早稲田大学審査学位論文（博士）

Navigating the Future: Scenarios and Strategies in Upgrading Indonesian Fishing Village

未来への進路: インドネシアの漁村改善におけるシナリオと戦略

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Abstract

As a result of intensifying coastal land use, obtaining decent housing and accessing habitable human settlements have become one of the social struggles experienced by contemporary small-scale fishermen. Many poor small-scale fishing households live in slum settlements that are overcrowded, lacking in basic services, and vulnerable to coastal disasters. Although living in coastal slum settlements adds another dimension of hardship for the fishermen, the issue has rarely been discussed thoroughly in academic and policy debates. These theoretical and policy gaps need to be addressed because declining and removal of fishing villages could negate cultural and economic production, or worse, threaten the existence of fishing communities who are the most important contributors to fishery productivity. Policy intervention aimed at a community as vulnerable and unique as small-scale fishing communities requires an approach that is sensitive to the local context, responsive to local needs, and supportive of local capacities.

To address the coastal slum settlement problem, many governments, such as the Indonesian government, seek to improve the living condition of such settlements through slum upgrading projects. The scheme was inspired by the conception of aided self-help housing, which assume that in-situ physical interventions will induce transformative place-making practices and autonomous incremental development by the residents. Literature review on this study proposes two important considerations that need to be taken into account for slum upgrading to generate transformative outcomes: 1) recognition of residents' sense of place as the basis in formulating locally sensitive development strategies, and 2) inclusion of a future-oriented approach that anticipates uncertainties such as scenario planning method. Fishing settlements provide an excellent setting to explore these conjectures, as they not only represent fishermen's unique maritime culture and radiate a unique sense of place based on waterscape urbanism, but also face growing uncertainties as a result of, among others, climate changes, ecosystem disturbance, and volatile economic trends. Scenario planning is proposed in this study to support locally sensitive slum upgrading processes and transform place-making practices of slum residents. The research employs Bourdieu's theory of practices as an overarching analytical framework in analyzing a scenario planning exercise to examine this assumption.

The study focuses on Mola villages in Wakatobi Regency as its research area. The settlement is inhabited by the Bajo people, once a sea-nomad ethnic group that holds a strong economic, cultural, and spiritual relationship with the ocean. The settlement was built above shallow waters and represented their habitus as the 'sea people'. Despite its uniqueness, the settlement was labelled a slum settlement since it lacks a street network and proper sanitation facilities. A

technocratic infrastructure-led slum upgrading project was implemented from 2015 to 2018, which had altered local place identity and residents' ways of using the space. The project and the newly established landscape can be interpreted as the restructuration of the place-making field of the area. However, the study reveals the hysteresis effect as habitus of Bajo people, which embodied a marine-based and informal life, and their capitals are incompatible with the new formal land-based place-making process. The hysteresis effect can be observed in housing design and daily transportation behaviour. The project also depicts the deficiency of a single sectoral approach and silo-based bureaucratic arrangement in dealing with complex and unstructured coastal problems such as the fishing villages.

The community of Bajo Mola villages also face growing uncertainties in the future. The area has recently been designated as priority tourism; hence, major tourism development initiatives and investments that will alter the landscape and affect community livelihood are expected. To navigate the uncertain future, scenario planning was conducted with the Bajo youth. The process identified the fishing industry, new housing or settlement development, and tourism development as pivotal uncertainties that will determine the shape of different scenarios. Based on variations of these uncertainties, the scenario team identified plausible futures of Bajo Mola villages that are described in four scenarios: Sea Urchin (deteriorating environment), Halfbeak Fish (stagnant economy), Napoleon fish (growing but vulnerable economy), and Marlin (vibrant settlement and the rise of creative economy). The exercise stimulates discussion that produces valuable insight and contributes to the youth's social learning process. By reflecting on the plausible condition of the future, they have identified the necessary habitus and capitals to strive in the future world and devise a pathway to acquire required practical mastery or feel for the game to realise the desirable future. As they update their mental models, the Bajo youth experience subjective reframing, which is critical in instigating transformative learning.

Drawing from the experience of conducting scenario planning with the Bajo Mola youth, it can be concluded that scenario planning can direct locally sensitive urban development process and bring about transformative changes by performing as a tool for communicative planning and as a tool for social learning. In this fashion, scenario planning can cause transformative governance or transformative learning which ultimately leading to transformative outcomes. Thus, this study recommends the application of scenario planning to support slum upgrading process so that a more robust action plan that anticipates plausible futures and brings about transformative outcomes in place-making practices can be generated.

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Putra Arief Budiman

Table of Contents

List of Figures

List of Tables

Abbreviation

BPS	*Badan Pusat Statistik* (Statistics Indonesia)
CBO	Community-based Organization
CSP	Community Settlement Plans
CSR	Corporate Social Responsibility
FAO	Food and Agriculture Organization of the United Nations
FGD	Focus Group Discussion
GDP	Gross Domestic Product
HP3	Coastal waters tenure rights
Ha	Hectare (1 Ha = 10,000 m^2)
IDR	Indonesian Rupiah (1 IDR ≈ 0.0076 JPY)
IPCC	Intergovernmental Panel on Climate Change
KIARA	*Koalisi Rakyat untuk Keadilan Perikanan* (The Peoples Coalition for Fishery Justice)
KIP	Kampung Improvement Program
Kotaku	*Kota Tanpa Kumuh* (Cities Without Slums Initiative)
LEPA	*Lembaga Pariwisata* (Tourism Community Based Organization)
MFMA	Ministry of Fisheries and Marine Affairs
MoPWH	Ministry of Public Works and Housing
NGO	Non-Governmental Organization
NSUP	National Slum Upgrading Project
PDAM	*Perusahaan Daerah Air Minum* (Local Drinking Water Enterprise)
RP2PKP	*Rencana Pencegahan dan Peningkatan Kualitas Permukiman Kumuh Perkotaan* (Slum Prevention and Improvement Action Plan)
RTBL	*Rencana Tata Bangunan dan Lingkungan* (Urban Design Guideline)
SIAP	Slum Improvement Action Plan
SSF	Small-Scale Fisheries
UCLG	United Cities and Local Governments
UN-Habitat	United Nations Human Settlements Programme
WNP	Wakatobi National Park
WNPA	Wakatobi National Park Authority
WWF-TNC	World Wildlife Fund – The Nature Conservancy

Chapter 1: Introduction

1.1 Background

Coastal regions provide unique features that drive population growth and economic prosperity. There are already 19 coastal megacities globally, and more than 2.6 billion people live in the 100 km coastal strip (Sale *et al.*, 2014). Coastal areas attract people for their rich resources, and they offer access points to transportation and trade. They also offer a unique sense of place at the interface between land and sea, making them an ideal location for recreational or cultural activities (Neumann *et al.*, 2015). The transformation of coastal areas might accelerate further because of three ongoing trends: 1) an increase of human population caused by movement of rural migrants to the coastal cities; 2) an increase in economic activity and land use at the waterfront areas; 3) broader and intensified environmental impacts, use conflicts, social risks, and economic losses as the result of the first two trends (Dadon and Oldani, 2017). Because of urbanization and industrialization, the coastal regions now face increasing environmental stress and complex social issues.

Because of the large inflow of people, coastal population density is rising. Throughout the world, the coastal regions average density (97 per km^2) is already twice inland regions (41 per km^2) (Sale *et al.*, 2014). Tropical coasts, in particular, have a higher density (145 per km^2) and may rise further up to 199 per km^2 by 2050 (*ibid.*). With more people living in coastal areas, acquiring land has become more contested as conflicting interests arise over land use for housing, port, industry, agriculture, and environmental protection. The exorbitant price of coastal land cannot be afforded by small-scale, artisanal, traditional fishermen (hereafter referred to as small-scale fishermen) who generally are known to be poor (Panayotou, 1982; Béné, 2003; World Bank, 2012). In order to stay close to the sea in which they make a living, many small-scale fishing communities initially formed fishing settlements informally (or illegally) on vacant land, marsh, or above the ocean surface. Because of the informal tenure status, many settlements are provided with minimal service by the local government. The fishing villages grow into slum settlements that are often overcrowded, lack water and sanitation services, and are prone to disaster. These settlements can be found not only in rural areas but also in the urban periphery and inner-city areas. They are commonly sited adjacent to a fishing harbour or a fish market, creating an interlinked spatial network that facilitates fisheries activities.

In Indonesia, which is an archipelago country with the sea constituting almost three-quarters of the total area, there are 12.827 coastal fishing villages. These villages support the national fisheries industry, contributing 2.65% of the national GDP with a value of more than 419 trillion

IDR (≈3.10 trillion JPY)(BPS, 2020). Most of these settlements share similar physical traits of informal and unplanned housing arrangements with limited essential services. Many fishing villages are lacking piped drinking water and proper sanitation facilities, while public space seldom exists because of unplanned development and overcrowding. In addition, residents of fishing villages are also exposed to environmental risks such as rising sea level, floods, and tsunami because of the absence of coastal protection infrastructures in most areas.

To substantially improve the well-being of small-scale fishing communities, the Indonesian government intend to upgrade the living space in which they reside by installing basic urban infrastructures such as street networks, drinking water system, sanitation facilities, and public open spaces. Research have suggested that slum upgrading could achieve multidimensional objectives, not only physical improvement, but also poverty reduction, social cohesion, and disaster resiliency. However, policy intervention aimed at a community as vulnerable and unique as small-scale fishing communities requires appropriate approaches to not abruptly disrupt their livelihood and ways of life. Disregarding communities and their socio-economic needs may result in misdirected projects, inefficient resource utilization, and low commitment of stakeholders, which could hinder conceivable positive impacts of slum upgrading and may interrupt existing social progress. Decent slum upgrading projects should acknowledge and enhance community assets (physical, social, natural, financial, and human capital) rather than diminish them (Satterthwaite, 2008). In short, slum upgrading projects should be sensitive to local contexts, responsive to local needs, supportive of local capacities

It is crucial that slum upgrading projects do not disrupt people-place relationships and improperly change socio-spatial life. Thus, acknowledging residents' psychological ties with their living space is necessary. In environmental psychology and human geography literature, these ties are often referred to as sense of place. Sense of place constitutes cognitive, affective, and conative meanings that a person or a community associate with a particular spatial setting (Jorgensen & Stedman, 2001). The concept has been increasingly employed as a theoretical lens in planning research because it explains people's attitudes and behaviour towards the place. The fishermen may have constructed a different sense of place compared to the others regarding their settlement. In fact, scholars have rarely investigated the sense of place towards coastal slum settlements. It is necessary to conceptualize the relationship between the small-scale fishing community and their surrounding built and natural environment in the coastal area to create more authentic and locally sensitive upgrading strategies.

Due to its potential multidimensional benefits, slum upgrading may induce a social-economic transformation of a community. However, small-scale fishing communities in fishing villages face complex problems and heightened uncertainties, both at sea and on the land. Their daily catches are unpredictable by nature because of the limitation of traditional fishing gears that they use. Issues such as climate change, overfishing, and ocean pollution only exacerbate the uncertainty of their livelihood in the long term. By living in slums with limited land tenure security, they are at risk of eviction at any given time. Their economic productivity may also be at stake since the lack of sanitary infrastructures and health facilities in coastal slum settlements could raise the risk of illness. To achieve multidimensional development objectives, planning a fishing settlement upgrading program requires a method that addresses uncertainties and potential future problems.

To navigate complex problems and uncertain futures, planners have experimented with scenario planning to create and analyse multiple plausible versions of the future -good, bad, and unexpected- so stakeholders can better prepare for them (Goodspeed, 2019). Scenario planning is a strategic thinking tool for probing the future that considers trends and uncertainty. At first, it was developed by the military and the business sector to help decision-makers navigate uncertain futures (Kahn, 1965; Wack, 1985). In recent years, the method has been increasingly performed for urban and regional planning, especially at the city or regional levels (Bartholomew, 2007; Chakraborty *et al.*, 2011; Goodspeed, 2020). Scenario planning could also be implemented at the community or neighbourhood levels. However, community-based scenario planning examples mainly were initiated on a pilot scale (e.g., Bennett, Kadfak and Dearden, 2016; Garfias Royo *et al.*, 2018); hence, its application and significance are inadequately understood.

Some communities encounter a high degree of uncertainties and face complex problems; thus, scenario planning is suitable for such communities so members can think and act strategically in navigating their future. One of such communities that necessitate scenario planning is slum residents. They are among the most vulnerable people, yet they face growing complexities and heightened uncertainties that may be overlooked during the slum upgrading process. In spite of this, scenario planning methods have never been employed in the context of slum upgrading initiatives. Supposedly, scenario planning could also support slum upgrading efforts as it will generate ideas or insight for more elaborate planning that is more responsive to changes in the future. This assumption has never been examined. It has raised a question on whether the use of scenario planning for slum upgrading could induce transformative outcomes as we have seen in its practice in other fields. An inquiry to explore the applicability and usefulness of scenario planning as a tool for communicative action during the slum upgrading process is imperative.

Besides producing a strategic plan responsive to future challenges, proponents of scenario planning from the business management discipline also claim that the methods promote organizational learning in the form of mental models sophistication (Senge, 1990; van der Heijden, 1996). Mental models are internal cognitive representations of external reality that underpin human preferences, actions, and behaviour (Jones *et al.*, 2011). Through deliberative discussions held during scenario planning, actors will gain an understanding of how the system works. This eventually will update actors' mental models and perceptions about their place. For the slum dwellers, refinement of mental models and becoming a learning entity would enhance their adaptive capacity in coping with the consequences of changes in the future. Ultimately, this process would lead to continuous development of community's capacity and encourage autonomous community-based incremental development of their neighbourhood. This potential feature of scenario planning 'process' has yet to be discussed further in its application in urban planning, which tends to focus only on the 'product' of scenario planning, that is, the scenarios.

Incorporating transformative scenario planning into the slum upgrading process would improve residents' knowledge and attitude on the issues of their living environment. Hypothetically, this will transform their social place-making practices so that they can adapt to future environments. However, this assumption needs to be critically examined further. Pierre Bourdieu introduces the concept of habitus, which he defines as "the durably installed generative principles of regulated improvisations … [which produces] practices" (Bourdieu, 1977, p. 78). Habitus represents a system of values and dispositions that guide an individual's response to cultural values and contexts (structures) (Webb, Schirato and Danaher, 2002). This explanation puts habitus in the same position with sense of place and mental models as subjective, systematic, and deep-seated principles that regulate attitude and behaviour. Bourdieu further explains that practices are products of relations between habitus and capital within the social fields (Maton, 2008). Thus, it can be assumed hypothetically that the transformation desired from the scenario planning and slum upgrading process can only be achieved if the community's capitals and the social fields of practice are being transformed as well. The use of Bourdieusian theory of practice as an analytical framework in scenario research has never been performed. This holds the potential to increase our understanding of the evolving relationship between habitus, capital, and the fields that shape ones' practices in the future.

One of the small-scale fishing communities in Indonesia that experiences severe constraints and face growing uncertainty is the Bajo Mola community in Wakatobi Regency. The Bajo people are well-known as 'sea gypsy' who, until the mid-nineteenth century, mostly lived nomadically

on houseboats. In Wakatobi, they have developed a unique on-water settlement above shallow waters. Over time, the settlement grew up spontaneously without formal planning and basic infrastructure development. A survey conducted in 2014 by a ministry agency identified the Bajo Mola settlement as a slum area based on criteria stipulated in the national law. Since the government also have a target to eradicate slum settlements by 2020, the slum upgrading performed in the Bajo Mola area afterwards. A large sum of money was allocated from 2015 to 2018 mainly to develop local road and pavement which had dramatically changed the settlement's landscape. The slum upgrading project can also be seen as a beautification effort to support the designation of Bajo Mola village as one of the priority areas to be developed as a tourism destination in the Wakatobi Regency. Both slum upgrading project and the designation as tourism priority area put Bajo Mola village on the verge of drastic change that will transform the social and economic structure of the society. Hence, to navigate the current of changes and anticipate the future, scenario planning at the community level would be beneficial to be exercised. This attempt would be the first scenario planning for slum upgrading exercise in Indonesia.

1.2 Research Problems and Research Aims

As outlined above, obtaining decent housing and accessing habitable human settlements have become one of the social struggles experienced by contemporary small-scale fishermen. In the urbanization and industrialization era, fishing settlements have slipped down in the pecking order of coastal spatial distribution, sidelined by other profitable land use. In the bourgeoning and liberalized coastal space market, small-scale fishers are excluded because they cannot afford to compete with the affluent. Hence, many poor small-scale fishing households can be found living in coastal slum settlements that are overcrowded, lacking in basic services, and vulnerable to coastal disasters. This adds another dimension to small-scale fishermen vulnerability.

Nevertheless, the issue of housing for fishermen is overlooked in the fishery management discipline, which tends to focus solely on natural resource distributional justice at the water. The fishing settlement has yet to be an integral part of the social-ecological system that supplies fishery products for human consumption. As a result, the social and economic significance of the fishing settlement, as well as the fishermen housing perception, preference, and behaviour, were inadequately understood.

Despite lacking the contextual comprehension of housing for fishermen issues, governments put forward policies to address the coastal slum settlement problem. One of which is slum upgrading that was implemented in the case of Bajo Mola villages. The scheme utilizes

infrastructure development and essential services provision to stimulate economic growth and improve the quality of life in slum settlements. The early conception of slum upgrading scheme was inspired by the works of 'aided self-help' proponents such as Turner (1972) and Mangin (1967). They argued that slum dwellers, with their organizational skills and resourcefulness, have the capability to gradually improve the quality of the neighbourhood and the houses according to their own needs. They suggests that the government should focus their efforts on developing basic infrastructures system in the area, which then may stimulate residents' investment in their dwelling. It assumes that the residents will pursue autonomous incremental development or maintain progress after leverage of in-situ physical, social, or economic interventions. In other words, it is often claimed that the approach will improve the physical condition of a settlement and promote residents' place-making practices. This bold assertion needs to be examined in the case of Bajo Mola villages.

To assess the implementation of the slum upgrading project in Bajo Mola villages, the research employs sense of place theoretical framework that would examine the relationship between the Bajo Mola people and the settlement they lived in. Sense of place is a fundamental factor determining people's attitude and behaviour towards the place. It may be reconstructed as a result of significant historical events. The implementation of slum upgrading which has altered the settlement's landscape, surely affects people-place relationships in the Bajo Mola settlement. Hence, the study first needs to clarify the impacts of slum upgrading on the reconfiguration of people-place relationships. In a sense, the study intends to evaluate whether the slum upgrading project implemented in Bajo Mola village strengthened the community's positive sense of place or disrupted the socio-spatial relationship between the community and the place.

The existing slum upgrading practice usually aims its attention at current issues at the time of the project begin while future issues and uncertainties are often overlooked. The already vulnerable communities need to be prepared so they can better adapt in a time of change. As previously mentioned, the research seeks to incorporate scenario planning into slum upgrading projects to guide the post-intervention transformative process so that the community would be better prepared for future challenges. Based on his experience using scenario planning for the post-apartheid reconciliation process in South Africa, Kahane (2012, p. XV) believes that scenario planning can induce transformation, rather than temporary change, of a society "like a caterpillar into a butterfly". However, it is unclear that the transformative effect of scenario planning that transpires in other fields would also take place in its use for slum upgrading purpose. Hence, this research tries to exercise scenario planning with the residents and analyse the applicability and the significance of scenario planning in the context of slum upgrading.

With the participation of the residents, this research will try to create multiple hypothetical future scenarios and identify strategies that will navigate them for socio-economic transformation in the future.

Several previously mentioned inquiries framed the aim of this research: to investigate how scenario planning can support locally sensitive slum upgrading process and transform place-making practices of slum residents. As the research related to the social practices of everyday life, Bourdieusian theory of practice will be used as an overarching theoretical framework that will be reflected upon throughout the thesis. To this end, this study indicates new avenues for research in urban planning, particularly in the topic of slum upgrading and scenario planning.

1.3 Research Questions

This research is conducted to address the following main research question:

How can scenario planning support locally sensitive slum upgrading process and generate transformative outcomes within the Bajo Mola community?

This research question will be answered by responding to several defined research sub-questions. These sub-questions are as follows:

1. How are the policy frameworks in place to manage fishing villages in Indonesia?
2. What is the social and economic condition of the Bajo Mola community? What does the settlement mean for the community?
3. How was the slum upgrading project implemented in Bajo Mola villages? What kind of changes were experienced by the community after the project was completed?
4. What are the scenarios and strategies produced from the scenario planning exercise with the youths of Bajo Mola villages?

1.4 Research Significance

The plight of fishermen housing and fishing settlement is an unnoticed social problem that contemporary small-scale fishermen had to be dealt with, especially in developing countries. However, as previously mentioned, more academic and policy attention has been directed at fishermen struggles and challenges at the water (e.g., overfishing, pollution, ecosystem disturbance). As a result, policies to improve small-scale fishermen's welfare and well-being tend to focus only on their fishing endeavours. As the research tries to explore the significance of fishing settlement in fulfilling the social, economic, and psychological needs of the fishermen and the whole community-at-large, it seeks to raise awareness on the issue of housing for fishermen and contribute to the coastal management and marine policy scholarly literature.

Relevant stakeholders, such as the citizens, government, and NGOs, may use this study to advocate for or engage in policy discussions about the preservation and revitalization of fishing settlements.

By incorporating scenario planning, the research provides a novel approach to conducting slum upgrading projects. Generally, slum upgrading projects include a visioning workshop that produces a short-term or medium-term action plan. As a result, the current slum upgrading program tends to focus on infrastructure development as short-term objectives while often disregarding future changes. Presumably, extending the planning time frame may alter how the project will be carried out to prepare the communities for the future challenges beyond the slum upgrading intervention period.

This study also enriches discussion about the use of scenario planning methods in the field of urban planning at a community level. The scope of most scenario planning activities recorded in scientific journals is on a large scale, that is for major regions and metropolitan areas. The use of scenario planning in smaller areas has been relatively understudied (Goodspeed and Deboskey, 2020). The application of scenario planning between the regional level and the neighbourhood level would be significantly different. While regional scenario planning mainly involves experts only, participatory neighbourhood scenario planning should involve both the experts and residents' representatives. Hence, this research would supplement limited theoretical knowledge and know-how of community-based scenario planning. Furthermore, the research also highlights the educational value of scenario planning to the society. Although such value has been discussed at length in organizational and business management literature, the heuristic aspect of scenario planning has yet to be critically examined in the urban planning field.

The study will be a significant attempt in polishing scenario planning conceptual framework as an approach that would instigate transformative effect to a community as suggested by Kahane (2012). Transformation in this study is represented by improved of social place-making practices shaped by a set of individuals' dispositions and redefined social structure in the place. Hence, Bourdieusian theory of practice is employed as an analytical framework for this study. In this study, scenario planning is used to explore, predict, or direct the relationship between habitus, capital, and the social fields in the future. At last, a new perspective on scenario planning may be arrived at.

This research can help provide the policymakers with information about the social and economic significance of the fishing settlement, and the fishermen housing perception, preference, and behaviour in Bajo Mola Villages. This study can serve as their reference for

future policy amendments, formulation and improvements on housing for fishermen. In addition, the benefits of scenario planning include the creation of scenarios that can serve as an input to policy discussion. The study allows local authorities to better understand the resident's needs, assets and livelihoods, and to evaluate their approach in dealing with the Bajo Mola settlement as the participatory nature of this study provides further insight into citizens' aspirations and capacities.

This study is also significant for the Bajo community to prepare them for changes in the future. The Bajo people are experts in navigating their ways across the sea. Moreover, they must be able to navigate the fast-flowing current of changes affecting their livelihood. Scenario planning would be a valuable tool to educate the community about potential futures and their implications. Scenario planning activities will raise community awareness regarding the current and future state of their settlement and prompt thoughtful discussion regarding potential upgrading strategies that can be implemented.

1.5 Thesis Structure

The thesis consists of seven chapters, and the brief outline of the chapters are presented as follows.

- Chapter 1: Introduction

  The chapter introduces the topic and explains the context of the research. A research question and sub-research questions are framed to provide a guidance in conducting the research and writing the dissertation. Then, the chapter explains the rationale for the research, its contribution to the existing theoretical framework and input for policy design.
- Chapter 2: Literature Review

  The chapter discusses books, scholarly articles, and any other published information on relevant subjects: slum settlements, fishing villages, and scenario planning. Summary and synthesis of existing literature will be provided as foundations to support research endeavour.
- Chapter 3: Research Methodology

  The chapter explains the specific procedures to answer the research question. It presents an explanation and justification of research types, research designs, data collection methods and data analysis. Reflection on the limitation of the study as the consequences of methodological choices will be presented in this chapter.
- Chapter 4: Regulatory Framework and Programs for Fishing Settlements in Indonesia

This chapter discusses various existing laws and programs to provide an overview of policy approaches for fishing village development in Indonesia. The objective of this paper is to answer sub research question number 1.

- Chapter 5: Bajo Mola Villages Case Study

  Detailed examination of the case study, the Bajo Mola villages, is reported in this chapter, including the profile of Wakatobi Regency, history of Bajo people and the villages, housing and settlement issues in the area, and residents' livelihood and cultural assets. In addition, this chapter provides information on how slum upgrading was implemented in the village and its impact on the community's place-making practices. The purpose of this chapter is to answer sub research questions number 2 and 3.

- Chapter 6: Scenario Planning for Bajo Mola Villages

  This chapter recounts the process and the result of the scenario planning exercise conducted with the Bajo youths. This chapter seeks to answer sub research question number 4.

- Chapter 7: Conclusion

  This chapter reflects on the research finding and interprets lessons learned from the case study from the perspective of previous studies. Then, a synthesis of arguments that address research problems and research questions will be provided in this chapter. It also describes research contribution to the relevant theoretical debate. In addition, this chapter recommends future research direction and practical suggestions for applying scenario planning for slum upgrading.

Chapter 2: Literature Review

As the basis for understanding, analyzing, and designing ways to answer the research question, it is essential to examine relevant literature that explores a few topics or concepts related to this research. Hence, this chapter will provide a description, summary and critical evaluation of books, scholarly articles, and other relevant sources to address the research problem being investigated.

In answering the research question, this study adopts and considers multidisciplinary points of view and theories. Four conceptual frameworks established from different fields in the social science discipline are presented in this chapter. The first is slum settlement and upgrading, of which improvements in theories and procedures are being pursued. The second one is the fishing village which provides the context of the case study under investigation. Next is scenario planning, of which the applicability and usefulness of the method are being critically examined. Then, the Bourdieusian theory of practices will be explained as the overarching theoretical framework that connects all inquiries in this dissertation.

2.1 Slum Settlements

Twenty-five hundred years ago, Plato noted that any city is divided into two: the city of the poor and the other of the rich (Glaeser, 2012), and slums are the part of cities that accommodate the poor people. Since then, the widespread growth of slums or informal settlements has become one of the persistent issues of urban development that can be found in many cities, especially in developing countries. Even after decades of international recognition for adequate housing as human rights mentioned in the Universal Declaration of Human Rights (1948) and the International Covenant on Economic, Social and Cultural Rights (1966), which then reemphasized on Istanbul Declaration on Human Settlements (1996), almost a quarter of the world's urban population still live in health-threatening housing condition and deprived environment of slums (UN-Habitat, 2016). In fact, the number of people living in slums had increased 28% in 24 years, from 689 million people in 1990 to 881 million people in 2014 (*ibid.*). These slum dwellers suffer extreme disadvantages such as marginalization, poverty, basic service deficits, ill-health, and high vulnerability to the adverse impacts of poor and exposed environments, climate change and natural disasters. The precarious condition of the slum has brought international attention; therefore, UN-Sustainable Development Goals specify access for all to adequate, safe and affordable housing and basic services and upgrade slums as one of the targets that need to be fulfilled by 2030.

2.1.1 Definition of Slum

Two terms have been used interchangeably to describe the poor residential neighbourhoods in cities: slum and informal settlement. The slum is widely used to describe a wide range of low-income settlements or poor human living conditions (UN-Habitat, 2003). Gilbert (2007) argues that the term of slum has pejorative meaning and stigmatizing, which could lead to bad policy; thus, he preferred the term of informal settlement. However, as discussed in the Habitat III Issues Paper (UN-Habitat, 2015b), informal settlement and slum have a slightly different meaning. Informal settlements are residential areas where inhabitants have no security of tenure, and the housing may not comply with planning and building regulations. Not all informal settlements can be described as slum, some are occupied by the middle- and rich-income population. This means that informal settlement also includes all income levels of unauthorized residential properties. Slums, on the another hand, "are the most deprived and excluded form of informal settlements characterized by poverty and large agglomerations of dilapidated housing often located in the most hazardous urban landscape in addition to tenure insecurity, slum dwellers lack formal supply of basic infrastructure and services, public space and green areas, and are constantly exposed to eviction, disease and violence" (UN-Habitat, 2015b, p. 1). Slums have poverty and social inequality dimensions that differentiate them from informal settlements, which only emphasize legal compliance aspect of the problem.

In defining slums, several institutions have a different understanding. UN-Habitat define slums as a contiguous settlement that lacks one or more of the following five conditions: access to clean water, access to improved sanitation, sufficient living area that is not overcrowded, durable housing and secure tenure (UN-Habitat, 2003). This definition is broadly accepted because it provides operational indicators to measure slums. However, state governments also have their own interpretation of slums based on local context and laws. For example, The National Housing Authority of Thailand defines a slum as "a dirty, damp, swampy or unhealthy area with overcrowded buildings and dwellings which can be harmful for health or lives or can be a source of unlawful or immoral actions, with a minimum number of 30 housing units per 1,600 square metres" (Bhatkal and Lucci, 2015, p. 12). Meanwhile, in Indonesia, Law No.1 Year 2011 regarding Housing and Human Settlements stipulates slums as precarious settlements because of their disorganised spatial structure, high building density, poor quality construction and lack of access towards urban infrastructure. Based on the definition, the Indonesian government institute seven criteria to identify slum settlement: building condition, neighbourhood streets, water supply system, drainage system, sanitation system, solid waste management, and fire hazard protection system.

Gilbert (2007) suggests that differences of definition lead to differences in policy approach aimed at slum settlements. The Indonesian version put infrastructure availability as the principal criteria in identifying slum settlements. Consequently, existing programs are mainly focused on infrastructure development to eliminate the physical squalor of the slums. Meanwhile, the complex nature of social, economic, and political dynamics confronted by the poor urban communities which create the slum settlements in the first place may be overlooked. This has raised the question of whether the policy approach toward slum settlements would address the root of problems of slum issue in the country.

2.1.2 The Underlying Cause of Slum Growth

The 21st century marks a moment in human history as for the first time there are more urban populations in the world than its rural inhabitants. Data from UN-Habitat (2016) shows that in only 40 years, the urban population has grew 2.5 times larger, from 1.57 billion people in 1976 to more than 4 billion urbanites in 2016. It is expected that the trend of urban growth will continue, mainly in Asian, African, and Latin American countries, where most of this growth comes from (UN-Habitat, 2016). Urbanization is driven not only by natural population growth but also by rural-urban migration, with many of those who lived in the countryside moving to the cities to seek a better life, sometimes out of desperation.

Glaeser (2012) claims that urbanization is humanity's greatest invention because cities have been recognized as the prime driving forces of development and innovation. Urbanization fosters growth and is generally associated with greater productivity and opportunities attributed to agglomeration, industrialization and scale economies. These characteristics enable firms and industries in cities to grow jobs and increase the income of its residents. The World Bank (2015) found that 72% out of 750 cities observed outperformed their countries in terms of economic growth. Urbanization also offers substantial opportunities to reduce poverty as many jobs are available in the cities. These promising features of cities motivate the rural poor to flock to cities, creating 'urbanization of poverty' in which massive transfer of rural poverty to cities increases the absolute number of poor population in urban areas (UN-Habitat, 2003).

