general, respondents with a higher level of place dependence have an increased likelihood to be concerned but support the change compared to the attitude not concerned at all. The planning actor group was a significant predictor for attitude [3], concern and do not support the change, that is, those in the Local Active Community group and those in the Civic and Institutional group are less likely to be concerned and not support the change than the Advocacy group.

Research Question Three models the attitudinal responses and predicts the trajectory of landscape change based on the description of the future place which was reclassified into three categories including “Urbanization”, “Conservation-Coastal and ecosystem loss”, and “Remain existing”. The model suggests that attitudes regarding place change are a significant predictor, while the planning actor is not. The findings suggest that the respondents who are not concerned regarding place change are more likely to visualize urbanization compared to the other attitude, concerned and do not support the changes.

Overall, these findings suggest the latent sense of place factors extracted are consistent with that which is reported in the literature regarding the multidimensional construct of place, consisting of place dependence, place identity and place attachment. Community attachment however appeared to stand as an individual construct which does not merge or is concealed.
within other dimensions. The overall structure and intensity of sense of place (and factors) are coherent among groups. However, the attitudinal and behavioral characteristics of sense of place yields a mixed result. Stewardship attitude is not associated with actual behavior, and only the variability in attitude between groups is significant. In the prediction model of sense of place and attitude, of the four factors, only factor 3 (place dependence) is associated with stewardship attitudes, although those respondents still support the changes that threaten their place values. As anticipated, although the Local Active Community and Civic and Institutional in the planning actor group are more likely to be concerned they still support the changes as compared to the Advocacy group. For the landscape change prediction, those who are not concerned about place change are most likely to visualize urbanization as their vision of future landscape. Although the planning actor group was reported in the qualitative findings to be divided between those which projected urbanization and ecosystem loss it is not the case in the prediction model as expected.
Chapter 6. Discussion

6.1. Introduction

The key aspect of this study on urbanizing coastal communities is to explore how sense of place relating to various land use planning actors helps to explain attitudes towards development, and how these attitudes might influence outcomes.

While a substantial proportion of the sense of place literature indicated support for mobilization and empowerment towards positive outcomes, such as environmental stewardship engagement (Lokocz et al., 2011), environmental advocacy (Cantrill, 1998) or environmentally-responsible behaviors (Vaske & Kobrin, 2001), thus far these studies have not explored the various conceptualizations and ideas related to “place” among the various planning actor groups and their implications on the ecosystem. More specifically, how do these conceptions shape future landscape changes based on a set of sentiments and sensibilities, attitudes and behaviors? Discovering the variances of place conception and how they might generate various attitudinal outcomes could provide indicators for future landscape changes and could include their impact on ecosystems. This information can provide a critical basis for land use and conservation decision-making processes to mitigate any potentially adverse impacts.

Consequently for this reason this study addresses the theoretical framework based on social and ecological resilience through the integrative concept of sense of place, since the literature has rarely focused on the intersection of these concepts in understanding the dynamics of the relationship between society and ecosystems. From a practical perspective, this information indicates that planning as a process, has implications that resemble “place-making”. This is since sense of place involves cause and effect that serves to guide choices regarding land use development and conservation efforts. It calls for and invites discussion, public participation and negotiation that is justified and should not be ignored. This chapter synthesized thematic comparison between the qualitative and quantitative findings.

6.2. Thematic Comparison of Qualitative and Quantitative Findings

The study consists of three primary questions that pertain to the aim to understand relationship of ecosystem and society. First of all the study aim is to understand the way in which ‘place’
is perceived by the three planning actor groups and the way in which their roles and on-the-ground ecosystem management serve to shape it. This included an investigation to understand what are the structures of meaning and to what extent this contributed to the intensity of their overall sense of place. Second, the study examined the role of sense of place in determining their stewardship attitudes and behaviors. Finally, the trajectory of future landscape changes involved a description based on the attitudinal responses and actor groups. A mixed-methods study was designed to explore these questions in the case study of the land use planning process in Pontian.

6.2.1. Place Manifestation in Planning

The expectation that the study had here was that it would seek to discover a wide variety of structures of meaning. I wanted to explore how the different planning actor groups conceptualize sense of place in land use planning. This including how their perspective of place is shaped by their own direct or indirect role in the local decision-making process.

In regard to an overall indication of sense of place, the qualitative study revealed five thematic dimensions. The themes, personal identity, community attachment, place attachment, place character and subsequent feeling differences, reflect a rich description of the strongly held, very positive senses of place. The broad description of the place meanings mainly focused on the bio-cultural aspect of the place, meanings that derived from the process of physical and cultural combinations, for example, the biological and aesthetic values of the coastal mangroves, traditional products and way of life. Other meaning structure is associated with more personal-based values; and community-based attachment, including belief system, socio-economic values and political systems.

Building from the qualitative findings, the quantitative analysis revealed four possible sense of place factors, that is, community attachment, place attachment, place dependence and place identity from the initial six constructs of sense of place measurement. These factors were consistent with the ones reported in the literature as well as in the qualitative phase, although there are two patterns of differentiation. First, the construct items developed from the qualitative phase merged with the ones in the theoretical framework, personal identity merged into place identity and place character into place dependence. Second, community attachment appeared to stand as an individual construct, which supports the argument by Brehm et al. (2006) and Stedman (2002), that community aspect of place can be reducible into a distinct component and the present study provides strong evidence. Although the items configuration
changed between the qualitative and quantitative findings, overall, the meaning structure resembled the similarities.

Returning to the first research question, the sense of place structure between the planning actor groups is compared. The qualitative findings revealed that although in terms of the overall pattern they can be broadly grouped into five thematic factors that are similar across the groups, that is, personal identity, community attachment, place character, place attachment and feeling different from elsewhere, the meaning unit was emphasized differently among the groups. The meanings structure for the Local Active Community group mainly center on the community and identity-idea of place. This is relatively easy to understand given their active roles in terms of engagement and outreach with the wider community in relation to the developmental activities that help shape the meanings. These findings support the processes domain in place theories that propose the role of social construction of place (Brehm et al., 2006; Greider & Garkovich, 1994) and political and economic involvement (Agnew, 1987; Gieryn, 2000) that influence identity (Twigger-Ross & Uzzell, 1996). This was evident, as illustrated by the participants in this group who notably described their specific roles in the community and how it helped shape their personal, as well as their place identity.

Similarly, the effect of social interactions and cultural values developed through either formal or informal contact with the communities emerged as the core meaning for participants in the Civic and Institution group. Through their professional and civic roles, the process tended to strengthen their ties with the community resulting in their familiarization with the place’s physical and cultural resources. This evidently supports the claim that the physical qualities are merely a background symbol of the social bonds that exist (Lalli, 1992; Relph, 1976; Woldoff, 2002). Connection to the meanings associated with the physical qualities are only developed as a result of connection with the group or to the group it represents (Scannell & Gifford, 2010a). The findings on meanings structure of this group also pointed to active socialization from the professional capacity, indeed, it generated a power to communicate, share and reinforce meanings in a broader context at the community level. This finding appears to be consistent with the research of Agnew (1987) as described in relation to politics of place, and in terms of the suggestion by Galliano & Loeffler (1999) and Manzo (2003) regarding shared meanings expressed collectively from the perspective of the interplay of socio-political power.

Whereas the meaning for participants in the Advocacy group signified it was far more oriented towards natural and cultural resources in terms of their contribution towards shaping the place
identity. The fact that participants in this group who are mostly in direct contact with the coastal mangroves spoke about the ecological values as well as the associated socio-economic benefit is an example of the interdependency of the local natural and cultural resources and the way they tend to shape the meanings. Particularly, the findings show that the functional aspect of the physical environment referring to place dependence (Jorgensen & Stedman, 2006; Sack, 1997; Shumaker & Taylor, 1983) becomes meaningful whilst it intersects with personal goals, beliefs and values (Proshansky, 1978).

Although the quantitative finding suggested homogeneity in terms of the sense of place structure between the groups, differences were apparent in the qualitative findings. Interpreting the findings is somewhat difficult from a planning theoretical point of view. The findings contradict the assumption of normative problems in planning, where pluralistic actors and values exist (Hendriks, 1999). Planning is seen to convene or meet up “in between” these values and actors (Forester, 2004) because there is no single truth, since different stakeholders perceive problems and answers differently (Baum, 1977). This was apparent in the qualitative findings where the difference in terms of values was observed. So, the homogeneity of meanings structures between groups in the quantitative findings could be interpreted as a symptom of the disenfranchisement of actors and values in the planning process, if insights from the qualitative findings are given due consideration (refer Section 4.3.3.2).

The incongruence between qualitative and quantitative findings also can be bounded to the limits of methodology used. This is because answers by respondents in the qualitative phase depend on how questions were worded and interpreted, and then how researcher interpreted the answers. The qualitative findings certainly contributed more depth to the understanding of phenomenon investigated, but this will be influenced by how well the interview questions were worded and interpreted as well as how representative the answers were (discussed in Section 7.2). As a result, this may also have influenced the survey development, which highlights the problem with this method.

Although the orderly categorization of sense of place factors in the quantitative findings and overall themes emerged in the qualitative findings may imply that that one group’s sense of place structure can be classified into a similar pattern, more nuanced understandings were revealed in the qualitative findings. Within the Local Active Community and Civic and Institutional group, the social ties and community interaction was essential in transforming the mere space into “place”. This conception is aligned with the “existential” model that proposes
meanings are constructed from the daily experience of the interacting individuals. In other words, the theory underlines the social construction of place, that is experiences are created based on human activities and interaction that are central to the development of sense of place (Jackson, 1994; Relph, 1976; Tuan, 1977). Furthermore, this experience was reinforced by these groups’ social position and role, through which the social interaction and networks become symbolic in terms of their meaning to the groups (Greider & Garkovich, 1994; Hummon, 1992b; Williams & Stewart, 1998).

For the Advocacy group, the experience was valued less in terms of the social aspect of the place. Rather, the natural and humanity dependency interpretation in terms of the physical qualities was found to be essential in their development of sense of place. Therefore, their structure of sense of place was proposed to derive from the “interpretation” model that theorizes genius-loci (Cresswell, 2004; Norberg-Schulz, 1980), in which their interpretation was focused on an appreciation of location and on the qualities of the physical environment (Ryden, 1993; Stedman, 2003).

The actual result of the similarly held values and attitudes towards place between the Local Active Community and Civic and Institutional group were rather not so surprising. Often, while new development is promoted rhetorically by the political elite and government employees, it may not always align or represent the more resource-dependent group. This phenomenon seems to be structured into the process of local community structure and decision-making process. Warren, Ryan, Lerman, & Tooke (2011) suggest that the local political structure is often dominated by long-time residents who represent traditional views as compared to newer residents who may have more environmental-based views however were not represented in official positions. This study brings forward such a proposition through describing which local decision-making process could be emanating via a political maneuvering of values organized through patronage. Future research could explore in more depth the manner of which affiliation to political or institutional entity has the power to negotiate or impose views in planning. This relates to the social process of place manifestation in planning which is discussed in Section 7.1.1.

6.2.2. Sense of Place and Environmental Stewardship

The expectation here was that the multitude of place values would characterize specific stewardship attitudes and behaviors among the planning actor groups. This was stimulated
based on their response to changing place and associated issues, including certain motivations or constraints.

The qualitative and quantitative findings found a discrepancy in the capacity of each of the planning actor groups to react to place changes, although all participants in the qualitative phase and more than half of the survey respondents (63.4%, $N$=90) indicated stewardship attitudes in terms of their concern regarding the place change based on the meaning structure discussed in the previous section. The qualitative analysis found a shared attitude in Civic and Institution group, which was framed by the socio-economic return from conservation initiatives and bounded by professional engagement. Among the plausible explanations for this finding is the fact that most of the participants involved in the local resources and administration, viewed the protection and conservation of resources as motivated by the interest and opportunities created from those activities. Specifically, tourism activities related to history, ecology and culture were mentioned. This finding supported the claim that local communities’ capacities to protect place in terms of conservation is contingent on sustainable measures that are linked with socio-economic benefits they receive (Ghimire & Pimbert, 1997; Sekhar, 2003; Walpole & Goodwin, 2001). In contrast, participants in the Advocacy group viewed their roles differently. They saw their responsibility as collective rather than individualistic and where the outcomes need to address deep personal, ecological and humanitarian value. This conscience is in line with the philosophy that characterizes this group’s attitude, that is embedded in environmental ethics (Leopold, 1949) and deep ecology (Naess, 1973). The difference in attitudes depending on planning actor groups was supported in the quantitative findings where moderate association was found.

Even so, it is interesting to note that these attitudes only partially translated into actual stewardship behaviors due to several impediments that were grouped into two thematic areas: capacity building and governance. With respect to the Local Active Community group, their capacity building in terms of taking actions was limited by political factors. While for the Civic and Institution group, an anticipated professional constraint was the main constraint in capacity building as well as policies administration in governance. In regard to the Advocacy group, the political factor and policy administration were also identified as the core issues disempowering them. Consistently in the quantitative analysis, the assumed causal relationship between stewardship attitudes and actual behaviors was not proven to be statistically significantly related. These findings implied that the way these actors behave in the public sphere is more complex, and is moderated by the interplay of other factors, as possibly explained by the
impediments discussed above. Numerous authors have attempted to model linkages between attitudes and pro-environmental behaviors, for example, in the theory of planned behavior (Ajzen, 1991), values-belief norm (Stern, 2000), and norm activation theory (Schwartz, 1977). This finding expands such models by considering the influence of personal and socio-political factors (Chen et al., 2011; Hinds & Sparks, 2008; Raymond, Brown, & Robinson, 2011).

While qualitative findings indicated a relationship between sense of place structure and stewardship attitudes, the quantitative model showed the four latent sense of place factors are not significant predictors for stewardship attitudes, except for place dependence. In this model, respondents with a higher level of place dependence are more likely to be concerned but support the change. These findings are contrary to those that have been mostly reported in previous studies which found a positive relationship between sense of place and environmentally-based attitudes (Brehm et al., 2006; Lokocz et al., 2011; Vaske & Kobrin, 2001). The geographical, socio-economic context and sampled respondents of the study may partially explain the small effect of place dependence factor as it relates to the overall sense of place structure on stewardship attitude. Previous studies have focused on setting and people at the individual level, where monetary, social structure and political factors are not prevalent. On the contrary, the fact that this study’s sampled survey respondents were involved in the land use planning process, those who were concerned but supported the change did so likely because the goal of functional attachment was interpreted in economic terms, which is a reality in the context of urbanizing rural communities where the economic aspect is a primary indication in terms of development and conservation achievement.

The quantitative findings support the proposition in the qualitative phase that the membership of the planning actor group represented a significant indicator in relation to stewardship attitudes. As those in the Advocacy group were more likely to be concerned, they did not support the change compared to the other two groups. This finding can be implied and connected to the qualitative findings that indicated the factors such as professional and political constraint were disempowering in terms of their role in response to protecting place. Furthermore, a possible reason for these two groups to exhibit such an attitude was due to the fact that their stewardship attitude was more socio-economically oriented, to the extent that this consideration was weighted in support for the change.

Although the findings both in terms of the qualitative and quantitative methods indicated sense of place is indeed associated with stewardship attitudes and behaviors, the relationship is
unclear. In the qualitative phase, place-protective attitudes and behaviors existed within each of the groups, whether expressed in affirmative or opposing tone. In the quantitative model, only the place dependence factor significantly predicted attitude “concern, but support the change”. Also, stewardship attitudes were not significantly reflected behaviors at decision level and stated belief. The theories on people-place relationship and environmental behaviors suggest interlinked sense of place and stewardship attitudes and behaviors (Scannell & Gifford, 2010b). Even so, as it is noted from this study that in terms of sense of place alone, this relationship is dynamic within the context of urbanizing rural landscape communities with the involvement of a more complex picture of social, cultural, economic and political dimensions. This pattern is consistent with that presented by Cross, Keske, Lacy, Hoag, & Bastian (2011) and Kabii & Horwitz (2006) but contradicts that of Kruger & Shannon (2000), Lokocz et al. (2011), Stewart et al. (2004) and Walker & Ryan (2008) who view rural landscape protection as being motivated solely by a connection to character and feeling. Sense of place therefore, is not a simple panacea to stewardship as is predominant in the environmental literature as suggested by Heise (2008) and Lane, Lucas, Vanclay, Henry, & Coates (2005).