Although urbanization has the potential to make cities more prosperous and countries more developed, many cities worldwide are unprepared for the complex challenges associated with urbanization (UN-Habitat, 2016). Spontaneous or unplanned urbanization, especially considering its unprecedented scale and speed, has overwhelmed local governments, making them unable to provide housing and basic service for all, which are essential for the poor to reap the benefits of living in a city. Housing is one of the necessities that determine households'

welfare and quality of life. Its quality, quantity, and location affect health, security and wellbeing of present and future generations. It is generally considered that urban populations grow faster than the capacity of cities to support them with adequate, affordable housing. UN-Habitat (2016) noted that housing had been neglected as a central element in the urbanization process, resulting in the declining of affordable housing stock worldwide. Poor rural migrants who may not afford to build, buy, or rent decent housing favour cheap, substandard units close to employment opportunities. Thus, slum or informal settlements proliferate as the dominant form of urban expansion in developing countries.

The cause of slum emergence is not merely the by-product of urbanization but rather the result of inappropriate institutional arrangements in the housing and urban planning sector. UN-Habitat (2003), in a significant study of slums: *The Challenge of Slums*, already mentioned that slums and urban poverty are not only just a manifestation of demographic change but also the result of "failed policies, bad governance, corruption, inappropriate regulation, dysfunctional land markets, unresponsive financial systems and a fundamental lack of political will". At the global and national levels, policy failures were driven by the implementation of the neoliberal economic paradigm. As pointed out by Davis (2006), the neoliberal approach which promotes privatization of urban services, liberalization of trade, markets and financial systems, and public sector downsizing, hit the urban poor the hardest, shown by increasing extreme poverty, exclusion, and inequality in many cities in the Global South. Meanwhile, policy failure at the local level is mainly attributed to a lack of capacity and poor governance arrangement. Decentralization has been a worldwide trend; however, many cities struggle financially to bear delegated responsibilities such as providing infrastructure and services to a growing urban population. Although few administrative and political power have been shifted to the local level, the share of revenues coming from national resources has been low (UCLG, 2010). In addition, devolution of power is often not accompanied by capacity building and legal reform, making local governments unprepared to provide sufficient housing for the poor.

Fox (2014) compiled a number of research about how the planning system was not designed to prevent or cope with slum formation by establishing excessively rigid land use regulations, zoning laws, and building codes. This condition was partially attributed to the legacy of the colonial era, which devised inferior urban forms and poor institutional arrangements. The settlements were designed only for the elite colonizer population (e.g., the minimum plot size in Dar Es Salaam and in Nairobi is 500 m^2 and 250 m^2, respectively (Collier and Venables, 2013)) and often were racially segregated (e.g., South African apartheid segregation). Rural migrants were perceived as temporary sojourners, and they were discouraged from settling permanently.

Furthermore, he also adds that "colonial administrative structures were weak and highly centralized, and municipal authorities were granted minimal authority over development and regulation" (Fox, 2014, p. 195). As a result, the central government experienced a bureaucratic burden which made them unable to prepare for the massive influx of migrants, particularly after independence (Fox, 2014).

Based on his research on Lima's squatter settlement, Turner (1972) argued that enforcement of unrealistic building codes and standards[1] makes housing unaffordable for the poor as the policy inflates initial investment. He believes that this approach is a consequence of the conceptual error of viewing housing as a 'noun' or as a commodity/product, which focuses on the physical quality of housing units (*ibid.*). He asserts that housing supply by centralized institutions, either state or private, will always be inadequate to the ever-changing and immense variability of people's housing needs (*ibid.*). He then proposes that housing should be viewed as a 'verb' that impose housing as a process and an activity that corresponds to the real needs of its inhabitants. He suggests that housing should be treated as a mean to human ends, so decision making power must be given to the user themselves (*ibid.*). Hence, housing policy should acknowledge and support housing by the people, or the third sector, which have been the primary producer of low-income housing in the Global South. His thought on self-help housing inspired the inauguration of the World Bank's slum upgrading and site and services project in the 1970s (Werlin, 1999).

2.1.3 Slum of Despair or Slum of Hope

There are two different perspectives in viewing slum settlements based on their impact on the life of the dwellers. The first perspective is slums as places of despair, where environmental conditions and neighbourhood quality are declining; therefore, slums need to be 'cleared'. Secondly, some people view slums as places of hope where the dwellers' welfare and well-being are progressing by utilizing the opportunities of living in the city.

Since the 19th century, slums have often been recognized as the city's dark side and synonymous with criminal activities, disease, poverty, dilapidated housing, and overcrowding. For example, the United States of America government at that time defined a slum as "an area of dirty back streets, especially inhabited by squalid and criminal population" (Davis, 2006, p. 22). This definition implies negative image and disparaging characteristics assigned to slum settlements such as poverty, disease, crime, and disaster.

[1] Arbitrarily high minimum housing standards could also be found in Brazil (World Bank, 2006), Dar Es Salaam and Nairobi (Collier and Venables, 2013) and Zimbabwe and the Caribbean (Yahya *et al.*, 2001)

The list of challenges faced by slum dwellers is long, and many of these disadvantages reinforce each other in a vicious cycle. The result is the persistence of intergenerational poverty with a low degree of socioeconomic mobility for slum households (Buckley and Kalarickal, 2005). Although slums are supposed to provide cheap housing, the reality often shows that the inhabitants pay more for housing units and services. Squatting, which means inhabiting land without permission, is often considered to be free. However, squatting is not necessarily cheaper than buying a plot since the squatters have to pay the upfront costs, such as bribing the authorities and gangsters and the punitive cost of an unserviced land (Davis, 2006). For example, Kibera, which is one of the largest slums in the world, is an illegal settlement located on government land. However, 92% out of 810.000 households in Kibera are renting from absentee landlords who have close ties with government officials and political figures (Gulyani and Talukdar, 2008). These informal landlords run a very profitable business: in 2004, residents of the slum paid an estimated US$31 million in rents, with more coming from infrastructure business as a result of the absence of government in water and sanitation service (*ibid.*).

Poor health is strongly associated with substandard housing and overcrowding. Early slum improvement efforts were a response to an outbreak of contagious diseases that were believed to originate from slums (UN-Habitat, 2003). Poor sanitation, lack of waste disposal facilities, the presence of vermin, and poor indoor air quality due to ill-designed ventilation are among some of the characteristics of slums that make their dwellers susceptible to diseases. Slum-dwellers have suffered from ill-health throughout their life course, from infant until they became elderly (Sverdlik, 2011). Combination of overcrowding, indoor air pollution, and unsafe water and sanitation cause children of the slums to be disproportionately vulnerable to two leading causes of under-five mortality, pneumonia and diarrhoea. Childhood diarrhoea and undernutrition lead to stunted growth, which has long-term consequences in terms of health and life chances (Ezeh *et al.*, 2017). As they reach adulthood, slum dwellers are liable to communicable and non-communicable diseases such as Tuberculosis, HIV, occupational injuries and road traffic injuries (Sverdlik, 2011). Poverty exacerbates this situation as many families have just enough money to live on, so injury or disease suffered by breadwinners will lead to significant financial loss that will affect other household members. Furthermore, informal workers are mostly uninsured and often have minimal statutory rights so they might lose jobs if absent from work. Meanwhile, poor elderly face a heightened risk of disability and chronic diseases mainly due to limited health facilities.

Slum areas are also commonly stigmatised to be the place with a high incidence of crime. This is not universally true because some places (e.g., Kumasi in Ghana and Surabaya in Indonesia)

have low crime rates by virtue of an effective social control system (UN-Habitat, 2003). Strong social cohesion in slums can curb drug abuse and teenage behaviour at the community level (Ezeh *et al.*, 2017). It is true that other slums have a higher rate of violent crime and are dominated by criminal gangs such as favelas in Brazil and Venezuela. This situation results from weak social structures and economic hardship among the young adults, which increases during economic downturns, rather than because of extreme concentration of people (UN-Habitat, 2003). Poor people of the slums suffer the most from violence and property crime because it threatens their lives and livelihood. For this reason, the poor often regarded violence and security issues as considerably more important than housing or income issues.

Many slums emerge in extremely marginal locations such as flood plains, hillsides, shorelines, or contaminated areas, which make them at risk of natural or man-made disasters. It is well-known that disasters affect the urban poor the most compared to other social groups. Their houses are easily collapsed in the event of an earthquake or could be swept away when floods occur. High-density building in which many are made from flammable material, means that fire could spread out rapidly. Because of the narrow streets, rescue and evacuation efforts could be delayed, whereas every second counts in the event of a disaster. Furthermore, Ooi and Yuen (2009) estimate that climate change, which prompts rising sea level and extreme precipitation, puts more than 300 million people in developing countries at risk of climate-related hazards, most of whom are slum dwellers. The poor are the most vulnerable ones because of a lack of capacity to recover from disasters and shocks. They already have limited financial capital, so when disasters strike, they will lose significant income and suffer more financial burden to rebuild their home.

'Slum of despair' perspective gives slums a pejorative meaning as the worst place to live in or as a city 'cancer'. This view leads to slum clearance policies that are often associated with forced evictions practice. In reality, however, many slum settlements are progressing to become better places, with external forces' help, but dwellers play the leading roles. This progress resembles 'slum of hope' in which they contribute economically and culturally for the city and support dwellers' pursuit for better welfare.

Evidence demonstrates that slum dwellers collectively make a substantial contribution to urban and national economies and that many towns and cities will cease to function effectively without the people who live in slums (UN-Habitat, 2003). Slum-dwellers are adept at producing the services and commercial activities that the formal sector fails to provide through local enterprise and small-scale industry mobilization. Slum housing often hosts a lively community of home-

based enterprises of all sorts, providing the services and employment opportunities unfulfilled by planned cities. Low-cost housing in slums also accommodates low-cost labour, which supports formal and informal economic activities in the cities. These home-based enterprises empower women by providing employment opportunities close to their homes. The informal sector plays a vital role in the national economy, especially in developing countries. Urban informality has become the primary mode of urbanisation (Roy, 2005), and slum dwellers are the backbone of this informal sector, supplying cheap labour forces that produce affordable services for a wide range of consumers.

Slums also act as the entry point for the rural poor who migrate to cities. Besides providing a network of social support for new migrants to the city, slums welcome poor rural migrants who initially cannot afford to build, buy, or rent decent housing close to jobs. As they become integrated into the urban economy and their incomes rise, these migrants eventually enter the formal housing market or invest in upgrading their existing dwellings, thereby ameliorating slum conditions (UN-Habitat, 2003). Longitudinal research in the favelas of Rio and squatter settlement in Guayaquil, Ecuador, shows that there has been considerable movement both physically out of these settlements and into better-serviced neighbourhoods, as well as upwards socially and economically as families improve their positions in the workforce through education and economic initiatives (*ibid.*). This condition implies two phases of urbanization; the first stage is settling in the existing or new urban slums and the next phase is moving to a better part of the cities or upgrading their settlements.

Evidence suggests that slum dwellers gradually develop their neighbourhood and invest in housing improvement through saving and borrowing (Wakely and Riley, 2011). What they do is incremental self-help housing, in which if supported with micro-credit or organized savings, production of construction materials, training and community capacity building, it will efficiently create soundly built neighbourhood and resilient community (Arroyo and Åstrand, 2013). Turner (1969, p. 109) states that the incremental process of informal urban settlements demonstrate "progressive self- improvement – fired by hope, unhampered by built-in blight – has led to evolving modern settlement". The common people possess enormous human and material resources for housing in the form of collective savings capacity and collective entrepreneurial and manual skills that exceed the financial and administrative capacity of any state or private corporation (Turner, 1972). He then claims that when dwellers are in control, their homes are better and cheaper than those built through government programs or large corporations; thus, he argued that housing is best provided and managed by those who are to dwell in it rather than being centrally administered by the state (Turner, 1972).

Not only does the housing improve, the economic condition of slum dwellers is also gradually better off. By living in the cities and taking advantage of available opportunities, the urban poor may increase their income and accumulate asset-ownership. Glaeser (2012) claims that even compared to the direst urban poverty, conditions in rural areas are usually worse. Indian census results, for example, support this argument. The data show that Indian urban slum dwellers are better off compared to rural assets in terms of assets possessed (television, cell phone, cooking gas) and access to basic service (electricity, toilet, drinking water) (Roy *et al.*, 2014). The same conclusion can also be found in Kenya where household asset ownership, building quality, access to services, and children's health and education outcomes are better in the slum than in rural areas (Bird, Montebruno and Regan, 2017).

2.1.4 Slum Upgrading

'Slums of despair' had been the predominant view prior to the 1970s. In many aspiring global cities, slums were seen as eyesores that require 'spatial purification' while involuntary resettlement was deemed as an unavoidable consequence of many infrastructure development/ city beautification projects (Olds, Bunnell and Leckie, 2002). Slum clearance was very prevalent, with more low-income housing demolished than built (Werlin, 1999). The practice of slum clearance is almost synonymous with forced eviction, which removed people from their homes or lands against their will, generating social tensions and inhibiting low-income households progress toward prosperity (Olds, Bunnell and Leckie, 2002). In many cases, eviction involves the use of violent forces and evictees hardly receive compensation. Numerous studies have described the disruptive social impacts of forced displacement. Everett (2001), for example, mentioned that evictees lose not only their land and houses but also their livelihood, communities and social networks, which are critical survival tools for the poor. In addition, the psychological stress, which often leads to trauma of displacement, and the health effects can be devastating, particularly for the elderly and children (Everett, 2001). Furthermore, Cernea (1997) asserted that the effects of forced eviction include landlessness, joblessness, homelessness, marginalization, food insecurity, loss of access to common property resources, increased morbidity, and community disarticulation.

United Nations recognizes these negative impacts; thus, they acknowledge that forced eviction violates several human rights. Eviction compromises the right to housing and violates the right to life and security, the right to privacy, the right to jobs, the right to freedom of expression, and the right to health and education (Everett, 2001). Now there is a body of international laws and agreements condemning forced eviction. A multi-national institution such as the United Nations and the World Bank has created guidelines to avoid development-induced relocations

or minimize its devastating impacts through a fully participatory process or income restoration effort. Today, while forced evictions and resettlement still occur in some cities[2], hardly any government openly advocates such repressive policies (UN-Habitat, 2003).

Since the 1960s, many governments have tried to intervene formal housing market by building large-scale public housing. Increasing housing supply will reduce property prices so that they become affordable for the poor. However, mass public housing often comes with a high unit cost due to the adoption of Western design standards and building techniques. In addition, it is unpopular with many tenants because of its small size, poor design, and problems in maintenance (Pacione, 2009). Even with subsidies, rents proved to be unaffordable for most slum dwellers (Buckley and Kalarickal, 2005; Pacione, 2009). Support for public housing has declined because it is not cost-effective while cutbacks in public expenditure due to economic crises and structural adjustment programs (Davis, 2006; Pacione, 2009; UN-Habitat, 2016). High-rise public housing estates have also been constructed to re-house squatter settlers. Usually, these relocation sites were located on the periphery of cities where cheap lands were available. Nevertheless, many of these estates have become slums because of overcrowding and building dilapidation (UN-Habitat, 2003). Deterioration of public housing occurred because of minimal dwellers control or involvement in daily management and maintenance, limited resources allocated for public amenities procurement or revitalization, and resident abandonment due to inconvenient location (e.g., far from jobs, unreachable by public transports) (UN-Habitat, 2003).

Proponents of self-help housing and incremental development, such as Mangin (1967) and Turner (1972), favoured slum settlements as the solution for low-income housing over slum clearance or public housing. They argued that government should play a minimum role limited in developing sanitary infrastructures and improving the environmental quality of slum areas. In contrast, slum residents, given their organizational skills and resourcefulness, will gradually improve their houses, particularly if encouraged by the security of tenure and access to credit. This idea gained popularity in the 1970s as governments, and multilateral institutions acknowledged the virtues of informal housing delivery system: they were affordable without recourse to public subsidy, they were flexible and responsive to the changing needs and fluctuating fortunes of poor urban families, they were self-managed and made few demands on hard-pressed public administrations, and they met the needs of the rapidly growing urban populations of developing towns and cities (Van der Linden, 1992 in Wakely and Riley, 2011). Compared to eviction or relocation, slum upgrading is preferable for several reasons: less violent

[2] It was estimated that that between 1998 and 2008 forced evictions affected 18.59 million people worldwide (UN-Habitat, 2011)

or politically troublesome reaction from slum-dwellers; the reassurance of slum-dwellers employment; and little disruption towards social support systems (Werlin, 1999). As a result, the policy approach to address informal settlements has shifted towards slum upgrading.

Slum upgrading, or sometimes referred to as 'slum rehabilitation' or 'slum improvement', is a process through which informal areas are gradually improved, formalised and incorporated into the city itself through extending land, services and citizenship to slum dwellers (City Alliance, 2003). Although initially limited to providing physical infrastructures or 'wet services' (i.e., drainage, drinking water, sanitation system), lesson learned from decades of implementation has developed slum upgrading process to include tenure regularization, community development, and local economic stimulation. Slum upgrading covers a wide range of potential interventions; at its most comprehensive, it consists of physical, social, economic, organizational and environmental improvements. Hence, projects are practised in varying scales and scopes and with different levels of impact around the world. Nevertheless, this approach relies on the capacity of low-income households to build their own houses and neighbourhood incrementally according to their own needs. At the same time, government intervention focuses on components that individual households could not procure for themselves, such as land, infrastructures, and services (e.g., health and education facilities).

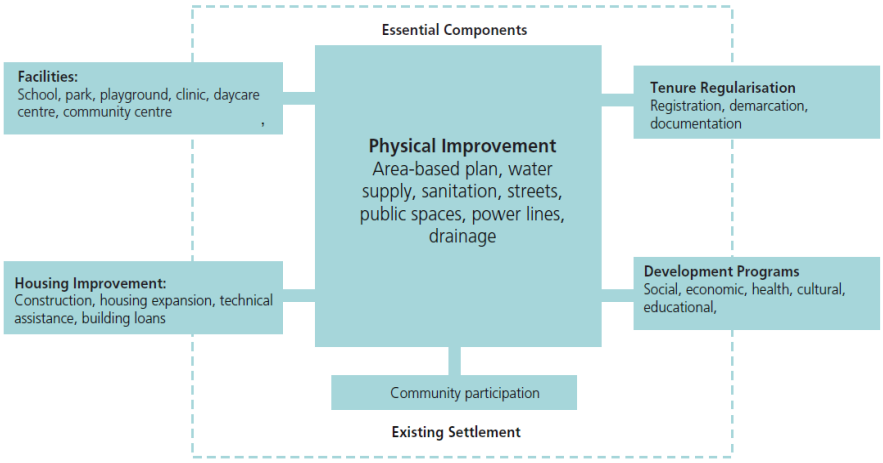


Figure 1 Components of Slum Upgrading (UN-Habitat, 2014, p. 10)

Slum upgrading has become one of the main approaches in the provision of adequate housing. Worldwide implementation has lifted about 320 million people out of slum-like conditions between 2000 and 2014 (United Nations, 2015). Years of practice have evolved how slum upgrading is being conducted. One of the most important amendments of its practice is regarding community involvement in the slum upgrading process. Lesson learned from projects worldwide points out that local participation, not only in the construction processes but also in

decision making and designing process, is critical for success. In the participatory slum upgrading program scheme, the local community is no longer the object of the development projects but the active participant at all stages. Their inputs are crucial because the community knows the area and its problems. By acknowledging their needs, knowledge and opinions, neighbourhood upgrading would be more responsive to residents' demands, more inclusive, more sustainable, and more cost-effective than top-down programmes (UN-Habitat, 2016). In addition, community involvement will develop a sense of ownership, ensuring the project's sustainability continue further.

Empirical evidence also shows the benefit of a participatory approach to slum upgrading. In the widely praised Baan Mankong program in Bangkok, communities make decisions about infrastructure and housing construction, and the government provides subsidies directly to residents (Boonyabancha, 2009). From its launch in 2003 to 2011, the program helped build 90,000 units in 1,546 communities (Bhatkal and Lucci, 2015). The homes were built at a lower cost and on a shorter timeline than typical top-down projects (Boonyabancha, 2009). Numerous studies also suggest that comprehensive participatory slum upgrading have the potential to not only reduce conflict, crime, insecurity, flood risks but also boost households economy, businesses proliferation, and strengthen resilience in dense and complex urban environments (Yu *et al.*, 2016; Mitra *et al.*, 2017; Perez-Casas, 2017). On the contrary, without participation, slum upgrading may displace low-income residents, as an example in Beirut suggested (Woetzel *et al.*, 2014). The participatory approach to upgrading has become the favoured approach since it aligns with the recent discourse on good governance and poverty reduction.

In recent years, UN-Habitat has been advocating for streets improvement as the driving force of slum upgrading (UN-Habitat, 2012, 2015a). The streets are a vital spatial element that supports life in slums. Streets have at least three meanings: 1) as an entity for the mobility of people, goods, and services; 2) as a pathway for water and sewerage pipes, power lines, and drainage systems; and 3) as a public space for where social, cultural and economic activities are articulated, reinforced and facilitated (UN-Habitat, 2012). Street improvement is expected to trigger autonomous urban regeneration, promote economic activity, attract shops and services, and increase residents' identity with their place of residence, bringing an enhanced sense of security and orderly development (*ibid.*). Furthermore, streets also define the urban configuration of slums, which provides the basis for legalisation and regularisation of land tenure. This will be the foundation of an area-based plan for future development of slum to become a neighbourhood that conforms with the city's urban fabric.

Figure 2 Implementation of Slum Upgrading Program (Kampung Improvement Program) (www.akdn.org)

Nevertheless, current upgrading practices have limitations in providing low-income housing for the long run. Although slums are known as the entry point for the rural poor who migrate to the cities (UN-Habitat, 2003), slum upgrading tends only to improve the quality of the existing housing stock, while often failing to consider the future influx of new residents to the areas (Gulyani & Bassett, 2007). Critics have already pointed out that most informal settlements have not been planned for infrastructure system and service provision in the first place (Wakely & Riley, 2011), making it complicated and costly to install infrastructures for meeting existing demands, let alone aggravated demands of the future. The slum upgrading process usually involves an action planning activity to produce a vision that is expected to be realized at the end of the project. Thus, in many cases, upgrading projects were designed to produce immediate results, but sometimes at the expense of long-term interests. Short-sighted vision might lead to piecemeal interventions with limited contribution to long-term settlement development endeavour.

2.1.5 Slum as Meaningful Place

In a widely cited book, Cresswell (2015) defines places broadly as "meaningful location". Although it sounds simple, this definition implies that places are built upon human experience and their interpretation of space. The place is not space conceived merely as a geographical location. Instead, place has meanings and values and is filled with people, practices, objects, and representations (Gieryn, 2000). Space became a place when humans ascribe symbolic meanings based on their experience interacting with the biophysical environment (Relph, 1976; Tuan,

1977). These experiences may be interpreted, felt, and understood differently by different actors following individuals' or groups' unique contextual factors, such as cultural and economic circumstances (Gieryn, 2000); thus, the place could not be separated from the people who make and invest meaning in them (Soja, 1996). In theorizing place based on meaning, most literature follows the 'social construction' view, inspired by Lefebvre's (1991) notion of (social) spaces being socially constructed. However, although social construction is essential, the physical landscape shape and set bounds to these constructions (Stedman, 2003).

Studies across the social science discipline have demonstrated that people's psychological and social ties with place influence their attitude and behaviour. Various concepts have been introduced to describe aspects of people-place relationships (e.g., place attachment, place identity, place dependence, rootedness, etc.). The term 'sense of place' has been widely employed as a generic concept to describe people's preferences, perceptions, and emotional connections regarding a particular spatial setting. Agnew (1987 in Cresswell, 2015) describe sense of place as the subjective and emotional attachment people have to a place. Stedman (2002, p. 563) defines a sense of place as "a collection of symbolic meaning, attachment, and satisfaction with spatial settings held by individuals or groups". It can also be interpreted as a subjective perception of people about their environment and a conscious feeling about places (Hashem *et al.*, 2013). Sense of place includes the cognitive (e.g., beliefs and perception), the affective (e.g., emotions and feeling), and the conative (e.g., behavioural intentions and commitments) dimensions of people-place relationship (Jorgensen and Stedman, 2001).

Although the concept of sense of place originated from the environmental psychology and human geography fields, the concept has been increasingly discussed in urban planning and design research. The concept is useful to explain people's outlooks, perceptions, dispositions, behavioural beliefs, social capital building, political activity, and community engagement (Chamlee-Wright and Storr, 2009). It has been widely acknowledged that understanding a sense of place helps predict attitudes and specific types of behaviour (Jorgensen and Stedman, 2001; Manzo and Perkins, 2006; Guthey, Whiteman and Elmes, 2014; Masterson *et al.*, 2017). For example, experts have argued that sense of place support pro-environmental behaviour or long-term stewardship (Chapin and Knapp, 2015), promote social cohesion (Manzo and Perkins, 2006), and aid the level of commitment in the neighbourhood revitalization (Brown, Perkins and Brown, 2003). Hence, calls to incorporate sense of place in urban planning and design have been made to capitalize on people's attachment to place as a foundation for identifying locally-sensitive urban regeneration strategies.

Apparently, every neighbourhood, residential area, and district has its own sense of place based on its physical and sociological structure and experiential characteristic (Billig, 2006). This assumption also applies to slum settlements. For its inhabitant, slums serve as not only a place to live but also a place for economic and social production (Nijman, 2010) (see also section *Slum of Hope)*. However, Massey (1991) asserts that there is no single sense of place even within the same neighbourhood since actors involved might have different experiences and viewpoints. Hence, sense of place is inevitably contested (Gieryn, 2000). Slums could not escape from "apocalyptic and dystopian narratives of the slum" (Roy, 2011, p. 224), which are often held by outsiders to varying degrees (Lombard, 2014)(see also section *Slum of Despair)*. As sense of place contributes to specific behaviour or actions, the discrepancy between slum dwellers and local state agencies in perceiving the endowed meaning and value of a place could lead to a dispute over policies on slum settlements.

By placing meanings in particular places, individuals and organizations are likely to engage in the process of constructing them. From residents to urban planners, people shape and co-create the places they occupy every day (Relph, 1976; Tuan, 1977; Cresswell, 2015). The deliberate shaping of an environment to facilitate social interaction and improve a community's quality of life comes in the process of place-making[3] (Silberberg *et al.*, 2013). In its simplest term, place-making refer to "the process of creating quality spaces that people care about and want to be in" (Wyckoff, 2014, p. 1). The term place-making is also defined by Schneekloth and Shibley (1995, p. 1) as "the way in which all of us as human beings transform the places in which we find ourselves into places in which we live". These definitions emphasize psychological and emotional dimensions in creating places to fulfil human needs, in addition to social, economic, and physical dimensions. Place-making is a process in which places are being made and remade on daily basis through reiterative social practices (Cresswell, 2015). This imply the incremental nature of places which are shaped through everyday activities (Lombard, 2004).

Slum-dwellers are also involved in the place-making process. In fact, in the absence of government support, they have been the leading actor in claiming and shaping the slum as it is. Although often portrayed as unplanned and disorderly, the place-making process by the slum dwellers has created rich multifunctional spaces full of social and economic life (UN-Habitat, 2003; Nijman, 2009; Roy, 2011). Informal community and neighbourhood organizations, within their capacity, have strived to provide essential services and improve site incrementally.

[3] In the literature, the spelling 'place making', 'place-making', and 'placemaking' are used interchangeably. However, a review by Lew (2017) found that 'place-making' is the most commonly used spelling. Thus, this dissertation use the spelling of 'place-making' in accordance with popular norm.

Moreover, slum dwellers give meaning to places through activities such as naming, signifying, taking part in social relations and recurrent rituals, making it humanized (Friedmann, 2007). However, the state often failed to recognize this informal place-making process in the slums (Friedmann, 2010; Lombard, 2014; Fuentes and Pirzkall, 2020). In fact, through demolition and eviction, the state was accused of 'place breaking', which erased the meaning of place and destroyed established patterns of human relationships (Friedmann, 2010). Furthermore, through urban regeneration that excludes the participation of the inhabitants, the meaning of places could be significantly altered or diminished in the transformed or newly constructed places (Ujang and Zakariya, 2015). Hence, experts have called for the application of place-making lens in the slum upgrading process to enhance sense of place that relate to the psychological and emotional needs of the residents (Lombard, 2014; Fuentes and Pirzkall, 2020).

Not only does the slum dwellers produce the space, but also, in turn, the settlement influences the life of the dwellers. Holloway and Hubbard (2001, p. 7) stipulate that "as people construct places, places construct people". Based on his study in Dharavi, Nijman (2010, p. 4) discovered the overwhelming significance of slums for its inhabitants: "it determines who they are, what they do, where they go, and whom they know". Through place-making process, people create place identity. Place identity concerns the physical image of the area and relates to the sense of belonging towards certain territories or places (Ross, Bonaiuto and Breakwell, 2003). Hernandes and others (2007) define place identity as "a component of personal identity, a process by which, through interaction with places, people describe themselves in terms of belonging to a specific place". Place identity is constituted by locations' physical and symbolic properties (Proshansky, Fabian and Kaminoff, 1983). It informs the distinctiveness of an area and the sameness that binds a community to a place, which builds self-esteem, creates a sense of self-efficacy, and establish collective connectedness (Lewicka, 2008). Indeed, places are dynamic; hence, place identity naturally evolve. However, a loss of identity caused by the enforced place-making process would lead to people struggling to adapt to new meanings or weakens place attachment due to the inability to continue to feel, practice, and recall experience (Ujang and Zakariya, 2015). Hence, it is argued that sustaining the meanings and identity of the urban elements and icons (objects, structures and images) is important because they contribute to self-identity, sense of community and sense of place (Hull, Lam and Vigo, 1994).

2.1.6 Culture-Led Regeneration

The relationship between culture and place is inextricably linked. Traditionally, culture is dependent upon the place. As people chose places to inhabit, their cultures grew directly from the natural assets of the places that they settled. The ecology of those places, the foods they

offered, the materials they provided for making shelter and clothing – all these place attributes became converted, through human use, into cultural characteristics. In turn, these cultural characteristics, both tangible and intangible, imbue cultural meanings and help shape a place. Throughout time, the relationship of both conceptions has been reciprocal; thus, it can be assumed that a place is a manifestation of human culture. Mehrhoff (1990 in Ngau and Blanco, 2019) suggest that places embody cultural values, expressions of identity, memories, and history, they give character to a space and create a sense of belonging.

Many slum settlements of the world have existed for centuries (e.g., Dharavi in India, Makoko in Nigeria, and Kibera in Kenya were found in the 19th century). For a long time, the dwellers have claimed place meanings and created various cultural products and practices, making those slum settlements a culturally distinct settlement, in which buildings, traditions, livelihood, and social interactions are unique and contextual. These features should be recognised as cultural assets that can support efforts in meeting the social, economic, and political objectives of slum dwellers.

In order to accomplish multiple development objectives in a culturally distinct slum area, principles of culture-led urban regeneration can be applied. This approach uses local cultural resources to reverse the environmental, social, and economic decline of an area. It intends to promotes urban economic regeneration by increasing investments in cultural production (e.g., investments in the cultural and creative industries) and encouraging the construction of landmark cultural facilities to promote cultural consumption (Bianchini and Parkinson, 1993). In terms of slum upgrading, cultural activities can be incorporated as an area strategy alongside other social, environmental, and economic activities to catalyse regeneration and promote urban change (Evans, 2005). Integrating cultural strategies in slum upgrading projects may bring benefits in physical (e.g., heritage conservation, adaptive reuse), economic (e.g., new job creation, increasing property value) and social-cognitive (improved social cohesion, greater individual confidence, and a stronger sense of place) dimensions. The approach applies to the neighbourhood level, as shown by the three cases of culture-led regeneration in Korea, which transformed the urban identity of declining neighbourhoods into a tourist attraction, a new artist village, and a cultural space (Hwang, 2014).