6.2.3. Navigating Change

Here the study explored how various possible landscape change trajectories and social-ecological resilience are shaped by the interplay of sense of place and associated attitudes and behaviors. This was expected since each planning actor group was characterized by their role in the planning process and therefore constituted a difference in terms of the expectation in relation to what the place would be. The positive note was linked with an affirmative attitude in favor to support change, while negative denotes disapproval attitudes related to the change.

The qualitative findings revealed that, although they are concerned, a broad consensus among the first two group’s members indicated a supportive attitude towards rural change. Their descriptions were thematically associated with growth and urbanization. As discussed in the previous section, the affirmative attitudes towards rural change were mainly framed in relation to the social and economic benefits, which those participants viewed as progress for rural people. In contrast, as was expected from the Advocacy group, nearly all of the participants had an opposing view, which expressed antipathy for the rural change by associating with environmental loss and degradation and its impacts on peoples’ well-being socio-economically. In the quantitative analysis, however, the differences in attitudes and landscape change prediction among the groups were not supported. Although the stewardship attitudes
were a significant predictor in the overall model, only a single attitude was a significant predictor at the variable level. That is, a respondent’s lack of concern decreases people’s probability to visualize the loss of natural coastal ecosystems. Conversely, some authors argued that the relationship is the other way around (Kollmuss & Agyeman, 2002; Pelletier, Dion, Tuson, & Green-Demers, 1999): that because they do not visualize the loss of natural ecosystems, they are not concerned. This may be influenced in part because of the perception of not being in-control over changes related to other non-environmental situations as illustrated in some of the descriptions in the qualitative findings.

The level of “openness” to rural landscape change among the first two groups that was expressed through attitudes of either “not concerned”, or “concerned but support the change”, indicates that the normally idyllic image of rural areas (Evans, 1996; Macnaghten & Urry, 1998) and protective attitudes towards such areas (Lokocz et al., 2011; Park & Selman, 2011; Walker & Ryan, 2008) are not static but rather change over time. Previous studies have suggested this change of landscape preference can be influenced by modification from long-term socialization (Kyle, Mowen, & Tarrant, 2004), demographics change (Lyons, 1983), restructured primary production and practice (Elands & Praestholm, 2008; Paquette & Domon, 2003) and socio-political discourse (Quétier et al., 2010). In this study, the affirmative attitude and vision towards urbanization is possible, given the volatility of the economic, social and political context (Baharuddin, 1986). This notion can be supported by the fact that these group’s functional and administrative roles are to benefit the people and therefore embrace the landscape change. For all practical purposes, their sense of place is strengthened, especially in terms of social interconnectedness that is justified by the purported benefits of change towards urbanization.

The opposite response from the Advocacy group is not surprising, and is the expression of the longstanding societal debate on sustainable development and how it increases resilience for both social and ecological systems. The group in its advocacy role has been questioning the environmental degradation from urbanization and its impact on the socio-economic wellbeing of the local people. Insight from the qualitative analysis revealed that the dissatisfaction and opposing attitude towards urbanization was not purely an objection. It was rather an expression of the discontent in terms of the marginalization of the people who are dependent on the resources that may present a barrier and different ideas in terms of such a direction. This process is further fueled by the representative mode rather than the participatory mode of the participation process as discussed in Section 4.2.3.2. This finding reinforced the idea that the
marginalization of the people from the local planning activities only led to resentment (Reed, 2008; Woods, 2003). This uniform and invariable development process and people raised a clear concern regarding the resilience of future socio-ecological systems. It can increase social vulnerability and the incapacity to be resilient (Dale, Ling, & Newman, 2010; Hinkel, 2011) which can increase negative feedback in terms of land use transitions and resource depletion (Lambin & Meyfroidt, 2010). Therefore, the resistance response from this group towards the rural landscape change was framed by their interdependency on resources as illustrated in the various dimensions in terms of place and how such changes can increase their vulnerability. The qualitative findings corroborate what has been reported in other previous studies on the loss of self-identity and social resilience (Adger, 2000) and cultural heritage and loss of income opportunities (Kianicka, Buchecker, Hunziker, & Müller-Böker, 2006) on antipathy to change. This explains why the attitude toward change and prediction of change of participants under this group is essentially different from those directly affected and is consistent with other reported studies (Dubbink, 1984; Gómez-Limón & Fernández, 1999; Moore-Colyer & Scott, 2005; van den Berg, Vlek, & Coeterier, 1998).

6.3. Summary of Key Findings

Overall, the thematic comparison between the qualitative and quantitative findings from the research questions yielded several consistent findings with a few discrepancies. Insight from the qualitative findings provided a context to explain the contradictions that resulted from the different methods utilized to collect the data. From the standpoint of exploratory research, the discrepancies were of interest as they created a basis for the connection to the theoretical framework and future research.

Clearly, all participants from both the interviews and the survey demonstrated a high level of awareness towards their place, structured by several important factors that are similarly perceived across the groups. The five sense of place factors that emerged in the qualitative findings are consistent with the structure that was revealed in the quantitative findings with several changes in configuration that combined to create four factors: community attachment, place attachment, place dependence and place identity. These factors represent the multidimensionality aspect of sense of place and are consistent with the literature in terms of the role of the physical, the social and processes in its development. In the study the community
attachment aspect appeared to be separable and stands out as an individual dimension in both methods.

In regard to attitudinal and behavioral responses, a mix of environmental stewardship characteristics was observed comparing the groups in terms of the qualitative findings. The Local Active Community and Civic and Institution group seemingly shared a collective attitude in which although they are concerned, they support the rural change. Their capacity, motivation and aspiration is linked to the socio-economic benefits as they relate to the local community. Conversely, the Advocacy group indicated they “are concerned and do not support the rural change”, with their capacity to respond to the impact of such changes that are framed deeply from their personal and ecological values. Interestingly, the quantitative model indicated two contrasting findings. First, the stewardship attitudes did not significantly translate into actual behaviors. Second, only place dependence was a significant predictor for stewardship attitude where those who registered higher in this factor will be likely to be concerned but support the change. These contradictions highlight a complex picture of societal impacts on ecosystems, considering that the qualitative findings revealed some of the indicators, factors and context of the impending stewardship attitudes and behaviors, notwithstanding the participants’ support or not regarding the rural landscape change.

Linked with the various stewardship attitudes regarding the place change, certain differences in possible landscape change trajectories were observed among the groups during the qualitative analysis. These were based on multiple visualizations expressed either in positive or negative nuances that were grouped into two themes, urbanization and ecosystem loss. The rural landscape change in relation to urbanization was perceived collectively. This was seen as positive by the first two groups. Meanwhile, the Advocacy group visualized this in terms of the negative connotations associated with the loss and degradation of the natural ecosystems. This finding highlights that such variance in attitudes was dependent on social-functions, that is, while the affirmative attitude by the two groups was framed in terms of social-economic benefits, the latter was based on resource-based dependency. However these findings are not supported by the quantitative findings, where the planning actor group was not a significant predictor, and only the attitude “place change but not concerned” is significantly less likely to be able to predict ecosystem loss. The self-in-control and non-environmental issues in the qualitative findings provide possible insights into this phenomenon.
Chapter 7. Conclusion

7.1. Implications and Contributions

The aim of this exploratory study is to understand the role of sense of place in shaping stewardship attitudes and behaviors to enable us to develop a holistic understanding of socio-ecological resilience in the rural landscape. Within the context of planning actors in urbanizing rural coastal communities, the assumed theories on the predicted relationship between sense of place, stewardship and landscape change offered a useful framework. However, this was too simplistic. In a much more complex picture, the findings suggest an interplay of social, economic and political factors that are linked to socio-ecological transformation. These findings illuminate an interesting implication in engaging an interdisciplinary perspective of place, planning and social-ecological systems.

This study contributes to the understanding of the impacts of human-nature relationships on the physical environment through planning outcomes. This is done by examining the sense of place concept that embodies values, behaviors and vision in Malaysia. There are three key messages in the study. First, the place epistemological model differs between planning actor groups and is centered on each group’s dependency on place. In a contested place, values are legitimized in planning by favouring particular community-based entities that have particular epistemologies. Understanding this helps facilitate negotiation to find common ground in regard to different values, even though as described in this thesis, the process does not necessarily capture the less articulated values that relate to the physical entity in the planning process. Second, by consequence, these rationalized behavior systems dictate the formulation of stewardship goals and land use outcomes (i.e., conservation vs. development) ultimately conforming to each group’s motive of place dependency. Third, building on previous two, what and why such goals evolve dictates the evolution of social-ecological systems. Understanding how different actors identify with and depend on place helps explain and interpret different rationalities held by different actors. This in turn helps explain how social-ecological systems have evolved to date, and how they might evolve in the future. Planning systems therefore need to consider these interactions and relationships more thoroughly. The preliminary conclusion is that while these interactions have been explored in Malaysia, and structures are in place to allow such understanding, the practice of planning does not yet allow for such complex phenomena to be taken sufficiently into consideration.
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The following sections elaborate these messages and what they mean and their significance to the field. This chapter concludes with a discussion of the limitations of the study and suggestions for future research.

7.1.1. Sense of Place

The examined sense of place structure among the groups from the qualitative and quantitative method presents implications for place literature. Similarities in the overall thematic pattern of sense of place structure among groups indicate that certain groups possess a robust connection to the place through diversification across the characteristics tested. This is consistent with Kellert (2005) who suggested that the aggregate of place structure that encompasses the material world (physical environment), meanings and spirit will likely result in a more compelling, deeper and broader sense of place.

In terms of the perspective of this study, assessment of the place structure for each group relates to how well values are articulated. My analysis suggest that a sense of place that is mainly structured by community attachment is not necessarily better at articulating values than that structured by physical qualities. On the other hand, nor is the sense of place’s structure for environmental advocate’s formed by physical qualities necessarily better or worse at articulating values than those local residents whose place is structured on community attachment. However, on balance, the focus on community interaction may facilitate discussion, possibly creating a problem for Advocacy group which whose values are less likely to prevail.

In the context of the planning process, the focus on social ties and community interaction might be better at explaining the conscious activity and social processes that highlight each groups’ communalities in meaning structure. This can enable differences in meanings distinct to the groups to be communicated and negotiated, providing a common ground for solidarity and collective action in solving contested issues relating to social and ecological sustainability (Fresque-Baxter & Armitage, 2012). Therefore, I argue that there is a two-level process of transforming simple “space” or area into a “place” with particular meaning for individuals and groups. One involves the particular characteristics associated with a person or group, which shapes attitudes and is a function of how they interact with the space. The second process is how these particular attitudes and experiences are then communicated and shared with other individuals and groups who may hold similar, overlapping or different attitudes. This second process relates to the consequent shape of a shared and collective structure, and influences
planning processes. Furthermore, in this way the communicated meanings of the structure response could combine all the dimensions of place which will be likely to guarantee inclusiveness (groups and meanings) in future spatial transformation. There is no evidence that the place structure favors value articulation across a particular group. However, in the two-stage process, the Advocacy group values may be less well articulated. This may contribute to the difficulties in articulating this group’s values that attached to physical or cultural characteristics of a place in planning processes. This indicates that further study is required to address the role of community attachment in transforming inherent individual place values into shared symbolic meanings. This raises questions such as which values prevail and under what circumstances community attachment allows or disallows the legitimization of these values in planning. This warrants further investigation and will be discussed in the next section.

7.1.2. Environmental Stewardship

*Place dependence* represents the potential of place to meet a certain groups’ goal or needs as compared to other place (Jorgensen & Stedman, 2001). The fact that the higher level of *place dependence* is predicted to more likely to be concerned but still support the change, which is characteristic of the Local Active Community and Civic and Institutional group, suggests the role and goal of these groups was framed from a certain worldview and bound to social, cultural and political context. While these groups possess a positive level of connection with other sense of place aspects or factors, it is not a precursor for stewardship. Achievements are influenced by allegiance to a materialistic worldview that guides such attitude for meeting its perspective with respect to socio-economics (Kymlicka, Walker, & Ebrary, 2012). This translated into these groups’ support for development even though this may threaten the existing idea of the “place”, as long as the socio-economic benefits are believed to transfer into the local communities.24 Those groups which connect to place across dimensions and hold a stewardship attitude but support the rural landscape changes motivated by social-economic returns of and from such changes will strengthen their position within the community. I would argue that regardless of groups, the standardization of certain goals or worldviews across heterogeneous communities and at land use planning level could lead to potential conflict and disenfranchisement of other groups.25 While possessing a positive sense of place across factors as demonstrated in this study may have benefits, to translate these characteristics effectively

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24 Refer page 117 on note regarding the influence of metropolitan worldview towards participant’s stewardship attitudes and visions about place.
25 For example, refer page 123 on symptoms of certain group disenfranchisement from planning activities.
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into stewardship where incompatibility exists may require recognizing the relationship between the diversity of place dimensions and the role of the social, cultural and economic factors that can be arrived at in terms of certain agreements. Therefore, it is necessary to revisit the theoretical relationship between sense of place and stewardship that includes the social, cultural and political context and different worldviews in order to further understand the dynamics of this relationship. An in-depth future investigation should address which aspect of place dependence contributes to the affirmative attitudes for rural change and how it relates to certain worldviews that rationalize such behaviors in the planning process.

7.1.3. Resilience Thinking

While not the focus of this study, the findings have contributed to resilience theory and practice in a broader context. The findings regarding a different manifestation of attitudes and visions based on sense of place factors among the planning actors have contributed to an understanding of the interaction between the social and ecological system. This might be framed by two implications: looking at sense of place as a causal mechanism for human organizing responses of change, and the existence of possible mismatches of responses and feedback of responses between actors that are shaped by such a mechanism.

First, while there is a large body of literature on drivers of landscape change, focusing particularly on the human dimension, these theoretical frameworks and empirical works have focused almost exclusively on the independent aspect of the economic, cultural and other factors that are known to have explicit impacts on landscape change. There has been an increasing body of literature that has investigated the impact of humans on landscape change (e.g. Clement et al., 2006; Karali, Rounsevell, & Doherty, 2011) that attempts to combine multiple factors into an explicit framework. The current study adds to this growing trend by augmenting the theoretical model of landscape change with a more tacit, less tangible concept as sense of place that is able to explain the landscape change and communicate about the quality of life of different groups. The theoretical case suggests that sense of place is associated with attitudes and vision to preserve it (e.g. Cheng, Kruger, & Daniels, 2003). It is however noted, from the qualitative findings that conflicting meanings between actor groups has resulted in a different course in terms of attitudes and visions regarding landscape change. This pattern is consistent with that presented by Stedman (2005); Hunziker et al. (2008) and Johnson, Halfacre, & Hurley (2009) yet contradicts that of Cheng et al. (2003). The study findings suggest that, although it is inconclusive, sense of place can provide an integrative theoretical
and operational framework that captures a broad psychological, biophysical, socio-economic and attitudinal dimension in order to explain the human impact on landscape change. I argue that sense of place is able to provide an explanatory framework for interpreting human responses to changing landscape and potential impact on future landscape change. The response to a changing place is not simply interpreted to signify “diminishing existing place meanings”. Rather, heterogeneous communities of different groups organize response to landscape change to reinforce their own place meanings, and manifest into various stewardship attitudes and the directions of future change, which are often conflicting.