Nevertheless, Lin and Hsing (2009) have warned about its potential drawbacks: it may result uneven effects of economic regeneration, and it may lack local particularities, which could lead to social exclusion of the local community. Thus, they argue for local community engagement during the revitalization of existing local identity, rather than imposing new ones, to re-establish

their sense of place (Lin and Hsing, 2009). One of the methods used for participatory culture-led regeneration is cultural mapping. Cultural mapping is a part of the planning process that brings a diverse range of stakeholders into conversation about the cultural dimensions and potentials of places to make visible how local cultural assets, stories, practices, relationships, memories, and rituals constitute places as meaningful locations. It can be used as a starting point to understand community context and issues so that an integrated picture of the cultural character, significance, and workings of a place can be produced.

2.2 Small-Scale Fisheries

2.2.1 Coastal Management

Small-scale fishermen live and operate in coastal areas, a place where land and water surfaces meet. In this space, two separated but co-evolving systems interact: the human and the natural systems. The former is artificial, consisting of built environment, human activities, and institutions that organize human activities, while the latter is natural and comes with its elements and resources (Timmerman and White, 1997; Wong *et al.*, 2013). Conformity between both systems is key to sustainable development, as they underpin poverty eradication, food security and environmental protection. However, the equilibrium in the coastal area has shifted as the human population, and their socio-economic activities grow further and reshape the natural system. Overfishing is an example of how augmenting marine resources extraction for human consumption have outpaced natural system capability to replenish. Another example of human incursion into the marine realm is 'ocean sprawl', which means the proliferation of artificial structures in coastal and offshore areas such as the construction of ports and harbours, oil and gas platforms, marine renewable energy installations, and coastal defence structure (Firth *et al.*, 2016). As both systems are under heavy stress and difficulties arise because of conflicting interests and overlapping jurisdictions, the symbiotic relationship between the two systems has become dysfunctional over time (Timmerman and White, 1997).

The failure of managing the land-sea interface has resulted in considerable catastrophic impacts. Water pollution and coastal littering, eutrophication, seafood contamination, depletion of fishery resources, and habitat loss are among anthropogenic environmental threats to the ocean system. Beatley (2014, p. 5) even states that "Coastal cities have treated our oceans as garbage dumps and open sewers for centuries". It is no wonder that 80 per cent of marine pollution come from land-based activities (Inniss *et al.*, 2017). Annually, approximately more than 8 million tonnes of plastic waste enter the oceans each year, and it will remain in our ecosystem for years, harming sea birds, sea mammals, marine turtles and countless fish (*ibid.*). Ocean

pollution from agricultural, municipal, and industrial waste has caused tripled nitrogen loads, known as eutrophication. It causes decreased oxygen concentration, resulting in aquatic organism annihilation, seafood contamination, and causing billions of dollars loss per year. A global environmental pressure like climate change will only worsen ocean environmental problems with IPCC (Wong *et al.*, 2015) mentioned three key impacts in coastal regions: sea-level rise, increase in ocean temperatures, and ocean acidity. They predicted global mean sea level will rise from 0.28 to 0.98 m by 2100, which pose a significant risk to more than 600 million people, or 10 per cent of the world's population, who live in low-elevation coastal zones (McGranahan, Balk and Anderson, 2007). Meanwhile, ocean warming and ocean acidification have caused mass coral bleaching and mortality, which leads to decreasing biodiversity and fishing stocks. In addition, climate change also exacerbates the risk of extreme weather events as the warmer ocean will lead to a more intense tropical cyclone[4]. Table 1 shows how the trend of factors affected by climate change threatens coastal communities' livelihood and wellbeing of coastal communities.

Table 1 Climate drivers and its effect on coastal environment

Climate Driver	Trend	Effects
CO_2 Concentration	Rising, 0.1 pH	Ocean acidification
Sea-surface temperature	Rising, 0.6 ^{o}C	Circulation changes, sea-ice reduction, coral bleaching and mortality, algal bloom, species migration
Sea level	Rising, 1,7 $\pm$ 0.5 mm/yr	Flooding, erosion, saltwater intrusion, rising groundwater table, impeded drainage
Storm intensity	Rising	Erosion, salt water intrusion, coastal flooding
Storm frequency, storm tracks, wave climate	Uncertain	Altered storm surges and storm waves
Run off	Variable	Alteration in flood risk, water quality, fluvial sediment supply, circulation and nutrient supply

Source: Nicholls et al., 2007

Unless these coastal problems are being addressed, the future of people on the coastline will be substantially bleaker than their condition today. Furthermore, coastal problems are highly complex and often unstructured. It is complex because it consists of a variety of social systems that include communities, infrastructure, food production systems, tourism areas and health-related issues, and a variety of natural systems which combine coastal lands (including beaches, coasts and the inland strip), reefs, aquifers, estuaries and lagoons, deltas and marine areas near coasts. If both social and ecological issues are taken into account, coastal strategies will be truly inclusive and sustainable in the long term (Gupta and Bavinck, 2017). Coastal problems are also

[4] Although frequency of tropical cyclones globally will either decrease or remain unchanged in the future, there will be a likely increase in global mean tropical cyclone precipitation rates and maximum wind speed (IPCC, 2014)

unstructured due to multiplied set of uncertainties, non-linearities and risks, and the fact that costs and benefits often fall on different actors. An obvious example can be found related to climate change, in which the ones who suffer the most (poor communities and small-scale fisheries) bear the brunt of the actions of those who emitted the greenhouse gases recklessly (e.g., factories, developed nations).

Coastal governance is indeed a 'wicked problem'[5] because of multiple management goals, competing preferences of stakeholders, and social conflicts involved (Hopkins *et al.*, 2012; Groeneveld, 2020). For this reason, Gupta and Bavinck (2017) urged the need to shift from a single-minded technocratic, growth-oriented focus in coastal development management to inclusive development that embraces coastal adaptiveness. They believe that the coastal management approach should consider existing local institutions that have developed through history, shaped by local discourses, shaping local practices. Sale *et al.* (2014) added that coastal management solutions should be tailored to communities specific socio-political circumstances, building from existing sustainable practices and nurturing numerous local bottom-up efforts. However, as coastal issues become more complex and technical, a bureaucratic, technocratic approach is becoming more apparent in which participation and consultation are often neglected.

2.2.2 Issues of Small-Scale Fisheries

The fishing industry is becoming more lucrative than ever. FAO (2018) recorded that fish consumption per capita had increased from 9.0 kg in 1961 to 20.2 kg in 2015, while global fish production peaked at 171 million tonnes with a total value of USD 362 billion in 2016. 59.6 million people were employed in the capture fisheries and aquaculture sector, of which 14 per cent are women (*ibid.*). Fish are some of the most traded food items in the world, with 60 million tonnes are exported with a value of over USD 143 billion in 2016, equivalent to the combined export values of coffee, rubber, cocoa, meat, and sugar (Eide, Bavinck and Raakjær, 2011).

Despite the growing marine industry, one group that has not fully reaped its benefit is small-scale fishermen. Small scale fisheries are distinctly different from large scale fisheries (see table 2). Large-scale fisheries are often associated with high capital costs and sophisticated fishing techniques, and mechanized technologies. They require extensive and concentrated landing with catch preservation and distribution facilities. Meanwhile, small-scale fisheries use smaller (or no) fishing vessels and relatively low-technology fishing methods. They make short fishing trips to

[5] Rittel and Webber (1973) coined the term wicked problem to explain the nature of social problems that have no defined formulation to solve, thus the problem is never solved definitively

inshore fishing grounds and tend to be more labour intensive. Another characteristic is that their products are primarily for household consumption or sold in local markets. Policy makers and academics widely use the term 'small-scale fisheries', but there has not been any universal agreed operational definition yet. Its definition is contextual and varies between different countries and regions (Panayotou, 1982; Berkes *et al.*, 2001; Schuhbauer and Sumaila, 2016). The traditional, subsistence, and artisanal fisheries are included in the small-scale fisheries (Berkes *et al.*, 2001) (see table 2).

Table 2 Characteristic of Different Fisheries

Fishing-Related Characteristic	Large-scale / Industrial	Small-scale	Traditional / Artisanal
Fishing Unit	Stable, with division of labour and career prospect	Stable, small, specialized with some division of labour	Lone operators, or family or community group
Ownership	Concentrated in few hands, often non-operators	Usually owned by senior operator, or jointly operated	Owner-operated
Time Commitment	Usually full-time	Full-time or part-time	Most often part-time
Boat	Powered, much equipment	Small; in-board motor (or small outboard)	None, or small, usually non-motorized
Equipment	Machine-made assembly by others	Partly machine-made materials, sometime operator-assembled	Often hand-made materials, operator assembled
Gear Sophistication	Electronics, automation	Mechanized and manual	Mainly non-mechanized
Investment	High; large proportion other than by operator	Medium to Low; entirely by operator	Low
Catches	Large	Medium to Low	Low to Very Low
Disposal of Catch	Sale to organized markets	Organized local sale, notable consumption by operators	Primarily consumed by operator and family; occasional sales
Processing of Catch	Much for fishmeal and non-human consumption	Some drying, smoking, salting; primarily for human consumption	Little or none; all for human consumption
Economy integration	Formal; fully integrated	Partially integrated	Informal; not integrated
Occupationality	Full time or seasonal	Often multi-occupational	Multi occupational
Extent of marketing	Products found worldwide	Often national and local	Local or district-level only
Management units	One or few large units	Usually many small units	Very many small units
Fisheries data collection	Not too difficult	Difficult	Often no data

Source: Berkes et al, 2001

The contribution of small-scale fisheries to society is often undervalued. The sector provides a meaningful contribution to food security, poverty alleviation, and local economies. They capture about half of the global fish catches and employ more than 90 per cent of the world's fishers and fish workers (World Bank, 2012). They provide a safety net for unskilled labours and affordable nutrition for the poor. Small scale fisheries tend to be the economic backbone of coastal communities, generating multiplier effects in other fishing-related activities such as fish traders, processors, transporters, net-makers and boat-builders (FAO, 2015). These communities may be situated in geographically remote areas or small islands; hence, they heavily rely on fish for food and livelihood. Culturally, they are firmly anchored in local communities, often reflecting historical links between adjacent fishery resources and traditions or values (*ibid.*).

Despite their economic and cultural importance, relatively high incidence of poverty is evident in small-scale fishing communities around the world, and it is well documented in many research (e.g., Acheson, 1981; Panayotou, 1982; Béné, 2003; Béné and Friend, 2011; Knudsen, 2016). The World Bank (2012) estimates that up to 5.8 million fishers earn less than USD 1 per day. The cause for poverty in these communities is multidimensional in nature, not only simply because of low incomes due to smaller catch of fish, but also because of economic and socio-political reasons, which we will discuss in the next sub-chapter. FAO (2015) highlights that these fisheries-dependent communities face severe livelihood issues such as lack of alternative opportunities, youth unemployment, unhealthy and unsafe working conditions, lack of credits and markets, forced labour, and child labour. Furthermore, their well-being is not very well as indicated by low levels of formal education and high incidence of ill health (often including above-average incidences of HIV/AIDS). Furthermore, environmental issues such as pollution, climate change impacts and natural and human-induced disasters add to the threats facing small-scale fishing communities. These multifaceted distresses are borne by women, children, unskilled fishers, and those who depend directly and indirectly on the fishing industry.

Their contribution to food security and nutrition, poverty eradication, equitable development, and sustainable resource utilization is not fully appreciated, so insufficient attention is given to the sector's needs. The reason might be that SSF is viewed as a traditional and poorly equipped subsidence activity with low economic performance (Panayotou, 1982). Early fisheries policies almost exclusively focused on large-scale fisheries assuming that small-scale fisheries were only a temporary feature of the transition from artisanal to industrial fisheries (*ibid.*). Among the society, they are also often perceived as unruly members of society, which are challenging to manage because of their informal, accessible, and liberal traits (Misund, Kolding and Fréon, 2008). As a result, FAO (2015) noted that small-scale fishing communities commonly suffer

from unequal power relations, particularly if they conflict with large-scale fishing operations or other capital-intensive sectors such as tourism, mining, energy, industry, and infrastructure development. Schuhbauer and Sumaila (2016) argues that small scale fisheries contributions to society should not only be measured by financial indicators but should also be valued from ecological, cultural and social dimensions. For example, the contribution of SSF in absorbing unskilled surplus labour and creating a safety net for poor households (Béné and Friend, 2009) or their role in preserving the coastal ecosystem.

2.2.3 Development Challenges of Small-Scale Fisheries

The notion of poverty in small-scale fisheries have been discussed in many literature (Panayotou, 1982; Cunningham, 1994; Béné, 2003; Béné and Friend, 2009; Jentoft and Eide, 2011; Knudsen, 2016), and it has been noted that 'fishery rhymes with poverty' (Béné, 2003). Béné, in his widely cited article (2003), concluded that most literature views poverty in fishery as the result of low fishing catches due to overfishing which was an inevitable consequence of the open-access nature of fisheries. This perspective equates small-scale fisheries with poverty, preventing further discussion on how fisheries contribute to poverty alleviation (Béné, 2003). However, recent theoretical development put broader perspective inspired by Amartya Sen's (1981) entitlement theory. Entitlement theory changed views on poverty and famine, from previously seen as a failure of production (a Malthusian crisis), to be seen as a breakdown in the rights of access to resources. Béné (2003) asserted four kinds of discrimination that deny or restrict small-scale fishermen's commands over resources: economic exclusion, social marginalization, class exploitation, and political disempowerment. He then argued for shifting the attention of fishery research from the resources themselves (and their assessment), and to put greater emphasis on the role of politics of (or power over) access, control, and redistribution of these resources (*ibid.*).

The cause of poverty in small-scale fisheries communities is not only the inadequacy of suitable fishing gear which limits their income, but also because of multidimensional issues that put communities in a vulnerable position. Thus, even though different economic criteria (e.g., fish catches, the standard of housing, land ownership, capital investments, and household debt) dominate in poverty discourse, different social attributes (such as literacy rate, access to education, health, and other essential services), as well as social manifestations of poverty (such as power relations), have been argued to be included in poverty definition (Thorpe, Andrew and Allison, 2007). A number of literature has discussed constraints and problems that affect them from at least three points of view: bio-ecological, economic, and socio-political.

Bio-ecological

Historically, humans have viewed the ocean with its marine life as the source of a continuous and inexhaustible food supply. However, fish, like any other living renewable resources, need time to replenish. Meanwhile, fish are a common property resource protected and owned by no one, which may lead to a 'tragedy of commons' (Hardin, 1968). Bene (2003, p. 951) summed up this conventional wisdom of fisheries as: "the open-access nature of the fisheries allows more people to enter the fishing sector, which leads to the economic and biological overexploitation of the resources". FAO (2018) reported that the percentage of fish stocks harvested at sustainable levels decreased from 90 per cent in 1974 to 66.9 per cent in 2015. On the other hand, according to the same report, 33.1 per cent of stocks were fished unsustainably, rising from only 10 per cent in 1974. At the same time, pollution, loss of habitat, and climate change cause decreasing reproductive success of many marine species. Moreover, the inadequacy of suitable fishing gears confines their fishing range to only near shore area, which are often already overexploited. Declining fish stocks are a significant cause of poor income, especially for small-scale fishermen who own fewer tools to expand seaward for new fishing ground. Nevertheless, despite small-scale fishermen being the most affected group by overfishing, a few of them are also instigate ecosystem disturbance by applying destructive fishing techniques such as poisoning and bombing (Ruddle, 2014).

To survive the realm of the sea, humans are at the mercy of nature and depend on artificial equipment. However, the sea is a treacherous and uncertain environment. Extreme weather, disorientation, or mechanical failures are some of the many risks fishermen face that could threaten life and livelihood. In Bangladesh, fishers are forced to discontinue fishing due to rough weather and tidal surges during the monsoon seasons (Islam, 2011). Furthermore, many marine ecosystem's species are only available at certain times because they seasonally migrate. Some species also had experienced population boom and bust in ways that are difficult for even fishery scientists to predict (Acheson, 1981). This seasonality or interruption in fishing operations causes a variation in income and food security throughout the year (Islam, 2011).

Economic

A few experts believe that what keeps fishermen's income at low levels is the lack of alternative employment opportunities, creating a labour surplus within the fishery sector (Panayotou, 1982; Béné, 2003). Small-scale fisheries face occupational immobility in which entry to fisheries is relatively easy and not very costly, while the exit is difficult. As Panayotou (1982) points out: a good fishing year and widespread unemployment attracted many people to become fisherman.

When fisheries become over-crowded and profits for most fishermen disappear, the labour surplus will switch professions or migrate if necessary, assuming perfect mobility of labour and capital. However, this might not be the case because a fisherman might not be able to afford to spend time looking for a job or moving when his income is down to subsistence level and, for another, he can hardly expect to find a buyer for his boats and gears. Hence, even if they earn less than their opportunity costs, fishermen may continue fishing.

Poor small-scale fishermen may suffer economic exclusion because they cannot get access to productive assets necessary to improve fishing activities. Since they may have limited access to formal credit, they turn to middlemen who often provide loans in addition to marketing fish products. In a positive relationship, the benefit would be mutual because middlemen supposedly possess excellent knowledge about the markets. However, many have reported that middlemen have used whatever it takes to maintain control over fish markets, such as price manipulation, violence, or creating credit terms that will put fishermen continuously indebted (Acheson, 1981; Panayotou, 1982). The fishermen's bargaining position is weak; therefore, middlemen can establish a monopsony and control fishery systems.

Another challenge faced by small-scale fisheries is related to the marketing of their products. Although artisanal or traditional fishermen are said to be fishing for their own consumption in many literature, they still ought to sell some of their catch for cash income as fish is not categorized as a staple food. Fish is an easily perishable good without an adequate supply of ice and freezing facilities. Moreover, small-scale fishery activities are often remotely located from the consumption centre. These conditions hint at high collection, marketing, and storage cost for the fishing business of small-scale fisheries (Panayotou, 1982).

Socio-Political

Fishery activities take up a great deal of time; therefore, fishermen are often absent or underrepresented in the political process. As a result, small-scale fishermen may suffer political disempowerment where they are excluded from the decision-making process regarding marine resources they depend on. This might be critical for small scale fishermen since it may lead to a reduction or even denial of access and use of the resources, especially considering that institutional support is often skewed in favour of the large-scale fishermen (Panayotou, 1982; Berkes *et al.*, 2001).

Béné (2003) also mentioned that specific individuals or groups have been denied access to or control over fishing resources because of their gender or ethnic origin. He calls this problem as

the social marginalization of small scale fishermen (Béné, 2003). Fishing communities have strong kin systems, so it is common to see participants in the fisheries belong to specific families, ethnic and religious groups, which often restrict access to those within their social group.

The immense multifaceted challenges faced by small-scale fishermen influence their housing behaviour. The implication of uncertain fishing income resulting from the bio-ecological challenges is fluctuating fishermen's savings. Meanwhile, the small-scale fishermen may have trouble getting a mortgage due to the lack of proper property tenure that can be used as collateral assets. Hence, they often build their houses incrementally, usually starting with the use of low-quality building materials. As they gain saving, they will be able to upgrade their dwelling gradually. This practice poses a significant risk because it may compel fishermen households to occupy an unfinished building that may easily collapse.

Socio-political challenges of small-scale fishermen also impact their housing endeavour. Since they are underrepresented in the political arena due to their occupational trait, small-scale fishermen may be excluded from the decision making process regarding the development of their settlement. Moreover, many small-scale fishermen may be considered as non-permanent residents because of their migratory routine. This status may prohibit them from gaining political access and services.

2.2.4 Living in Coastal Slum Fishing Village

It is well-documented in several studies that poor small-scale fishermen households, especially in developing countries, live in squalid environments. The characteristics of these settlements are comparable to slums, with a lack of water supply and inadequate sanitation, unhealthy environmental conditions, and substandard housing. Anugraham (1940 in Bavinck, 2011, p. 178) details the housing situation of a fishing village in Chennai: "Most of the fishers live in huts. Normally a hut is about 8 feet by 10 feet with low walls and low roof of palm matting. There is only one doorway which is hardly 5 feet high. In some cases, a bamboo tatty which serves as a provisional 'door' is placed at the entrance and fastened by ropes to either door post. Most of the huts have no windows, as the need for ventilation is neither valued nor even felt by the fisherfolk. The ventilators, if any, are nothing more than holes to send out smoke. Incidentally, they let in a little light." In Bangladesh, the settlement in which small-scale fishermen lives is described as "rather hostile physical environment, many of them on government owned land, in congested shanty settings…, … these settings are risky and with limited basic services. …village settlements are highly congested and sanitation facilities are poorly developed. Many households still lack water sealed toilets, exposing them to risk of water borne disease"(Islam

and Chuenpagdee, 2013, p. 9). Similar issues of landlessness, informality, deteriorated neighbourhood or geographical isolation also have been described in India (Jacob and Rao, 2016), Turkey (Knudsen and Koçak, 2011), Brazil (Gillam and Charles, 2018), Myanmar (Okamoto, 2011), and Indonesia (Marpaung, 2017; Asmal and Amri, 2018). It should be noted that some fishermen live in decent housing, showing a degree of variety in fishing communities. Nevertheless, fishing villages lag behind other towns and villages with insufficient sewage and roads, even in developed countries such as Japan (MAFF, 2019). Living in a coastal slum fishing village adds another dimension of hardship for the fishermen: not only do they face adversity at sea, but also misery on the land.

Figure 3 Fishermen village of Hong Kong (left; timeout.com) and Nigeria (right; theguardian.com)

However, one of the most significant, but also maybe the least understood, threats faced by the fishing communities is displacement. It is often suggested that fishers leave their homes because of overfishing, population pressure, or coastal erosion. However, displacement could also take place through eviction or gentrification. As the competition for land use in the coastal area grows, the more lucrative business sectors demand coastal space resulting in the rising economic value of waterfront land. This may prompt restriction over access to beaches and fishing activities, and the worst being the wholesale removal of fishing populations (Bavinck, Jentoft and Scholtens, 2018). 'Coastal grabbing', which means a relatively sudden and forceful transfer of property rights over resources and coastal space, has occurred in recent decades in several countries triggered by globalization (Bavinck *et al.*, 2017). In addition, coastal gentrification had occurred because new wealthy tenants who purchase properties along the coast for its amenities had increased land prices, leaving resource-dependent activities, such as fisheries, less valued or priced out of the waterfront, frequently leading to fragmented social networks within communities (Colburn and Jepson, 2012). Meanwhile, many fishermen do not hold formal land tenure as many fishing settlements in developing countries are initially formed illegally on vacant land, marsh or above the ocean surface.

Fishing settlements are commonly sited adjacent to fishing harbours that land fish from a certain fishing ground, creating an intense dependent relationship of work and living space. In fact, boundaries are indistinct in some cases; hence, the fishing settlement also functions as fishing harbours or markets. Proximity is an important feature, not only as it reduces transportation costs, time, and labour for processing, storage, and marketing, but also fishing-related industries such as shipbuilding, boat repairs, fish auctions, are usually clustered in one area. In order to stay close to fishing ports, small-scale fishermen trade-off amenities and tenure security. FAO (2015, p. x) has recognized the importance of tenure rights for land in the coastal area to fishery sector by stating: "Tenure rights to land in the coastal/waterfront area are critical for ensuring and facilitating access to fisheries, for accessory activities (including processing and marketing), and for housing and other livelihood support". Their houses serve as a shelter and as places for land-based fishing-related activities such as net mending, fish drying or processing, and marketing. The settlement also provides space for alternative income generation activities that could absorb fishing income fluctuations arising from environmental uncertainty (weather, seasonal fluctuations, poor fishing gears, etc.) (Panayotou, 1982). For small-scale fishermen, fishing settlements, fishing ports, and fishing grounds provide integral and indispensable features and conditions that support fishing activities. Thus, any measure that affects fishing communities in fishing villages will also further impact the productivity of fisheries sector and livelihood of fishermen.

Fishing communities have historical and dependent links with their settlement environment. As noted by Urquhart and Acott (2013, p. 45): "Many coastal communities have strong links to fishing that span generations where fishing is a way of life that goes beyond the means to earning a living. Fishing's influence is not confined to those activities that take place at sea, but spills over onto land to create a particular identity and sense of place in coastal towns inherently linked to fishing." They have established a feeling of deep-rooted 'place attachment', which is a component of sense of place. It refers to positive bonds to physical and social settings that support identity and provides other psychological benefits (Low and Altman, 1992). As previously mentioned, place attachment also contributes positively to the stewardship of ecosystem services. Stronger place attachment strengthened protective norms and enhanced local ecological knowledge, which was developed through the social learning of place-based communities (Andersson, Barthel and Ahrné, 2007).

The areas where they live are the site of maritime cultures and heritages built up over a long time. This constructs a place identity that embraces sense of belonging towards a certain community or territory (Ross, Bonaiuto and Breakwell, 2003). In the fishing settlements, the

fishing community produces tangible and intangible cultural values that are treasured not only by fishermen but also by the general public, as they create distinctiveness, community's identity, and sense of place. Thus, it is essential to recognize the value of the fishing cultural landscape to promote policies to preserve fishing cultural heritage for the socio-cultural benefit of the coastal communities (Urquhart and Acott, 2013; Khakzad and Griffith, 2016).

The settlements built by the fisher community have distinctive visual characteristics that reflect long interaction with the marine environment. Their place-making approach is different from a typical land-based society in terms of understanding water dynamics and risks. Based on their research in Bangkok, Thaitakoo and Mcgarth (2010) found that water communities had incorporated natural hydrological processes into their urbanism. This perspective differs from the mainstream urban planning approach that deters water dynamics as it based on the 'solid state' of landscape urbanism. They argue for waterscape urbanism as a new model for urban design which based on the 'liquid perception' by stating: "Instead of the design of cities thought of as permanent, static, solid land-based environments, liquid perception is based on change, adaptation and the continuous reproduction of locality as an embedded and evolving cultural practice" (Thaitakoo and McGrath, 2010, p. 37). They elaborated further the differences between solid perception and water perception in table 3 below.

Table 3 Water and solid perception

Solid Perception	Liquid Perception
Rigid flood protection structures inhibit the natural flow of water	Flexible and open traditional structures allow the natural flow of water
Life behind the flood protection barriers will be static and stagnant because the structure separates the life behind the wall from the dynamics and nutrient flow of water	Cultural and social life is tied to the dynamic of water. Social and economic patterns adjusted according to the dynamics level of water
Resist any change of water level or quantity	Resilience and adaptation evolve through time with the seasonal flow of water
Incoherence between land and water	Coherence between land and water
Water is hazard and need to be eliminated/ mitigated	Water is a part of vulnerability and it is manageable
Disjointed – separation among land-water-human	Joined, linked and connected land-water-human

Source: Thaitakoo and Mcgarth, 2010

The fishing villages are where social interactions among fishermen take place. In a way, it is what holds fishing communities together. Well-functioning fishing communities are the most

critical contributors to fishery productivity (Jentoft, 2000). However, the decline and removal of fishing villages occur in both developed and developing countries, threatening fishing communities' existence. For them, fishing is not only a means of earning a living but also a way of life and the centre for social interaction (Brookfield, et al., 2005; Urquhart and Acott, 2013). Thus, this displacement trend will bring devastating outcomes to the fishing community's well-being as it will negate the economic, social, and cultural assets accumulated by small-scale fishing communities over a long period. As a result, they may suffer significant setbacks in escaping poverty. In addition, loss of place and its meaning would have negative impacts on psychological well-being and individual and collective identity, memory, and history (Gieryn, 2000). Displacement, environmental hazards, and geographical isolation are among the spatial risks that add to the risks faced by small-scale fishing communities.

2.3 Scenario Planning

2.3.1 Scenario Planning Rationale

The life of small-scale fishing communities is full of uncertainties, both at sea and on the land. Their livelihood from fisheries is already unpredictable by nature because of the conventional fishing gears that they use. Issues such as climate change, overfishing, and environmental degradation only exacerbate the unpredictability of their livelihood. In many developing countries, small-scale fishing communities often live in slums with limited land tenure security, putting them at risk of eviction at any given time. Living in the slum added another dimension of vulnerability that may unsettle their life and livelihood. This combination of uncertainties makes the development issue of fishing villages a highly complex problem; therefore, planning the neighbourhood upgrading requires a method to address these uncertainties and potential issues that may arise in the future.

In addressing the future of a complex system full of uncertainties, scenario planning emerges as a promising approach. Goodspeed (2020, p. 21) defined scenario planning as "long-term strategic planning that creates representations of multiple, plausible futures of a system of interest". This approach uses scenarios as plausible descriptions or stories of hypothetical future developments, which can serve as a basis for action. These plausible futures, known as scenarios, were developed based on a coherent and internally consistent set of assumptions about driving forces (trends and uncertainties) and key relationships (Schoemaker, 1995; Wiseman *et al.*, 2011).

The scenario technique was initially developed for military purposes. Herman Kahn from RAND Corporation formulated an 'escalation ladder', which describes distinct variations or stages of what may occur that lead to nuclear war following World War II (Coates, 2016). The

business sector then adopted scenario planning to develop a robust corporate strategy in an unpredictable business environment. One of the most famous and widely documented examples is Royal Dutch Shell (Wack, 1985; van der Heijden, 1996). By incorporating scenario planning, Royal Dutch Shell was able to navigate the market challenges of the 1970's OPEC oil embargo better and faster than their competition, driving their leap to become the second-largest oil company in two years (Wack, 1985). Since then, scenario planning has gained popularity as a robust diagnostic tool to navigate the turbulent environment in a wide range of themes ranging from food security (Meadows *et al.*, 1972) to climate change (IPCC, 2014). In South Africa, scenario planning was used to create alternative models for the transformation during the post-apartheid reconciliation process. As reported by Kahane (2012), a group of South African leaders from across the spectrum of the social-political-economic system: politicians, businessmen, trade unionists, and activists, gathered together to conduct a transformative scenario planning exercise. After a series of intense discussion, they came up with four scenarios that could happen to the country (Figure 4), which influenced the country's political and economic strategies until now (Kahane, 2012).

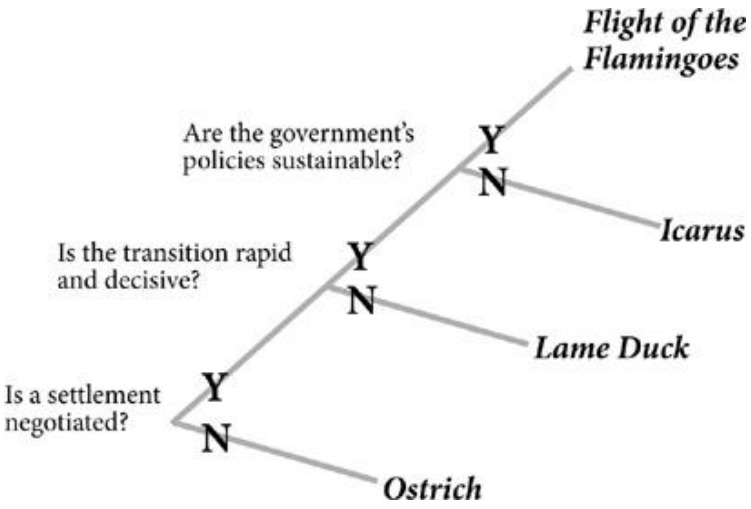


Figure 4 Mont Fleur Scenarios (Kahane, 2012, p. 9)

Traditional long-term planning usually predicts the future based on projections and forecasts and uses the information to draw a plan for responding. However, this approach is ill-suited in an increasingly uncertain world characterized by complexity and volatility. While forecasting could be useful, forecasting error is becoming more frequent in this kind of dynamic world, resulting in dramatic results (Wack, 1985). Most traditional frameworks aim for a single future direction without considering uncertainty. Hence, organizations could not anticipate and prepare for possible opportunities or adversities that may unfold in the future.

To be successful in a dynamic, complex, and volatile system, the plan needs to be flexible and adaptive to the changing environment. This objective can be achieved by maintaining awareness of uncertainty and understanding its driving forces which are the essential feature that characterizes scenario planning. Scenario planning opens an area of thinking and contains more information about the future because it addresses key uncertainties through a chain of cause and effect (van der Heijden, 1996). Thus, decision-makers not only look at the outcome but also understand the driving forces of why things happen (*ibid.*).

Besides producing better strategies, another value of scenario planning is educational, as it expands sophistication in thinking through complex back-and-forth processes of developing alternative scenarios and re-examining the implication in the future (Coates, 2016). Van der Heijden (1996) mentioned that scenario planning contributes to the learning process in several ways:

- At individual level
  - As a cognitive device: Stories are efficient for providing many different pieces of information in a mutual context, thereby making the cognitive aspects of any situation more manageable.
  - As a perception device: People see certain things and overlook others based on their existing mental models and resulting expectations. The scenario process increases the range of what participants see and expands their mental models.
  - As a cognitive reflection tool: The scenario process helps people think through ideas generated in the strategic conversation more effectively
- At group level
  - As a ready-made language provider, assisting the strategic conversation across a wide range of partly conflicting views.
  - As a conversational facilitation vehicle: scenario planning provides an organised way of discussing relevant aspects of the business in an organisational context.
  - As a vehicle for mental model alignment, scenario planning permits coherent strategic action.

Scenario planning usually involves convening a multi-stakeholder group to jointly generate a set of plausible scenarios for the future of a place or an organization in a given time horizon. As the South African post-apartheid scenario planning process showed, scenario planning brings together stakeholders who will not interact otherwise. Kahane (2012) noted that scenario planning transforms relationships among actors. By working together in building scenario,

empathy and trust have grown, improving their abilities and willingness to work together for the future (*ibid.*). Stakeholder involvement is an essential principle of scenario planning as it builds credibility and legitimacy. Consolidation of different perspectives in terms of worldviews, objectives, system focus, ethical biases, and other factors will enrich any set of scenario development and resolve conflicting interest regarding the future (Coates, 2016). Hence, it can be concluded that the enhancement of participatory engagement in the development process is another value of scenario planning.

Despite its growing popularity, there is no single approach regarding scenarios (Godet, 2000). In fact, because of the abundance of creative entrepreneurs who develop a variety of approaches and methods to suit the needs of their clients, scenario planning theoretical development has been chaotic and often creates confusion in definition and methods (Bradfield *et al.*, 2005; Bishop, Hines and Collins, 2007). Experts have propose typologies of scenario planning to deliver a common understanding about the diverse application of scenario projects (van Notten *et al.*, 2003; Bradfield *et al.*, 2005; Börjeson *et al.*, 2006; Chakraborty and McMillan, 2015). Defining typology of scenario planning would help planners to determine methods and techniques for scenario development and analysis.

Table 4 Van Notten and colleagues' (2003) Classification of Scenario Planning

Overarching themes		*Scenario characteristics*	
A	Project goal: exploration vs decision support	I.	Inclusion of norms? : descriptive vs normative
		II.	Vantage point: forecasting vs backcasting
		III.	Subject: issue-based, area-based, institution-based
		IV.	Time scale: long term vs short term
		V.	Spatial scale: global/supranational vs national/local
B	Process design: intuitive vs formal	VI.	Data: qualitative vs quantitative
		VII.	Method of data collection: participatory vs desk research
		VIII.	Resources: extensive vs limited
		IX.	Institutional conditions: open vs constrained
C	Scenario content: complex vs simple	X.	Temporal nature: claim vs snapshot
		XI.	Variables: heterogeneous vs homogenous
		XII.	Dynamics: peripheral vs trend
		XIII.	Level of deviation: alternative vs conventional
		XIV.	Level of integration: high vs low

Source: van Notten et al., 2003

Van Notten and colleagues (2003) proposed a detailed classification of scenario planning based on three overarching themes: project goal, process design, and scenario content (table 4). The first theme, project goal, is related to the 'why' question as to the purpose of the project. The project may be intended for 'exploration', including awareness raising, the stimulation of creative thinking, and gaining insight into how societal processes influence one another (van Notten *et al.*, 2003). On the other hand, scenario projects also may act as a 'decision support' tool to examine the path toward desirable futures or propose concrete strategic options (*ibid.*).

The second theme, process design, is related to the 'how' question to describe the data collection and analysis approach used in the project. The project may employ 'intuitive' approach that relies on qualitative knowledge gathered from interactive group sessions (*ibid.*). Meanwhile, scenario projects might as well be 'formal' in which quantitative knowledge and computer simulation techniques are being used for scenario development (*ibid.*). The third theme, scenario content, is related to the 'what' question, which shows detail level of scenarios developed. Some scenario planning is 'complex' as it is "composed of an intricate web of causally related, interwoven, and elaborately arranged variables and dynamics" (*ibid.,* p. 428). In contrast, other scenario planning is 'simple' as it is more limited in scope (e.g., narrow focus, short-term perspective) (*ibid.*).

Besides different scenario types, there is also a wide range of scenario planning methodologies. However, the most popular way to construct scenarios is founded by Global Business Network consulting firm; hence, it is known as the GBN method. In general, the process consists of four key steps: 1) brainstorming and discussing key trends, constraints, and issues; 2) identifying driving forces, categorizing them as assumptions or uncertainties, and rating their degree of uncertainty and impact; 3) selecting the driving forces with the most uncertainty and highest potential impact to serve as the basis of the scenarios; and 4) building the scenarios based on the driving forces (Avin and Goodspeed, 2020). Similarly, Kahane (2012) also pointed out five general step in transformative scenario planning: 1) convening a team from across the whole system; 2) observing what is happening; 3) constructing stories about what could happen; 4) discovering what can and must be done; and 5) acting to transform the system. The choice of techniques and steps are tailored based on the purpose of the scenario project and the nature of the user organization; thus, it makes the scenario planning method diverse. Experts have voiced their concern regarding the lack of a 'prescribed' approach, with some of them describing this condition as 'methodological chaos' (Bradfield *et al.*, 2005). However, because of its flexibility, scenario planning can be applied across many disciplines.

2.3.2 Scenarios in Urban Planning

In a thought-provoking essay, Isserman (2014) criticized planners for having lost sight of the future. He believed that the current planning profession is orientated in pragmatic and short-term problem-solving activities, such as budgeting, programme management, and project administration, while "voluntarily sacrificing its roles as visionary and idealist and abandoning its responsibility to be a source of inspiration and to produce ideas about what might be and what ought to be" (Isserman, 2014, p. 9). Planners, he argued, should have the courage to dream bold images of desirable futures, unbounded by present perceptions, perspectives and views.

Present-day cities, regions, and settlements worldwide face growing uncertainties as a result of globalization, urbanization, decentralization, and technological and cultural change. These uncertainties include demographic changes, economic trends, climate change, housing affordability and local government fiscal capacity. Inability to anticipate intensifying exceptional challenges and consequences of global and local change in the future might lead to disastrous circumstances. As Ratcliffe and Krawczyk (2011, p. 643) state, "it is increasingly recognised that urban planners and policy-makers lack an effective future-oriented approach enabling them to anticipate with acuity impending transformations, efficiently prepare for ensuing ramifications and tackle the inherent and labyrinthine complexity". Thus, it is crucial to engage in decision-making processes that accommodate these challenges, rather than trying to make decisions in spite of them, by using methods such as scenario planning. Scenario planning provides an insight into how each uncertainty is associated with each other, creating a few plausible futures that may arise and be responded to with possible policies and demonstrate its implications.

Scenario analysis in urban planning is nothing new. In fact, it is argued to be the center of land use planning (Chakraborty *et al.*, 2011). In traditional area planning methods, there is a process of visioning, which creates a desirable image as a shared view of the future. However, scenario planning advocates argued that a single preferred visioning practice would ignore other plausible futures as plausible and tends to push planners in a direction that was based on present-day needs. Ratcliffe and Krawczyk (2011) added that traditional planning practices follow a 'predict and provide' model based on existing data from the past and respond only to the present needs, which will lead to reinforcement of the present state. Expanding the use of scenarios from simple single visioning to creating and maintaining multiple plausible narratives about the uncertain future allows planners to discover unknown or poorly understood interrelationships or use scenarios to engage broader public input into planning processes. A future approach in city planning will raise awareness of people/stakeholders regarding possibilities and opportunities that tomorrow might hold and the potential threats and disasters, so they can make a more intelligent decision today (Ratcliffe and Krawczyk, 2011).

Scenario experts advocate the inclusion of multi-stakeholders in the process to help differing interest or social groups understand one another's concerns and ideas about the future (Kahane, 2012), create connections and build capacity for future action (Chakraborty, 2011), to build credibility and legitimacy (Coates, 2016). Thus, scenario planning resonates with the theory of interactive planning that emphasises the communicative process that encourages participation and builds the community's capacity. In this context, planners should serve as technical advisors,

mediators, and facilitators, helping the community reach consensus and navigate the planning process through experiential learning (Chakraborty, 2011).

Urban planning practitioners have adapted scenario methods from the business world and, in general, future studies. Many planning organizations have practiced the method. However, Bartholomew (2007) found that most planning exercises were facilitated by regional organizations that focused on regional-level, growth-related issues, such as spatial patterns and urban form. In the USA, Portland Metro pioneered the explicit use of scenarios for planning at the metropolitan scale in the early 1990s (Chakraborty, 2011). Others, such as Chicago's GO TO 2040 Regional Vision, Delaware's Future Forces, and Denver's Metro Vision 2040, follow suit (*ibid.*). However, scenario planning at the neighbourhood level has not been widely practiced and discussed. Among the few community-based scenario planning exercise are vulnerability analysis and adaptation planning of Thailand coastal communities (Bennett, Kadfak and Dearden, 2016), informed decision making on infrastructure interventions in Kibera (Garfias Royo *et al.*, 2018), and Exploratory Scenario Planning for municipal general land use plan in the Town of Sahuarita, Arizona (Marlow *et al.*, 2015). This research intends to enrich the understanding and know-how of the community-based scenario planning process.

2.3.3 Scenario Planning for Slum Upgrading

Avin (2007) suggests using scenario planning for a future-oriented project concerning issues for at least a ten-year period, stakeholders are heterogeneous or hold different values and views, and significant changes are likely, and its effect is unknown. Wiseman *et al.* (2011) also identify six factors affecting the appropriateness of scenario planning, namely: uncertainties, level of complexity, time frame, known unknowns, confidence in alternative decision-making tools, and level of agreement about the best approach (see Figure 5)

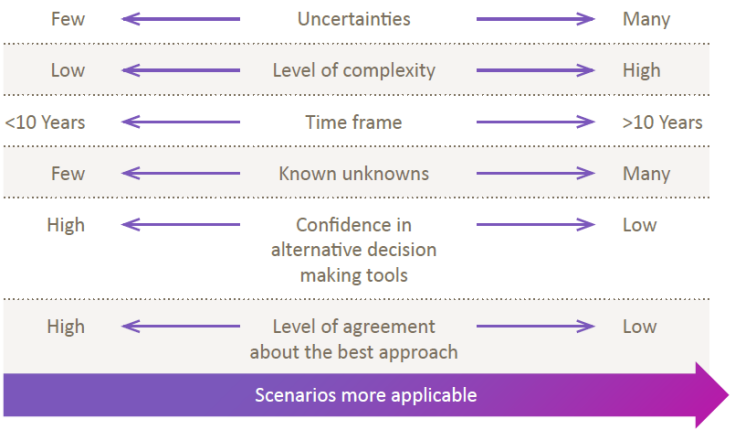


Figure 5 Applicability of scenario analysis for planning purpose (Wiseman et al., 2011, p. 31)

Slum settlement in the era of accelerating changes also faces growing complexity and heightened uncertainty. Several persistent issues such as urbanization, poverty, and inequality have been exacerbated in recent decades due to economic liberalism, globalization, and poor governance. Climate change is among the new emerging challenges confronted by slum dwellers. Low lying coastal areas where many dense slums are located are especially vulnerable to climate change's adverse impacts. Rising insecurity and urban risks also become serious concerns. Crime and violence remain pervasive risks, but risks from terrorism, diseases and pandemics have undermined slum dweller welfare and well-being. The recent Covid-19 crisis has shown that the slum dwellers' were disproportionately affected compared to other urban residents (Tampe, 2020). Not only does the slum environment withhold prevention efforts, such as hand washing, self-isolation and physical distancing, the pandemic also disrupts the informal economy on which slum dwellers depend to earn daily income (Corburn *et al.*, 2020).

Without proper tenure, slum dwellers are always at risk of eviction; hence, their future livelihood and well-being are uncertain. Local politics significantly affect the fate of slum settlements. Each regime might have different agendas and views; thus, slum dwellers always feel anxious, particularly during election years. Policies continuously change, and slum dwellers barely have an influence on these policy changes. In case of intervention made by the authority, the residents are sometimes excluded; thus, they cannot anticipate changes in their daily lives after the intervention. Major interventions such as relocation or slum upgrading will bring significant changes to the livelihood and well-being of slum dwellers.

The previous explanation has mentioned the differing views regarding slum settlements which lead to different policy responses. Even in a slum upgrading project, there would likely be a disagreement in planning and the implementation of the project as each stakeholder holds disparate interests and awareness.

Many government-initiated slum upgrading projects are implemented for a short period of time, five years at most (UN-Habitat, 2003). After the project is finished, slum dwellers might face subsequent problems that could arise, such as gentrification or slum recurrence (Mkoli, 2020; Lees *et al.,* 2015). In most cases, slum upgrading was designed to meet actual needs and produce an immediate result, but sometimes at the expense of long-term interests. Short-sighted vision might lead to piecemeal intervention with limited contribution to long-term settlement development endeavour. Thus, slum upgrading projects must establish a longer-term framework. As uncertainties increase and available resources decrease, communities should look 20 to 30 years into the future to guide policy choices and sustainable public investments across

economic, social, and environmental dimensions. In other words, the community has to think strategically to anticipate the future. Scenario planning could be helpful to improve community responsiveness to events or change in trends and patterns in the future despite lessening government support.

Conducting scenario planning at the community level does not necessarily require big budgets and complex computer modelling. A simple approach can be conducted only by using paper and a pencil. What matters the most is the community having a fruitful discussion and understanding what the plausible future will look like so they can prepare to adapt. Hence, a narrative storyline would be sufficient for community-based scenario planning because of less complexity compared to the scenario at macro (regional) level. Thus, the resources required for conducting scenario exercise at the community level is relatively small.

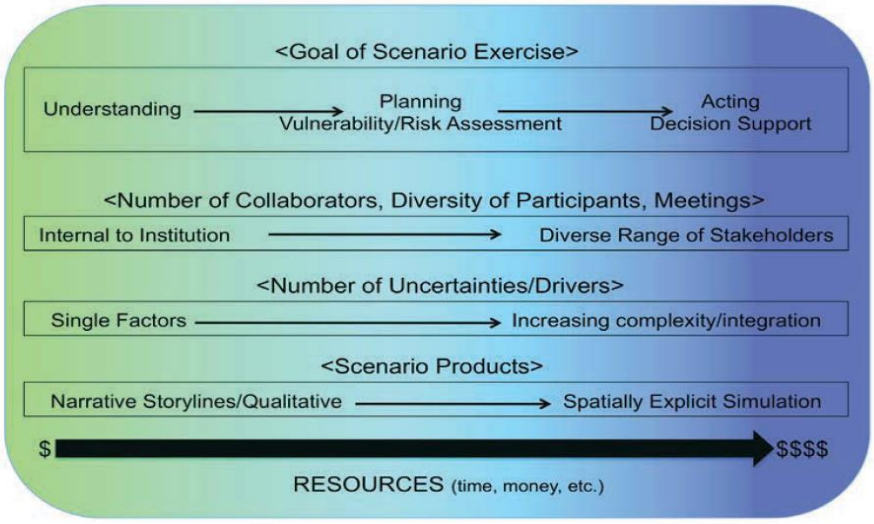


Figure 6 Resource demand of planning exercise (Rowland et al., 2014, p. 21)

2.3.4 Scenario Planning and Learning Organization

In an increasingly complex and dynamic world, a community or an organization must adapt to a changing environment to continuously excel. Along the way, they will face different challenges, threats, and opportunities, which require them to come up with different actions that specifically address future circumstances. They are compelled to learn continuously to solve new problems of the future because simply repeating old practices would only yield short-lived cosmetic improvement. Scholars have argued that continuous learning is the key to continuous improvement (Garvin, 1993). Hence, the term 'learning organization' arise. Peter Senge popularized it in his book *The Fifth Discipline*, in which he describes learning organization as "an organization where people continually expand their capacity to create the results they truly desire, where new and expansive pattern of thinking are nurtured, where collective aspiration is set free,

and where people are continually learning how to learn together"(Senge, 1990, p. 3). Peter Senge (1990) propose five disciplines that are necessary to attain this quality:

a. System Thinking: Senge describes this discipline as a conceptual framework that sees all parts as interrelated and affecting each other. Thinking systematically enables one to look at a problem holistically, identify root causes and design high-leverage solutions. It is the fifth discipline that holds other concepts together as a coherent whole.
b. Personal Mastery: It is a discipline of personal growth and learning. People with high levels of personal mastery are continually expanding their ability to create the results in life they truly seek. It is the discipline of continually clarifying and deepening our personal vision, focusing our energies, developing patience, and seeing reality objectively. According to Senge, mastery is an exceptional level of proficiency which as a result of lifelong learning.
c. Mental Models: Senge describes mental models as ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and take action. Mental models can be shared through meaningful conversation that balance inquiry and advocacy, where people expose their own thinking effectively and make that thinking open to the influence of others.
d. Building shared vision: The goals, values, and missions are deeply shared throughout the organization. Having a shared image of the future allows people to excel and learn not because they are told to but because they want to. The discipline of unearthing shared pictures of the future fosters genuine commitment and enrollment rather than compliance.
e. Team Learning: Through collective learning, team members realize that the team's intelligence exceeds the intelligence of the individuals in the team. Team learning promotes extraordinary capacities for coordinated actions. Team learning is vital because teams, not individuals, are the fundamental learning unit in modern organizations

Experts have suggested that scenario planning creates or accelerates organizational learning (de Geus, 1988; van der Heijden, 2004; Chermack, Lynham and van der Merwe, 2006). Scenario planning effectively integrates fragmented disciplinary knowledge and viewpoints, and by identifying multiple futures, leads to an expanded 'portfolio of possible actions' and new ways of understanding the system (van der Heijden, 2004). Scenario planning also allows organizations to reperceive themselves and their environment, requiring participants to re-examine assumptions and reshape their mental models (Chermack, 2005). Furthermore, through dialogues and group learning during the scenario planning process, mental models can be shared among members, leading to the realignment of mental models that enable unified actions. Scenario planning allows group learning to establish a group memory system for future

application (Glick *et al.*, 2012). For its capability to expand, reshape, and realign mental models, Peter Senge (1994) put scenario planning as a tool for developing the mental model discipline.

Mental models are personal, cognitive representations of external reality that underpin people's preferences, actions, and behaviour (Jones *et al.*, 2011). Chermack (2003) states that mental models regulate "how individuals see the world, how individuals know and think about the world, and how individuals act in the world". Since Senge's Fifth Discipline (1990), the term 'mental models' have become the common word in the management literature to describe individual perceptions, beliefs, values, and experiences shaping individual behaviour (Glick *et al.*, 2012). Mental models exist within the minds and are constructed based on personal life experiences, perceptions, and understandings of the world (Jones *et al.*, 2011). Thus, each individual has their own comprehension in understanding a given system. Similarities and differences of mental models can be analysed to improve communication between stakeholders and improve overall understanding of the system.

Individual's mental models affect their performance within the organization; hence, it impacts flexibility and adaptability of organization in changing environment. However, it is often assumed that changing mental models are difficult (Chermack, 2003). Scenario planning purports to change the way participants think about a certain issue or problem or about the system in which their organization operates by expanding their ability to consider possibilities, thus improving the user mental model. Empirical evidence has shown that scenario planning updates participants' mental models (Chermack, Lynham and van der Merwe, 2006; Glick *et al.*, 2012), which could lead to higher levels of innovation and creativity.

Interestingly, the value of scenario planning toward the creation and enhancement of learning organization is not limited to the improvement of the mental model. Chermack and colleagues (2006) and Haeffnerr and colleagues (2012) discover that scenario planning also promotes other learning organisation dimensions. Based on the identical pre- and post- studies of scenario planning participants, they identify that scenario planning positively contribute to seven dimensions of learning organization, namely:

- Create continuous learning opportunities
- Promote dialogue and inquiry
- Encourage collaboration and team learning
- Create systems to capture and share learning
- Empower people toward a collective vision
- Connect the organization to its environment

- Provide strategic leadership for learning.

These dimensions are almost similar to Peter Senge's five components of the learning organization. This means that scenario planning not only contributes to the mental model discipline, but also instigate the whole learning organization components.

As previously mentioned, many slum upgrading projects were conducted in short period of time. Slum residents are expected to continue pursuing incremental development of the area autonomously after government interventions. The theoretical basis of slum upgrading itself relies on the residents' commitments and resources to maintain site improvement during the post-upgrading phase (Mangin, 1967; Turner, 1972; UN-Habitat, 2012). Community capacity development[6] usually become one of the components of a slum upgrading program. The challenge, however, is to maintain continuity of the learning process so that they can sustain the benefit of the improvement in the long run. Traditionally, community capacity building comes in the form of training. However, Natarajan (2017) argues that participating in community engagement such as scenario planning is a 'socio-spatial learning' attempt framed as a collaborative learning arena within the spatial planning domain. Through participatory processes like scenario planning, slum residents can learn and relearn together about the system in which they existed and its driver of changes, so they can expand their knowledge in deciding the future of their own settlement.

In the future, the slum residents could face unprecedented challenges that may not be able to tackle using current community capacity. Climate change, for example, poses an amplifying challenge for the well-being and livelihoods of slum dwellers. IPCC reported that the most extreme weather disaster risks are concentrated in informal settlements as they are constantly exposed to climate events with limited or no hazard-reducing infrastructure, low-quality housing, and limited capacity to cope (Revi *et al.*, 2014). In responding to climate change risk, most slum dwellers can only adapt through simple measures, such as extending (informal) social networks, constructing barriers to prevent floodwater entering homes, increasing the height of furniture, and building floors or storing food above the flood lines (Adger, 2003; Douglas *et al.*, 2008; Jabeen, Johnson and Allen, 2010). Many of these measures are more of a reactive response to past or occurring events than anticipatory ones (Adger, Arnell and Tompkins, 2005). While these measures are important as temporary adaptation strategies, they will not be sufficient to

[6] Capacity development refer to the process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time (UNDP, 2009). This process is driven from the inside and starts from existing capacity assets; thus, it is different from capacity building which assume no existing capacities to start from.

deal with future climate change risks that are expected to increase exponentially (Revi *et al.*, 2014).

In the face of an uncertain future, slum dwellers as a community must enhance their ability to evolve to cope with the consequences or take advantage of changes; that is their adaptive capacity[7] (Smit and Wandel, 2006). One of the key components for developing and mobilizing the capacity to adapt is social learning[8], which is often referred to as the process by which actors develop shared meanings, values, and understanding through interaction that provides the basis for future joint action (Phuong, Biesbroek and Wals, 2017). As in promoting learning organization, scenario planning also provides a platform for social learning (Johnson *et al.*, 2012); therefore, it constitutes a potentially meaningful tool to increase the community's adaptive capacity. Cinner and others (2018) suggest that adaptive capacity should be built across five domains: (1) the assets that people can draw upon in times of need; (2) the flexibility to change strategies; (3) the ability to organize and act collectively; (4) learning to recognize and respond to change; and (5) the agency to determine whether to change or not. Scenario planning contributes to the improvement of these domains directly and indirectly. By acknowledging plausible futures and understanding how systems work and correlate, the community can devise different anticipatory strategies to be implemented in different scenarios. With these strategies in mind, the community will have the flexibility to select suitable strategies to respond to changes immediately. In addition, through the scenario planning process, a community can identify asset deficiency in addressing future challenges. Furthermore, by involving a wide range of stakeholders, scenario planning promotes knowledge exchange and realignment of mental models that enable unified and coordinated actions according to agencies' responsibilities and capabilities.

Through knowledge exchange and consensus-building among actors, social learning can prompt institutional changes (Pahl-Wostl *et al.*, 2007) in the form of social innovation. Moulaert and colleagues (2013) refer to social innovation as finding acceptable solutions for a whole range of problems of exclusion, deprivation, alienation, lack of well-being, and those actions that contribute positively to significant human progress and development. Social innovation comes

[7] In climate change literatures, the term adaptive capacity mostly referred to in relations with sensitivity, exposure, and vulnerability towards the impact of climate change (see e.g., Adger, 2005; IPCC, 2001). In this paper, it is used as a generic concept to describe the capacity of individuals, societies, and organizations in dealing with changes, whether it is climate-related or not.

[8] Originally, the term social learning was coined by Bandura (1997) who defined it as the learning of individuals in a social environment by observation and imitation of others. However, recent theoretical development suggests that the interaction between actors was not only limited to observation and imitation, but also through other means such as discussions and collective actions. Hence, this paper refers to broader and more recent definition.

in the form of new products, services, organizational structures, or activities that are better or more effective in meeting the social needs of or delivering social benefits to communities (Moulaert, MacCallum and Hillier, 2013). Social innovation could also occur during, or as a result of, slum upgrading. In a case of slum upgrading in Kenya, for example, Midheme (2013, p. 207) concludes that "a shift from bureaucratically controlled project design and implementation to substantive stakeholder participation through collaborative process can improve community's problem-solving capacity". Meanwhile, in Surabaya, Indonesia, comprehensive slum upgrading has led to the initiation of a community-based micro-financing scheme to support residents' efforts to renovate houses and establish home-based enterprises (Das, 2015). In Thailand, a national slum upgrading program, the Baan Makong Program, employs a land sharing approach through which squatters seek collective tenure security by negotiating to share the site they had occupied with the landowner (Angel and Boonyabancha, 1988). Scenario planning provides an overview of future challenges. Through strategic conversation, these challenges can be anticipated by initiating long-term social innovations.

The ultimate aspiration of scenario planning is the transformation of the social system. Kahane (2012) states that scenario planning transforms actors' understandings, relationships, intentions, and actions. However, in order to achieve these transformations, he argued that three integral components must be in place in scenario planning practice: 1) a whole-system team of insightful, influential, and interested actors; 2) a strong container that allow the team to feel protected and safe in doing their challenging work; and 3) a rigorous process of which the actors construct a set of plausible and relevant stories about what could happened (not about what will happen or what should happen) (Kahane, 2012). However, scenario planning in urban planning tends to exclude two key components: 1) the use of multiple scenarios, and 2) the inclusion of diverse organizations, people, and interests through deep deliberation (Zapata and Kaza, 2015). Hence, although scenario planning for urban planning may produce a better and more rigorous strategic plan, the transformative impact of the method has never been suggested in the urban planning literature. Thus, this research seeks to explore the potential of community-based scenario planning to induce the transformation of the social system in a slum settlement. To this end, Bourdieu theory of practice is employed as the analytical framework.

2.4 Bourdieu's Theory of Practices

2.4.1 Habitus, Field, and Capital

To improve the physical, social, and economic condition of a slum settlement, a transformation of the residents' individual and collective practices is crucially important. However, what drives

individual and social action in the first place? This topic was the central question of Pierre Bourdieu sociological inquiry.

Pierre Bourdieu's sociological attempt was prompted by his concerns over the split of two fundamentally different theoretical dichotomies in sociology, the objectivist and the subjectivist, of which he describes it as "the most ruinous" opposition (Bourdieu, 1990, p. 25). The objectivist regards the social structure exerting force upon the individual who is seen as merely the structure's carrier. At the same time, subjectivists consider individual's action is produced and determined by the actor himself according to their objectives, aspiration, and choice (Asimaki and Koustourakis, 2014). Bourdieu sees that both social structure and individual agency, or 'outer' social and 'inner' self, shape each other. He recognises that the behaviour of agents (individuals, groups, or institutions) was "structured and structuring structures" (Bourdieu, 1984). Maton (2008) interpret that it is structured by one's past and present circumstances; thus, an individual's behaviour is systematically ordered rather than random and unpatterned. On the other hand, it is also structuring meaning that it helps to shape one's present and future 'structure', which comprise a system of dispositions that produce perceptions, appreciations, and practices (Maton, 2008). He calls this embodied system of structured structuring disposition as 'habitus' (Bourdieu, 1990).

Habitus is central to Bourdieu' theoretical framework, yet it is an enigmatic concept (Power, 1999; Maton, 2008). In his own words, he describes it as "a system of durable, transposable dispositions, structured structures predispose to function as structuring structures, that is, as principles which generate organized practices and representations…" (Bourdieu, 1990, p. 53). The habitus is structured to reflect the external social structures in which it was formed, yet it also redefines those structures (potentially with modifications) (Power, 1999). Edgerton and Roberts (Edgerton and Roberts, 2014, p. 198) assert that habitus is "rooted in family upbringing and condition by one's position in the social structure, through which one perceives the social world and one's prospects within it". Furthermore, Bourdieu states that the habitus is "the durably installed generative principle of regulated improvisation" (Bourdieu, 1977, p. 78). This means that habitus shape practice as it is the unconscious taking in of rules, values, and disposition used by individuals to respond to a cultural context in a variety of ways (because it allows improvisation) (Webb, Schirato and Danaher, 2002). The habitus regulates the flexibility of the practices. Hence, Bourdieu often refers habitus as "feel for the game" or a practical sense of what is to be done in a given situation (Bourdieu, 1998, p. 25). In this sense, habitus, as an embodied internal compass, represents master patterns of behavioural style that guide how individuals act, feel, think, and talk (Asimaki and Koustourakis, 2014).

Bourdieu (1990) states that the habitus is a product of social conditioning or history. He suggests that "[habitus] ensure the active presence of past experiences, which, deposited in each organism in the form of schemes of perception, thought, and action..." (Bourdieu, 1990, p. 54). Maton (2008, p. 52) interprets this as "[habitus] captures how we carry within us our history, how we bring this history into our present circumstances, and how we then make choices to act in certain ways and not others". Nevertheless, it is an ongoing and active process, as habitus is regarded as an open system since actor's dispositions are constantly subjected to experience (Bourdieu and Wacquant, 1992). He asserts that habitus "is durable but not eternal" (Bourdieu and Wacquant, 1992, p. 133) as individuals' dispositions are endlessly transformed in a direction that reinforce or modify its structures (Bourdieu, 1990). In fact, Edgerton and Robert (2014) claim that habitus is adaptive and incrementally modifiable. Bourdieu admitted that most experience would reinforce actors' habitus since people are more likely to interpret situations according to their pre-existing condition. In addition, it is assumed that an individual's primary habitus instilled in childhood tend to be more durable than the habitus that is learned later through profession or trade (Power, 1999).

Habitus is not the only concept that makes up Bourdieu's theory of practice. To understand practice, social agents should be acknowledged in the context of the socially structured space in which they are situated, known as the fields. If habitus is the feel for the game, the field is the game itself. The social world consists of a variety of arenas or 'fields' of practice like law, art, education etc., each with its own unique set of rules, knowledge, and forms of capital. In these fields, social agents seek to dominate the game within the boundary of their position. Thus, fields constitute a space of conflict and competition as actors struggle to achieve their objectives (Hillier and Rooksby, 2005). In these fields, actors seek to establish domination by using the different forms and types of capital they possess (Asimaki and Koustourakis, 2014).

The capitals determine the social actors' position within the field and the products of the field (Thomson, 2012). According to Bourdieu, the concept of capital goes beyond the economic sphere and monetary exchange. Rather, it encompasses a broader system of exchange in which assets are being transformed and exchanged within and across different fields (Moore, 2012). They are the resource (in materialized or incorporated embodied form) that can be applied to given activities brought by actors into the fields. In his paper, *The Forms of Capital*, Bourdieu (1986) identify three types of capital:

- Economic capital, which related to material wealth such as income or property rights

- Social capital[9], is defined as actual or potential resources obtained through the possession of durable social connections, mutual acquaintance and recognition as a member of a group.
- Cultural capital, refers to the knowledge and skills acquired through education, both formally and informally. It can be incorporated as 'embodied' skills and knowledge, 'objectified' cultural goods (e.g., books, art, or tools), or 'institutionalised' credentials as degrees or certificates.