Second, the findings reinforced the resilience literature noting the non-linear nature of change, by specifying it from the competing and mismatch of attitudes and visions among actors regarding sustainability. Although not supported in the quantitative model, the findings from the qualitative phase suggest a mechanism for landscape change driven from the sense of place and attitudes among the planning group can invoke the path of two conflicting change trajectories. The present study is consistent with the work of Lambin & Meyfroidt (2010) of dynamic landscape change of interacting social-ecological system, though is contradictory in terms of the feedback and responses. In their study, the negative feedback that arose from the depletion of key resources explained that the slowing down of the deforestation and reforestation was driven by socio-economic factors. I argue in the context of my study that this relationship is not apparent. That is, the negative feedback from resource depletion or environmental degradation does not necessarily transform into a positive change. In this case, the depletion of natural resources associated with the urbanization trajectory can inform a negative feedback from the perspective of Advocacy group because of the potential effects on their place dependency. Thus, their ability to adapt and react to changes diminishes (factored by disempowerment as described in Section 4.3.32) and can further accelerate ecosystem loss and affect ecological resilience as a result of their incapacity to protect the environment. Conversely, the urbanization trajectory informs positive feedback from the perspective of the Local Active Community and Civic and Institutional group. This was framed from their place dimension in terms of strengthened social interconnectedness and transferable socio-economic benefits to the rural communities from such a change. Hence, I argue that sense of place is a process of social-ecological feedback, in which change can be caused and informed by either positive or negative feedback depending upon the specific groups’ underlying place conception. Therefore, this finding contributes to the understanding of a non-linear relationship in terms of landscape change, highlighting the mismatch between response, feedback and
resilience processed through sense of place mechanism between various actor groups. This phenomenon warrants further investigation to assess the possible trade-off between different conflicting paths of change.

This study has shown a glimpse of a possible connection between knowledge explained in interdisciplinary literature that may assist in understanding complex ecological (and social) problems. In terms of the integration of the sense of place and stewardship in this study, it has shown that it has a potential contribution to resilience theory. Substantially, resilience thinking has been approached as a matter of pursuing ecological resilience and this study has contributed to an evolving broader perspective by engaging with social resilience. This has been uncovered using sense of place as a concept that embodies human-nature relationships and has helped to structure the importance of this as a response to uncertainty and navigating change. It holds transformative capabilities through culture, which is stewardship goals and behaviors formed as an emergent adaptation that include place-based values that are not limited to an environmental entity. Social and political factors shape the emerging characteristics and have provided an initial link to resilience. It justifies further research with respect to a more comprehensive resilience framework (e.g. Ostrom, 2009) that incorporates connections of the biophysical, social, and political domains in managing shared resources in a contested place. Such integration would provide a mechanism to assess cause and effects and provides fertile ground for planning to embrace sense of place in explaining social-ecological interactions and exploring possible outcomes.

7.1.4. Contribution to Planning Theory

Although this study is exploratory in nature, several contributions and challenges for planning were derived, particularly generated from the qualitative findings. The contribution of this research applies to bioregional planning broadly, and to the land use planning process specifically.

In broad terms, the study has brought together the observation of sense of place structure and meanings to attempt to articulate their substance and interaction in shaping stewardship attitudes and behaviors. This study has distilled this process which achievable through mixed-methods among multiple planning actor groups into a comprehensive discussion to understand the underlying process of landscape change and resilience. While bioregional planning provides theoretical grounding for sustainability, the study demonstrated that conservation, reconciling human needs and stewardship in land use planning has not yet fully converged.
This study contributes to the understanding of the complexities of the socio-political reality in relation to the fields of environment, conservation and sustainability embedded in “place” – a key problematic area in bioregional planning (and other approaches) that has not yet been fully grappled with and connected. The different values, expectations and visions among the groups as indicated in this study reinforced the ambiguity with respect to the role of government, governance and community empowerment in planning.

Regarding the postmodernity of the changing rural landscape means coping with post productivist, multifunctional, globalization and emerging new technologies, that are becoming more “wicked” problems for planning (Friedmann, 1987; Rittel & Webber, 1973). The grouping of society based on the different rationalities of place that are bounded by social and structural arrangements enable planning to analyze the diversity and possible land use outcomes. These findings fit into “clumsy” solutions (Hartmann, 2012; Verweij & Thompson, 2006) based on cultural theory (Thompson, Ellis, & Wildavsky, 1990) to manage this pluralism. The approach in this study reinforces the need for planning to recognize the wider spectrum. These discussions are linked with the inherent characteristics of normativity, uncertainty and complexities in planning theories and practice (de Roo & Silva, 2010; Gunder & Hillier, 2009; Hillier, 2010).

The results from addressing the first research question suggested a number of contradictory findings. While a quantitative model suggested a similar sense of place structure across the groups, a more nuanced place conception that emphasized differently between the groups appeared in the qualitative results. The current state of theory on the planning normativity underlines the emergence of pluralistic groups, values and visions. While bioregional planning defined partly by theories including both the transactive approach (Friedmann, 1987) and the collaborative approach (Healey, 1997) in an effort to address the multiplicity of actors and groups, their applicability has been hindered by their abstract nature and has not been readily interpretable in land use decisions. This study presents a preliminary example on the intersection of various group’s values in planning as the challenge faced in the rapidly changing landscape of rural policy and planning. Here, the findings perhaps presented two possible alternatives for the manifestation of values and meanings in planning. First of all, as an endorsement of sense of place that manifests collectively, and is shared and becomes dominant across all groups or possibly as a process of homogenization of the various values which are significantly held by each of the groups. And second, as the distinguishing factor between a homogenization process and a process that takes account of different rationalities. Whichever
manifests, it has important implications for bioregional management. This is since conserving the core area of biological diversity surrounded by human settlements while fostering their sustainable use requires a deeper understanding of the way in which people and nature interact. This must be addressed across both the terrains of geographic scale and awareness as a comprehensive ecosystem. The inclusion of an array of people and institutions in conservation and development process grouped into three planning actor groups in this study has highlighted that, although in bioregionalism theory it posits to be nurturing positive change, it could be framed differently based on rationalities of “place”. While this is well recognized, this study contributes to understanding why this is so. The key challenge for bioregional management therefore is to further examine the place concept among the planning actors to understand the way in which place is individually conceived and under what condition it is transformed in the public sphere and which factors contribute to such transformation.

The finding on the relationship between sense of place and stewardship attitudes provides a new insight into the social aspect of the bioregional approach that contends, indicates, justifies, and presents support for community-driven governance and capacity building. Although it has been suggested that an awareness of place-based values is fundamental in the community stewardship of sustainability (Thayer, 2003), this study provides a preliminary claim that while sense of place is fostered, a multitude of stewardship attitudes can emerge in the planning arena. This pointed to the challenges in modeling complexities of attitudes, behaviors and institutions that are strongly embedded in the cultural, economic and political layer. Furthermore, the finding on affirmative and opposing attitudes towards rural change suggested a shift in role and delegation of power to a specific group as a matter of pursuing specific aims and functions. Perhaps it is possible that planning theories would never cope with the unexpected consequences of such varying behavior in land use decisions (Renn, 2008), yet comprehending the cause of the identification of such behaviors through a specific interplay of place and visions as demonstrated by this study could contribute to the broadening of management systems from a rationality base, a mode that is questioned in planning theories (Gunder & Hillier, 2009; Hillier, 1997).

The findings in regard to the links between attitudes and behaviors related to landscape change prediction have demonstrated one approach for moving from a theoretical discourse into a more testable and operational framework to understand the uncertainty that surrounds planning outcomes. The deconstruction of specific actor group’s meanings clarified through their civic and social functions provide a possible way of identifying the depth and breadth of attitudes
and behaviors towards place. The possible applicability of this approach in the land use planning public engagement process where various actor groups can express their beliefs and values towards place in sum rather than through a deductive process in terms of the specific components could render a more integrated view from the perspective of various groups and provide common ground in assessing a possible landscape change trajectory that is linked to community-based negotiated meanings and aspirations.

While some of the findings in this study are rooted in local culture (as discussed in Section 6.2.2), there is another aspect of values manifestation in planning that can inform general planning theory in two ways. First, in the context of planning discipline broadly, the integration of community-based values has been important since the rational turn. This can be observed from its effectiveness on communicating and consolidating the future plan and action with the affected beneficiaries (Innes & Booher, 1999) who rely on its substantive content. However, in relation to process, planning theory is still struggling to juggle between the decisions of choice and which values to prioritize while the complexities of the values of the different groups exist. This inherently stems from the goal of the planning process to achieve a true-or-false, desirable-non-desirable solution. This study reinforces the importance of the process, rather than emphasizing the substantive content in the planning. This involves understanding and clarifying the values and for whom in managing different rationalities in public participation rather than what and whose is better. Second, it is interesting also to note that, even though a clarification of the group’s values for which common ground can be reached and improve outcomes, the planning process can be highly political. The institutional and community-based structure can be used as a mechanism to standardize values that may not be aligned with the dominant group. Therefore, liberating or empowering people out from their own resources requires understanding the motive of place dependency and how it structures the common goal of the power of certain groups to negotiate or impose their values on other groups. The permeability of the planning process to values will determine the emergent properties of planning decisions – in the way specific groups behave and shape their goal of care.

7.1.5. Contribution to Planning System in Local Context

In the context of land use planning practice in Pontian, this study perhaps represents the first intensive attempt to assess the applicability of bioregional theories, as a progressive step moving toward a discourse in planning that includes the interaction of multiple views and
visions. Several revelations have emerged from this study that could be important and have a significant spin off effect on the planning process at the local level. Assessment in terms of place values among a group of actors within specific roles in planning, comprise a multidimensionality of place that is centralized on coastal ecosystems and cultural landscape. This study has demonstrated in a substantial manner that such revelations in regard to specific place structure important to groups in heterogeneous communities can be deconstructed and are applicable in planning.

In relation to public participation as a tool to include the values of various groups in the planning process, the study suggests that the existing public participation process is inconsistent in terms of its method and implementation to include some of the opposing perspectives. Specifically, the representative mode of participation that could be said to be tokenistic in nature and, as elaborated in Section 4.3.3.2, could also be predisposed towards disenfranchisement of the people by disempowering them in terms of active, co-creative, capacity building. This relates to their ability to contribute in a meaningful way in the process of decision-making about their place. This is significant as it highlights two important questions, that is, whether the participation is indeed used as a tool to recognize multiple views, and if so, how could the participation method encourage and champion those with different rationalities? Bioregional planning that envisions a community-driven approach requires a shift in the participation approach that is adaptable to such a condition in order to foster and facilitate negotiations towards achieving sustainability objectives.

The question of place issues, visions and how specific actor group’s behaviors in response to conservation and development have brought to the surface the dynamic of social-ecological systems in Pontian that are linked to the prediction of several possible trajectories in terms of landscape change. The study showed that these possible changes and implications for future ecosystem services can be anticipated in the planning process and provide an avenue for alternative mitigation measures to manage the mismatch of various expectations from the perspectives of the different groups. Further, the possible indication of change trajectories called for better rearrangements of institutional and civic capacity to enhance the complete and undivided approach in terms of the social and ecological protection policy mechanisms. Moreover it will benefit the long-term sustainability of the place and serve to hearten, inspire, restore and revitalize a communicative and shared learning paradigm among the various groups confirmed and defined by a flexible institutional structure to increase resilience capacity.
The articulation of values among planning actor groups in this study have shown that values are important and have implications in the local context. This study has justified the use of sense of place as a framework to clarify the rationalities of different group in influencing land use outcomes – through view, motive, behaviors system and expectation. As a result of this study we can frame a lesson related to the Malaysian planning system in two ways. These are in regard to an application in land use policy frameworks, and in terms of methodological process in community-based planning. First, the importance of sustainable developments that incorporate the social, environment and economic factors have been realized in spatial planning in Malaysia. This has been translated into a plethora of policy frameworks and mechanisms implemented at different levels in relation to the planning structure, including at an institutional level. This is illustrated through well-structured three-tier development plans: a physical plan (national level), structure plan (state level), and local plan (district level) that proceed to deliver and implement sustainable policies. While the structure and the policies may have addressed place-based values, its manifestation has been hindered by a reductionist approach, through compartmentalization and the limitations associated with the various sectoral domains. This structure and the formulation of the policies may have inadvertently resulted in an over emphasis on social and economic development and a view that environmental problems can be solved via a technocratic approach. My observations in this study have linked the relationships between these domains and discuss and explain the possible future implications on our environment. Achieving community articulation of values regarding sense of place in land use policy required it to be expressed in sum, in which the different place epistemological orientation can be addressed and provided clarification regarding the development versus the conservation dichotomy.

Second, the permeability of values in the planning process dictates the outcome/s. This relates to the planning process that is able to cope with the diversity of groups and values, and how to manage the expectations. It requires a pluralistic approach in that it allows redundancy and a diversity of values in order for its transformative power to manifest. From a theoretical point of view, this would serve as a buffer from the shock and build adaptive capabilities. This can be achieved through an overall inclusiveness of the values that are less well articulated. This is exemplified in this study through the Environmental and Cultural Advocacy group which look at the implications of development from the physical-environment perspective. Arguably their voices had significantly less influence on the planning process. Public participation in the Malaysian planning system has opened access to its citizens and stakeholders of all
backgrounds to be actively engaged in the decision-making process. This is illustrated by its provision under the Act 172 that is mandatory for public consultation in preparation of development plans. While this provision clearly show that community-based values have an influence, its methodological framework can be improved – see Jalaludin (2005) for further discussion on the limitation of the current methodological framework. This would increase the permeability of values to encourage redundancy and diversity in the outcome/s. The current practice suggests that public participation is often only conducted as a form of inspection to a draft development plan that often has been prepared by outside consultants. Even though individuals are consulted during the initial plan formulation, this is limited to representatives of certain interest groups, which are often dominated by political representatives whose main values are articulated in terms of the social and economic outcomes. While this is understandable, there is a need to include values that are less articulated, such as, those related to the physical-environment entity. This allows an understanding of the resistance or openness to achieve a common goal or goals and is part of a democratic process. The challenge is for the planner who acts as a facilitator or moderator to manage and cope with the richness of place expressions within the professional and fiscal constraints. The existing policy framework that addresses sense of place and allows it to permeate through a process that recognizes place pluralism will foster community-based care that takes into account various rationalities, thus building redundancy in functions and roles.

7.2. Limitations and Recommended Future Research

This exploratory study has been underpinned by various interdisciplinary orientations to explore the societal impacts on ecosystems. It is contended that the amalgamation of diverse theories built upon the fields of geography, environmental psychology, sociology, among others could provide a robust foundation that can magnify a scholarly understanding of the dynamic interactions between society and ecosystems. While it is intriguing in the sense that the application of broad theories can point to several directions, this study can only scratch the surface, especially studying the topical aspect of the complex and dynamic relationship of Pontian. Consequently, the findings presented in this study are bounded by several limitations. However, the questions raised also provided additional avenues for study in the future.
First, this study was designed to be exploratory, or theory building rather than theory testing in terms of problems that are not yet fully articulated and intersected in the existing body of knowledge. While, integrating the various theories can provide new insights on the questions this study advanced, the distinctive disciplines bounded by different epistemological and world views proved to be challenging in discourse and in terms of the language, methods and implications that vary widely depending on the broad context. Therefore, the insights only sketched the overall picture hence in the future it is necessary to develop a more comprehensive theoretical framework. The model should necessarily operationalize the relationships between the variables, particularly in regard to the aspects of economics, culture and politics in relation to place dimension and its impact on stewardship attitudes and visions for change. The future framework should continue to build on the interdisciplinary basis of the interacting domains, and provide a blueprint for assessing the complex relationships.

Second, the focus of this study on the relationships between place values, attitudes and visions has been limited only from the perspective of sampled respondents involved directly in the land use planning processes in Pontian. The fact that this study is exploratory in nature, the findings are not intended to be generalizable to other residents who have not participated within Pontian, or residents outside the district who may be connected to Pontian either on social, economic or cognitive ground. Although a stratified random sampling method was employed for the survey, these samples were not preconceived to be purely a randomized sampling of Pontian residents, rather the sampling strategy was employed to include a range of respondents across socio-demographic variables who are available in the sampling frame. It would be ideal to include and employ a truly randomized sampling of population of Pontian residents, and a broad range of other residents outside the district administrative boundary who have access to the Gunung Pulai and coastal mangrove forests, especially the Sungai Pulai RAMSAR site. This inclusion would be of help in two ways. First, such a study could be contrasted to this study in that the sampled population has a direct influence on decision-making in regard to the place, which will allow a better understanding of a cacophony of views and its rationalities of not participating. Second, the inclusions of the wider communities that are linked spatially with the natural ecosystems will allow for an assessment of bioregional insights and thinking. This is as the terrain of awareness of people living nearby potentially could have a different conception of values and expectations as a result of different development patterns and planning directions. This information could provide a significant impact on the regional ecological integrity of the bioregion system that is located within different administrative boundaries, especially the
Chapter 7 – Conclusion

Sungai Pulai mangrove systems and Gunung Pulai forest, areas facing enormous pressures for land use conversion.

Third, this study has focused on sense of place and its attitudinal characteristics as drivers in the prediction model. It is not an exhaustive measurement of landscape changes, as other significant predictors either in ecological or human dimension may have a significant influence. The use of sense of place provides a framework that summed up the integration of social, economic and biophysical dimensions which revealed an informative decision path of change. However, while this study has been able to relate the potential landscape changes based on the sum of place conception, the qualitative analysis indicates other human dimensions that influence the dynamic of the current and future changes of the place. For example, it relates the effects of changing agricultural policies, regional development policies and rural economic development program on place conception as forces for land use transition. Future studies on predictions of landscape change trajectories could integrate other non-spatial drivers, such as the variables above. Such integration in the prediction model would allow for a better understanding of direct impacts these human drivers have on shaping the ecosystems.

Further, the predicted spatial changes perceived by the respondents do not allow for a direct relationship with assessments with on-ground outcomes, which is linked with ecosystem structure and function. This is because the model from this study only offers a snapshot of spatial and temporal changes in Pontian. While this snapshot allows assessment of various variables at one time, it does not provide a definitive causal relationship of the present and future outcomes in terms of the various views, attitudes and visions. However, the focus of this study on the sub-populations that have an influence on land use decisions perhaps provides a base line foundation for a long-term understanding of the relationships between the systems and continues to build on a mosaic of the study to understand the complexities. Future studies need to test outcomes against the model, including what follows regarding different sub-group influences, the creation of one dominant set of attitudes, and views or visions in the discourse. The linkage between this could provide a robust framework for improved accuracy interpretation and anticipating possible mitigation measures.

Fourth, the issue of external validity has arisen as a result of potential non-response errors for both of the data collection methods. For the qualitative phase, interviews were conducted for each of the groups until new meanings and views were not discovered. The multi-mode entry approach was adopted to ensure the inclusion of a broad spectrum of participants in order to
meet the criteria. However, it is possible that despite this strategy, some other important meanings were not revealed due to the limitations of this approach. Moreover, there are several related broad planning topics that emerged during the interviews that have not been pursued, as a result of the interviews having reached the level at which the data regarding the topics of interest had become “saturated”. As the main aim of the phenomenology method is to uncover underlying meanings and not strive for statistical significance, this limitation is deemed to be acceptable. It is therefore accurate to conclude that although the phenomenology revealed many important underlying meanings for each of the groups, it is likely not all of the meanings were considered as a result of the filtration process.

In regard to the quantitative phase, the low response rates recorded could introduce the possibility of non-response bias. In the case of this study, the repeated solicitation with sampled respondents after the administration of the survey was intended to increase the response rate. The process for reaching respondents involved a process in which they may have been contacted as many as three times via phone or/and mail wherever such information are available. When respondents agreed to participate and were given the research package, it was anticipated that it could increase the chance for them to return the survey. Even so, in reality this has not materialized and it is not too difficult to imagine that further repeated solicitation will be perceived as an element of coercion, which this study attempted to avoid. Ideally, a researcher always strives for a 100% response rate through employing several strategies as have been adopted by this study. Nevertheless, the survey response rate was reported to have steadily declined over the last decades in social science studies (Dillman, 2007). There is a mixture of opinions suggested in the literature about what constitutes an “acceptable” response rate. While anything above 50% is considered “acceptable” (Babbie, 2005), others have suggested that an even higher response rate represents unintended bias and an over representation of population segments (Krosnick, 1999). A low response rate therefore does not necessarily correlate to self-selection bias or non-response bias (ibid.) if the possibility of findings in the survey differed significantly from non-respondents can be assessed. As indicated in Section 5.2.2, a comparability assessment of key variables based on the continuum of resistance model and demographic population variables have yielded fairly congruent results, although the latter revealed minor discrepancies for ethnicity and gender. This means that the findings are reasonably generalizable and should not impair its contribution (Majumdar, 2008), though should be accepted cautiously (Krosnick, 1999).
The underrepresented Chinese and women respondents particularly can be argued as an artifact of a cultural setting, thus the lack of rural-based scholarship that can inform the potential effects of these demographic differences. However, it is possible to surmise by inferring to a more general social context and theories related to place that, first, the rural Chinese identification of place can be theorized to their settlement identity (Holst, 2012) and place mobility\textsuperscript{26} (Sakurada, 2010) context. Based on these two factors, it can be postulated that they share similar views and attitudes towards place as the first two groups in this study, where place epistemological is modeled based on a social construction process. Second, with the rapid urbanization and outmigration of the male population to major urban centers, inevitably the responsibility for rural women to increase rural production is greater (FAO, n.d.). This is more likely to increase their place dependency in terms of resource-based activities. Furthermore, women who have migrated and who are mainly involved in the manufacturing industry are more likely to return to rural areas due to failure or simply do not favor urban environments and remain in the village to maintain a moderate standard of living (Thompson, 2004). Within this context, it is possible to speculate on women’s place dependency and the general view on development is likely to exhibit similar characteristics as the advocacy group. This can possibly be framed from their more environmental-based dependency and vision to maintain such lifestyles.

Fifth, the hypothesized planning actor variables were less influential than originally predicted in terms of the sense of place and attitudes. This phenomenon could lend to a reductionist problem while categorizing broad planning actor groups into a distinctive group, if there are possibilities of cross-functioning roles and more subtle social and cultural variables in play. This indicates that there is a need to assess it from a broader societal context, such as, from the perspective of the influence of the demographic variable in relation to the predicted outcomes. From the initial survey model, four demographic variables including length of stay, age, ethnicity and location where participants were raised were used to predict the three outcome variables, namely, sense of place, stewardship attitudes and vision for change. Some of the interesting findings were that respondents who stay between 6-12 years are less likely to be concerned and support changes and the respondents who have stay between 40-70 years in the place are more likely to visualize urbanization changes. Although these variables cannot be considered fully as the thesis stands, these initial findings provide an intriguing connection to

\textsuperscript{26} Refer Ross & Weisner (1977) for detail explanation on sociological and anthropological theory of impacts of rural-urban migration on place identification.
some of proposition generated from the main findings. As such, future study can incorporate a more detailed assessment of the demographic variables that encapsulate time dimension in a place creation process that could reveal a clearer picture regarding why there is variability and a contradiction between the findings on place manifestation in the planning context.

Finally, in the quantitative analysis, the factor analysis to assess the underlying sense of place structure has been conducted on the overall sample of respondents instead of separately for each sub-sample of respondents. Due to the low response rate for each group, the study was forced to compare factor structure measured at overall sample. While this overall measurement revealed that the groups are similar based on the variance test, this finding should be interpreted cautiously, since the qualitative findings indicated a more nuanced place structure specific to the groups. It is likely that an exploratory and confirmatory factor analysis applied at each sub-sample followed by a multi-group invariance test would better reveal the differences or commonalities of the factor structures.

7.3. In Conclusion

This study set out to explore the dynamics of Pontian, including the interaction of various significant values held about this place. Based on a sense of place perspective, it aimed to explore how the place is valued from the lens of three actor groups involved in the land use planning process including its role in shaping their care and vision about the place. The sense of place, defined from a phenomenological and positivist approach, combined the aspect of physical, social and processes in place development. This study has shown that sense of place can be operationalized in land use planning, through specific ideas, attitudes and visions.

The results of this study presented an intriguing step towards the intersection of various theories encapsulated in bioregional planning to understand the dynamic of social-ecological systems and resilience. More importantly, these findings highlight that a less tangible concept such as sense of place should formally enter the planning process as a locus for development and conservation initiatives. While previous planning and conservation approaches may have argued that the process should be value-free and human influences are often unrelated or irrelevant, it is unavoidable that the long-term viability and success of sustainability depends on local community support in which decisions are mobilized by the specific values and expectations of the local community. Therefore, planning decisions contextualized on
negotiated local community’s values not only ensure the success of common goals they also empower and nurture culture towards positive landscape change.

In regard to assessing how sense of place is legitimized in planning, it is important to consider the difference in how the place is conceived by various actor groups that could provide a justification in terms of the choices or decisions that are made regarding land uses. This could provide clarification in terms of how well sustainability is shaped from competing views and attitudes through public participation in the planning process. It is contended that “place” can manifest in two-level process and while the focus on community interaction by the Local Active Community and Civic and Institution group may provide a common ground for discussion, the Advocacy group’s values may be less likely to prevail.

In spite of what has been reported about the positive relationship between the higher level of sense of place and the protective attitudes to protect the setting, the high level of sense of place shown in this study has produced a different classification of stewardship attitudes and visions for change, determined by a complexity of economic, cultural and political reasoning. Sense of place has not been comprehensively included as an influence in decision-making, and therefore has not been taken into account in collective sustainable actions and visions. It is possible that the existing planning practices may outwardly have failed to recognize, or have turned a blind eye to, the mismatches of values and visions, which could have significant repercussions for the future ecological resilience of communities that are highly dependent on coastal resources. It is hoped that the dissemination of this study could provide a new perspective for planning to embrace sense of place as an integrative concept as it relates to the interacting social-ecological systems, a much more needed solution in the face of “wicked” planning problems.
References


References


References


Bryant, F. B., & Yarnold, P. R. (1995). Principal-components analysis and exploratory and confirmatory factor analysis. In L. G. Grimm & P. R. Yarnold (Eds.), Reading and
References


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Appendixes

Appendix A. Interview Guides

<table>
<thead>
<tr>
<th>Date:</th>
<th>Time:</th>
<th>Code Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**General Information:**
This interview consists of 10 main guiding questions. Each question is comprised of several parts relating to its main theme. You are encouraged to provide as much information as possible on each part.

1. How long have you been living here?

2. Why did you move here? [Prompts: Or were you born here? Or come here to work?]

3. Where would you think is the edge of (‘here’) that you have been mentioning to me? How far would you go from your home to fulfil any activities either daily or occasionally (for example monthly)? Can you indicate on the maps the place that you mentioned and explain? Is there any possibility the boundaries of your place is only defined by your neighborhood or maybe extend to the larger area of your town/city center and its surroundings? Have you heard about Iskandar Malaysia? Do you consider your place to be part of the Iskandar region? Any explanations are welcome

4. Do you think the place (indicated on the map) can be considered as special? What physical, cultural or historic features made this place special that you connected with? Why is it important for you? What would best describe the place when others ask where you live?

5. Do you think the place (indicated on the map) can be considered as special to other people in your communities? What physical, cultural or historic features made this place special that they connected with? Why do you think it is important for them? If different from places on the map, can you indicate the important places and why they are so special for them? Do you think that your place or theirs (if different) would be as special without you/or your friends/families living in the area?

6. Can you tell me what you like about your place? What do you feel is different about the place compared with other places in doing all your things in daily life? What are specific activities or events that you do in this place that you can’t do in other places?

7. Are there any other comments that you think are important for me to know about your place?

8. Do you think the place that is special for you or other people in the community is changing? What do you envisage your place will be like in 30 years’ time? Would it remain the same as what you described or will it be different? Can you identify any threats that significantly altered this valued place? Do you think you are capable of doing something to protect against these changes? Do you think your concerns are shared by others in the communities to protect the place? Do you believe your valued place is being recognized or celebrated in any events or mechanism?

9. Are you involved or are you intending to be involved, in any way to protect the place from being significantly altered? Are you aware of any conservation and development strategies to protect against such changes? How do you see these policies influencing the protection or erosion of the value of the place? How do you think these strategies can be improved? Please elaborate as freely as you can

10. We are reaching the end of our discussion. But before that, you can add any additional comments to this interview regarding issues that were asked about

Some information about you before we end:

1. Can I know your age range? Please indicate by ticking one of the following:

   - [square] 12-17
   - [square] 18-25
   - [square] 26-33
   - [square] 34-41
   - [square] 42-49
   - [square] 50-57
   - [square] 58-65
   - [square] 66-73
   - [square] 74-81
### Appendices

<p>| | | | |</p>
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<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Do you live in:</td>
<td>☐ urban areas</td>
<td>☐ In rural areas (villages, settlements)</td>
<td>Please tick one</td>
</tr>
<tr>
<td>3. Did you spend most of your childhood time in the village or urban areas? If urban areas, did you frequently engage with nature through outdoor activities or other ways?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. You’re most welcome to provide detailed information about yourself, including any details of your participation in any environmental advocacy movement, or civic roles in any groups that in particular were interested in protecting local natural and cultural resources</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Are you willing to check through the transcript of this interview, and attend a follow-up meeting to confirm the content of the transcript of the interview is correct? Please tick one:</td>
<td>☐ Yes</td>
<td>☐ No</td>
<td></td>
</tr>
</tbody>
</table>

Thank you again for your time in participating in this study. We really appreciate your help.
# Appendix B. Survey Variables and Corresponding Items