Bourdieu noted that it is possible to convert one form of capital into another. However, he recognized that the economic capital is the root of all the other types of capital (Bourdieu, 1986) as it is the most easily accumulated and converted into the other forms of capital.

Bourdieu also proposes another type of capital, which is symbolic capital. Symbolic capital includes the other forms of capital when they are perceived and recognized as legitimate (Bourdieu, 1989). Bourdieu (2000, p. 242) writes: "[symbolic capital] is not a particular kind of capital but what every kind of capital becomes when it is misrecognized as capital, that is, as a force, a power or capacity for (actual or potential) exploitation and therefore recognized as legitimate. It shapes how capital forms create symbolic relations of power that reinforce the structure of the social space (Bourdieu, 1989). These relations with power demands recognition, deference, obedience and the service of others (Schwartz, 1997 in Hillier and Rooksby, 2005). The key feature of symbolic power is its legitimization of both power and the actor's who employ it that involve the consent or active complicity of dominant and dominated actors. Thus, symbolic power may prompt symbolic violence, defined as 'the violence which is exercised upon a social agent with his or her complicity' (Bourdieu and Wacquant, 1992, p. 167). Webb and colleagues (2002, p. 25) explain this concept as "agents are subjected to forms of violence (treated as inferior, denied resources, limited in their social mobility and aspirations), but they do not perceive it that way; rather, their situation seems to them to be the natural order of things". Furthermore, symbolic violence can also be interpreted as "the imposition of one's group's norms on another" (Mace, 2017, p. 123).

[9] For Bourdieu, social capital is determined by class membership or titles of nobility (Dovey, 2005). Bourdieu's concept of social capital emphasizes conflicts and the power function against other agents in the field (Siisiainen, 2003). Furthermore, he views that the social capital is related with the reproduction of class, status, and power relations, thus it is based on the notion of *power over* rather than the *power to* (Smith and Kulynch, 2002). This concept has slightly different meaning compare to Putnam's concept of social capital (Putnam, Leonardi and Nanetti, 1993). Social capital, according to Putnam's concept, is measured by the integration of the values of society, and solidarity and togetherness; and creation of consensus and sustaining the stable development of a society (Siisiainen, 2003).

Habitus, field, and capital constituted Bourdieu's three main thinking tools that produce practices (Bourdieu and Wacquant, 1992). Bourdieu (1986 in Maton, 2008) associates habitus with the concept of capital and field using following equation:

[(habitus)(capital)] + field = practices

Maton (2008, p. 51) explains this relationship of concepts as: "practices result from relations between one's dispositions (habitus) and one's position in a field (capital), within the current state of play of that social arena (field)". Field is interpreted as "a series of institutions, rules, rituals, conventions, categories, designations, appointments and titles which constitute an objective hierarchy, and which produce and authorise certain discourses and activities" (Maton, 2008). Meanwhile, capital is the resource that actors bring to the fields.

Practice results from "an obscure and double relationship" between the a habitus and a field (Bourdieu and Wacquant, 1992, p. 126). Naturally this relationship is continuously changing as both components mutually generating and generated. Consequently, symbolic capital also fluctuates in response to changing field positions and structures (Hardy, 2012). In stabile times, these changes took place gradually and were anticipated. However, habitus may not respond in times to drastic field changes during turbulent times. In this sense, social agents uphold their acquired habitus, limiting adaptation to new conditions (Bourdieu, 1984). Bourdieu uses the term 'hysteresis' to describe the mismatch and the time lag between the change of each elements. He writes: "The hysteresis of habitus, which is inherent in the social conditions of the reproduction of the structures in habitus, is doubtless one of the foundations of the structural lag between opportunities and the dispositions to grasp them which is the cause of missed opportunities and, in particular, of the frequently observed incapacity to think historical crises in categories of perception and thought other than those of the past" (Bourdieu, 1977, p. 83). This passage suggests that hysteresis, a disrupted habitus or fields, might cause the social agents to miss the opportunities resulting from field change. Even further, it may lead to abrupt and catastrophic results such as loss of positions, power and wealth (Hardy, 2012). Nevertheless, understanding this concept allows us to analyse the consequences of field transformation towards individuals' habitus and social practices.

2.4.2 Bourdieu's Framework in the Urban Planning Fields

Attempts have been made to incorporate Bourdieusian theories and concepts in planning research. This tradition is grounded on the conflictive nature of urban affairs, which involves struggles and dynamics among social agents with different interests, values and norms (Shin, 2013). Urban planning can be interpreted as a field as it consists of "a system of social positions

defined by the struggle between different actors in development process"(Howe and Langdon, 2002, p. 221). Bourdieu's theory helps uncover the deeper logic behind stakeholders' choices in urban politics, influenced by their habitus and capitals (Shin, 2013). Inspired by Bourdieu's reflexive sociology, Howe and Langdon (2002) developed reflexive planning theory to understand build environment processes. They suggest exploring stakeholders' habitus and the varying amounts of capital possessed by them to pursue their interests in developing the built environment (Howe and Langdon, 2002). This analysis includes professional planners whose actions were guided by professional codes of conduct and knowledge gained from their educational undertaking. At last, they conclude that the built environment results from continuous negotiation and exchange of capital among stakeholders in the planning field (Howe and Langdon, 2002). Hence, comprehension of agents' habitus, which influences their tendencies, motivations, preferences, worldviews, and aspirations, will enable better improvisation and navigation around the complexities in planning process.

Bourdieu's theory is also used to interpret people engagement with place and space. A complete edited book has been written to discuss the relationship between habitus and place (Hillier and Rooksby, 2005). One of the book's key objectives is to explore the links between habitus and the process of place-making practices in the field of built environment planning and development. They demonstrated that in this context, habitus is one's embodied and cognitive sense of place. Furthermore, essays from the book suggest that the physical and geographical dimension also shapes habitus as particular practices are enabled by or dependent on a particular physical setting. Thus, they conclude that "…habitus is dependent on this environment, and may be distorted, transformed, or destroyed if the surroundings change or disappear" (Hillier and Rooksby, 2005, p. 399).

In comprehending the physical space, Bourdieu suggests that "there is no space that does not express social hierarchies" (Bourdieu, 2018, p. 106). Thus, he believes that the physical space is the manifestation of the structure of social space as the place occupied by an agent is an indicator of his or her position in the social order (Bourdieu, 2018). The physical site offers aggregate opportunities for its occupants to appropriate different material or cultural goods and service. However, to seize these opportunities, an agent has to have the tacit means to inhabit the place properly, starting with the proper dispositions (Bourdieu, 2018). To that end, he concludes that "it is the habitus that makes the habitat"(Bourdieu, 2018, p. 106).

Every social agent in the planning field has its own habitus. Slum-dwellers, like other stakeholders, display their habitus by viewing their own social and physical spaces and

accordingly position themselves in that social world. Bayat (2007) attempted to capture their habitus, which was generated by living such an informal life characterised by "flexibility, pragmatism, negotiation, as well as constant struggle for survival and self-development" (p. 579). He (2007) claims this as the 'habitus of the dispossessed' (Bayat, 2007, p. 579) or in Roy's (2011, p. 228) term 'slum habitus'. In terms of place-making, it can also be suggested that with this habitus, they strive to enhance their well-being and houses and collectively create vibrant and multi-functional settlements incrementally even with limited government support.

As social agents have each own distinctive history and upbringing, discrepancy of habitus among stakeholders is inevitable in the urban planning field. However, as planning is regarded as a public affair, the government, consisting of planners (planning experts), usually plays the dominant role. However, from Bourdieu's perspective, the government with its bureaucratic, technocratic, and command-and-control habitus and endowed with great economic, social, and cultural capital have the capacity, if not the tendency, to commit symbolic violence. For example, in dealing with slum settlements, they may make a disruptive intervention that denies and rejects citizens' right to shape and reshape their surrounding environment, such as eviction, resettlement, and authoritative slum upgrading project. The general public may comprehend this as a necessary action deliberated by professional experts considered the most knowledgeable. However, Chambers (1983) has pointed out that professionals have significant biases; hence, the interventions may not necessarily correspond to citizens' needs and demands. Chambers and other practitioners' proposition had shifted multinational development agencies' perspective towards local and community-driven development which is characterised by: empowerment of the poor and other marginalized groups, responsiveness to beneficiary demand, the autonomy of local institutions, greater downward accountability, and enhancement of local capacities (Binswanger-Mkhize *et al.*, 2010).

2.5 Conclusion

The chapter firstly discussed slum settlements as a persistent urban problem in the Global South. The discussion over the issue of slums has been focused upon two different perspectives in perceiving slum, and these are 'slum of despair' and 'slum of hope'. Through decades of practice, slum upgrading has become the mainstream approach in dealing with slum settlements. The central assumption behind the concept of slum upgrading is that the slum dwellers, with their resources and organizational capability, will pursue further incremental development or maintain progress following their own needs after an in-situ physical, social, or economic intervention. Hence, it can be assumed that slum upgrading will excel or transform slum

residents' place-making practices. Proponents of slum upgrading also claim that the intervention would provide multidimensional benefits, such as reducing poverty, crime, insecurity, and strengthening social cohesion and community resiliency. However, empirical evidences show varying conclusions to these assumptions and claims. Thus, a question has arisen: what are the principles that are necessary to be applied for a transformative slum upgrading intervention?

Based on a considerable literature review of this research, two essential considerations need to be examined to elaborate slum upgrading practices so that it can lead to physical and socio-economic transformation in slum settlements. First, slum residents' sense of place should be recognized as the basis in generating locally sensitive urban development strategies. Sense of place is regarded as a positive factor that contributes to stability, security, sense of community, and psychological well-being of the residents. Sense of place as habitus also guide residents' place-making practices. In this vein, cultivating residents' positive sense of place may lead to higher commitment and participation in settlement improvement and foster pro-environmental behaviour. People would be motivated to stay in, protect, and improve the places that are meaningful to them. Thus, sense of place needs to be honoured and strengthened through the participatory process in the planning and design phase of slum upgrading. On the contrary, development projects that exclude the citizen from the decision-making process and disrupt the community's sense of place threaten the neighbourhood's social and physical fabric, and thus it may face resistance from the residents.

Second, slum upgrading should incorporate a future-oriented approach that anticipates increasing complexities and growing uncertainties in the increasingly volatile environment. Current slum upgrading practice is at risk of short-termism; thus, extending the planning time frame might prepare residents to navigate the various challenges that may unfold in the future. To that end, scenario planning can be integrated into slum upgrading process. This method has been proven to bring about transformative change in other contexts. For example, in its implementation for post-apartheid reconciliation in South Africa, scenario planning has transformed actors' understandings, relationships, intentions, and actions. This transformation, hypothetically, could also be applied in the context of slum upgrading, where it can induce social learning within the community and enhance the community's adaptive capacity.

Fishing settlements provide an excellent setting to explore these conjectures. In developing countries, most fishing settlements can be categorised as slum settlements. These settlements were inhabited mainly by the small-scale fishermen whose social and economic progress are hindered because of various bio-ecological, economic, and socio-political constraints.

Nevertheless, the settlements play a significant role in the social-ecological system of fisheries through an intricate network with fishing harbours and fishing grounds. They not only provide space for land-based fisheries activities but also serve as a mode of production for commodities, culture, and social networks. The settlements represent fishermen's unique maritime culture; hence, they provide a distinct sense of place esteemed by the community and the general public. Meanwhile, fishing settlements also face growing complexities and heightened uncertainties in the future as a result of, among others, climate change, ecosystem disturbance, and volatile economic trends. A scenario planning that convenes a multi-stakeholder group allows political discourse to determine integrative strategies in anticipating future complexities. For this reason, scenario planning for slum upgrading is appropriate to be implemented in the context of fishing settlement revitalization.

Scenario planning is expected to support slum upgrading projects so that it can instigate social change. To examine the promise of transformative outcome, the study seeks perspectives using Bourdieu's theory of practice to analyse a scenario planning exercise. However, how does Bourdieu's theory of habitus, arguably a theory of social reproduction rather than a theory of social change, contribute to the theoretical development of scenario planning, which considers change as inherent? In this case, scenario planning is understood to provide an overview of the plausible field structures in the future. This structure eventually will regenerate habitus. However, habitus transformation would take a considerable time, resulting in a hysteresis (missed opportunities from change). Presumably, by reflecting on the condition of the future fields, community members can identify a pathway to develop necessary habitus and capitals earlier to readjust in time of changes and enhance social practices to strive in the future world. Shaping one's habitus may provide a practical mastery or feel for the game. Thus, it is argued that Bourdieu's theory can further elaborate scenario planning theory and practices by highlighting the relational mode between habitus, capital and the structures (fields).

The literature review in this thesis explains key concepts used in this research. These concepts encompass a wide range of disciplines, from the field of urban planning, environmental psychology, public policy, sociology, coastal management, fisheries management, future study, and business management. The multidisciplinary approach authorizes the comparison of concepts across disciplines. Linking concepts from multidisciplinary perspectives allows us to conceive and develop new insights that can be useful for theory building and real-world problem solving as it provides a holistic understanding of a research subject.

One of the correlating notions across disciplines in this study is the subjective thoughts, feelings, values, and beliefs constructed based on experiences, histories, upbringing, and understandings. Phycologists call this an intra-psychic phenomenon that shapes people's attitudes and behaviour (Manzo and Perkins, 2006). This notion can be found in the concept of sense of place, habitus, and mental model. A comparison between these concepts is presented in the table below. However, these cognitive and embodied aspects of development, in relation to human perception, thinking, and learning, are rarely considered in formulating policies, especially regarding slum settlements or fishing villages. Understanding these concepts allow us to analyse the different representation of the world that individuals or groups assume, which explain their perceptions, preferences, and actions towards specific issues.

Table 5 Comparison between the concept of sense of place, mental models, and habitus

	Sense of Place	Mental Models	Habitus
Originating discipline	Human geography and environmental psychology	Psychology and organizational studies	Sociology
Source	"[Sense of place] resides in human interpretations of the setting, which are constructed through **experience** with it." (Stedman, 2003, p. 672)	"[Mental Models] are constructed by individual based on their unique life **experiences**, perceptions and understanding of the worlds"(Jones *et al.*, 2011, p. 1)	• "[Habitus is] an open system of dispositions that is constantly subjected to **experiences**" (Bourdieu and Wacquant, 1992, p. 133) • "[Habitus] is 'structured' by one's past and present circumstances (Maton, 2008, p. 56)
Function	"[sense of place] influence the values, attitudes, and, more importantly, the behaviour of the individual and society" (Shamai, 1991, p. 355)	"Mental models are used to reason and make decisions and can be the basis of individual behaviour" (Jones *et al.*, 2011, p. 1)	• Generative principle of regulated principle which produces practices (Bourdieu, 1977) • "Habitus focuses on our ways of acting, feeling, thinking, and being" (Maton, 2008, p. 51)
Inner-Outer Relationship	Sense of place is socially constructed, and the physical environment gives form to these constructions (Stedman, 2003)	"Mental models are personal, internal representations of external reality" (Jones *et al.*, 2011, p. 1)	• "[Habitus is] structured structures predisposed to function as structuring structures" (Bourdieu, 1977, p. 72)
Immutability	"Sense of place change through time because of historical contingencies and the interaction of social, political, cultural, environmental, and other processes" (Chapin and Knapp, 2015, p. 40)	"Mental models have to be highly dynamical models to adapt to continually changing circumstances" (Jones *et al.*, 2011, p. 1)	• "durable but not eternal" (Bourdieu and Wacquant, 1992, p. 133) • "Habitus change constantly in response to new experiences" (Bourdieu, 2000, p. 161)

Using Mezirow's terminology (1997), it can be assumed that these interdisciplinary concepts can be perceived as 'habits of mind'. He defines a habit of mind as "a set of assumptions – broad, generalized, orienting predispositions that act as a filter for interpreting the meaning of experience" (Mezirow, 2000, p. 17). A habit of mind, together with 'point of view', makes up an individual's 'frames of reference', which is the structure of cultural and psychological assumptions through which ones shape perceptions, cognition, and feelings (Mezirow, 1997, 2000). He argues that solving ill-structured problems and adapting to changes require perspective transformation, which can be achieved through transformative learning. Transformative learning refers to the process by which our frame of reference transformed into more dependable to produce interpretations and opinions that are more justified and true (Mezirow, 2000). Mezirow acknowledge that frame of reference transformation can be achieve through critical reflection and participation in discourse (Kitchenham, 2008). Critical reflection means assessing one's actions, not only their nature and consequences but also the related circumstances of their origin (Kitchenham, 2008). Besides, discourse is defined as "a dialogue devoted to assessing reasons presented in support of competing interpretations, by critically examining evidence, arguments, and alternative points of view" (Mezirow, 1997, p. 6). Scenario planning hypothetically can serve as the social process that promotes both critical reflection and discourse. In such a case, scenario planning would be a valuable tool to instigate transformative learning. This assumption will be clarified in this research.

These 'inner' structures shape people responses toward 'outer' structures. However, contemporary slum upgrading practice and theory rarely touch this subject. Current planning practice tend to emphasize the development of the outer structure, that is the physical environment and social institutions, without considering beforehand or analysing its impact on the inner structure. Only recently, there have been growing calls for acknowledging the sense of place aspect to highlight the importance of understanding slum residents' sense of place and their organic place-making practice (Lombard, 2014; Hutama, 2016; Shafqat, Marinova and Khan, 2021). Furthermore, Fuentes and Pirzkall (2020) appeal for the slum upgrading policy to not only focus on physical upgrading but also aim to fulfil cultural, psychological, and emotional needs, which can be achieved through a deliberative place-making attempt that cultivate upon community sense of place. In this sense, slum upgrading approach not only attempt to transform physical, economic, and social structure but also may reconstruct the 'inner' structure that lies within the individuals' mind.

Chapter 3: Research Methodology

This section specifies actions taken to investigate the research problem and the explanation for the procedure used to collect and analyse information in understanding the problem.

3.1 Research Type

The study can be categorised as exploratory research as it seeks to understand better the issue of fishing settlement and the application of scenario planning for the purpose of slum upgrading. As previously mentioned in the first chapter, the issue of housing for fishermen and the application of scenario planning for slum upgrading is an under-researched topic. In the absence of adequate knowledge, the research approaches the topic from multidisciplinary perspectives to generate new ideas and assumptions. This approach allows an opportunity to construct a more comprehensive understanding of a very complex issue such as fishing settlements.

To a certain degree, this research falls in the spectrum of participatory research[10]. This research is participatory because it involves a joint process of knowledge creation with the service user (Bergold and Thomas, 2012). To answer a research question that features complex social issues, it is important to acquire inputs from people who were being studied because they have the ultimate knowledge of the issues and will be affected the most by the research outcomes. In this research, the local community and other stakeholders contributed by providing responses to questions and helping generate insight through discussions based on findings. Under this paradigm, the role of a researcher changes into 'an ally', 'an advisor', or 'an information provider' to address the community's social concern. The result of the study may benefit the local community by supporting and enhancing the strategic action that leads to community transformation and social changes. By incorporating a participatory approach, two outcomes were expected. First, increase the validation of research results; second, increase the likelihood of lasting positive change to the community under investigation.

3.2 Research Design

This study combined case-study design with the scenario planning process as the main framework to answer the research question.

[10] Babbie (2010) use the term participatory action research. However, I am more incline to Bergold and Thomas (2012) who differentiate participatory research and action research as both can be conducted separately, or applied with different emphasis on one research project.

3.2.1 Case-Study

This research employed a case study approach to explore an issue (slum upgrading) within a bounded system (Bajo Mola village) (Creswell, 2007). The case study is a method of intensively studying a phenomenon over time within its natural setting in one or a few sites (Bhattacherjee, 2012). A case study has been a common research strategy in the social science field, particularly community planning, which is often place-based and focused on contemporary phenomena with some real-life context (Yin, 2009). A single case research design was chosen because the case represents a unique case (Yin, 2009) where Bajo Mola villages are experiencing drastic physical changes as a result of slum upgrading intervention. The use of case study design would also provide information regarding contextual conditions and the description of the causal mechanism in the research area. The case study strategy allows a combination of data collection and data analysis methods to holistically investigate a social phenomenon. Data collection in a case research study is typically extensive, drawing on multiple sources of information such as observations, interviews, documents, and audio-visual material (Creswell, 2007).

In this study, there are two purposes of employing case-study approach. First, it is intended to clarify housing and settlement issues in Bajo Mola villages, examine the meaning of fishing settlement to the Bajo Mola community, and evaluate changes in the people-place relationship due to infrastructure-led slum upgrading project. In short, the case-study design seeks to elucidate the relationship between the Bajo Mola people and the settlement they lived in before and after slum upgrading project intervention. By doing so, inference about the impact of slum upgrading towards the Bajo Mola residents' place-making practices can be identified. To this end, residents' lived experiences using the place will be captured through field observation, interviews, and surveys. Second, the case study design is also used to understand the critical issues of the present state and recognize actors and factors responsible for the current situation in Bajo Mola villages. This information will be used to formulate scenarios during the scenario planning exercises. To achieve this objective, extensive desk study analysis and expert and stakeholder interviews will be conducted.

3.2.2 Scenario Planning

The definition and rationale of scenario planning have been discussed considerably in the previous chapter. In this subchapter, the process of conducting scenario planning for the context of this study will be explained. There is no consensus on how scenario planning should be carried out since the design depends on the research objectives. To answer the research question, the scenario planning process that was conducted in this research have these specific characteristics:

- *Exploratory*: the study aims to generate scenarios that broadly identify what can happen (Börjeson *et al.*, 2006). Contrary to normative design that is target-driven, exploratory scenario planning describes plausible futures, not just probable or desirable futures (Khan *et al.*, 2015). In this scenario planning design, the process is as important as the products because the main purpose is to raise awareness or stimulate creative thinking (van Notten *et al.*, 2003).
- *Participatory*: to a certain extent, scenario planning in this study involved the participation of relevant actors in accommodating various viewpoints. In this case, the representatives of Bajo youths were recruited to become members of the scenario team. This team performed scenario analysis as the study sought feedback from the community, allowing opportunities for knowledge sharing (Chakraborty and McMillan, 2015).
- *Qualitative*: Qualitative or narrative scenarios are appropriate to be used in this study since several relevant pieces of information are unavailable or cannot be entirely quantified (van Notten *et al.*, 2003). Unlike the quantitative approach that relies on modelling methods, qualitative tools primarily use data gathered through interviews, essays, or opinion surveys, to construct narrative or storylines (Chakraborty and McMillan, 2015; Khan *et al.*, 2015).
- *Micro:* The subject of scenarios in this study is area-based, meaning it explores what can happen in exploring a particular geographical area (van Notten *et al.*, 2003). The scale of issues of this area-based scenario study is micro-level because it involves only the internal members of the community.
- *Mid-term:* In a scenario study, the time scale for a long-term study is 25 years or more, while for a short-term study is 3-10 years (van Notten *et al.*, 2003). This study applies a mid-term view with a time frame of 15-20 years.
- *Hermeneutic:* Instead of generating technical knowledge based on quantitative modelling techniques, the hermeneutic scenario studies aim to increase a shared understanding of social reality to make joint activities possible (Khan *et al.*, 2015).
- *Strategy-Driven:* The scenario building process is conducted to ignite a policy choice discussion in an effort to fine-tune the current strategy. Therefore, this study is categorized as a strategy-driven scenario that aims to underpin the planning processes and help achieve policy goals (Khan *et al.*, 2015).

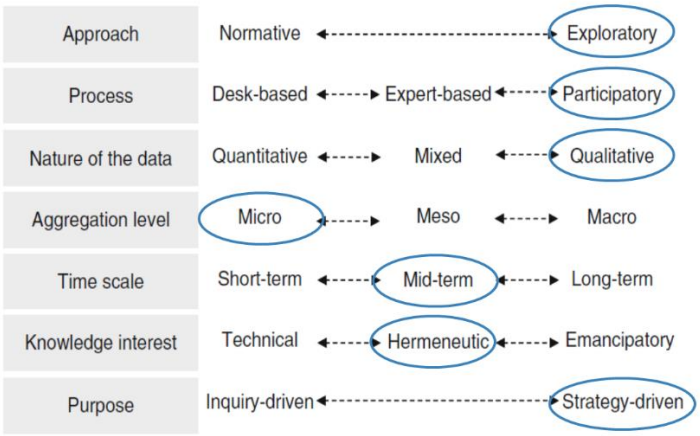


Figure 7 Characteristic of conducted scenario study (adapted from Khan *et al.*, 2015)

Based on the classification above, the design of the scenario analysis process of this study can be established. The scenario planning design used in this study is primarily based on Krawczyk and Ratcliffe's methodology (2005). The scenario planning process consists of five main phases, which are briefly explained as follow:

1. Formulation of the problem/strategic question

   This step is common to all scenario methods (Huss and Honton, 1987). It is necessary to prepare a statement or a strategic question at the start of the process to determine the expected outcomes of the process (Krawczyk and Ratcliffe, 2005). This step defines the topic, scope of analysis (i.e., geographical scope, time frame), and objectives of the scenario planning process. In this study, the author decided on the strategic question based on the previously mentioned research question.
2. Understanding of the past and present

   This phase aims to describe the current situation and factors that led to the development of the present situation (Krawczyk and Ratcliffe, 2005). It involves recognising stakeholders with vested interest in the research area and their relationship with crucial factors (policies, events, etc.) that influence changes in community livelihood assets and strategies. Information gathered from desk-study and semi-structured interviews were used to complete this phase.
3. Exploration of the future

   This phase's main objective is the creation of scenarios. These scenarios were formulated by identifying main driving forces of change, trends, issues and factors, and analysing how they can influence the future (Krawczyk and Ratcliffe, 2005). The driving forces of change are typically social, economic, technological, and political. These forces shape the future but are usually beyond actors' control; they simply have to adapt. Based on the examination of

driving forces, trends are derived and then sorted based on the level of impact and uncertainty. Three of the most impactful and most unpredictable trends are then analysed further as bases for scenario stories creation. The scenario stories describe narratives detail of the scenario, how it unfolds over time, and what implications it may have on the community. In this study, analysis from desk study and interviews was used to identify trends and driving forces of change, while the scenario team members assessed the level of impact and uncertainty during FGDs.

4. Development of the most desirable vision of the future

   In this phase, scenarios created in the previous phase were discussed with the community in Focus Group Discussions. First, participants were informed about how the future would unfold according to different scenarios. Then the reflective discussion was conducted regarding their consequences to community livelihood assets and strategies. Next, the participants decided on the most desirable vision as a direction in which decisions and actions should be determined.

5. Recommendations and suggestions for implementation of the vision.

   In the last phase, participants of FGDs conformed to policy proposals and suggestions for action that could be implemented internally within the community or with external stakeholders involved. In this study, the focus of actions was limited to the components of slum upgrading/urban renewal (Figure 1).

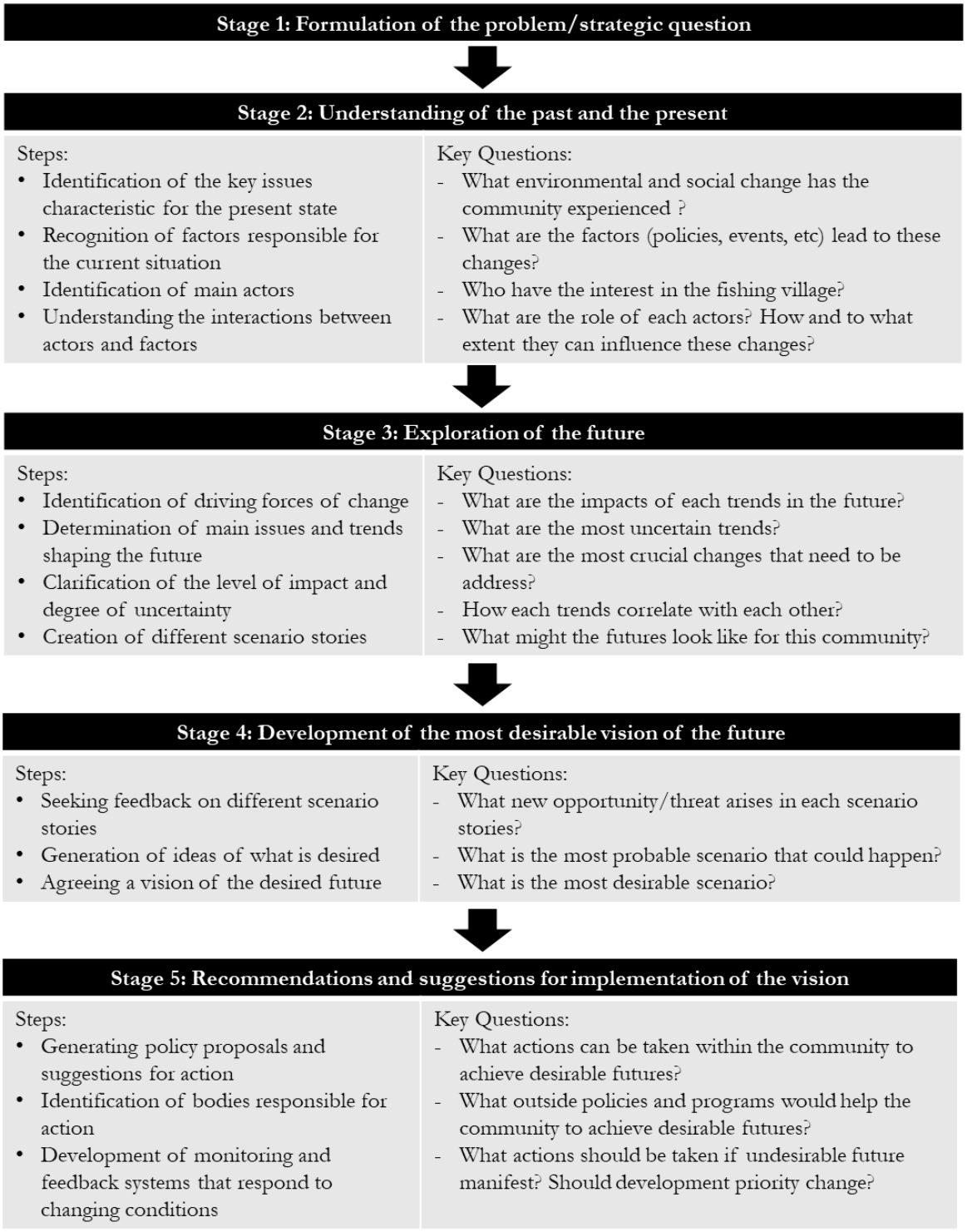


Figure 8 Structures of scenario planning exercise

3.3 Data Collection

This research employed multiple research designs to capture a comprehensive portrait of the social reality in the case-study research area. Different kinds of methods are needed because the social phenomenon being investigated is complex. In addition, since each data collection method has limitations, it is better to exploit the mixed method approach to complement each

other. In short, for this study, it is necessary to use both quantitative and qualitative data to generate unique insight into a complex social phenomenon that is not available from either type of data alone.

Quantitative and qualitative data were collected through various methods conducted during fieldwork study on 14-20 September 2019 and 8 August-9 September 2020 in Wakatobi Regency. These methods are as follow:

1. Household Survey

   In this study, questionnaires were given to households to collect data for pre-post design study. The sample size is 58 households distributed almost equally from the five villages. In the beginning, each village was allocated 12 households to be surveyed. The sampling method was a systematic sampling method based on house location using a sampling interval of ten houses. After the first household is selected, the next respondent will be the tenth house next to the previous respondent. This method was continued subsequently until the designated sample size was met. However, two samples were ruled out because of incomplete data. Considering the time limitations of the research, two research assistants were hired and trained to help administer the closed-ended questionnaires in the survey. All collected quantitative data then were analysed using the Statistical Package for Social Scientists (SPSS 24) and Microsoft Excel 2016.