<table>
<thead>
<tr>
<th>Concept/Variable</th>
<th>Sub-variable</th>
<th>No.</th>
<th>Items</th>
<th>Comments/Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section A</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reason to be in Pontian</td>
<td></td>
<td>[1]</td>
<td>Do you live or work in Pontian?</td>
<td>To classify respondent's reason to be in Pontian</td>
</tr>
<tr>
<td>Length of Residence</td>
<td></td>
<td>[2]</td>
<td>If you live in Pontian, how long have you done so (________ years OR □ entire life); if you work in Pontian, how long have you done so (________ years)</td>
<td>Substantial literature indicate that sense of place positively increasing as people spend more time in that place.</td>
</tr>
<tr>
<td>Definition of Place</td>
<td></td>
<td>[3]</td>
<td>Can you tell the most important reason why you lived or moved in this place?</td>
<td>Open responses that correspond to the broad themes of place connection.</td>
</tr>
<tr>
<td>Sense of Place Measure</td>
<td></td>
<td>[4]</td>
<td>Do you consider this place to be special? If YES, PROCEED with Question #5. If NO, Skip to Question #32. For Question #5 to Question #30, please CIRCLE only ONE of the following for each statement with “1” strongly disagree (SD), “2” disagree (D), “3” neither agree nor disagree (NAD), “4” agree (A), or “5” strongly agree (SA).</td>
<td>A decision-point question where respondent are channeled toward two different set of questions. For Question #5-30, each question addressed a different place dimension as indicated on the left column</td>
</tr>
<tr>
<td><strong>Personal Identity</strong></td>
<td>Belief and Value System</td>
<td>[5]</td>
<td>Living in this place reflects my personal belief and values</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Family</td>
<td>[6]</td>
<td>This is somewhere I connect with my family</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rootedness</td>
<td>[7]</td>
<td>Being in this place reflects my origin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sociocultural</td>
<td>[8]</td>
<td>The communities in this place is part of my life</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Socioeconomic</td>
<td>[9]</td>
<td>I am comfortable here because this place matches my socioeconomic standard</td>
<td></td>
</tr>
<tr>
<td><strong>Place Dependence</strong></td>
<td>Activities</td>
<td>[10]</td>
<td>This is the best place for recreational activities I like to do</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lifestyle</td>
<td>[11]</td>
<td>This place reflects lifestyles that I like</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strategic Location</td>
<td>[12]</td>
<td>I can easily go to other places nearby from here</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Services Accessibility</td>
<td>[13]</td>
<td>No other place can be compared to this place where I can get urban services with ease</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contact With Nature is Different</td>
<td>[14]</td>
<td>This place allows me to connect with nature in a way that other places could not</td>
<td></td>
</tr>
<tr>
<td><strong>Place Identity</strong></td>
<td>Commodities</td>
<td>[15]</td>
<td>I identify strongly with this place's natural resources and commodities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Product</td>
<td>[16]</td>
<td>This place can show much to others about who I am</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Geography</td>
<td>[17]</td>
<td>This place means a lot as the southernmost tip of Asian continent</td>
<td></td>
</tr>
<tr>
<td><strong>Place Attachment</strong></td>
<td>Emotional</td>
<td>[18]</td>
<td>This place matches my emotional feeling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Memory</td>
<td>[19]</td>
<td>This place brings my old memory back</td>
<td></td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Peaceful</th>
<th>[20] I feel peaceful when I am here</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safer</td>
<td>[21] I feel safe here</td>
</tr>
<tr>
<td>Humanity Values</td>
<td>[22] I can identify with the humanity values here</td>
</tr>
</tbody>
</table>

#### Community Attachment

<table>
<thead>
<tr>
<th>Easy to Mix</th>
<th>[23] I mix easily with the communities here, and I am accepted as part of the community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong Bonding</td>
<td>[24] This place is somehow where I considered the communities as part of my family</td>
</tr>
<tr>
<td>Culture and Tradition</td>
<td>[25] I feel the culture and tradition of the communities here are part of my life</td>
</tr>
<tr>
<td>Friends</td>
<td>[26] This place is where my friends are close by and are connected to my life here</td>
</tr>
<tr>
<td>Social Service</td>
<td>[27] I feel needed and appreciated by the communities when I am here</td>
</tr>
</tbody>
</table>

#### Place Character

<table>
<thead>
<tr>
<th>Landscape Aesthetic</th>
<th>[28] I think the landscape here is beautiful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological</td>
<td>[29] The flora and fauna in this place is really fascinating</td>
</tr>
<tr>
<td>Natural Landscape</td>
<td>[30] I like living here surrounded by natural landscape</td>
</tr>
</tbody>
</table>

#### Place Dimension

<table>
<thead>
<tr>
<th>What aspect of this place do you most identify with?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a Natural resources and biological features</td>
</tr>
<tr>
<td>b Peacefulness in traditional village setting</td>
</tr>
<tr>
<td>c Profession/ work</td>
</tr>
<tr>
<td>d People, values, culture and way of life</td>
</tr>
<tr>
<td>e People, friends and own social group</td>
</tr>
<tr>
<td>f Opportunities for variety of activities</td>
</tr>
<tr>
<td>g Beautiful landscape and scenery</td>
</tr>
<tr>
<td>h Other (specify):</td>
</tr>
</tbody>
</table>

Each response category classifies the sum of sense of place into a broad dimension of sense of place.

#### Reason for not feeling connected

<table>
<thead>
<tr>
<th>Why don't you consider this place to be special for you? Please indicate &quot;YES&quot; or &quot;NO&quot; of the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a My interests are not provided by this place</td>
</tr>
<tr>
<td>b This place is not the same as I remembered</td>
</tr>
<tr>
<td>c I don't like the community here</td>
</tr>
<tr>
<td>d I don't like the landscape</td>
</tr>
<tr>
<td>e This place is the same as others</td>
</tr>
<tr>
<td>f Urbanization</td>
</tr>
<tr>
<td>g The environmental condition here is degrading</td>
</tr>
<tr>
<td>h Other (specify):</td>
</tr>
</tbody>
</table>

Outline negatively the sense of place measure. Free response question with possible options from the interviews.

### Section B:  

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#### Stewardship Attitudes

<table>
<thead>
<tr>
<th>Question</th>
<th>Text</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>[33]</td>
<td>Do you think your place is changing? Please circle “YES” or “NO”. [IF YES, CONTINUE TO Question #34. IF NO, SKIP TO Question #41]</td>
<td>These are decision-point questions to guide respondents into classification of stewardship attitudes and behavior responses regarding place changes.</td>
</tr>
<tr>
<td>[34]</td>
<td>If &quot;YES&quot;, is that a concern for you? Please circle “YES” or “NO”. [IF YES, CONTINUE TO Question #35. IF NO, SKIP TO Question #41]</td>
<td></td>
</tr>
<tr>
<td>[35]</td>
<td>Do you support the change? Please circle “YES” or “NO”. [IF YES, SKIP TO Question #37. IF NO, CONTINUE TO Question #36]</td>
<td></td>
</tr>
<tr>
<td>[36]</td>
<td>What do you think your function to address THIS OR ANY OTHER concerns? Please CIRCLE only ONE of the following response for each question: strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree. These variables are used to explore what they respondent think of their capacity in accordance to land ethics. The attitudes option adapted from the findings of the interviews.</td>
<td></td>
</tr>
</tbody>
</table>

| Collective Action | a | I think together with other's action, we can address this concern. |
| Conservation and Economic Values | b | When involved in addressing my concern, it is benefiting myself and others socially and economically. |
| Adaptive Capacity | c | Depending on the need and situation, I act on those issues that I think are important. |
| Environmental Education | d | By acting on these issues I can educate other people. |
| Learning Process | e | I learn something from others who share the same concern. |
| Profesion Capacity | f | What I do is related to my work. |
| Self-Recognition | g | My skills are recognized as valuable when addressing the issue. |
| Sharing Knowledge | h | My concerns are reinforced when they are shared among community members. |

#### Stewardship Behaviors

<table>
<thead>
<tr>
<th>Question</th>
<th>Text</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>[37]</td>
<td>Are you involved or planning to be involved in any efforts to address THIS OR ANY OTHER concerns? [IF YES, CONTINUE TO #38. IF NO, SKIP TO #39]</td>
<td>A decision-point question where respondent are directed to the subsequent series of questions. This also can be used as an independent indicator of stewardship.</td>
</tr>
<tr>
<td>[38]</td>
<td>If &quot;YES&quot; to Question #37: Please circle “YES” or &quot;NO&quot; or “Don’t Know (DK)” against the following actions you have</td>
<td></td>
</tr>
</tbody>
</table>

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Respondents are given a predetermined response categories that were compiled based on the interview findings.

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<thead>
<tr>
<th>Appendix</th>
<th>Action Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Attend Meeting</td>
</tr>
<tr>
<td>b</td>
<td>Conduct research</td>
</tr>
<tr>
<td>c</td>
<td>Conservation actions</td>
</tr>
<tr>
<td>d</td>
<td>Write in mass media or academic publication</td>
</tr>
<tr>
<td>e</td>
<td>Commenting on past or planned developments</td>
</tr>
<tr>
<td>f</td>
<td>Financial Contribution</td>
</tr>
<tr>
<td>g</td>
<td>Involved in Non-Governmental Organization (NGO)</td>
</tr>
<tr>
<td>h</td>
<td>Talk to Others to Take Action</td>
</tr>
<tr>
<td>i</td>
<td>Participation in local events, such as mangrove awareness day</td>
</tr>
<tr>
<td>j</td>
<td>Environmental Monitoring</td>
</tr>
<tr>
<td>k</td>
<td>Involved politically, such as bringing the grassroots' voice to the attention of leaders to take action</td>
</tr>
<tr>
<td>l</td>
<td>Preserve historical artifacts</td>
</tr>
<tr>
<td>o</td>
<td>Other (specify):</td>
</tr>
</tbody>
</table>

**Section C**

**Disempowerment**

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[39]</td>
<td>If &quot;NO&quot; to Question #37: Do you think the current management of development and environment is satisfactory? Please circle &quot;YES&quot; or &quot;NO&quot;. [IF YES, SKIP TO QUESTION #41. IF NO, CONTINUE TO QUESTION #40]</td>
</tr>
<tr>
<td>[40]</td>
<td>If &quot;NO&quot; to Question #39: Please answer each of the following statements why do you think it is unsatisfactory.</td>
</tr>
</tbody>
</table>

**Capacity Building**

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>My concerns and opinions have been ignored</td>
</tr>
<tr>
<td>c</td>
<td>Development and conservation activities are too dependent on political influences</td>
</tr>
<tr>
<td>e</td>
<td>Responsible personnel aware but bound to their organization policies</td>
</tr>
<tr>
<td>g</td>
<td>A qualified person could do it but they are unable to contribute</td>
</tr>
<tr>
<td>i</td>
<td>No platform to voice my concern</td>
</tr>
<tr>
<td>o</td>
<td>It is too difficult to understand the issues</td>
</tr>
</tbody>
</table>

**Governance:**

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>I have to follow the policies even if they conflict with my beliefs</td>
</tr>
</tbody>
</table>
### Policy

- d  The economic perspective of this place is prioritized over other concerns
- f  It doesn't matter if I really care when the government itself does not
- h  Development is needed even though the natural area has to be sacrificed

### Process

- j  Only when I am involved in a group or organization will my voice be heard
- k  It's too late to do something when this place changed already without my knowledge
- m  While the platform is there, it’s inconvenient and difficult to be involved

### Implementation

- n  Even if the concern is listened to, there are too many government agencies involved for anything to be done
- l  The governmental agencies are not committed to the policies
- p  Other (specify):

### Vision of Place

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Remain as it is now</td>
</tr>
<tr>
<td>b</td>
<td>Loss of natural landscape and coastal areas</td>
</tr>
<tr>
<td>c</td>
<td>Planned housing and industrial scheme</td>
</tr>
<tr>
<td>d</td>
<td>Remain rural and affordable</td>
</tr>
<tr>
<td>e</td>
<td>Growth/overdevelopment threatening environment [Destruction of the area because of too much building and sprawl]</td>
</tr>
<tr>
<td>f</td>
<td>Continue to develop and benefit communities economically</td>
</tr>
<tr>
<td>g</td>
<td>Preservation or enhancement of green areas for own and other enjoyment</td>
</tr>
<tr>
<td>h</td>
<td>Other (specify):</td>
</tr>
</tbody>
</table>

This item was intended to provide basic descriptor based on the interviews that can project the implications of their attitudes and actions on future land use patterns.

### Section D

#### Demographics

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
</table>
| Age      | - 18-24  
- 25-39  
- 40-54  
- 55-70  |

Distribution and overall profile of respondents
<table>
<thead>
<tr>
<th>Appendix</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Your gender?</td>
</tr>
<tr>
<td></td>
<td>- Male</td>
</tr>
<tr>
<td></td>
<td>- Female</td>
</tr>
<tr>
<td>Ethnic</td>
<td>What of the following categories describe your ethnicity?</td>
</tr>
<tr>
<td></td>
<td>- Malay</td>
</tr>
<tr>
<td></td>
<td>- Chinese</td>
</tr>
<tr>
<td></td>
<td>- Indian</td>
</tr>
<tr>
<td></td>
<td>- Aborigines</td>
</tr>
<tr>
<td></td>
<td>- Other (specify):</td>
</tr>
<tr>
<td>Educational Attainment</td>
<td>What is the highest level of education you have completed?</td>
</tr>
<tr>
<td></td>
<td>- Not a high school graduate (PMR or UPSR)</td>
</tr>
<tr>
<td></td>
<td>- High school graduate (SPM or STPM)</td>
</tr>
<tr>
<td></td>
<td>- Vocational or technical training</td>
</tr>
<tr>
<td></td>
<td>- Diploma or professional diploma</td>
</tr>
<tr>
<td></td>
<td>- Bachelor's degree</td>
</tr>
<tr>
<td></td>
<td>- Postgraduate degree</td>
</tr>
<tr>
<td>Employment Status</td>
<td>What is your current employment status?</td>
</tr>
<tr>
<td></td>
<td>- Currently working</td>
</tr>
<tr>
<td></td>
<td>- Retired</td>
</tr>
<tr>
<td></td>
<td>- Unemployed</td>
</tr>
<tr>
<td></td>
<td>- Student</td>
</tr>
<tr>
<td>Occupation</td>
<td>What is your occupation? [IF RETIRED OR NOT CURRENTLY WORKING: What was your recent occupation? STUDENTS: What is your area of study?]</td>
</tr>
<tr>
<td>Place of Residence</td>
<td>What of the following categories best describe your current place of residence?</td>
</tr>
<tr>
<td></td>
<td>- Urban</td>
</tr>
<tr>
<td></td>
<td>- Semi-urban</td>
</tr>
<tr>
<td></td>
<td>- Rural</td>
</tr>
<tr>
<td>Childhood Time</td>
<td>Did you spend most of your childhood time in which of the following categories?</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
</tr>
<tr>
<td>- Village</td>
<td></td>
</tr>
<tr>
<td>- Semi-urban</td>
<td></td>
</tr>
<tr>
<td>- Urban</td>
<td></td>
</tr>
<tr>
<td>- If &quot;Urban&quot; or &quot;Semi-Urban&quot;, did you frequently engage with nature through outdoor activities or other ways? Yes OR No</td>
<td></td>
</tr>
</tbody>
</table>
Appendices

Appendix C. Interview Telephone Recruitment Guide

Assalamualaikum/Salam Sejahtera,

My name is [staff’s name], work at [organization] as [staff’s designation]. Currently we are working with a PhD student from the School of Architecture & Planning, The University of Auckland, New Zealand to understand the reasonable ways of how community can help to improve the environment in [area]. The student, Muhammad Farid Azizul is also a tutor on study leave from Department of Landscape Architecture, Faculty of Built Environment, University Technology Malaysia. We are recruiting a small group of participants of [area] to assist him in getting to know about how local people think about their environment in [area] which includes natural and cultural surroundings. I understand that you [were involved in SERANTA for regional plan/local plan] through [name of affiliation] or [been active in local natural and cultural advocacy]. Is it convenient for you at this time to spend a few minutes talking about the study?

[If Yes:]

The student research interest is in exploring how people think about their local environment and surrounding natural and cultural resources. Specifically, he is looking at how people become attached to a specific area, by discovering the values and significance of the area that reflected the chronological history and development of the area. An understanding of these matters is crucial from the perspectives of community as well as planners, decision-makers and other stakeholders in guiding land use planning and conservation that responds to the values of the local community.

In order to implement this research, the study phase includes establishing contacts with other community members of your area, who like yourself, have been identified because of their civic roles capacity in the decision-making of planning your area. If you agree to participate in this phase of study, your involvement would be in a form of face-to-face interview. An interview normally would last from one and half to two hours, conducted at a location that is convenient for you. With your permission, the interview session would be recorded on audiotape and later transcribed into a script to enable accuracy. Of course it is totally your choice to freely answer or decline the questions, and to withdraw from the study at any point if you wish.

Do you think you might be interested in participating in this study? Can I send you a letter of intent about this study? It comprises a summary of the research information explaining the aim, scope and related information in detail and consent form for you to look over. The student hopes and anticipates having between 21-30 key people linked with civic engagement to natural or cultural resources and planning for this phase of study, and wonders if you can recommend someone with the above interest that I can contact to see if they might be interested to participate in this study as well?

I will call you again within 7-10 days to confirm your participation and respond to any queries that you may have.

I really appreciate your time this [morning/afternoon] talking with me. I look forward to speaking with you soon.

Thank you.
Appendices

Appendix D. Interview Participant Information Sheet (PIS)

[1] PIS Individual

[Name]
[Address]
[Address]

[Date]

Assalammualaikum.wrh..wbth/ Salam Sejahtera

Dear [name]:

**LETTER OF INTENT TO INTERVIEW PARTICIPANTS**

You were spoken to on the telephone on [date] about a study I am conducting for my Ph.D. research in the School of Architecture & Planning at the University of Auckland, New Zealand. This letter is to clarify the nature of the study and invite you to participate in it. [Town name] is one of several localities within the Iskandar Malaysia region that will be included in the study. Please look through the Participation Information Sheet (PIS) attached below which summarizes the aim, scope and the role of participants who will be in this study.

Thank you for your initial interest, and I hope that you will find this an exciting and worthwhile project to participate in. I will contact you by telephone in approximately one week to confirm your participation, to answer any questions you may have, and to discuss the scheduling of an interview if you would like.

Warm regards,

Muhammad Farid Azizul
PhD Student,
School of Architecture & Planning
The University of Auckland
New Zealand
**INTERVIEW PARTICIPANT INFORMATION SHEET**

**INDIVIDUAL**

**Project title:** Sense of Place and Environmental Stewardship: Empowering Communities in Bioregional Planning - Case study of Iskandar Malaysia

**Researcher:** Muhammad Farid Azizul

**Supervisor:** Dr. Stephen Knight-Lenihan

### Research Introduction:
Muhammad Farid Azizul is currently a PhD student at the School of Architecture and Planning at the University of Auckland. He is also a tutor on study leave from Department of Landscape Architecture, Faculty of Built Environment, University Technology Malaysia. The University of Auckland requires that ethics approval be obtained for research involving human participants. This information sheet explains the purpose and scope of the research and your involvement.

### Project Description and Invitation to Participate:
The project is a part of a PhD being pursued by the researcher, and is funded by the Government of Malaysia. The locus of this project is within several localities of Iskandar Malaysia. The primary objectives of this project is to understand better how people become attached to a specific area, by discovering the values and significance of the area reflected by its chronological history and on-going development. The results of this study could be utilized by the community itself by strengthening the sense of place and instilling awareness towards the care of their environment, as well as fostering better communication with decision-makers in land use planning and conservation.

I invite you to take part in this study as you have links with civic engagement on natural or cultural resources and planning of the selected town and communities. Please take a few minutes to read this information sheet before making up your mind about whether or not you would like to assist me with my research.

### Project Procedures:
This project is a six-month study, which aims to find out local views in an interactive manner. The study is separated into three rounds, which I anticipate would require about three to five hours from each participant divided over three occasions. The first round is a face to face interview and subsequently you will be asked to recommend other persons that satisfy the criteria of having civic capacity in the decision-making of your area’s natural and cultural resources.

The interview will be guided by a schedule, which normally would last about one and half to two hours, conducted at a location that is convenient for you. You are free to choose to answer or decline any of the questions if you wish.

An audio recording will be used to ensure accuracy. The audio recording can be stopped at any time during interviews. Subsequently, the recording will be transcribed and some excerpts of the transcripts will be translated into English for thesis/report use by the researcher himself, assisted by a professional being hired for the project who will also work under the condition of confidentiality. The transcript of your interview (either in Bahasa Malaysia or English) will be made available for you to check. You may also review and make correction or adjustment to the transcripts. I will provide a print out of the transcripts confidentially to you for corrections.

After the completion of the first round, I will summarize the information in the form of a composite map of places and the related landscape features that have been valued by the participants, including yourself. This information will also be incorporated into the development of survey questionnaires as part of the...
multifaceted response to the project that will be done next year. Based on this summarized information, the second round requires me to have an informal meeting with phase one participants to discuss individually whether I have summarized the responses correctly. This meeting ideally would be scheduled for about one month from the first interview of the last participants, at a time comfortable for participants, and would last no more than two hours.

The summaries, and the feedback I receive from participants on the summaries, initiates the third round of the study which the intent is to engage more of the local population to share its views on the information summarized. Your anonymity will be preserved by ensuring no form of documentation is kept linking you directly or indirectly to information elicited from you earlier. The way to operationalize this may be through an advertised public exhibition or open day where people can easily drop by to share and discuss their views.

Most visits and interviews will be within working hours at considerable duration of one to two hours. Compensation or reimbursement of expenses of RM50 will be provided to participants who are self-employed.

| Data Storage, Retention, Future Use And Destruction: | We will store the data in such a way that only the researcher and the supervisor will have access to it. Print outs and other physical materials will be stored in a filing cabinet located at the University of Auckland, and only the researcher will have access to this material. Audio recording and other electronic files will be stored in the researcher’s computer, laptop and other devices with password protection. The researcher will input the data gathered through the interviews transcripts and survey questionnaires into computers. The data will be analyzed and the results of this project may be published but no data included will be linked to any specific participant. At the end of the project, any personal information will be destroyed immediately. However, any data on which the results of the project depend will be retained in secure storage for six years. The audio recording will be completely erased from the computer and any other devices. The digital data will be deleted from computers. The printed transcripts and translation of the transcripts will be destroyed by paper shredder machines on the University of Auckland premises. |
| Rights To Withdraw From Participation: | Participation in this project is completely voluntary. You have the right to withdraw at any time and to withdraw data from your interviews or surveys up to six months from the date when they were first gathered. |
| Confidentiality: | There are no questions in the list of interview or survey questions which will make it possible to identify you except a code number that will be used for internal communication and publication. We will keep all information you provide confidential. Only the researcher will use and have access to it. Any third parties getting involved in the research, i.e. research assistants, transcribers or translators, will work confidentially as they will only have access to the code numbers and not the names and must sign a letter of confidentiality agreement. |
| Consequences and Potential Risks: | Either the [Johore State Town or Country Planning Department] or [local municipality of your area] or [district office] has given assurance that your decision regarding participation/ nonparticipation will have no consequences for the relationship between you and the organization/ municipalities. Although it is unlikely to happen, please be advised that there may be some potential affects as a consequence of being a participant of this project. Should you experience any anxiety or distress, the researcher can provide information about relevant support agencies such as National Council of Welfare and Social Development Malaysia (MAKPEM), Yayasan Salam Malaysia (Malaysian Solidarity Foundation). |
## Availability Of The Project Result:

The results of the study will be available as a part of my final thesis in the School of Architecture and Planning Library. An electronic copy of the thesis summarized documents on place meaning as valued by the participants can be distributed on request to any interested parties in land use planning or conservation decision-making. Please indicate in the Consent Form if you wish to get the electronic copy of summarized findings.

For further information you can contact the researcher, the supervisor or the head of school, as detailed below:

<table>
<thead>
<tr>
<th>Muhammad Farid Azizul</th>
<th>Dr. Stephen Knight-Lenihan</th>
<th>Elizabeth Aitken Rose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Researcher</td>
<td>Supervisor</td>
<td>Head of School</td>
</tr>
<tr>
<td>PhD Candidate, School of Architecture and Planning, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Tel. +64 (9) 373 7599 ext. 85076 Email: <a href="mailto:mazi395@aucklanduni.ac.nz">mazi395@aucklanduni.ac.nz</a></td>
<td>Senior Lecturer, School of Architecture and Planning, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Tel. +64 (9) 373 7599 ext. 88673 Email: <a href="mailto:s.knight-lenihan@auckland.ac.nz">s.knight-lenihan@auckland.ac.nz</a></td>
<td>Senior Lecturer, School of Architecture and Planning, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Tel. +64 (9) 373 7599 ext. 86425 Email: <a href="mailto:e.aitkenrose@auckland.ac.nz">e.aitkenrose@auckland.ac.nz</a></td>
</tr>
</tbody>
</table>

**Local Contact Details:**

<table>
<thead>
<tr>
<th>Muhammad Farid Azizul</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Landscape Architecture</td>
</tr>
<tr>
<td>Faculty of Built Environment</td>
</tr>
<tr>
<td>University Technology Malaysia</td>
</tr>
<tr>
<td>81310 UTM Skudai, Johore Bahru, Johore, Malaysia.</td>
</tr>
<tr>
<td>+60 (12) 7928385</td>
</tr>
</tbody>
</table>

For any queries regarding ethical concerns you may contact the Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Office of the Vice Chancellor, Private Bag 92019 Auckland 1142. Tel. +64 (9) 3737599 ext. 83711

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON <3 July 2013> for 3 years, Reference Number <2013-2016/9713>
Assalamualaikum wrh. wbth/ Salam Sejahtera

Dear [name]:

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Thank you for your initial interest, and I hope that you will find this an exciting and worthwhile project to participate in. I will contact you by telephone in approximately one week to confirm your participation, to answer any questions you may have, and to discuss the scheduling of an interview if you would like.

Warm regards,

Muhammad Farid Azizul  
PhD Student,  
School of Architecture & Planning  
The University of Auckland  
New Zealand
### PARTICIPANT INFORMATION SHEET

**ORGANIZATION**

<table>
<thead>
<tr>
<th><strong>Project title:</strong></th>
<th>Sense of Place and Environmental Stewardship: Empowering Communities in Bioregional Planning—Case study of Iskandar Malaysia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Researcher:</strong></td>
<td>Muhammad Farid Azizul</td>
</tr>
<tr>
<td><strong>Supervisor:</strong></td>
<td>Dr. Stephen Knight-Lenihan</td>
</tr>
</tbody>
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The [Johore State Town and Country Planning Department] Or [Town x Municipal Council] Or [District Office] is invited to take part in this study as it is one of the major agencies involved in the development planning and conservation activities in the country. Your agency/department’s role in coordinating such activities provides access to other important stakeholders, in particular people who [had been involved in the public participation process (or SERANTA) during the development plan proposal] or [knowledgeable person/organization in local natural resources and conservation]. Please take a couple of minutes to read this information sheet before making up your mind about whether or not you would like to assist us with our research.

**Project Procedures:**
This project is a six-month study, which aims to elicit local views in an interactive manner. Agreeing to participate in this project means that you, as the [staff designation] of [name of agency/department], are willing to be the key person to organize a meeting and interview between myself (accompanied by a research assistant working under the condition of confidentiality) and [stakeholders involved in the SERANTA of Area xxx Structure/Local Plan Year xxx] or [knowledgeable person in local natural resources and conservation] who satisfy the criteria for participation. I am seeking your permission to invite them to be participants of the present research.

This study is separated into three rounds, which I anticipate would require about three to four hours from each participant divided over three occasions. The first round is establishing contacts with other community members (who satisfy the criteria for participation) of the selected locality. Identified participants initially contacted and who agree to participate in this study will be involved in a form of face-to-face interview guided by a schedule which normally would last about one and half to two hours, conducted at a location that is convenient for them. The participants are free to choose to answer or decline any of the questions if they wish.

An audio recording will be used to ensure accuracy. The audio recording can be stopped at any time during interviews. Subsequently, the recording will be transcribed and some excerpts of the transcripts will be translated into English.
for thesis/report use by the researcher himself, assisted by a professional being hired for the project who will also work under the condition of confidentiality. The interview transcript (either in Bahasa Malaysia or English) will be made available for the participant to check. They may also review and make correction or adjustment to the transcripts. We will hand in the print out of the transcripts confidentially to participants for corrections.

After the completion of the first round of the study, I will summarize the information in the form of a composite map of places and the related landscape features that have been valued by the participants. This information also will be incorporated in to the development of survey questionnaires as part of the multifaceted response to the project that will be done next year. Based on this summarized information, the second round requires me to have an informal meeting with phase one participants individually to discuss whether I have summarized the responses correctly. This meeting ideally would be scheduled for about one month from the first interview of the last participants, at a time comfortable for participants and would last no more than two hours.

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| Consequences and Potential Risks: | We seek your assurance that any participants introduced by your agency/department who decided to participate or not to participate in any means during this study will not be affected in the relationship between them and your agency/department. Although it is unlikely to happen, there may be some
potential affects as a consequence of being a participant of the current project. Should a participant experience any anxiety or distress, the researcher can provide information about relevant support agencies such as National Council of Welfare and Social Development Malaysia (MAKPEM), Yayasan Salam Malaysia (Malaysian Solidarity Foundation).

### Availability Of The Project Result and Who to Contact for Further Information:

The results of the study will be available as a part of my final thesis in the School of Architecture and Planning Library. An electronic copy of the thesis summarized documents on place meaning as valued by the participants can be distributed on request to any interested parties in land use planning or conservation decision-making. Please indicate in the Consent Form if you wish to get the electronic copy of summarized findings.

For further information you can contact the researcher, the supervisor or the head of school, as detailed below:

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<tr>
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<td>PhD Candidate, School of Architecture and Planning, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Tel. +64 (9) 373 7599 ext. 85076 Email: <a href="mailto:mazi395@aucklanduni.ac.nz">mazi395@aucklanduni.ac.nz</a></td>
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+60 (12) 7928385

For any queries regarding ethical concerns you may contact the Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Office of the Vice Chancellor, Private Bag 92019 Auckland 1142. Tel. +64 (9) 3737599 ext. 83711

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON <3 July 2013> for 3 years, Reference Number <2013-2016/9713>
Appendices

Appendix E. Interview Consent Form (CF)

[1] CF Individual

CONSENT FORM INDIVIDUAL

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Project title: Sense of Place and Environmental Stewardship: Empowering Communities in Bioregional Planning-Case study of Iskandar Malaysia

Researcher: Muhammad Farid Azizul
Supervisor: Dr. Stephen Knight-Lenihan

I have read the Participant Information Sheet (PIS), understood the nature of the research and why I have been selected. I have had the opportunity to ask questions and have them answered to my satisfaction. I also realize my participation in this project is voluntary.

- I agree to take part in this project and to provide information to the researchers under the conditions of confidentiality set out on the PIS;
- I understand that I am free to withdraw from the study (including interviews and surveys) at any time, or to decline to answer any particular questions in the project;
- I have been informed that the research will take place at a location that is convenient for me and agreed on by both parties;
- I have been informed that I will be recorded during interviews;
- I have been advised that audio recording can be stopped at any time during interviews;
- I understand that the interview recording will be transcribed and translated;
- I have been informed that I may withdraw data from the interviews up to six months from the date of the first interview;
- I have been advised that besides the researcher, a transcriber, and a translator will be hired to assist him under the conditions of confidentiality set out on the PIS;
- I have been advised that I may review transcripts in Bahasa Malaysia of my interviews;
- I have been advised that compensation or reimbursement of RM 50 will be provided for my participation in this project if I am self-employed;
- I have been informed that my real name will not be mentioned in any of the reports produced for this project;
- I understand that the results of the overall project will be published as part of the researcher’s final report;
- I have been informed that the results of the study will be available as a part of the researcher’s final thesis in the School of Architecture and Planning Library, University of Auckland, New Zealand, and *I wish/do not wish to receive a summary of findings. Please print your email here (______________________________________) if you wish to get the electronic copy.
- I understand that data will be kept for future analysis, for a maximum of 6 years;
- I have been advised that after completion of the study or within a maximum period of 6 years, the data will be subsequently destroyed by the researcher;
- I understand that this consent form will be kept separately from all other forms of data;
- I have been advised that there may be some potential effects as a consequence of being a participant of this project; and should I experience any anxiety or distress, the researcher can provide information about relevant support agencies; and
- I understand that The Johor State Town and Country Planning Department or the local municipal councils and the district offices have given assurance that my decision to participate or not to participate will not have any consequences for the relationship between me and the organizations.
Appendices

Name: 
Signature: 
Date: 
Phone: 
Email: 

*Preferred method of contact: Email/Phone)

Note. *) Please, select one that applies

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON <3 July 2013> for 3 years, Reference Number <2013-2016/9713>
[2] CF Organization

CONSENT FORM ORGANIZATION

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Project title: Sense of Place and Environmental Stewardship: Empowering Communities in Bioregional Planning-Case study of Iskandar Malaysia

Researcher: Muhammad Farid Azizul

Supervisor: Dr. Stephen Knight-Lenihan

I, the [designation] of the [name of planning organization/ local municipal council/ district office], have been given and have understood an explanation of this research project. I have had an opportunity to ask questions and have them answered to my satisfaction. I also have been informed that my participation in this study within my organization is voluntary.