2. Interview

   Two kinds of informants were interviewed during the field research: residents and experts. In conducting the interview to residents, snowball sampling was employed. The first few key informants introduced other members of the population with deep knowledge or unique perspectives about the settlement dynamic in Bajo Mola Village as potential respondents. Unstructured open-ended interview approaches were employed to explore issues in detail with the interviewee using probes, prompts, and flexible questioning style to generate a spontaneous conversation that captured the respondents' points of view rather than the researcher's concern (Henn, Weinstein and Foard, 2009). This approach aims to form social rapport with respondents and provide opportunities for researchers to uncover issues and concerns that had not been previously thought of. On the other hand, expert interviews were conducted with experts who understand and can explain many things about the study, since they observed or involved in the research area for a long time. These experts come from different institutions, namely the central government (Ministry of Public Works and Housing; Wakatobi National Park Authority), local government (development planning agency, housing agency, tourism agency, fisheries agency), Head of Villages, NGOs/CBOs

(KIARA, LEPA Mola, Padakawuang Sama, WWF-TNC), and academics (Haluoleo University and Wakatobi Community College). For this reason, respondents were chosen purposively. Interviews were performed by semi-structured face to face conversation where the interviewers had a clear list of issues to be asked. With this kind of interview, the interviewer was prepared to be more flexible on the topic and allow informants to speak their opinions concerning the issue that the researcher brought. All interviews were conducted using the Indonesian language.

3. Focus Group Discussion Workshop

   The purpose of conducting focus group discussions was to seek feedback from the community regarding both the impact evaluation and scenario planning part of the study. By stimulating discussion, FGD allowed participants to clarify their views and opinions, engage with others, and reach common ground. Participants of the FGDs consisted of youth representatives from each of five Bajo Mola villages. The youths (age 18 to 32) were chosen to be involved in scenario planning exercises because they are likely to be the future leaders of the villages; hence, they need to understand what futures may lay ahead. However, they are rarely involved in the decision-making process in the villages. This exercise allowed them to voice their concern, share ideas, and build knowledge regarding their villages' settlement issues. Three youth representatives from five villages, fifteen in total, were deliberately selected. Each village delegation consisted of the leader of the youth group (Karang Taruna), one person who works in the fisheries sector, and one person who works in the non-fisheries sector. For this research, three FGDs workshops were conducted. In each workshop, different experts were invited as observers and interviewees. These experts also provided information that broadened the participants' knowledge and constructive comments on the results of the FGDs. An official from local housing agency attended the first workshop, the second workshop was attended by WNPA representatives, and scholar from local community college attended the third workshop. The author moderated and led the discussion, who worked based on a discussion agenda consisting of a set of questions for participants, attempting to build a holistic understanding of the problem situation based on participants' comments and experiences.

Table 6 Members of Scenario Team

Code	Age	Gender	Occupation	Attendance		
				FGD1	FGD2	FGD3
MBah1	25	Male	Fishermen	O	X	X
MBah2	25	Male	Government intern	O	O	O
MBah3	24	Male	Middlemen	O	O	O
MUta1	25	Male	Mosque Caretaker	O	O	O
MUta2	22	Male	Government intern	O	O	O
MUta3	32	Male	Fishermen	O	O	O
MSam1	20	Male	Fishermen	O	X	O
MSam2	22	Male	Unemployed	O	O	O
MSam3	28	Female	Store employee	O	O	O
MSel1	22	Female	Teacher	O	O	O
MSel2	20	Male	Fishermen	O	X	O
MSel3	25	Male	Unemployed	O	X	O
MNel1	23	Male	Fishermen	O	O	X
MNel2	21	Female	Student	X	O	O
MNel3	29	Male	Fishermen	O	O	O

4. Direct observation

   During field study, the author observed the institutions, cultures, and customs in the research area. The activity involved observing social interaction, having an informal conversation with the residents and scenario group members, and joining everyday activities of those being studied (Henn, Weinstein and Foard, 2009). This effort intended to identify patterns of people behaviour and social interaction in the natural environment, particularly related to housing development, human-made environment, and residents' livelihood. In order to gain acceptance in the community, the author spent more than five weeks living in a local resident's home.

5. Official document review

   To provide additional supporting data and as a means for data triangulation, various policy documents and public data relevant to the research were also collected, including national and local regulation, local spatial planning document, official report, presentation materials, and statistical records. Most of the documents were collected from public officials to ensure validity. These documents provide essential information regarding the existing policy design, program implementation, future plan, issues of settlement development at the national and local levels.

Table 7 Data collection methods

Method	Purpose	Instrument	Sampling Method	Data Source	Respondents
Survey	Case-study approach	Structured Questionnaire	Systematic Sampling	Households of Bajo Mola villages	58 household
Interview	In-depth case-study approach	Semi-Structured Interview	Purposive Sampling	Head of villages, leader of CBOs, government officials, NGOs staff, academician	16 people
		Unstructured interview	Snowball Sampling	Bajo Mola residents	7 people
Focus Group Discussion	Scenario planning	Guide Questions	Purposive Sampling	Bajo Mola youth	15 people
Observa-tion	In-depth case-study approach	Photography	n/a	Bajo Mola Settlement	5 villages
Document Review	Supporting data/ data triangulation	Checklist	n/a	Public office; village records	n/a

3.4 Limitation of Study

The study only involved one individual case study; therefore, it is limited in the generalizability of research findings (Babbie, 2010). Thus, the study does not claim that a similar conclusion will be applicable elsewhere. However, it intends to ignite theoretical and policy discussion on fishing village upgrading and scenario planning approach. Furthermore, case studies can form the basis for developing more general, nomothetic theories (Babbie, 2010).

The study was conducted during the Covid-19 pandemic in the Wakatobi area. To minimize risks of disease transmission, the research methodology was modified during fieldwork. The case study was initially intended as quasi-experimental research with a control group of Bajo settlement in a neighbouring island that did not receive slum upgrading. However, because of the pandemic, inter-island transportation in Wakatobi was suspended; thus, a survey on control group could not be administered. Hence, pre-post design is employed only to highlight changes of people-place relationships as part of case-study research attempt. The design may not sufficiently measure the effect of slum upgrading projects because it provides bias estimates of

program impact. However, this approach was engaged in a couple with qualitative interviews to explore how slum upgrading projects change community sense of place and social practices.

Because of the Covid-19 pandemic, the approach in conducting scenario planning had also changed. The initial plan was to involve relevant stakeholders to become scenario members to voice different perspectives. However, a Covid-19 outbreak in the government offices caused the plan to be dropped. As an alternative, only Bajo youth members were involved. However, this group selection creates may bias on the scenario planning result as it came from a single stakeholder. Nevertheless, one of the key inquiries of this research is to determine the suitability and benefits of scenario planning exercise at the community level as part of slum upgrading process. Thus, scenario planning that involves wider relevant stakeholders is necessary to update scenarios and strategies and prompt real social innovation.

Chapter 4: Regulatory Framework and Programs for Fishing Settlements in Indonesia

First, the chapter will discuss the regulatory framework governing fishing settlements in Indonesia. Then, the division of roles and responsibilities between government agencies at the national, provincial, and local levels will be presented. Next, strategic programs related to the case study research area will be examined, followed by explaining various projects that have been implemented upon fishing settlements and slum settlements by government agencies. This explanation includes an analysis of implementation problems that limit the outcomes of the projects. Finally, this chapter will provide concluding remarks about Indonesia's existing policy approach of fishing settlement development and management.

4.1 Regulatory Framework

There are no specific laws governing fishing villages in Indonesia. However, few laws related to small-scale fisheries, human settlements, and other general cross-cutting regulations frame the government's approach in dealing with fishing villages and provide guiding principles for upgrading interventions. The content of these regulations will be explained particularly in areas concerned to fishing villages, as follows:

1. Law No. 31 of 2004, later amended with Law No. 45 of 2009, regarding Fisheries

   The laws provide the basic regulations at the national level that cover fisheries management; fishing boats, gear and licensing; added-value fishery product; fisheries research and development; fishery fees; the empowerment and prosperity of fishermen; fishery courts and arbitration; and, fishery enforcement and sanctions (Muawanah *et al.*, 2018). The legislation defines small-scale fisheries as fisheries that use small size vessels of less than 5 Gross Tonnage (GT), and it also rules that they are not required to acquire a business license to operate. The regulation prohibits the destructive practice of poisoning fish and blast fishing and illegal, unreported, and unregulated fishing to maintain fishing stocks in Indonesian waters. The law intends to improve small-scale fishermen welfare by mandating the provision of credit assistance and exemption from levies and licensing. However, the regulation skews towards larger-scale fisheries as it becomes the dominant domain of the law. Out of 111 articles in the original Law, only 8 articles mention small-scale fishing practice.

2. Law No. 27 of 2007, later amended with Law No. 1 of 2014, regarding Coastal and Island Management

The purpose of the law is to regulate the utilization of coastal and small island space and its resources to ensure sustainability both on the coastline and inshore waters. The law established necessary coastal management arrangements such as zoning regulations, concession rights, land reclamation, and conservation areas. It recognizes traditional fishermen as one of the main stakeholders in coastal management and acknowledges the right of traditional communities to fish with customary practices. However, it mentions prohibition against coral mining which is a practice often conducted by many traditional communities. In addition, they were involved in 'Mitra Bahari' (literal translation: maritime partners), a stakeholder forum consisting of representatives from local government, non-governmental organizations, community-based organizations, academicians, and business sector (article 41). This forum focuses on counselling, training, research, and policy advising and traditional/small scale fishermen are able to participate as forum member. However, this forum only has a consultative role and does not delegate the power of the authority to fishermen. This is little more than a tokenism arrangement and may be insufficient to ensure the voice of small-scale fishermen to be heard.

The legislation also stipulates the creation of coastal zoning plan by local governments as a reference in issuing coastal waters tenure rights (HP3), a right given to individual or legal entity to utilize an area of inshore waters and its resources. This right can be given to traditional communities, but it has been criticized for favouring large-scale industries and tourism development (KIARA, 2019). Furthermore, the zoning plan mainly focused on the water area and often disconnected the land area under Spatial Plan regulation. This condition created a disjointed planning system between the land system and the water system. Furthermore, the law also does not govern fishing villages. In fact, it excludes the settlement as one of the priority zoning allocations for coastal regions and small islands (article 23).

3. Law No. 7 of 2016 regarding The Protection and Empowerment of Fishermen, Fish Farmers, and Salt Farmers

   As the title suggests, this law intends to protect and empower small-scale fishermen, fish farmers, and salt farmers. The act calls for the protection and empowerment of small-scale fishermen, including provision of facilities and enabling environment necessary to run their businesses, enhancement of fishermen's capacity and skills, and ensuring their safety against catastrophic events. However, the law does not explicitly address issues of fishing villages preservation and improvement. The law does not stipulate assurance for rights of coastal space for small-scale fisheries. The facilities that need to be provided to the small-scale

fishermen mentioned in the legislation are primarily referred to fisheries facilities (e.g., fishing harbour, cold storage) instead of settlement infrastructures (e.g., sanitation facilities, housing).

4. Law No. 26 of 2007 regarding Spatial Planning

   The law provides general regulation for spatial planning and management in Indonesia to harmonize natural and built-up environments. The regulation calls for the establishment of spatial plans at national, provincial, and city or district level governing land space and water and air space. One of the paramount directives of the law is the obligation to allocate 30% of the city area for green open space. One form of green open space is the green belt along the coastline. Hence, achieving the green open space target has become the excuse for local municipalities to demolish informal coastal slums inhabited by many small-scale fishermen households.

5. Law No. 1 of 2011 regarding Human Settlement and Housing

   This law states that every citizen has the right to have decent housing and a safe living environment. Based on this law, the government intends to upgrade all slum settlements by the year 2025. Under this law, a slum settlement is defined as a precarious settlement because of its disorganized spatial structure, high building density, poor quality construction and lack of access to urban infrastructure. This definition puts the physical aspect of slums at the centre without recognizing the complex nature of the social and economic dimensions of slums. As a result, existing programs mainly focus on physical upgrading and fail to address other related issues such as poverty, land tenure, and social cohesion. The regulation also stipulates three approaches to slum: restoration, renewal (slum upgrading), and relocation. For relocation, the government is required to seek input from the resident regarding the location of the new settlement.

In the case of Bajo Mola villages, the scope of the regulatory framework has been broadened because the area has multiple functions as a cultural heritage site, tourism destination, and national park. Hence, these laws below should also be considered to understand the context of issues in Bajo Mola settlement:

1. Law Number 11 of 2010 regarding Cultural Conservation

   The law mentions that nation's cultural assets in the form of objects, buildings, structures, sites, and areas should be protected and managed by the government with the involvement of the local community. An area could be nominated as a cultural heritage site if the cultural landscape had formed in at least 50 years and indicated past spatial function influenced by

ancient human tradition. In addition, the cultural heritage site should be owned collectively by the indigenous community, and they are prohibited from selling the property except to the government. In the case of Bajo Mola, although the site is full of valuable cultural assets, the property (land and buildings) is individually owned. Hence, it is difficult for the Bajo Mola settlement to be designated as cultural heritage site.

2. Law Number 10 of 2009 regarding Tourism

   The legislation stipulates that tourism development should uphold cultural diversity and local wisdom. It also imposes preparation of tourism development masterplan at national and local level. The masterplan elaborates plans for the development of the tourism industry, tourist destination sites, marketing and branding, and institutional arrangement. The legislation also mentions the designation of national tourism strategic area, which will focus on tourism development carried out by the central government.

3. Law Number 5 of 1990 regarding Biodiversity and Ecosystem Conservation

   The legislation defines national parks as nature conservation areas with native ecosystems and can be used for research, education, livelihood, tourism, and recreation purposes. The law stipulates that the central government manages the national parks following a zoning plan that includes core zone, general use zone, and zone for other purposes. In managing national parks, the central government established a National Parks Authority located in the capital of regencies or cities where the national park is located.

4.2 Multi-level Government Arrangement

Five layers of government existed in Indonesia: central, provinces, regencies (*kabupaten*) and cities (*kota*), district (*kecamatan*), and villages (*kelurahan/desa*). Before the present state, there was limited devolution of authority and financial resources to government institutions at the lower levels (Nasution, 2017). The central government held almost all responsibilities in providing public service while the local government mainly functioned as implementing agencies of national policies and programs. However, the fall of Suharto's authoritarian regime in 1998 transformed Indonesia's administrative and political system. Calls for democratic governance had led to the adoption of decentralization policy a year later. Two laws were established: Law 22/1999 and Law 25/1999; the former focused on administrative matters while the later concern for fiscal arrangement. These laws impose the redistribution of authorities and responsibilities from the central to subnational governments. Under these laws, the third level of local governments in Indonesia, Kabupaten (regencies) and Kota (city), essentially become responsible for almost all public service delivery such as public works, health, agriculture, industry, and trade so forth.

The decentralization process that took place was radical, ambitious, yet hasty; hence, it is often referred to as 'Big Bang Decentralization' (Hofman and Kaiser, 2004). After a long period of a highly centralized regime, the political authorities and financial resources were abruptly transferred to local governments who were inexperienced in managing their jurisdictions and ill-equipped with the administrative capacity to deliver public goods and promote economic development (Firman, 2009; Nasution, 2017). Thus, in 2004, the policy was amended by enacting Law 32/2004 and Law 33/2004. The former law rearranged the distribution of authorities so that 29 governmental functions were shared between the central and local governments, while the later law allow local governments for greater revenue potentials from natural resources exploitation (Talitha, Firman and Hudalah, 2020).

Nevertheless, fiscal viability remains difficult, especially in disadvantaged areas with poor resources and limited human capital (Shoesmith, Franklin and Hidayat, 2020). Most of the local governments rely heavily on intergovernmental transfers, which are mostly used to pay for government employees' salaries and goods procurement (Talitha, Firman and Hudalah, 2020). Meanwhile, few heads of cities and regencies have shown a level of disobedience by implementing policies that contradict national and provincial interests. For example, license for natural resources exploitation, such as in forestry and mining, were given without considering potential devastating impacts on neighbouring regions. In fact, many local resources appropriation were linked to local leaders and associates who may unfairly seek their own profit (Shoesmith, Franklin and Hidayat, 2020). With the authority given to them, local leaders might act as a little king (*Raja Kecil*), in which even the higher tier of government cannot intervene (Firman, 2009).

In 2014, the regional autonomy law was amended again by the enactment of Law 23/2014. This time, provincial governments hold more responsibilities in managing government matters with broader externalities, such as fishery management and environmental protection. The national government can designate special regions (*Kawasan khusus*) based on strategic national interest in which they have full authorization to intervene in the area (Talitha, Firman and Hudalah, 2020). Meanwhile, political and fiscal autonomies are granted to the village government based on the Law 6/2014. The village heads (*kepala desa*) and village councils *(dewan desa*) now have the responsibility to manage village budget funds (*dana desa*) sourced from national budget allocation and locally-generated revenue. They also can establish village-owned enterprises to generate revenue for autonomous village development. The village empowerment policy is aimed to encourage community participation and improve development responsiveness as the village became the subject of local development instead of merely objects for national programs. In

reality, however, the village governments are heavily dependent on intergovernmental transfer, and the village budget are used more for operational costs than investment for communities' development priority (Antlöv, Wetterberg and Dharmawan, 2016). Moreover, many village institutions have yet the capacity to plan, organize, and monitor development project. In addition to the accountability issue (see Antlöv, Wetterberg and Dharmawan, 2016), this circumstance remains a challenging issue that needs to be addressed to fulfil the promise of village empowerment policy.

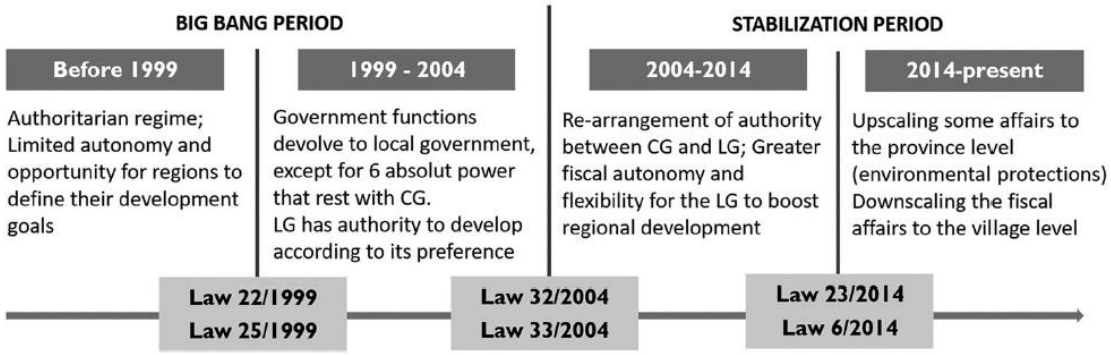


Figure 9 Changes in Indonesia's Decentralization Policy (Talitha, Firman and Hudalah, 2020, p. 703)

In the case of human settlement development, division of powers and responsibilities is defined in Law 1/2011 regarding housing and human settlement, and Law 23/2014 regional autonomy. In essence, these laws stipulated that the role of central government is to formulate and establish national policies on human settlement and allocate funding or provide housing and human settlement for low-income citizens. The Law 23/2014 provide additional authority for central government to develop settlements in special regions. Meanwhile, the provincial governments' main task is to formulate and establish policies on human settlement at the provincial level and supervise the implementation of national policies carried out by city and regency governments. On the other hand, the authorities given to regency and city governments include formulation of policies at the local level, implementation of central and provincial policies on human settlement development, development of basic urban infrastructures, development of settlement for the general public, and licensing for settlement and housing development.

From the explanation above, it can be assumed that the central government is assigned to focus on regulating and facilitating functions. Nevertheless, they maintain development function only for low-income households or at special designated regions. Meanwhile, the provincial government not only have facilitating function but also supervising function. Nevertheless, the city and regency government are at the forefront of human settlement development because they hold regulating, facilitating, supervising, development, and maintenance functions.

As mentioned in the previous subchapter, the Law 1/2011 stipulates slum settlements alleviation and provision of decent housing for all Indonesian citizens. The city and regency governments with the authorities given to them supposedly have a major role in fulfilling the mandate. However, many local authorities are lacking capacities to implement this policy. First, they are financially constrained because almost all major tax bases are still held by the national government. Several affluent resources cities and regencies are able to improve their own source of revenue. Thus, major cities, such as Jakarta and Surabaya, have set up their own programs to improve slum settlement conditions in their respective areas. However, other places, especially the disadvantaged regions, have difficulties funding slum improvement programs and developing public housing. Moreover, the political will to invest in basic infrastructures for the poor remain relatively low because it does not directly improve local revenue. Another issue is the lack of technical capabilities and experience of local apparatus to administer complex program such as slum upgrading or public housing development.

Due to the incapability of local governments, central governments linger to become the dominant actor in settlement development in Indonesia. They have the capability to acquire financial loans and technical support from international donors to finance nationwide slum upgrading projects. They also have experience conducting slum upgrading projects since 1969, when the Kampung Improvement Program was initiated. The program was considered one of the world's earliest slum upgrading programs (Juliman and Darundono, 2006). Over the years, nationwide slum upgrading practices have been revolutionised (see Winarso, 2021). Nevertheless, the slum settlements issue remains persistent in the country until today.

4.3 Efforts in Upgrading Coastal Slum Settlements

In the absence of specialized policy regarding fishing villages, the government's approach in upgrading slum settlements does not differentiate between the coastal one and the non-coastal one. Despite its specificity, coastal slum settlements are treated with the same programs as inland slum settlements. Three different approaches in upgrading slums in Indonesia were identified of which all are designed by different institutions. First, the 'regular' slum settlement improvement program was conducted and designed by the Ministry of Public Works and Housing (MoPWH). The program aims to eliminate seven physical infrastructures features of slum settlements. Hence, the model can be acknowledged as an infrastructure-focused intervention. The second program is the National Slum Upgrading Project (NSUP). Although MoPWH conducts the program, it was designed by international donors led by The World Bank. The program also has physical infrastructure development as one of its components. However,

what differentiates it from the regular slum settlement is its emphasis on community participation and socio-economic improvement. The third one is the local governments-initiated slum upgrading programs. A few local governments have made an alliance with academics and non-profit organizations to set up innovative programs in upgrading slum settlements in accordance with the local context. For example, in collaboration with a local university, the Surabaya municipalities established Comprehensive Kampung Improvement Program (C-KIP), which is a modified model of the first national slum upgrading project (see Das, 2015; Septanti, 2016). Another example is the collaboration between the Jakarta Provincial Government and the Rujak Center of Urban Studies in upgrading the fishermen settlement of Kampung Akuarium, which will be explained later.

4.3.1 Regular Slum Improvement Program (MoPWH-led initiative)

In 2014, a nationwide survey was conducted by MoPWH to identify slum settlements in the whole country. It was intended to delineate the area of slum settlements and assess neighbourhood conditions based on specific criteria. Minister Regulation Number 14 of 2018 regarding Prevention and Quality Improvement to Derelict Houses and Slum Settlement mention seven aspects that need to be assessed to determine whether an area is categorized as a slum settlement or not. These aspects are:

1. Building condition

   If buildings in a settlement are disorderly arranged, overly dense, and breaching the technical standard requirement, then the settlement could be categorized as slums. According to these criteria, houses in slums do not refer to the statute of urban design guidelines or zoning regulation. Under this principle, the regulation also stated that houses on the water are considered to breach safety building standards; thus, hardly surprising that on-water settlement would be labelled as a slum.
2. Neighbourhood streets

   The regulation seems to assume that the only way that residents travel is through neighbourhood streets. Hence, it is recognized as a critical infrastructure that facilitates resident movement. Under this proposition, a settlement would be labelled as slum if the neighbourhood streets are in poor condition or its network does not fully cover the whole area.
3. Water supply system

   Under this principle, a settlement would be deemed a slum if the water supply network does not cover the whole area or if the quantity of the water supplied is insufficient to satisfy residents' needs.

4. Drainage system

   If a settlement had been inundated as high as 30 cm for at least 2 hours for more than two times a year, then the settlement could be acknowledged as slum because of its poor drainage system. Under this criterion, coastal villages that are often inundated by tidal floods would be likely considered as a slum.

5. Environmental sanitation system

   One of the slum indicators is the lack of an appropriate and safe sanitation system in the area. This condition is indicated by the absence of decentralized or centralized wastewater treatment system, or many people still practice open defecation.

6. Solid waste management

   If the waste generated by households is not sorted, transported, and processed because of lack of infrastructure, the settlement could be deemed a slum.

7. Fire hazard protection

   Another indicator of a slum is that fire protection facilities (e.g., fire fighter vehicle) and infrastructures (e.g., fire hydrant) are non-existent in the settlement.

Based on the survey, MoPWH estimate there were 38.431 hectares of slum area in the country. Under the national medium-term plan for 2015-2019, the Government of Indonesia intends to eliminate these slum conditions by setting an ambitious target popularly known as '100-0-100' (100 per cent access to clean water supply; zero slum condition; 100 per cent access to sanitation). MoPWH is the leading agency in realizing this target.

Per their task as public infrastructure developers, MoPWH approach was to eliminate the seven slum criteria through basic infrastructure provision. Their actions on the slum settlements were derived from the survey that was held in 2014. For example, if the survey indicates that a settlement's drainage system is absent or insufficient, then the government would develop a drainage system according to national standards. Characteristically, the approach undertaken can be viewed as infrastructure-led slum upgrading, influenced by Turner's theory of aided self-help development (Turner, 1972). The selection of infrastructure development intervention was based on top-down assessment with minimal community engagement. Tacitly, the local governments are expected to become a mediator in facilitating local residents' aspirations. However, in many cases, the local governments simply adhere to the central government's intervention. Hence, the program resembles the top-down management attitude and command-and-control value of bureaucracy in Indonesia. This type of program implemented in the Bajo Mola villages was selected as the case study area in this research.

4.3.2 National Slum Upgrading Program (Donors and GoI Cooperation)

In order to contribute to the achievement of global SDGs and build upon the World Bank's 'cities without slums' initiative, the World Bank assists the Government of Indonesia to eliminate slum condition in the country. They provide financial and technical assistance through the National Slum Upgrading Program or popularly known as Kotaku (abbreviation of *kota tanpa kumuh* which means cities without slum). The Kotaku itself is a national collaborative platform in dealing with slum settlement financed by multiple sources, including national and local government and multi-lateral donors (World Bank, 2016). In addition to the World Bank, the platform has also received support from the Asian Development Bank, the Asian Infrastructure Investment Bank, and the Islamic Development Bank. The funds collected from multiple sources were then allocated for national policy development, capacity building of local governments and communities, and small-scale infrastructures development in slum areas (World Bank, 2016).

Similar to the 'regular' slum improvement program, the NSUP also focused on eliminating seven aspects of slum appearance in developing small-scale infrastructures. However, NSUP projects adopt a participatory approach that puts citizen participation and ownership at the core of implementation through consultations and discussion, information disclosure, civil-society oversight in monitoring sub-projects outcomes, and peer-to-peer learning and knowledge sharing (World Bank, 2016). With the assistance of facilitators, the community decide for themselves the priority for infrastructure investment in their settlement. The community were included in data collecting, analysis, and actively participating in constructing the infrastructures that they deliberately chose (Purwanto, Sugiri and Novian, 2017). The NSUP funds these neighbourhood improvements through community-based organizations with the assistance of facilitators.

From 2016 to 2020, NSUP has been carried out 149 cities and regencies or 1,467 villages. In its implementation, the program referred to two planning documents: Slum Improvement Action Plans (SIAPs) at the city level and Community Settlement Plans (CSPs) at the community level. SIAPs comprised of an integrated strategy for city-wide slum alleviation, including clear technical guidelines, indicative investments, and financing, and were prepared by local governments through the City Housing and Settlement task force. On the other hand, CSPs were five-year plans prepared by communities, facilitators, and urban planner consultants to guide tertiary infrastructure planning at the village level. The project conducted at the neighbourhood level comes in nine phases as shown in Figure 10.

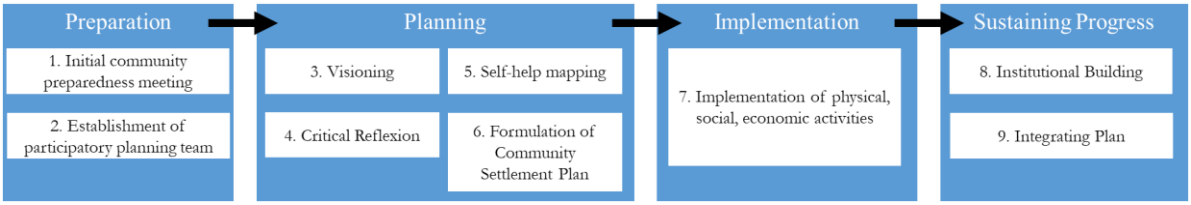


Figure 10 Phases of KOTAKU project implementation

In the process of NUSP at the neighbourhood level, there was a visioning exercise that was intended to identify a vision for settlement for the next five years. The community's ideas and aspiration for future settlement conditions became the aim for formulating upgrading strategies. The method used for this visioning process is Focus Group Discussion that involves village leaders, community-based organizations, and citizen representatives. Because this phase only resulted in a single vision, the villagers may fail to anticipate different plausible futures. They envisioned their own visions without considering uncertain external and internal factors, which may be ineffective if the situation changes. Furthermore, the visioning process only considered medium-term objectives during the implementation of NUSP. The residents were not prepared to anticipate situations after five years when government assistance was withdrawn.

In reality, the regular slum improvement projects are juxtaposed with NUSP on the same site so that the regular program could fill the gap of infrastructure development according to SIAPs and CSPs. This strategy is being implemented in many coastal slum settlements where the level of slums is severe. In Sumber Jaya village, Bengkulu for example, both programs were implemented based on CSPs formulated by the community. Funds from multiple sources were allocated for street improvement, open space landscaping, drainage development, self-help house renovation, communal sanitation facilities, street furnishing, promenade, and boat dock/jetty construction, and retaining wall installation. The result is a significant facelift of the fishing villages' physical image. The beautification effort in the area has attracted local tourists who visit for boat rides around the mangrove forest in the surrounding area. The program also contributes to improving access to drinking water and safe sanitation. Unfortunately, in the case of Bajo Mola, the regular program was not accompanied with NUSP; thus, no CSP was formulated, and citizen participation was woefully inadequate.

4.3.3 Kampung Akuarium Urban Renewal (Local Governments and NPO Alliance)

As the capital of Indonesia, the city of Jakarta is also inhabited by slum dwellers until now. However, Silver (2008) and Irawaty (2018) noted that slum eviction has accelerated during the 1980s until the 2010s due to large private development projects and government-initiated 'normalization' and beautification projects. Kampung Akuarium in coastal Jakarta was among

the slum settlements that was demolished in 2016. The evictees mainly were fishermen who sold their fish in the nearby historic fish market or worked as boat crews in the neighbouring fishing port. As the result of forced eviction, many of them had lived in boats while others established a temporary shelter. This condition raised concerns from grassroots NGOs such as Urban Poor Consortium. Hence, they advocated pro-poor urban policies through various means such as mass demonstration, litigation, alternative design, and political contract (Irawaty, 2018). In 2016, they facilitated a political contract between Kampung Akuarium residents with one of the governor candidates, Anies Baswedan, to re-establish the settlement with support from the provincial government. Eventually, the candidate won the election and kept his promise in 2020 when the construction of five vertical housing blocks was officially begun.

Figure 11 Urban Renewal in Kampung Akuarium (RCUS, 2020)

The residents of Kampung Akuarium constantly engage during the urban renewal planning process. Facilitated by local municipalities and in partnership with NGOs such as Rujak Center for Urban Studies and Urban Poor Network of Jakarta, the local residents formed a working group who formulated Community Action Plan (CAP) in 2018. The CAP preparation involves community mapping, SWOT analysis, exploration of cultural heritage and tourism knowledge, site planning workshop. From this series of activities, the resident came up with a vision to develop the area as a maritime tourism village. They also institute design principles for the urban renewal project. These principles include retaining the characteristic of 'kampung' or an informal sense of place that accommodate high social interaction. Based on this design principle, the vertical housing provides public space on each floor, which can be used for social interaction and greenery. In addition, the resident acknowledged that the site is located in a historic area. Hence, they urge that the renewal process should also consider preserving historical cultural heritage, both intangible and tangible.