- I agree to allow the researcher and his team to conduct interviews and questionnaires with some staff members at my department/organization;
- I agree to allow the researcher to gain access to the list of participants involved in the public participation process (known as SERANTA) during the development of [Structure/Regional/Local] plan from [year] OR individual/ party who links with civic engagement to natural or cultural resources, planning and conservation;
- I agree to introduce the researcher and his research assistant to the identified individuals/ parties and provide them any necessary facilitation;
- I understand that names and identifying details of individuals will not be used in any report, and all data will be described only in general terms at the group level;
- I understand that to ensure confidentiality and anonymity, all data including audio recordings, interview transcripts, survey questionnaires and language translations will be stored in a secure location on the University of Auckland in such a way that only the researcher and his supervisor will be able to gain access;
- I have been informed that the results of the study will be available as a part of the researcher’s final thesis in the School of Architecture and Planning Library, University of Auckland, New Zealand, and *I wish/do not wish to receive a summary of findings. Please print your email here (______________________________________) if you wish to get the electronic copy.
- I have been informed that the participants may withdraw data from the interviews up to six months from the date of the last interview;
- I give my assurance that the parties’ or individual’s decisions to participate or not to participate in the project will not affect the relationship between the organization and them; and
- I understand that this consent form will be kept separately from all other forms of data.

Name: ____________________________________________
Organization: _____________________________________
Signature: ________________________________________ Date: ____________________________
Phone: __________________________________________ Email: ____________________________

*Preferred method of contact: Email/Phone)

Note. *) Please, select one that applies

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE
ON <3 July 2013> for 3 years, Reference Number <2013-2016/9713>
Appendices

Appendix F. Survey Reminder Postcard

Dear Mr. /Mrs. ________________________

If you have completed the questionnaire I’ve recently sent you for my PhD research, please accept my thanks. If you have not emailed it back, it’s not too late!

Your participation in this research is valuable. I appreciate your generosity to take some time to complete the survey and help me learn as much as possible about how local values are celebrated in planning and conservation of your area.

Please call 012722xxx or email to ream396@arch.mau.ukm.my if you need another copy of research questionnaire.

Regards,

[Signature]

POS Malaysia
PAID

Dear Mr. /Mrs. ________________________

If you have completed the questionnaire I’ve recently sent you for my PhD research, please accept my thanks. If you have not emailed it back, it’s not too late!

Your participation in this research is valuable. I appreciate your generosity to take some time to complete the survey and help me learn as much as possible about how local values are celebrated in planning and conservation of your area.

Please call 012722xxx or email to ream396@arch.mau.ukm.my if you need another copy of research questionnaire.

Regards,

[Signature]
## Appendix G. Survey Research Package

### [1] PIS Organization

PARTICIPANT INFORMATION SHEET (PIS)

**ORGANIZATION**

<table>
<thead>
<tr>
<th><strong>Project title:</strong></th>
<th>Sense of Place and Environmental Stewardship: Empowering Communities in Bioregional Planning-A Case study of Urbanizing Coastal Rural Communities in Pontian, Malaysia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Researcher:</strong></td>
<td>Muhammad Farid Azizul</td>
</tr>
<tr>
<td><strong>Supervisor:</strong></td>
<td>Dr. Stephen Knight-Lenihan</td>
</tr>
</tbody>
</table>

| **Research Introduction and Invitation** | I am Muhammad Farid Azizul, currently a PhD student at the School of Architecture and Planning at the University of Auckland. I am also a tutor on study leave from Department of Landscape Architecture, Faculty of Built Environment, University Technology Malaysia. The University of Auckland requires that ethics approval be obtained for research involving human participants. This information sheet explains the purpose and scope of the research and your involvement.  

I am recruiting participants into this research by asking my contacts to pass the invitation to participate on to those who have been active in, and have links with, civic engagement on natural or cultural resources and planning in Pontian. This is how you have come to receive this invitation, as your organization is linked directly to the land use planning and conservation decision-making in Pontian. I’m seeking your permission to allow identified staff to participate in this research. Please take a few minutes to read this information sheet before making up your mind about whether or not to allow your staff to participate. |

| **Project Description and Procedure** | The broad aim of this research is to look at human-environment relationships among diverse social actors involved in local planning activities that influence the care and protection of a place. Items in the survey cover the topics related to the places where staff live and/or work in Pontian, personal meanings and feelings attached to them, and the way staff may respond to existing or future changes in that place.  

The research involves completing the survey form included for your perusal. Once permission has been given, I will mail out a form to the staff to fill out and return using the provided self-addressed mail within 7 weeks from the date they received the form. They will receive a friendly reminder from me one week after mailing the questionnaire. The average time expected to complete the whole survey is 20 minutes if done continuously. |

| **Confidentiality** | The questionnaires are anonymous – I will not ask the staff their name. In order to match their response with my category analysis, the survey form is pre-coded with 4-Digit numeric. This code does not allow me to identify them, and will only be used for internal communication and publication. At the end of data collection period, the return code will be converted into a numeric string, making the data entirely anonymous. Only the researcher will use and have access to it. Any third parties getting involved in the research, i.e. research assistants, will work confidentially as they will only have access to the code numbers and not the names and must sign a letter of confidentiality agreement.  

I will be using the data from participants in aggregate. The responses of individual participants cannot be identified, and any reports or publications from this research will provide only broad descriptions of the sample, for |
<table>
<thead>
<tr>
<th>Appendices</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>example, noting the average age and the attitudinal characteristics between different planning roles and capacities.</td>
<td></td>
</tr>
<tr>
<td>Consent, Participation and Withdrawal</td>
<td>Completing the survey and returning the survey form will indicate staff’s consent to participate. For your consent, please fill the attached Consent Form and return using the paid self-addressed envelope. Participation in this project is completely voluntary. Please note that while participation is completely voluntary, once participants have returned the survey, they cannot withdraw the data.</td>
</tr>
<tr>
<td>Incentive and Availability Of The Project Result</td>
<td>A redeemable prepaid mobile voucher will be provided in appreciation of staff time to complete the survey. If you wish to receive a copy of the research report from this study, please indicate in the Consent Form. This information will be stored separately from the survey data, in a locked filing cabinet located at the University of Auckland, and only the researcher will have access to this material. This information will be destroyed after 6 years.</td>
</tr>
<tr>
<td>Data Storage, Retention, Future Use And Destruction</td>
<td>I will store the data in such a way that only the researcher and the supervisor will have access to it. Print outs and other physical materials will be stored in a filing cabinet located at the University of Auckland, and only the researcher will have access to this material. Electronic files will be stored in the researcher’s computer, laptop and other devices with password protection. The researcher will input the data gathered through the survey questionnaires into computers. The data will be analyzed and the results of this project may be published but no data included will be linked to any specific participant. At the end of the project, any personal information will be destroyed immediately. However, any data on which the results of the project depend will be retained in secure storage for a minimum period of six years. The digital data will be deleted from computers.</td>
</tr>
<tr>
<td>Consequences and Potential Risks:</td>
<td>The Malaysian Town and Country Planning Department, Pontian District Office and Pontian Local Council have guaranteed that organization’s as well as individual’s decision to participate or not to participate will not affect your relationship with them. Although it is unlikely to happen, please be advised that there may be some potential affects as a consequence of your staff being a participant of this project. Should they experience any anxiety or distress; the researcher can provide information about relevant support agencies such as National Council of Welfare and Social Development Malaysia (MAKPEM), Yayasan Salam Malaysia (Malaysian Solidarity Foundation).</td>
</tr>
<tr>
<td>For further information you can contact the researcher, the supervisor or the head of school, as detailed below:</td>
<td></td>
</tr>
<tr>
<td>Muhammad Farid Azizul Researcher PhD Candidate, School of Architecture and Planning, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Tel. +64 (9) 373 7599 ext. 85076 Email: <a href="mailto:mazi395@aucklanduni.ac.nz">mazi395@aucklanduni.ac.nz</a></td>
<td>Dr. Stephen Knight-Lenihan Supervisor Senior Lecturer, School of Architecture and Planning, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Tel. +64 (9) 373 7599 ext. 88673 Email: <a href="mailto:s.knight-lenihan@auckland.ac.nz">s.knight-lenihan@auckland.ac.nz</a></td>
</tr>
<tr>
<td>Local Contact Details:</td>
<td>Muhammad Farid Azizul Department of Landscape Architecture Faculty of Built Environment University Technology Malaysia</td>
</tr>
</tbody>
</table>
| 81310 UTM Skudai  
| Johore Bahru, Johore, Malaysia.  
| +60 (12) 7225507  

For any queries regarding ethical concerns you may contact the Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Office of the Vice Chancellor, Private Bag 92019 Auckland 1142. Tel. +64 (9) 3737599 ext. 83711

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON <date/month/year> for 3 years, Reference Number: 9713
CONSENT FORM ORGANIZATION

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Project title: Sense of Place and Environmental Stewardship: Empowering Communities in Bioregional Planning-Case study of Iskandar Malaysia
Researcher: Muhammad Farid Azizul
Supervisor: Dr. Stephen Knight-Lenihan

I, the [designation] of the [name of planning organization/ local municipal council/ district office], have been given and have understood an explanation of this research project. I have had an opportunity to ask questions and have them answered to my satisfaction. I also have been informed that my participation in this study within my organization is voluntary.

- I agree to allow the researcher and his team to conduct questionnaires with some staff members at my department/organization;
- I understand that names and identifying details of individuals will not be used in any report, and all data will be described only in general terms at the group level;
- I understand that to ensure confidentiality and anonymity, all data including survey questionnaires and language translations will be stored in a secure location on the University of Auckland in such a way that only the researcher and his supervisor will be able to gain access;
- I have been informed that the results of the study will be available as a part of the researcher’s final thesis in the School of Architecture and Planning Library, University of Auckland, New Zealand, and *I wish/do not wish to receive a summary of findings. Please print your email here (_____________________________________) if you wish to get the electronic copy.
- I give my assurance that the parties’ or individual’s decisions to participate or not to participate in the project will not affect the relationship between the organization and them; and
- I understand that this consent form will be kept separately from all other forms of data.

Name: ____________________________________________
Organization: ____________________________________________
Signature: ___________________________ Date: ____________
Phone: ___________________________ Email: ___________________________

*Preferred method of contact: Email/Phone)

Note. *) Please, select one that applies

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE
ON <date/month/year> for 3 years, Reference Number <year/number>
PARTICIPANT INFORMATION SHEET (PIS)

**INDIVIDUAL**

<table>
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<th>Research Introduction and Invitation</th>
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<tbody>
<tr>
<td>I am Muhammad Farid Azizul, currently a PhD student at the School of Architecture and Planning at the University of Auckland. I am also a tutor on study leave from Department of Landscape Architecture, Faculty of Built Environment, University Technology Malaysia. The University of Auckland requires that ethics approval be obtained for research involving human participants. This information sheet explains the purpose and scope of the research and your involvement.</td>
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<td>I am recruiting participants into this research by asking my contacts to pass the invitation to participate on to those who have been active and have links with civic engagement on natural or cultural resources and planning in Pontian. This is how you have come to receive this invitation. Please take a few minutes to read this information sheet before making up your mind about whether or not you would like to assist me with my research</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Description and Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>The research looks at human-environment relationships among those who are regularly in a particular area, including those living and/or working in Pontian, and their involvement in planning activities. The survey includes questions on where you live, the personal values and feelings attached to those areas, and responses you may have to existing or possible future changes to that place.</td>
</tr>
<tr>
<td>The research involves completing the survey form enclosed and returning it by using the provided self-addressed envelope within 7 weeks from date you received this invitation. You will receive a friendly reminder from me one week after mailing the questionnaire. The average time expected to complete the whole survey is 15 minutes if done continuously.</td>
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</table>

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<th>Confidentiality</th>
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<td>The questionnaires are anonymous – I will not ask your name. In order to match your response with my category analysis, the survey form is pre-coded with a 4-Digit numeric code. This code does not allow me to identify you, and will only be used for internal communication and publication. At the end of data collection period, the return code will be converted into a numeric string, making the data entirely anonymous. Only the researcher will use and have access to it. Any third parties getting involved in the research, i.e. research assistants will work confidentially as they will only have access to the code numbers and not the names, and must sign a letter of confidentiality agreement.</td>
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<td>I will be using the data from participants in aggregate. The responses of individual participants cannot be identified, and any reports or publications from this research will provide only broad descriptions of the sample, for example, noting the average age and the attitudinal characteristics between different planning roles and capacities.</td>
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</table>

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<th>Consent, Participation and Withdrawal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completing the survey and returning the survey form will indicate your consent to participate. Participation in this project is completely voluntary; it would be great if you can complete the whole questionnaires. Please note that while your participation is completely voluntary, once you have returned the survey, you cannot withdraw the data.</td>
</tr>
</tbody>
</table>

*Project title:* Sense of Place and Environmental Stewardship: Empowering Communities in Bioregional Planning-A Case study of Urbanizing Coastal Rural Communities in Pontian, Malaysia

*Researcher:* Muhammad Farid Azizul

*Supervisor:* Dr. Stephen Knight-Lenihan
## Incentive and Availability Of The Project Result

It will take an average of 15 minutes to complete this survey if done continuously. As such, a redeemable prepaid mobile voucher is provided here in appreciation of your time and generosity to complete the survey. Apart from that, everyone who completes the survey has the opportunity to enter a lucky prize draw to win 2 branded 32-inch LED televisions at the end of this research.

If you wish to receive a copy of the research report from this study, please complete the attached Report Request Form (RRF) which requires your email address to be written on form. This information will be stored separately from the survey data, in a locked filing cabinet located at the University of Auckland, and only the researcher will have access to this material. This information will be destroyed after all research reports have been sent out. I suggest you create an alternative email address if the email address you are using can potentially identify you, if this is your concern. You can create a proxy email that will be used for the communication of this research, using one of the online services (e.g., gmail, hotmail).

## Data Storage, Retention, Future Use And Destruction

I will store the data in such a way that only the researcher and the supervisor will have access to it. Print outs and other physical materials will be stored in a filing cabinet located at the University of Auckland, and only the researcher will have access to this material. Electronic files will be stored in the researcher’s computer, laptop and other devices with password protection. The researcher will input the data gathered through the survey questionnaires into computers. The data will be analyzed and the results of this project may be published but no data included will be linked to any specific participant. At the end of the project, any personal information will be destroyed immediately. However, any data on which the results of the project depend will be retained in secure storage for a minimum period of six years. The digital data will be deleted from computers.

## Consequences and Potential Risks:

The Malaysian Town and Country Planning Department, Pontian District Office and Pontian Local Council have guaranteed that your decision regarding participation/ nonparticipation will have no consequences for the relationship between you and the organization/ municipalities. It is therefore unlikely there will be any effects as a consequence of being a participant of this project. However, should you experience any anxiety or distress, the researcher can provide information about relevant support agencies such as National Council of Welfare and Social Development Malaysia (MAKPEM), Yayasan Salam Malaysia (Malaysian Solidarity Foundation).

For further information you can contact the researcher, the supervisor or the head of school, as detailed below:

<table>
<thead>
<tr>
<th>Muhammad Farid Azizul</th>
<th>Dr. Stephen Knight-Lenihan</th>
<th>Elizabeth Aitken Rose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Researcher</td>
<td>Supervisor</td>
<td>Head of School</td>
</tr>
<tr>
<td>PhD Candidate, School of Architecture and Planning, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Tel. +64 (9) 373 7599 ext. 85076 Email: <a href="mailto:mazi395@aucklanduni.ac.nz">mazi395@aucklanduni.ac.nz</a></td>
<td>Senior Lecturer, School of Architecture and Planning, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Tel. +64 (9) 373 7599 ext. 88673 Email: <a href="mailto:s.knight-lenihan@auckland.ac.nz">s.knight-lenihan@auckland.ac.nz</a></td>
<td>Senior Lecturer, School of Architecture and Planning, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Tel. +64 (9) 373 7599 ext. 86425 Email: <a href="mailto:e.aitkenrose@auckland.ac.nz">e.aitkenrose@auckland.ac.nz</a></td>
</tr>
</tbody>
</table>

Local Contact Details:

**Muhammad Farid Azizul**
Department of Landscape Architecture
Faculty of Built Environment
University Technology Malaysia
81310 UTM Skudai
| Johore Bahru, Johore, Malaysia.  
  +60 (12) 7225507 |
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</tr>
<tr>
<td>APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON &lt;date/month/year&gt; for 3 years, Reference Number: 9713</td>
</tr>
</tbody>
</table>
Appendices

[4] Survey Questionnaire

PART I:

This survey looks at your area, which means the place that you live and/or work in Poniat.

1. Do you live or work in Poniat? Please circle only one appropriate answer

<table>
<thead>
<tr>
<th>Live</th>
<th>Work</th>
<th>Both</th>
</tr>
</thead>
</table>

2. If you live in Poniat, how long have you done so (_______ years OR □ entire life); if you work in Poniat, how long have you done so (_______ years)

3. Can you indicate the 5 most important reasons why you have lived or moved in this place? Please mark “1” for the most important, “2” for second most important, and so on.

   [PLEASE SKIP THIS QUESTION IF YOU ANSWERED "WORK" TO QUESTION #1 AND GO QUESTION #4]

   a. Family lives here
   b. History of this area
   c. Born and raised here
   d. People and culture
   e. Grew up here
   f. Nearby to other places
   g. Friends in the area
   h. Quality of life
   i. Profession or work
   j. It remains as a traditional village
   k. Property or home
   l. It has kept its natural values
   m. Income/Economic opportunity
   n. Recreational Opportunities
   o. Cost of living
   □ Other (Please specify):

4. Do you consider this place to be special? Please circle "YES" or "NO" 

   [IF YES, CONTINUE TO QUESTION #5. IF NO, SKIP TO QUESTION #52]

   Please answer each of the following statements. Please CIRCLE only ONE of the following for each statement with “1” strongly disagree (SD), “2” disagree (D), “3” neither agree nor disagree (NAD), “4” agree (A), or “5” strongly agree (SA).

<table>
<thead>
<tr>
<th>SD</th>
<th>D</th>
<th>NAD</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
</table>
   5. Living in this place reflects my personal beliefs and values
   6. This is somewhere I connect with my family
   7. Being in this place reflects my origin
   8. The communities in this place are part of my life
   9. I am comfortable here because this place matches my socio-economic standard
   10. This is the best place for recreational activities I like to do
   11. This place reflects lifestyles that I like
   12. I can easily go to other places nearby from here
<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>13.</td>
<td>No other place can be compared to this place where I can get urban services with ease.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14.</td>
<td>This place allows me to connect with nature in a way that other places could not.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15.</td>
<td>I identify strongly with this place’s natural resources and commodities.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16.</td>
<td>This place can show much to others about who I am.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17.</td>
<td>This place means a lot as the southernmost tip of the Asian continent.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18.</td>
<td>This place matches my emotional feeling.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19.</td>
<td>This place brings my old memory back.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20.</td>
<td>I feel peaceful when I am here.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21.</td>
<td>I feel safe here.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22.</td>
<td>I can identify with the human values here.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23.</td>
<td>I mix easily with the communities here, and I am accepted as part of the community.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24.</td>
<td>This place is where I consider the community to be part of my family.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25.</td>
<td>I feel the culture and tradition of the communities here are part of my life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26.</td>
<td>This place is where my friends are close by and are connected to my life here.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27.</td>
<td>I feel needed and appreciated by the communities when I am here.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28.</td>
<td>I think the landscape here is beautiful.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29.</td>
<td>The plant and animal life in this place is really fascinating.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30.</td>
<td>I like living here surrounded by natural landscape.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

31. **What aspect of this place do you most identify with?**
   Please select only top three reasons of the following, and rank with “1” for the most important, “2” for second most important, and “3” for the third most important. Then, go to Question #33.

   a. Natural resources and biological features
   b. Peacefulness in traditional village setting
   c. Profession/ work
   d. People, values, culture and way of life
   e. People, friends and own social group
   f. Opportunities for variety of activities
   g. Beautiful landscape and scenery
   h. Other (Please specify)

32. **Why don’t you consider this place to be special for you?**
   **[PLEASE SKIP THIS QUESTION IF YOU ANSWERED “YES” TO QUESTION #4]**
   Please answer each of the following statements. Please CIRCLE only ONE of the following for each statement with “1” strongly disagree (SD), “2” disagree (D), “3” neither agree nor disagree (NAD), “4” agree (A), or “5” strongly agree (SA).

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>My interests are not provided by this place</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>b.</td>
<td>This place is not the same as I remembered</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>c.</td>
<td>I don’t like the community here</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>d.</td>
<td>I don’t like the landscape</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>e.</td>
<td>This place is the same as others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</tbody>
</table>
PART II:

23. Do you think your place is changing? Please circle “YES” or “NO”.
   [IF YES, CONTINUE TO Question #34. IF NO, SKIP TO Question #41]
   Yes  No

34. If “YES”, is that a concern for you? Please circle “YES” or “NO”.
    [IF YES, CONTINUE TO Question #35. IF NO, SKIP TO Question #41]
    Yes  No

35. Do you support the change? Please circle “YES” or “NO”.
    [IF YES, SKIP TO Question #37. IF NO, CONTINUE TO Question #36]
    Yes  No

36. What do you think is your function in addressing these concerns?
    Please answer each of the following statements. Please CIRCLE only ONE of the following responses for each question
    by using scale "1" to "5", with "1" strongly disagree (SD), "2" disagree (D), "3" neither agree nor disagree (NAD), "4" agree (A), or "5" strongly agree (SA).

   a. I think together with others' action, we can address this concern
      1  2  3  4  5
   b. When involved in addressing my concern, it is benefiting myself and others socially and economically
      1  2  3  4  5
   c. Depending on the need and situation, I act on those issues that I think are important
      1  2  3  4  5
   d. By acting on these issues I can educate other people
      1  2  3  4  5
   e. I learn something from others who share the same concern
      1  2  3  4  5
   f. What I do is related to my work
      1  2  3  4  5
   g. My skills are recognized as valuable when addressing the issue
      1  2  3  4  5
   h. My concerns are reinforced when they are shared among community members
      1  2  3  4  5

PART III:

37. Are you involved or planning to be involved in any efforts to address your concerns?  Yes  No
   [IF YES, CONTINUE TO Question #38. IF NO, SKIP TO Question #39]

38. If “YES” to Question #37: Please circle “YES” or “NO” or “Don’t Know (DK)” against the following actions you have taken in the past or are planning to take. Then, go to Question #41

   a. Attend meeting  Yes  No  DK
   b. Conduct research  Yes  No  DK
   c. Conservation actions  Yes  No  DK
   d. Write in mass media or academic publication  Yes  No  DK
   e. Commenting on past or planned developments  Yes  No  DK
   f. Financial contribution  Yes  No  DK
   g. Involved in non-governmental organization (NGO)  Yes  No  DK
   h. Talk to others to take action  Yes  No  DK
   i. Participation in local event, such as in mangrove awareness day  Yes  No  DK
   j. Environmental monitoring  Yes  No  DK
Appendices

<table>
<thead>
<tr>
<th>k.</th>
<th>Involved politically, such as bringing the grassroots' voice to the attention of leaders to take action</th>
<th>Yes</th>
<th>No</th>
<th>DK</th>
<th>Other [Please specify]:</th>
</tr>
</thead>
<tbody>
<tr>
<td>l.</td>
<td>Preserve historical artifacts</td>
<td>Yes</td>
<td>No</td>
<td>DK</td>
<td></td>
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</tbody>
</table>

39. **If "NO" to Question #37: Do you think the current management of development and environment is satisfactory?** Please circle "YES" or "NO".

[IF YES, SKIP TO QUESTION #41. IF NO, CONTINUE TO QUESTION #40]

40. **If "NO" to Question #39:**

Please answer each of the following statements why do you think it is unsatisfactory. Please CIRCLE only ONE of the following responses for each question by using scale "1" to "5", with "1" strongly disagree (SD), "2" disagree (D), "3" neither agree nor disagree (NAD), "4" agree (A), or "5" strongly agree (SA).

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<thead>
<tr>
<th>SD</th>
<th>D</th>
<th>NAD</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
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<tr>
<td>a.</td>
<td>My concerns and opinions have been ignored</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>b.</td>
<td>I have to follow the policies even if they conflict with my beliefs</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>c.</td>
<td>Development and conservation activities are too dependent on political influences</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>d.</td>
<td>The economic perspective of this place is prioritized over other concerns</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>e.</td>
<td>Responsible personnel aware but bound to their organization policies</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>f.</td>
<td>It doesn’t matter if I really care when the government itself does not</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>g.</td>
<td>A qualified person could do it but they are unable to contribute</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>h.</td>
<td>Development is needed even though the natural area has to be sacrificed</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>i.</td>
<td>No platform to voice my concern</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>j.</td>
<td>Only when I am involved in a group or organization will my voice be heard</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>k.</td>
<td>It’s too late to do something when this place changed already without my knowledge</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>l.</td>
<td>The governmental agencies are not committed to the policies</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>m.</td>
<td>While the platform is there, it’s inconvenient and difficult to be involved</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>n.</td>
<td>Even if the concern is listened too, there are too many government agencies involved for anything to be done</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>o.</td>
<td>It is too difficult to understand the issues</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>□ Other [Please specify]:</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

41. **What do you think this place will be like in 30 years time?** Please select only top three visions of the following and rank with "1" for the most likely, "2" for second most likely, and "3" for the third most likely.

| a. | Remain as it is now | b. | Loss of natural landscape and coastal areas | c. | Planned housing and industrial scheme | d. | Remain rural and affordable | e. | Growth/overdevelopment threatening environment (Destuction of the area because of too much building and sprawl) | f. | Continue to develop and benefit communities economically | g. | Preservation or enhancement of green areas for own and other enjoyment | □ Other [Please specify]:  |

**PART IV:**

Page 4 of 5

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Before we end some information about you. Please tick [✓] at appropriate answer.

42. **What is your age?**
   - [ ] 15-24
   - [ ] 25-39
   - [ ] 40-54
   - [ ] 55-70
   - [ ] 71 & over

43. **Your gender?**
   - [ ] Male
   - [ ] Female

44. **What of the following categories describe you ethnicity? Please tick only one**
   - [ ] Malay
   - [ ] Chinese
   - [ ] Indian
   - [ ] Aboriginal
   - [ ] Other:

45. **What is the highest level of education you have completed?**
   - [ ] Primary education
   - [ ] Diploma or professional qualification
   - [ ] Secondary education
   - [ ] Bachelors degree
   - [ ] Vocational or technical training
   - [ ] Advanced degree

46. **What is your current employment status?**
   - [ ] Currently working
   - [ ] Retired
   - [ ] Unemployed
   - [ ] Student

47. **What is your occupation?**
   (If retired or not currently working: What was your recent occupation?)
   (Students: What is your area of study?)

48. **What of the following categories best describe your current place of residence?**
   - [ ] Urban
     - Cities where planned housing settlement with accessibility to services
   - [ ] Semi-urban
     - Larger towns and/or numerous small towns, may include villages as well
   - [ ] Rural
     - Villages (hamlets) / small towns / farmland
   - [ ] Semi-rural
     - Villages (hamlets) / small towns / farmland with some access to urban services

49. **Did you spend most of your childhood time in which of the following categories?**
   - [ ] Urban
     - Cities where planned housing settlement with accessibility to services
   - [ ] Semi-urban
     - Larger towns and/or numerous small towns, may include villages as well
   - [ ] Rural
     - Villages (hamlets) / small towns / farmland
   - [ ] Semi-rural
     - Villages (hamlets) / small towns / farmland with some access to urban services

   *If “Urban” or “Semi-Urban”, did you frequently engage with nature through outdoor activities or other ways?*
   - [ ] Yes
   - [ ] No

Thank you for your participation!
[5] Report Request Form

Report Request Form (RRF)

Project title: Sense of Place and Environmental Stewardship: Empowering Communities in Bioregional Planning-A Case study of Urbanizing Coastal Rural Communities in Pontian, Malaysia

Researcher: Muhammad Farid Azizul

Supervisor: Dr. Stephen Knight-Lenihan

I have been informed that the results of the study will be available as a part of the researcher’s final thesis in the School of Architecture and Planning Library, University of Auckland, New Zealand, and *I wish to receive a summary report of the research. Please print your email here:

(________________________________________)

Thank you.
## Appendix H. Interview Participants Classification

<table>
<thead>
<tr>
<th>Participant</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Age Range</th>
<th>Location</th>
<th>Length of Stay (years)</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>[a] Local Active Community Members (n=9)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>YG9</td>
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<td>73</td>
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<tr>
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<td>[b] Civic and Institution Organization (n=14)</td>
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<td>[c] Environmental and Cultural Advocacy (n=8)</td>
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</table>
Appendices

Appendix I. Conceptual mapping of hierarchical nodes structure for group [a] Local Active Community Members
Appendices

Appendix J. Conceptual mapping of hierarchical nodes structure for group [b] Members of Civic and Institution Organizations
Appendices

Appendix K. Conceptual mapping of hierarchical nodes structure for group [c] Environmental and Cultural Advocacy
Appendices

Appendix L. Survey Group-Based Demographics Profile

### Reason to be in Pontian

<table>
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<tr>
<th>Planning Actor Category</th>
<th>Frequency</th>
<th>Percent</th>
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</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Live</td>
<td>17</td>
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<tr>
<td>Work</td>
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### Gender

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| Civic and Institutional Arrangements Valid |                   |         |
| Urban                         | 4         | 8.5     |
| Semi-Urban                    | 24        | 51.1    |
| Rural                         | 12        | 25.5    |
| Semi-Rural                    | 7         | 14.9    |
| Total                         | 47        | 100.0   |

| Environmental and Cultural Advocates Valid |                   |         |
| Urban                         | 8         | 18.2    |
| Semi-Urban                    | 22        | 50.0    |
| Rural                         | 7         | 15.9    |
| Semi-Rural                    | 7         | 15.9    |
| Total                         | 44        | 100.0   |

### Location of Childhood Growth

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| Civic and Institutional Arrangements Valid |                   |         |
| Urban                         | 5         | 10.6    |
| Semi-Urban                    | 13        | 27.7    |
| Rural                         | 23        | 48.9    |
| Semi-Rural                    | 6         | 12.8    |
| Total                         | 47        | 100.0   |

| Environmental and Cultural Advocates Valid |                   |         |
| Urban                         | 4         | 9.1     |
| Semi-Urban                    | 20        | 45.5    |
| Rural                         | 17        | 38.6    |
| Semi-Rural                    | 3         | 6.8     |
| Total                         | 44        | 100.0   |
Appendix M. Sense of Place EFA Scree Plot

Scree Plot

Eigenvalue vs. Factor Number

Factor Number:
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

Eigenvalue:
0 2 4 6 8 10 12

The scree plot shows the eigenvalues for each factor. The plot helps determine the number of factors to retain in the analysis.