The practice of urban renewal of Kampung Akuarium could be considered the best practice of slum upgrading process in Indonesia, as it embraces a high level of participation from the

community and promotes collaboration between government, community, and NGOs. The participatory process allows citizens to direct development according to their needs and aspirations. Furthermore, they can learn about settlement issues, place-making process, establish network, and strengthen solidarity.

4.4 Conclusion

Despite having a crucial part in the coastal social-ecological system, and although there are thousands of deprived fishing settlements in the country, there is no specific policy that urges preservation and revitalization of fishing settlements in Indonesia. In the absence of explicit regulation, fishing settlements are being addressed separately by different institutions that hold interest over the coastal area. Through analysis of regulations, it can be concluded that the regulatory framework of land system and ocean system is disconnected. Although in reality both systems have a reciprocal relationship, they are being managed separately with limited coordination efforts by government agencies of both sectors.

On the one hand, fishery policies and the government institutions that enforce those policies tend to focus on the livelihood aspects of fishing communities. Thus, their support toward the small-scale fishermen are mostly related to their fishing practice and income-generating activities. On the other hand, national government agencies responsible for human settlement view fishing settlements upgrading just like any other slum settlements. They approach fishing settlement with a one-size-fits-all program that disregards the complexity of fishing settlement issues and special sense of place that the community has concerning their living environment. It applies mainstream urban design standards based on solid perception toward a maritime community that held water perception in considering settlement development strategies. Simply replicating interventions of urban land-based society towards small-scale fishing communities may disrupt their affective bonds with the surrounding environment and their livelihood and cultural development.

Three different approaches are adopted in upgrading slum settlements in Indonesia. The first one is the 'regular' slum improvement program which emphasizes the physical dimensions of the slums per the slum settlement definition and indicators stipulated in the national law. Thus, the intervention is mainly focused on infrastructure development work. It is related to a top-down rational planning approach that deems the planner as knowing everything. This basic approach may bring additional benefits to slum dwellers, but it will not instigate transformative processes that are necessary to address complex problems in the slum settlements. Without a participatory process, such a program is unlikely to generate a sense of ownership and gain

supports from the community. The following approach, the NSUP, is more comprehensive as it includes participatory process and capacity building in addition to physical infrastructure development. Thus, it is likely that the program would bring multidimensional benefits to the slum dwellers. However, like other mainstream participatory slum upgrading efforts, the program has not prepared the community to anticipate development challenges beyond the period of program intervention. Therefore, as mentioned in the previous chapter, the program is at risk of short-termism. Another approach was tried in the case of Kampung Akuarium. The project not only embraces full participation of the community along the planning and development phase, but also seeks to maintain maritime-based economy and the informal sense of place that the settlements known for. Furthermore, the model instigates social learning in the place-making process, establishing network, and strengthening social cohesion within the community. Although scenario planning was not used during the process, the progress resulting from the program may improve community adaptive capacity since social learning was one of the main principles of the program. The case also suggests that local governments, as the closest autonomous government level to the citizen, can be responsive in upgrading slum settlements per local needs, capacities, and aspirations. Moreover, it also signifies the importance of local government's partnership with NGOs, academics, or grassroots organizations in addressing the complex challenges of slum settlements. These organizations have the knowledge, experience, and flexibility to support the needs of local residents, which sometimes are beyond the reach of services provided by governments and public institutions.

Chapter 5: Bajo Mola Villages Case Study

In this chapter, the description of research area's political, economic, social, and environmental context will be explained in detail. While the previous chapter focused on policies and programs in dealing with slum proliferation and fishermen welfare at the national level, this chapter focuses on the local context at the regency and village level. First, geographical and historical information of the Wakatobi regency will be presented, followed by an explanation about Wakatobi's status as a marine protected area and priority tourism destination. After that, community profile of the Bajo people who inhabited the Mola villages will be provided. This description includes their social history and cultural belief as the 'sea people', as well as their social and economic characteristics. Next is the discussion over housing and settlement issues in Bajo Mola village. These issues lead to the implementation of the infrastructure-led slum upgrading project in the area from 2015 to 2018. The project has altered the physical features of the settlement. Consequently, it also transforms people-place relationships and residents' place-making practices. Based on the interview from the field research, at least five aspects of everyday life in Bajo Mola villages are affected by the alteration of the physical environment stemming from the slum upgrading project. These are: 1) housing design, 2) home-based enterprise, 3) mode of daily transportation, 4) fisheries and non-fisheries income, and 5) environmental noise. Before and after comparison of these aspects based on survey and interview results will be presented. The chapter will be concluded by analysing the phenomenon observed from the case study using the Bourdieusian analytical framework.

5.1 Profile of Wakatobi Regency

5.1.1 General Information

Wakatobi is an archipelagic regency in South East Sulawesi. Archipelagic because although it covers an area of 18.377 km^2, only 2,6% (473,62 km^2) of the area is land. In fact, the regency consists of 138 small islands and four main islands, **Wa**ngi-Wangi, **Ka**ledupa, **To**mia and **Bi**nongko, from which the regency's name derived from. During the pre-independence era, the area was under the rule of the Buton Sultanate. Then, after the national independence, it was governed under Buton Regency until Wakatobi became a new local administrative regency (*kabupaten*) in 2003. The local government is led by a regent (*Bupati*) who publicly elected every five years.

Figure 12 Maps of Wakatobi (Clifton and Unsworth, 2010, p. 6)

In 2019, Wakatobi's population was 95.892. The regency's population pyramid shows an expansive population that is young and growing, implying high fertility rates and lower than average life expectancies. Despite its enormous potential in tourism and fisheries sectors, public welfare is unfavourable. The residents' monthly average expenditure is only 848.193 IDR (~6.281 JPY). In 2018, 14.200 people, or almost 15% of the total population, lived below the poverty line. Furthermore, almost half of the population (47%) only graduated from elementary education or less. Meanwhile, life expectancy is among the lowest in South East Sulawesi Province, which is 68,17 years. As a result, their Human Development Index[11] is relatively low.

In this area, the majority ethnic group, the Wakatobi, coexist with another minority ethnic group, The Bajo. The Wakatobi are the descendants of Buton people who have ruled the area since the 13th century. Meanwhile, the Bajo are a sea-gypsy community that practice a nomadic maritime lifestyle. In Wakatobi, they live on shallow seas by constructing stilt houses on reef flats. Each group has their own language as well as customs and norms; thus, enriching the cultural asset of the region.

[11] The Human Development Index is a statistic composite index measuring three key dimensions of human development: a long and healthy life (measured by life expectancy), being knowledgeable (measured by expected years of schooling of children at school-entry age and mean years of schooling of the adult population) and have a decent standard of living (measured by adjusted Gross National Income per capita)

In 2019, three of Wakatobi's most dominant economic sectors were agriculture, forestry, and fishing (26.67% of GDP); construction (16.32% of GDP); and mining and quarrying (16,13%). Wakatobi's economy was mainly based on the primary sector. However, recent tourism initiatives have boosted Wakatobi's secondary and tertiary sectors. Development of buildings and infrastructures to support tourism has boosted the construction sector's contribution to the economy of the region. Moreover, accommodation and food service activities that grew by more than 11% in 2019 have become the most growing industry. Overall, Wakatobi's regional economy has risen at a rate of 6.6% in 2019.

5.1.2 Wakatobi National Park

Wakatobi is located at the centre of the world's Coral Reef Triangle, the marine waters which encompass some of the world's highest coral reef biodiversity in the world. It is also known as the 'Amazon of the seas', covering 5.7 million square kilometres of ocean waters and contains nearly 600 different species of reef-building corals, six of the world's seven marine turtle species, and more than 2,000 kinds of reef fish (WNPA, 2017). Indonesian government acknowledges the importance of preserving the biodiversity of the Wakatobi area and its protection from overfishing; hence, Wakatobi was designated as a National Park in 1996.

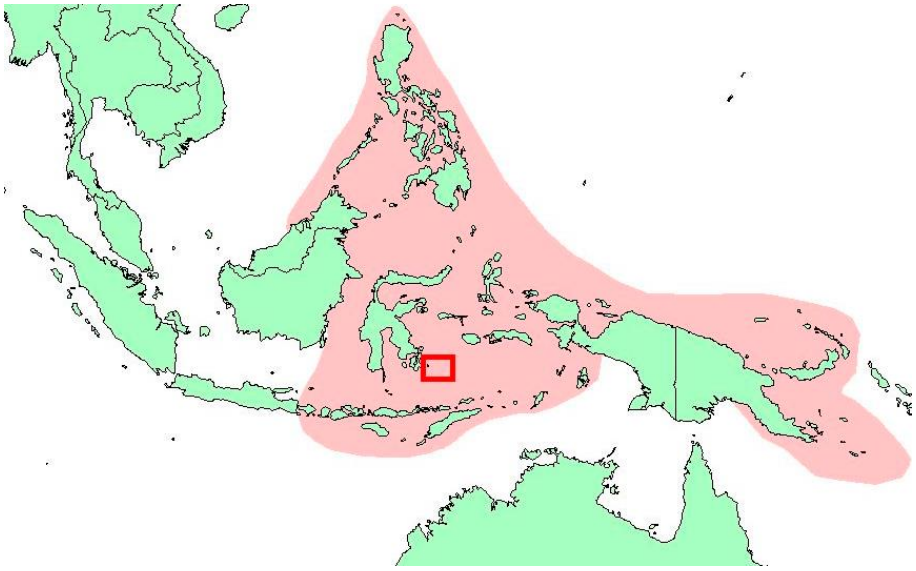


Figure 13 Location of Wakatobi National Park in Coral Reef Triangle (Von Heland *et al.*, 2014, p. 4474)

Covering an area of approximately 13.900 square kilometres, the Wakatobi National Parks (WNP) is the third-largest national park in Indonesia. The ecosystem is home to at least 406 coral reef species, 590 kinds of fishes, 11 seagrass species, 2 kinds of turtles, and 20 major mangrove species (WNPA, 2017). In addition, the area is situated in migratory corridors for large marine species such as whales (6 species) and dolphins (4 species). For its spectacular coral

gardens and diverse sea creatures, the area is worldly-renowned as one of the world's finest diving destinations.

To manage the area, the Indonesian Government established Balai Taman Nasional Wakatobi, known as the Wakatobi National Park Authority (WNPA), which is an arm of the Ministry of Forestry and Environment (MoFE). In managing the area, WNPA has established a zonation plan to set boundaries and to regulate marine resource extraction. The latest zonation plan in 2007, which already considered detailed ecological data (e.g., fish spawning and aggregation sites) collected by international NGOs (von Heland, Clifton and Olsson, 2014), divided the national park into five zones:

1. Core Zone (1,300 Ha or 0.09% of total area)
   Part of WNP that has a pristine natural ecosystem and must be given absolute protection to conserve its authentic and distinctive biodiversity. It is designated for an area with high biodiversity and acts as a habitat, stopover site, or breeding ground for endemic, endangered, or vulnerable species. The area is restricted from any kind of human activity except for the purpose of conservation or research.
2. No Take Zone (36,450 Ha or 2.62% of total area)
   Part of WNP that is protected to support conservation efforts of both Core Zone and Using Zone. The area is protected to ensure the natural ecological process; therefore, only limited activities, such as bounded eco-tourism and research endeavour, are allowed.
3. Tourism Zone (6,180 Ha or 0.44% of total area)
   Part of WNP which has attractive natural resources that can be utilized for tourism purposes. The zone is a non-fishing area and allocated for tourism destination development; hence, the area should be unsusceptible to natural disturbance and have the carrying capacity to support tourism activities. The area should also have decent accessibility to local settlement to support local economic growth.
4. Local Using Zone (804,000 Ha or 57.84% of total area)
   Part of WNP which has biological resources and ecosystem, can be exploited traditionally to fulfil the subsistence needs of local residents. Since many residents depend their livelihood on marine resources available in WNP, the WNPA allows traditional fishing practice in the zone to ensure both improvements of societies' well-being and environmental conservation. Traditional fisheries are carried out by considering the species type, extraction method, and Spawning Aggregation site (SPAGs) protection.
5. Common Using Zone (495,700 Ha or 35.66% of total area)

Part of WNP that can be utilized for deep-sea commercial fishing practice of both local and non-native vessels. The practice is heavily regulated and closely monitored by the WNPA to ensure the sustainability of the fishing stock. This zone covers most of the water area outside a radius of ± 4 miles from the Wakatobi islands and coral reefs.

6. Land Zone (46,370 Ha or 3,34% of total area)

   Part of WNP in the form of land area (islands) in which people own land, reside, and conduct daily activity. In this space, infrastructures and facilities with minimum environmental impact can be constructed according to spatial plan and local government regulation.

Table 8 Regulations governing activities in the WNP

	Core zone	Marine zone	Tourism zone	Traditional use zone	General use zone	Special land zone
Area covered (ha)	1,300	36,450	6,180	804,000	495,700	46,370
Fishing (all techniques)	x	x	x	✓	✓	n/a
Research	p	p	p	p	p	n/s
Boat transit only	[✓]	✓	✓	✓	✓	n/a
Boat transit and anchoring	[✓]	✓	✓	✓	✓	n/a
Tourism	x	p	p	p	p	n/s
Restoration and rehabilitation	x	x	✓	✓	✓	n/s
Education	p	p	✓	✓	✓	n/s
Traditional and ritual use	p	p	✓	✓	✓	n/s

Key: ✓: permitted; [✓]: permitted only in emergency; x: forbidden; p: prior permit required; n/s: not specified; n/a: not applicable.

(source: Clifton and Unsworth, 2010)

Besides having a national marine protected area status, UNESCO also designated Wakatobi as World's Biosphere Reserve in 2012 (WNPA, 2017). Along with 700 other Biosphere Reserve sites in the world (e.g., Mount Hakusan and Shiga Highland in Japan), WNP has been promoted to be the site for interdisciplinary learning in understanding changes and interactions between social and ecological systems. High marine biodiversity and unique cultural assets strive to make Wakatobi a learning laboratory for fisheries, marine biology, and anthropology.

In managing the WNP, the WNPA has set a vision for the future: "Wakatobi National Park as a Prominent Marine Ecotourism Destination in the World" (WNPA, 2017). With this vision, the WNPA intends to tap the region's tourism potential while conserving the ecosystem of the WNP biosphere. WNPA has attempted various programs to realize this vision, such as: marine patrol, cooperation with community-based organizations such as Forum Nelayan Padakauwang Sama, mangrove and coral reef ecosystem recovery, tourism promotion, as well as ethical tourism campaigns. Despite its crucial role in ecosystem stewardship, WNPA has severe

limitations in preventing illegal and destructive fishing practices due to lack of funding, equipment, expertise and local awareness (von Heland, Clifton and Olsson, 2014). In addition, although WNPA is an extension of the central government to manage the national park, their scope of authority is insufficient since much of the power belong to provincial or local government (e.g., marine resources usage licensing is under provincial government jurisdiction).

5.1.3 Wakatobi Tourism Sector

At the beginning of Wakatobi Regency establishment, the area was classified as disadvantaged region because of its isolated location, infrastructures shortfall, and weak economy. At that time, the residents greatly depended on marine resources within the area of which they exploit traditionally and marketed locally. To boost regional economic activity, the first regent of Wakatobi, Mr. Hugua, established an ambitious transformative agenda to put tourism as the leading economic sector in the area. He realised that Wakatobi is situated in an area with exceptional tourism potential yet to be unleashed and he believed that the tourism industry will create a multiplier effect throughout society. He initiated partnerships with many institutions, whether domestic or foreign, non-profit or profitmaking enterprises, to develop tourism attractions, accessibility, and amenities in Wakatobi. Under his leadership, the tourism sector of the regency has flourished, as indicated by increasing annual tourists visit and improving the quality of tourism supporting infrastructures.

Wakatobi's main tourist attraction is its extensive coral reefs and rich marine biodiversity which make it a world-class diving destination. Diving and snorkelling are the main reasons for most visitors travel to the islands. Furthermore, the area possessed plentiful cultural resources such as historical fortresses and old villages that offer unique an experience for the visitor. In the early 2000s, Wakatobi was visited by more foreign tourists than domestic ones. At that time, Wakatobi was known internationally among tourism professionals and diving enthusiasts. The rising of the middle-income class and the active usage of social media have driven the increase of domestic tourism since the late 2000s. The operation of Matohara Airport in 2010 also increased the number of tourists. In 2018, more than 29.000 tourists visited Wakatobi, of which three-quarters were Indonesian nationals.

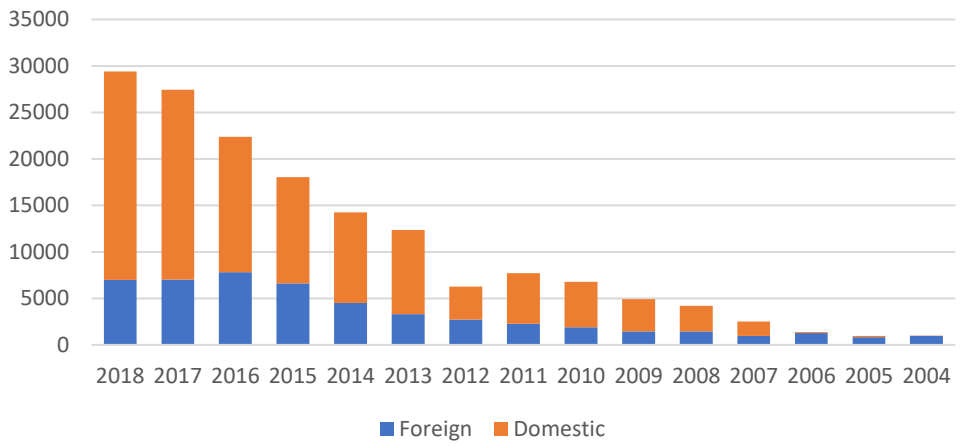


Figure 14 Number of Annual Tourist in Wakatobi 2004-2018

Wakatobi's tourism industry is slowly growing but still in its infancy phase. Several weaknesses need to be taken care of. The destination is still difficult and expensive to access, given limited air connection and boat schedules to move between islands. The number of non-star rated accommodations or homestays has risen recently, but the number of commercial luxury resorts has remained small without significant new investment since 2009, showing the low tourism investment in the area. A study of market analysis and demand assessment (Horwath HTL and Surbana Jurong, 2017) implies that lack of supporting facilities and infrastructures, including electricity and sewage management, is among the reasons why tourism investment in WNP has not built up recently. Additionally, there are also the issues of limited worker skills and the unwillingness of local communities to participate in eco-tourism activities.

Nevertheless, the Government of Indonesia is still eager to promote Wakatobi's tourism industry; hence, the area is designated as one of the top priorities for tourism development. Various supporting facilities and infrastructures are planned to be built mainly in the tourism core area to improve the region's attractiveness. Wakatobi's tourism should be developed with a concept of sustainable tourism to ensure environmental conservation in WNP. Tourism development should target visitors coming mainly for diving which comes under two profiles: Foreign backpackers and domestic visitors with lower purchasing power or affluent tourists with eco-sensitivity (Horwath HTL and Surbana Jurong, 2017). By targeting such a niche market, Wakatobi may avoid mass tourism to keep the natural ecosystem intact while reaping an optimum financial benefit. With such a market, Wakatobi will get an estimated 29,500 international visitors and 16,900 visitors by 2041 (*ibid.*).

Table 9 Forecast of Visitors to Wakatobi 2015-2041

	Number of arrivals			
Visitor type	*2015*	*2021*	*2026*	*2041*
Domestic visitor	11.401	12.700	13.800	16.900
Foreign visitor	6.626	11.700	16.400	29.500
Total visitor	**18.027**	**24.400**	**30.200**	**46.400**

(source: Horwath HTL and Surbana Jurong, 2017)

Major tourism investment by the national government in Wakatobi started in 2020. Recently, MoPWH and the World Bank published Integrated Tourism Development Master Plan which guides the infrastructure development to support tourism in Wakatobi. This document stipulates Bajo Mola villages as a tourism priority area. Based on previous experience in other places, the designation of a settlement to be a core tourism area would likely alter the physical appearance of the settlement as the government seriously attempts to transform it into a tourism village. Although details of the plan have not been published yet, major infrastructure projects are likely to be implemented in Bajo Mola villages in the near future.

Tourism Priority Area:
1. Wangi-Wangi Island
   a. Sombu Dive
   b. Bajo Mola
   c. Keraton (Fort) Liya
2. Kaledupa Island
   d. Hoga Dive
   e. Sambono Beach
   f. Ollo Fort
3. Tomia Island
   g. Tomia dive
   h. Kahiyangan Summit
4. Binongko Island
   i. Palahidu Beach

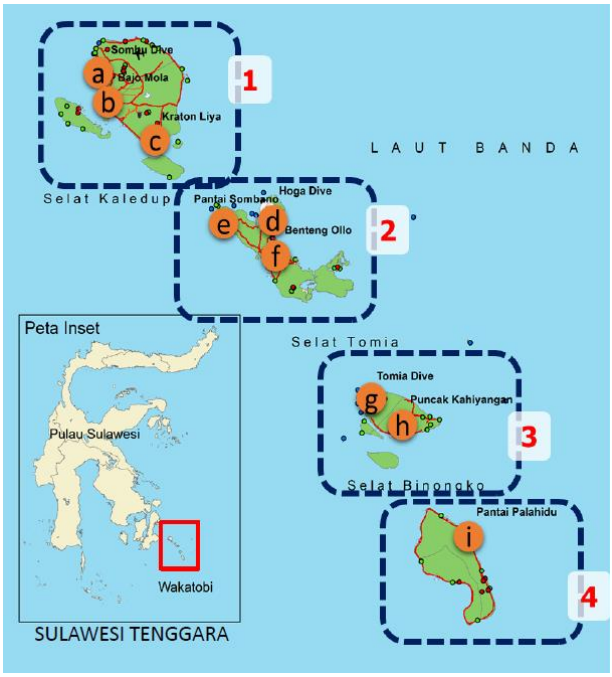


Figure 15 Tourism Priority Area in Wakatobi (Integrated Tourism Master Plan, 2020)

5.1.4 Regional Human Settlement Infrastructures

Infrastructures have significant roles in the economic development of a region, from supporting production systems to enhancing citizen well-being. This sub-chapter will explain the existing condition of infrastructure that supports the urban (settlement) system. This explanation includes water supply, wastewater and sanitation, drainage, solid waste, and public housing system.

Water Supply

Water is supplied to the residents mainly by a government-owned Local Drinking Water Enterprise (PDAM) and nine private companies. They provide access to clean water to 64% of Wakatobi residents. Only Wangi-Wangi Island has sufficient coverage with 98.41% access to the piped water network. The PDAM currently operates water supply systems with an installed capacity of 140 L/s. In the future, they can increase installed capacity up to 210 L/s, which will be sufficient to supply the forecasted demand in 2041(Horwath HTL and Surbana Jurong, 2017). There is no major river or lake on the islands; thus, the seasonality of raw water availability has become an issue since the water system depends on rainfall while the water catchment area is limited. Thus, a water reservoir has been planned to be developed.

Wastewater and Sanitation

Most of the sanitation systems in the Wakatobi region is adequate but not safe[12]. 72.84% of households have access to adequate toilets, but no final treatment plant existed in the area, so the excreta spill over the soil or to the sea (see Figure 16). Although several communal septic tanks have been built by the local government, they are not fully effective since no sludge treatment plant is available at the regency. Many public toilets are deteriorated because of management and users' negligence, which shows the lack of sanitary awareness. Untreated sewerage discharge to the sea will pollute the marine environment that need to be protected. Thus, it is important to develop wastewater treatment facilities and a sewerage network to bring about 'safe' sanitation for all citizen in the near future.

[12] The Government of Indonesia differentiate sanitation system into three categories, safe, adequate, and open defecation. Safe is the highest level of service in which excreta is safely disposed to in-situ using septic tank or transported and treated off-site in downstream treatment facilities. Adequate category includes all sanitation facilities that avoid contact between human and faeces, and no unpleasant smelling. This include pit latrines and temporary structures.

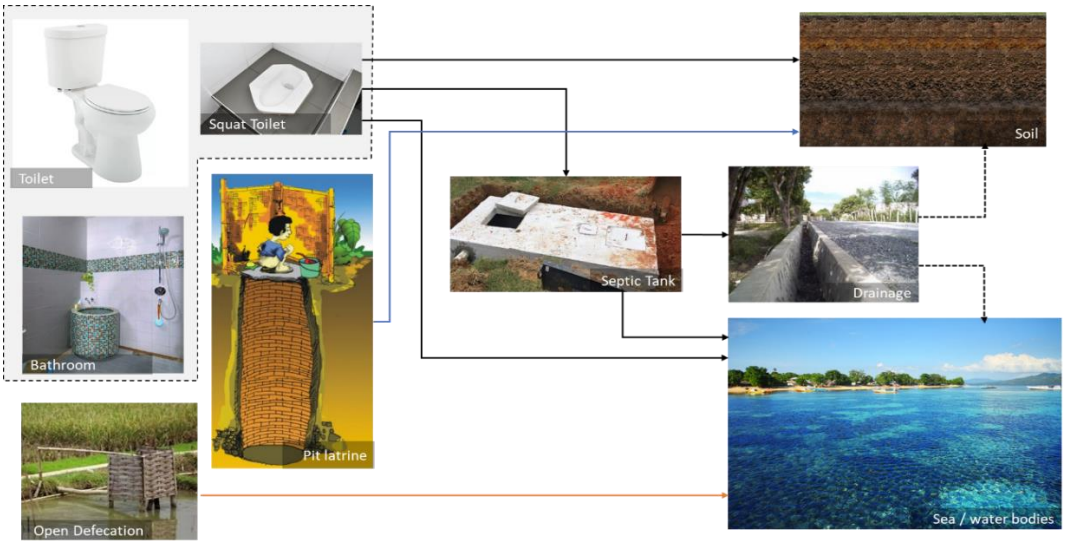


Figure 16 Sanitation system in Wakatobi

Drainage

Although most of the drainage in the Wakatobi Regency is in poor condition, the area has never experienced a major flooding event in the past. However, the drainage system should be maintained and upgraded to reduce temporary street inundation that often occurred during heavy rain. Moreover, the local government should anticipate climate change impacts in drainage system planning for the future. Wangi-Wangi Island, in particular, requires the most attention since the area has the highest density and the highest proportion of built-up land use.

Solid Waste

Solid waste management is one of the critical areas that are vital to the success of Wakatobi as a tourism destination. Littering is a problematic issue in many coastal areas and can cause damaging effects on both the marine environment and the local landscape. A study of environmental health risk assessment in 2016 estimated that the whole regency produces 38 tonnes of waste per day. However, about 15% of the waste generated was dumped to the sea, while almost 40% was burned. Only 22% of waste was collected. The numbers mentioned only cover Wangi-Wangi Island since other islands do not have a final disposal site. A further expansion of waste collection systems is greatly needed by not only increasing the numbers of garbage collecting trucks and the frequency of collection, but also the number of final disposal sites and integrated waste processing sites, particularly on other islands. Meanwhile, public campaigns to raise citizen awareness are also meant to change the general behaviour of the society. Solid waste management should begin at the source, at the household level. The people should understand and employ the reduce-reuse-recycle principle, which will reduce the government's load in handling waste.

Housing

As mentioned before, Wakatobi's economy is disadvantageous. With limited income, people cannot access the formal housing market. Hence, almost all houses were constructed autonomously. Because of limited income and informal arrangements, many people live in slums and among the poorest live in unhabitable houses. According to government data, there are 14 slum settlements in the whole Wakatobi regency with a total area of 143 Ha. Many of these settlements are located in the coastal area or above the ocean surface. Meanwhile, more than 5,000 houses have been identified as derelict housing. However, there is no public housing available in Wakatobi regency. The Office of Housing and Settlement was just established in 2017, but they face funding and institutional constraints. Currently, they focus on short term solutions such as houses renovation. This effort will be insufficient to affect the housing system altogether.

5.2 Profile of Mola Raya Villages

One of the biggest slum settlements in Wakatobi is the Mola Raya villages area. It consists of five villages: Mola Bahari, Mola Utara, Mola Samaturu, Mola Selatan, and Mola Nelayan Bakti. The settlement is located on top of the ocean surface and is a part of Wangi-Wangi Selatan District, the most populous district in Wakatobi Regency and its main economic growth centre area. The majority of the residents belong to the Bajo ethnic group with a strong cultural connection with the sea and mostly lives off marine resources.

5.2.1 Bajo People

Sama-Bajau, or mostly referred to as Bajo, is a sea-oriented ethnic group that once lived as nomadic boat-dwellers in the insular of South East Asia. As a result of this sea-nomadic lifestyle, they are scattered over a vast maritime zone, stretching from eastern Palawan and coastal Mindanao in the Philippines, to Borneo and Sulawesi, and then all the way to eastern Indonesia (Sather, 1997; Nagatsu, 2017). Although the exact population number of Bajo people is unknown, it is estimated that the number of Sama-Bajau speakers is more than a million (Nagatsu, 2017; Stacey *et al.*, 2017) or at least 467,000 in 2000 (Saat, 2003). Although they live in different countries and regions, they speak their own language with slightly different dialects influenced by surrounding areas.

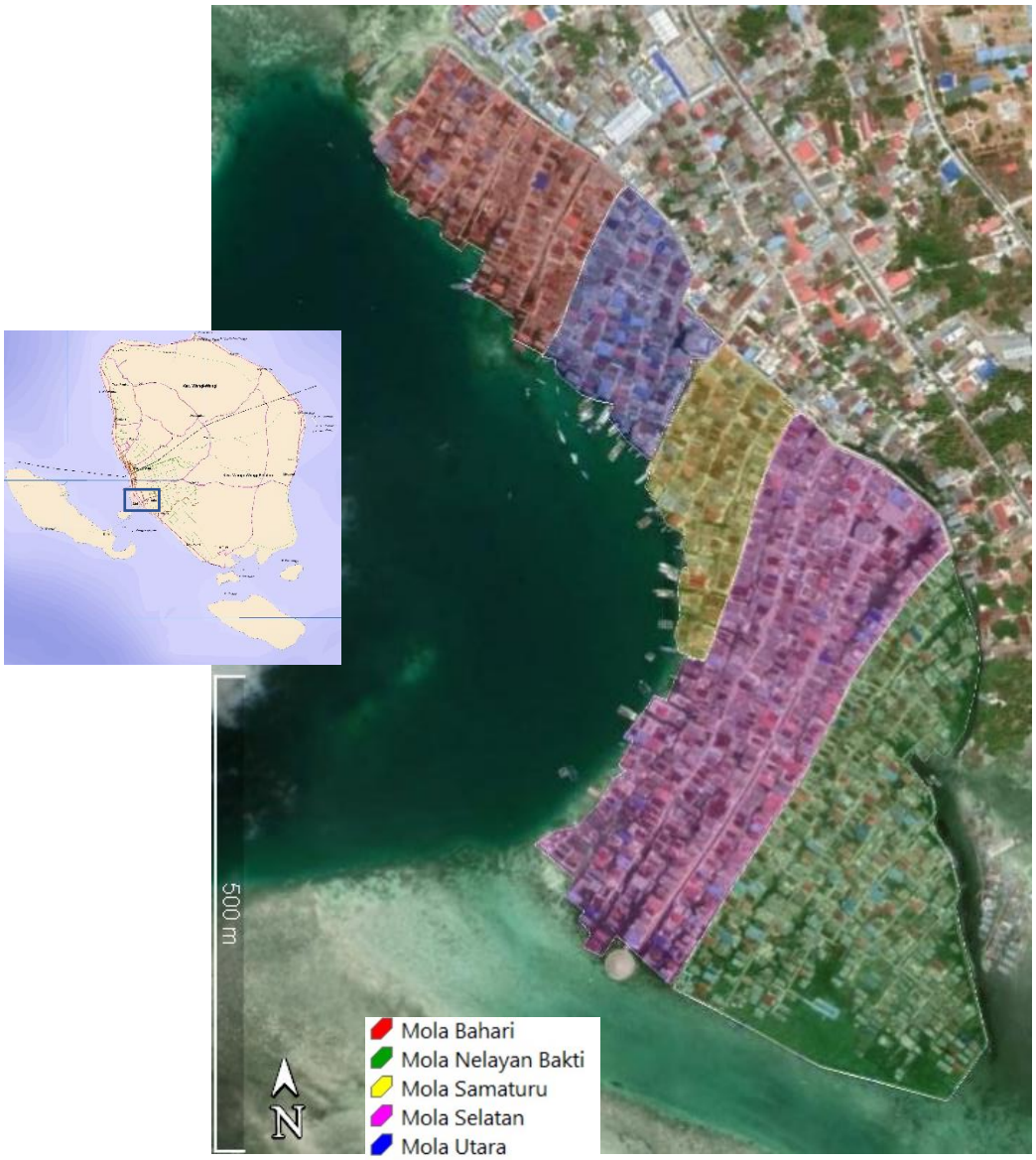


Figure 17 Maps of Bajo Mola area (modified from Google Earth)

According to stories and legends, the Bajo people originally came from Johor Sultanate in Malaysia (Sather, 1997; Stacey, 2007; Tahara, 2013). One of the narratives suggests that Bajo ancestors were Johorean royal guards who were ordered to find a princess that ran away or was taken captive by a neighbouring kingdom. According to one version of the story, the princess decided to stay in Sulawesi and married a Bugis prince; thus, as her escort, the guards also settled down in a location called Bajoe (Tahara, 2013). Another version suggests that the Bajo could not find the princess, so they would rather remain nomadic than face the king's wrath.

Nevertheless, one of the earliest records of Bajo existence in Sulawesi waters can be dated back to the sixteenth century (Stacey, 2007; Tahara, 2013). They served under ancient Gowa and Bone Kingdom in South Sulawesi and played an essential role in its political and commercial expansion and migration in eastern Indonesia (Stacey, 2007). For the next three centuries, they

had created archipelagic-wide trading networks for marine products (namely pearl, *teripang* (sea cucumber), and turtle shell), which eventually linked to the dispersion of Bajo people today (Stacey, 2007; Tahara, 2013). Despite being widely dispersed, the communities are linked by strong bonds of kinship, beliefs, and language (Stacey, 2007; Baskara, Abdullah and Suryo, 2014).

The Bajo are the people of the Southeast Maritime World[13]. They have a deep attachment to the maritime environment because they depend on marine resources for their livelihood, and their cultural norms and assets are closely associated with the sea. Although most of them practice Islamic religion, they perform ritual practices and follow traditional values based on their belief in the Lord of the Sea called *Mbo Ma Dilao* (Baskara, Abdullah and Suryo, 2014). They believe that the *Mbo Ma Dilao* are the incarnation of their ancestors, who will protect them while in the sea (Baskara, Abdullah and Suryo, 2014). The ancestors are believed to have authority over the marine environment; thus, the sea is perceived to belong to the Bajo people as the place to live and to earn a livelihood (Stacey, 2007). In the cosmology of Bajo people, the sea has its own spiritual meaning.

In the nineteenth century, the nomadic boat-dwelling lifestyle began to lessen while more sedentary living thrived, as indicated by the emergence of on-shore and off-shore Bajo settlements (Nagatsu, 1997; Stacey, 2007). Based on his research of Bajo people in Sulu Archipelago, Nagatsu (1994) suggests three causes for Bajo people sedentism[14]: 1) the establishment of market centres and the penetration of a money economy; 2) the introduction of a new maritime product, namely, agar-agar or seaweed; and 3) technological innovations, such as cotton and, recently, nylon fishing nets and outboard engines. He also found out that a land-dwelling way of life has changed the Bajo in several ways (Nagatsu, 1994): 1) abandonment of the nomadic life; 2) emergence of concentrated settlement patterns among Bajo communities; 3) social differentiation between rich and poor; 4) acceptance of Islam or Christianity; and 5) increased interest in occupations other than fishing. Although they have settled, Bajo people still maintain maritime lifestyles such as fishing, aquaculture, reef mining, and boat building.

Because of their past maritime nomadic lifestyle, the Bajo are relatively lagging in education and economic standing (Saat, 2003). Traditional fishing activities do not require higher education since practical knowledge of navigation and fishing is being passed from generation to generation. Many of them are poor because of their incapability to accumulate assets due to

[13] Yoshikazu Takaya (in Nagatsu, 2015) conceptually divide Southeast Asia regions into four unit worlds: (1) the South East Asian continental mountainous world, (2) the Thai-deltaic world, (3) the Javanese world, and (4) the Southeast maritime world.
[14] the transition from nomadic society to a lifestyle that involves remaining in one place permanently.

their migratory habits. In addition, one of the most discussed factors of Bajo poverty is social-cultural exclusion (Saat, 2003; Tahara, 2013; Aoyama, 2016; Stacey *et al.*, 2017). Outsiders consider them as sea gypsies, which is often connoted to a low level of civilization (Saat, 2003). In some places, they are often stereotyped as 'uncivilised', 'dirty', and 'primitive' (Aoyama, 2016; Stacey *et al.*, 2017) and associated with pirates or criminals (Tahara, 2013). When settling in coastal areas or on littoral waters, they had to adopt the dominant culture of the land-based coastal group. However, in many cases, they are treated as having lower social status than the dominant cultures (Saat, 2003). Patron-client bonds are often the nature of their cultural relationships with the land-based societies (Stacey *et al.*, 2017). The Bajo might have limited bargaining power over the land-based people because they own resources necessary for the Bajo to survive, such as freshwater and staple foods.

During the Bugis Kingdom era, the Bajo community began to settle down by living in 'water villages'. Thus, their houses are heavily influenced by Bugis housing design. In building houses, The Bajo refers to the philosophy of Appabolang (Juhana, 2000; Dharma, Ikhsan and Hasan, 2017). This philosophy consists of six factors that Panrita Bola (housing construction expert) need to consider in designing Bajo house: religion and belief, social relation, occupation, knowledge, lifestyle, and natural environment (Juhana, 2000). According to their belief, a house can be divided into three levels: Aje (foot), Watang (body), and Ulu (head). Aje is a dirty place inhabited by evil spirits, while Ulu should be clean and neat as it is a place for good spirits (Juhana, 2000). This belief is influenced by Bugis culture, where they believe the fortune goddess lives in the upper side of the house, so they store rice under the roof or make it the girls bedroom (Dharma, Ikhsan and Hasan, 2017). Based on the level of social interaction, the house can be horizontally divided into several parts. The very front of the house, called lego-lego, is considered the most essential part of the house as it is accessible to family members and guests (Syam *et al.*, 2018). Various social activities such as gathering, resting, net mending, drying places, and trading occur in this place. Another essential feat of Bajo houses is the utilization of building columns underneath the house to moor the boat and store fishing gear. Their houses are mostly constructed of various materials such as bamboo, nipa palm, timber, and roofing iron, and built either on wooden piles directly above the water or on coral rock foundations that they pile over time.

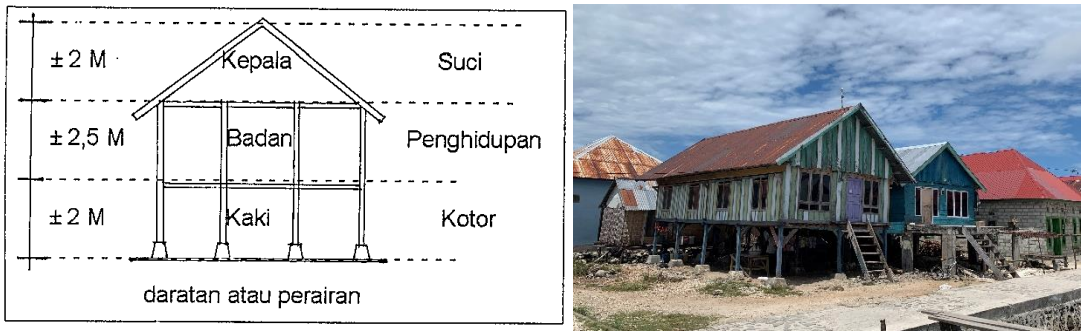


Figure 18 Bugis inspired home design (source: Juhana, 2000, p. 128 (left) and field study (right))

5.2.2 History of Mola Raya Villages

According to research by Natasha Stacey (2007), The Bajo have lived around the Wakatobi Islands since the 19th century. During that period, some of the Bajo people went to Kaledupa Island, a vassal state belonging to Buton Sultanate. They eventually set up a settlement offshore of the Kaledupa island. The first settlement was at Lembonga, near Buranga, the old capital city of Kaledupa Island (Stacey, 2007). Later on, they found a better site, and called the new place Mantigola (Stacey, 2007). For years, they had a relatively harmonious relationship with Butonese people despite being labelled inferior stature for their status as migrants.

In 1949, four years after Indonesia's independence, a rebellion was staged by DI/TII (Darul Islam/Tentara Islam Indonesia), who fought for the establishment of an Islamic state in Indonesia. The rebellion spread into South East Sulawesi in the 1950s, and a few Mantigola residents were presumed to be involved in the event. The rebellion fades out in just a few years after being crushed by the national army. Afterwards, the Kaledupa residents went after the Bajo Mantigola people for their involvement in the rebellion and started to intimidate the whole Bajo people in Mantigola and called them *gerombolan* (dissidents or troublemakers) (Tahara, 2013). Feeling unsafe, in 1955, the Bajo in Mantigola sought refuge in a neighbouring island, the Wangi-wangi island.

The initial group that went to Wangi-Wangi was denied at first by the Liya, one of the traditional communities descendent of the Butonese who inhabit the southern part of Wangi-Wangi Island. However, another traditional community that resided in the western part of Wangi-Wangi Island, the Mandati, had decided to accept them because one of the refugees had a kinship relationship with one of the leaders of the Mandati people.

The Bajo migrants were accepted under two conditions: 1) location of Bajo people residentials is decided by *Sara Mandati* (Mandati Council), and 2) Bajo people follow rules and norms established by Sara Mandati. According to the verbal agreement, the Bajo people were permitted

by Sara Mandati to live above the sea nearby 'Molii' spring water, which is the origin of the name Mola. Additionally, the Bajo people have to comply with Mandati rule despite being excluded from Sara Mandati decision making process. In the past, the Head of Bajo Mola village was also selected by the Mandati council. This situation put Bajo people at the lowest social status in Wangi-Wangi Island (Tahara, 2013; Eryano, Sudaryono and Iskandar, 2020).

In the 1980s and 1990s, the authority of cultural institutions in Indonesia weakened as centralized formal government entities replaced it. This situation affected Sara Mandati because they had no power and resources to exercise their authority regarding Bajo Mola settlement development. During that period, the Bajo built houses at will since space was widely available and the population was sparse (Eryano, Sudaryono and Iskandar, 2020). They should only notify the closest neighbours and give a sign of land ownership by themselves without Sara Mandati intervention. Hence, the settlement sprawled uncontrollably, making Mola Raya the biggest Bajo settlement in the world. However, after forming the Wakatobi Regency, the local government intended to empower cultural institutions and bring back tradition. This policy became the basis of Sara Mandati to regain control over settlement development in accordance with the old verbal agreement with the Bajo people. Nowadays, permission from Sara Mandati is required for new housing development in Mola Villages (Eryano, Sudaryono and Iskandar, 2020).

Settlement conditions of Mola Villages in the 1990s was documented in Natasha Stacey's book *Boats to Burn* (2007). At that time, Bajo Mola settlement covered an area of 8.3 Km^2 and was divided into only two villages, Mola Utara and Mola Selatan (Stacey, 2007). In 1994, both villages had a total population of 4,278 people living in 726 houses (*ibid.*). She describes that each rows of houses in the Mola settlement were separated by waterways or canals and few were connected by wooden or bamboo planks above the shallow waters while other houses were only accessible by canoe (*ibid.*). Residents disposed household rubbish and personal waste to the sea in which tidal movement periodically flush it out (*ibid.*). Houses were constructed mainly from wood or thatched palm leaf panels, with roofs of asbestos or thatched palm (*ibid.*). Several families often used the one small toilet huts built on piles over the sea, and freshwater was stored in ceramic jars or jerry cans (*ibid.*). Only a few houses had piped water connection at that time, while others had to spend hours collecting water and then transporting it in canoes (*ibid.*). Electricity was only available intermittently and only few households owned TV (*ibid.*).

Figure 19 Bajo Mola settlement in the 1990s (Stacey, 2007, p. 18-19)

5.2.3 Spatial and Demographic Features of Bajo Mola Villages

Kampung Bajo Mola covers an area of 34.28 Ha, which were inhabited by 7,779 people in 2019. The number indicates that the area's density is 226 people/Ha[15]. Two factors that lead to a high level of population density in the area: 1) high population growth; and 2) limited area for housing development. The high fertility rate is one of Bajo Mola's significant social and cultural issues. There has not been any official measurement, but Subardjan (2017) estimated that the Total Fertility Rate in Bajo Mola villages is around three to four. This means that every woman in reproductive years (15-49) has given birth to three until four children on average. Based on interviews, some respondents also suggest that each household usually has two to four children, while some households have eight children. Subardjan (2017) argues that lack of education and cultural value affects the low rate of contraceptive use. They also believe that 'more children more fortune'. Most Bajo parents view their children as a production factor that will help them gain additional income for the family. As a result, some families may view having a boy as more valuable than a girl. The Bajo community also had issues with space availability to build houses on stilts because shallow water area is limited.

Table 10 Mola villages population and spatial profile

Village	Population (2019)*	Area (Ha)**	Population density (people/Ha)
Mola Bahari	1 340	5.19	258.19
Mola Utara	1 001	3.55	281.97
Mola Samaturu	1 022	3.19	320.38
Mola Selatan	2 084	10.85	192.07
Mola Nelayan Bakti	2 332	11.50	202.78
Total	**7 779**	**34.28**	**226.92**

**) Source: SLAP, 2019*
***) Source: Wakatobi Statistic Office*

[15] As comparison, one of the most densely populated area in Tokyo, Nakano-ku, population density is 207 people/Ha

As previously explained, most Mola Raya residents belong to the Bajo ethnic group known for their maritime lifestyle. Thus, almost all households are fishing household, in which at least a member of the family involves in fishery activities. Most fishermen participate in small-scale capture fishery as indicated by small numbers of large fishing vessels. 86 fixed motorboats, 289 outboard motorboats, and 240 non-motorized boats are registered in the area. They capture fish using conventional methods, mostly angling, generating meagre income. Three hundred fifty-eight households were categorized as low-income families, while the number of social insurance assistance recipients reached 3,661 people[16] in 2017.

Poverty is often manifested in a slum settlement. According to a survey conducted by the local government in 2014, Mola Raya is recognized as 'heavy' slum settlement that requires priority attention by the local government and the national government. The assessment was based on seven indicators: quality of buildings, road accessibility, drinking water, drainage system, sanitation system, solid waste management, and fire protection facilities. The report of the assessment mentioned that the road network was severely inadequate. Most of the roads were dirt roads or wooden footpaths considered dangerous for pedestrians and inaccessible by car. The survey also mentions that no drainage network and proper solid waste management existed. Households often dispose waste and excreta directly into the sea. Assessment toward buildings showed that most houses were deteriorating as the wood used for construction material was liable to seawater. The report also mentioned that the drinking water and electricity coverage were sufficient but required improvement in service continuity.

In 2017, the local government created an urban design guideline (RTBL/*Rencana Tata Bangunan dan Lingkungan*) as a reference for urban regeneration or slum upgrading projects in Mola Raya villages. The guideline was created based on the vision to make Mola Raya a "humanist, ecological, and productive settlement" which makes it a liveable neighbourhood and an attractive space for tourists. The guidelines stipulated that tourism development should become the daily life of Bajo people, including their livelihood as fishermen. Thus, the guideline stipulates the integration of canals and road network to ease movement for both residents and tourists. In addition, housing and other landscape features should reflect the settlement's identity to preserve the historic landscape and its authenticity. To limit the expansion of the settlement, the document also mentioned footbridge construction surrounding the villages. The guideline also proposes the development of low-cost apartment buildings in the area to anticipate a housing backlog that could reach 1,338 units in 2037.

[16] Barely above poverty line, showing vulnerability to fall below poverty line

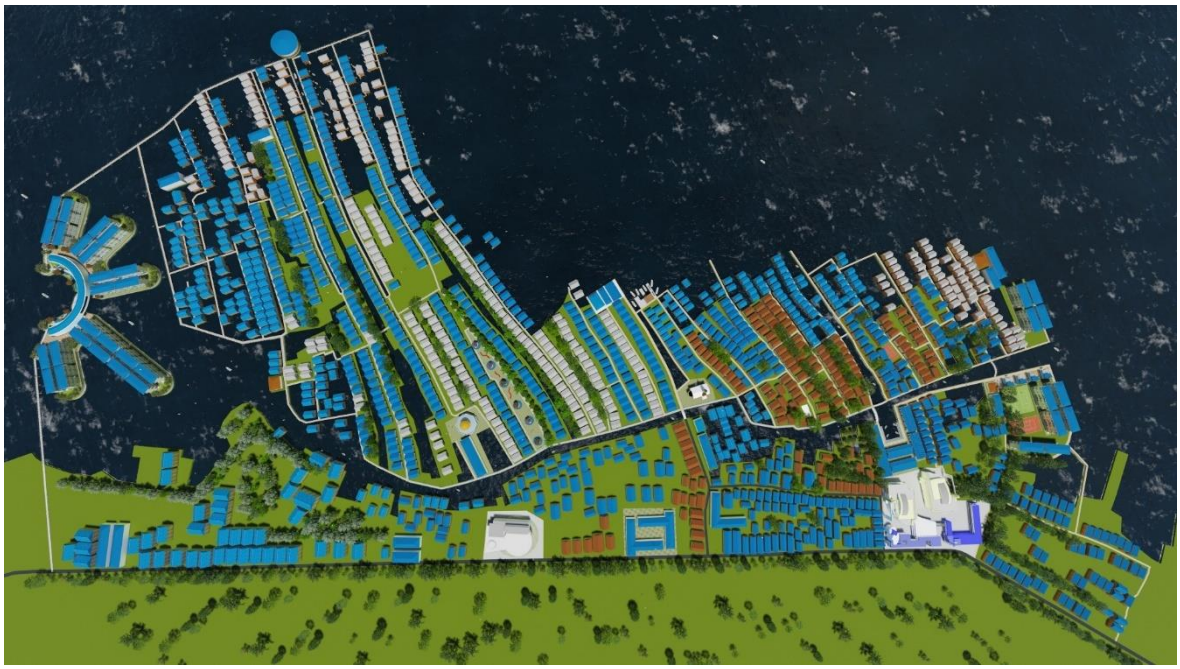


Figure 20 Landscape plan for Mola villages (Wakatobi Urban Design Guideline, 2016)

5.2.4 Community Governance

Indonesia is a country that consists of hundreds of indigenous cultures with their own customs and traditions. As in other cultures, the Bajo have their own cultural institutions and patronage system. All Bajo community, as in Mola villages, was led by a leader called Punggawa. In addition, some spiritual leaders serve as healers called Sandro. Regarding constructing new houses, common folks refer to Panrita Bola, an expert who has knowledge about construction rituals (*pangatonang ruma'* or *ilmu rumah*) (Juhana, 2000; Stacey, 2007). However, the role of cultural leadership in the society has lessened. The community governance is being replaced with formal bureaucratic governance with the head of village (*Kepala Desa*) holding the executive power. The village head is elected every five years and exercises their authority according to the national laws. The village head is overseen by five members of the Village Consultative Body. In carrying their bureaucratic duties, the head of the village is supported by a Village Secretary and several civil servants. The village head could also form a village-owned enterprise to increase village income and choose the enterprise's director.

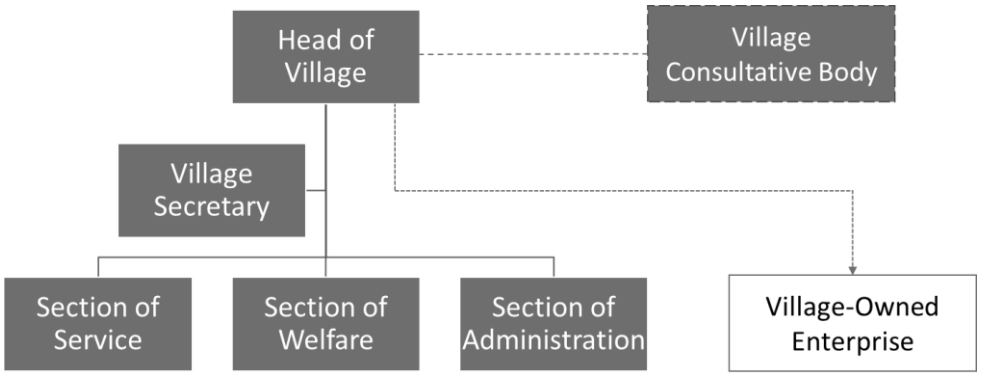


Figure 21 Organization of formal village government

Despite practicing formal governance, the traditional cultural arrangement with the Mandati people regarding settlement development of Mola villages still stands. After agreeing on land boundaries with neighbours, Bajo families who aspired to build a new house have to ask permission from the Mandati council. The Mandati council will eventually grant permission for first-time applicants under the condition that the land will not be sold. Construction that is conducted without Sara Mandati's approval would be suspended (Figure 22). The residents are mainly in compliance with the informal rules to avoid bad luck or sickness that is believed to be suffered by those who break the old agreement, or simply to avoid conflict. However, if the houseowner registers their lands and obtains land titles, the houseowner refers to formal regulation in developing the land and can sell the land without Mandati council intervention.

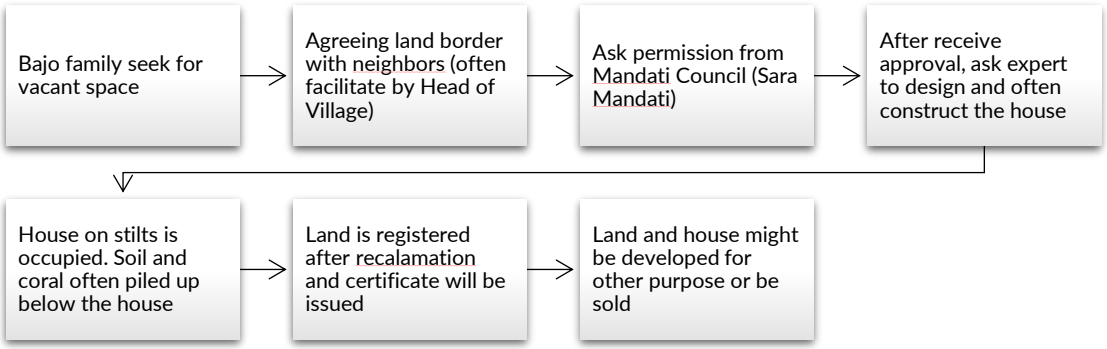


Figure 22 Process of Bajo household in acquiring space in Mola villages

Besides formal and cultural institutions, the community also organized themselves to regulate certain economic activities, such as fisheries and tourism. Padakauwang Sama, for example, is a fishery group that holds the right to Kapota Atoll Fishing Ground. The group was established in 2017 as a fishermen forum that arranged capture fishing practice collectively. The organization has empowered fishermen to collaborate with external organizations such as WNPA and RARE Indonesia. Moreover, there is also a community-based organization that engages in the tourism business called LEPA (Lembaga Pariwisata) Mola. The organization was

founded in 2015 as a result of a community-based tourism development project initiated by British Council and Bank Mandiri. LEPA Mola member consists of tour operators who offer several tour packages that relate to daily life and local knowledge of Bajo people. The presence of these two community-based organizations show that the Bajo people today are willing to organize themselves to elaborate and work together on each economic activity to reap full benefit for the whole society.

5.2.5 Economic Activities in Bajo Mola Villages

Most Bajo people in Mola villages depend on fisheries, especially nearshore capture fisheries, as their primary source of income. Many residents are also involved in fishing practice for additional income or for daily food. Women and children can be easily seen line fishing in the shallow seagrass or reef flats during the day. While in the night, the men often free dive over the nearby reef crest for speargun fishing. During the dawn, as the fish market open, fishing vessels arrive after hours of deep-sea fishing. These sights are the typical daily life at Bajo Mola fishing villages.

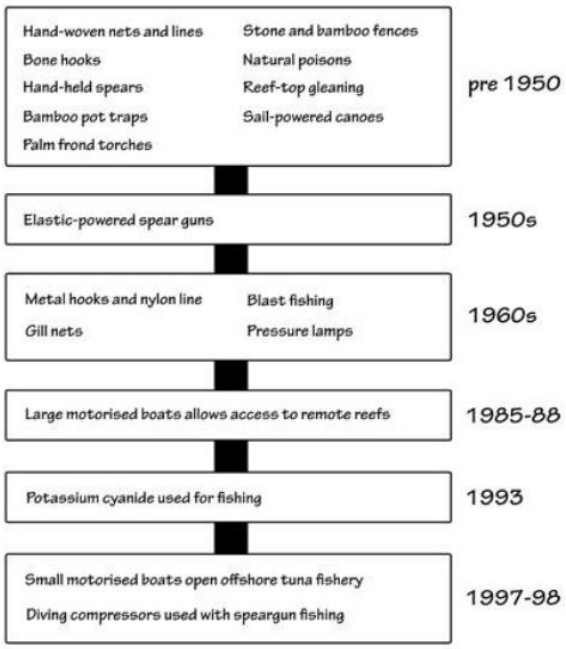


Figure 23 Fishery extraction techniques in WNP (Exton, 2010)

Although their fishing technique has evolved from low-efficiency subsistence techniques to improved extraction techniques using motorized boats (Exton, 2010)(see Figure 23), most Bajo fishers can be categorized as small-scale fishermen according to Indonesian regulation. The majority of the fish caught by the residents are landed on the village, and then the catches are either sold in the market, supplied to the intermediaries, or consumed by the families. The Bajo Mola fishermen cultivate a diverse variety of commodities. High-value commodities such as

octopus, tuna, grouper, sea cucumber and lobster are transferred to outside markets within Indonesia (Makassar, Bali, or Lombok) or travelled further to Hong Kong or Singapore. This export activity is driven by middlemen in the villages, who coordinate the collection of live fish and transfer of catches to large fleets with freezer facilities (Exton, 2010).

Figure 24 Night dive spearfishing

Despite being surrounded by enormous potential marine resources, Bajo Mola fishermen are barely prosperous. A survey conducted by the WNPA and RARE Indonesia in 2015 toward 262 Bajo Mola fishermen found that 84% of the respondent spend less than two million IDR (≈ 14,000 JPY) for average monthly expenditure. This amount of expense is less than the average of monthly expenditure of Wangi-Wangi island's residents. In addition, the same survey also found that 75% of fishermen do not finish elementary education. This is hardly surprising because, as several interviewees suggest, many fishermen have participated in fishery activities since early adolescence. Because of the low level of education, the fishermen have limited occupational mobility.

In addition, their welfare condition is at stake because fish catches had decreased compared to the previous decade. A study by the WNPA and RARE Indonesia found that the daily catch of valuable commodities has dropped significantly (see table 10). Traditional fishing methods, such as gill netting, speargun fishing, line fishing and gleaning, have not been regulated by existing fisheries management (Exton, 2010); thus, more and more people enter the fisheries industry, intensifying competition in extracting marine resources. Exton (2010) argued that a Malthusian form of overfishing has occurred in Wakatobi because of an increase in number of fishers, combined with a lack of alternative income streams and protein sources. In order to avoid Malthusian overfishing, he argued that efforts in fisheries management should focus on reducing the total number of fishers (*ibid.*). This condition could be achieved by reducing population

growth through community education and family planning assistance, promoting an alternative economy, and diversifying food resources.

Table 11 Catch of valuable commodities in 2015 and 2020

Type of Fish	Catch in 2015	Catch in 2005-2010
Black Sunu Grouper	20 fish/15 days	30-40 fish/15 days
Black Grouper	6 fish/day	100 kg/day
Leopard Coral Grouper	1-2 fish/day	10-15 fish/day
Tiger Grouper	20-30 kg / 15 days	150 kg/day
Mix Grouper	10 kg/day	30-40 kg/day
Tuna	20-100 kg	100-500 kg/day
Bobara	10-15 fish/day	15 fish/day
Napoleon	3 fish/15 days	20 fish/15 days

Source: WNPA and RARE Indonesia document, 2015

Aware that the unregulated fisheries will lead to devastating impact, several Bajo Mola fishermen decided to organize themselves. In the beginning, small groups were established based on the fish extracted, such as the grouper group and the tuna group. In 2015, these groups joined together and established Padakauwang Sama Fishermen Forum. With support from WNPA, the forum has succeeded in increasing fishermen awareness on sustainable fisheries practice. As a result, the practice of destructive fishing methods has decreased significantly in the past years despite a small group of residents still violating the regulation. In fact, the forum gains trust from WNPA to manage Coral Kapota Fishing Grounds. This initiative is a pilot for community-based fishery management in the area.

Figure 25 Fish commodities of Bajo Mola

In addition to fisheries, tourism is another promising economic sector that can be developed in the area. As Wakatobi's tourism industry flourished in the early 2010s, several Bajo Mola residents also sought to capitalise on the opportunities. With the help of Bank Mandiri CSR fund and facilitated by the British Council, the Bajo Mola residents established a tourism community-based organization called LEPA (Lembaga Pariwisata) Mola. Although the villages severely lacked tourism infrastructures and facilities, they believe that their Bajo cultural asset

can be developed into a tourism attraction. Hence, they offer various tour packages that combine education tourism and cultural tourism, such as:

1. Dolphin Watching

   The Bajo fishermen often encounter dolphins during fishing trip because the presence of dolphins indicates where a school of fish is located. They know the spots and the time of the dolphin appearance. Hence, they offer dolphin sightseeing tours using small motorized boats so that the tourist can see the animal up close in their natural habitat. The tourist not only enjoys a unique experience but also gains knowledge about the Bajo people's marine life.

Figure 26 LEPA Mola office

2. Bajo Cultural Walking Tour

   LEPA Mola also offer walking tour throughout the Bajo Mola villages. In about an hour, the guide will take the tourist strolling around the narrow alley of the settlement to see the resident's daily life and Bajo culture. The tour provides insight into how the Bajo live and their history. Visitors are also invited to enter a typical Bajo house and meet Bajo families to interact with local people and understand different ways of life. LEPA Mola plans to integrate this tour with Bajo Museum, which is planned to be operated by the government.

3. Canoeing

   The Bajo often use a small canoe called Lepa to travel. In the tour, the operator will take the visitor to wander around the settlement using Lepa. The visitors can learn about Bajo history and their nomadic tradition and enjoy the sea breeze and beautiful scenery of Wakatobi nature. The tourist can also try to paddle the canoe to experience the Bajo way of life.

4. Bajo Culinary

   The surrounding Wakatobi seas provide fresh ingredients for a variety of seafood. These include lobster, tuna, and grouper, which are rather expensive in the foreign market. Visitor can enjoy these seafoods which cooked using traditional recipe. One of the popular cuisines is Parende which consists of fish served with yellowish soup.

5. Star Telling

> The Bajo used to live nomadic on the sea. They are able to navigate the vast ocean using the star as references. Their knowledge about star navigation generates the visitors' interest who are curious about how the practice works. Hence, in this tour package, the visitors are taught how to observe sky objects to navigate and analyse wind direction, weather, and tidal flow.

The local government also acknowledge the tourism potential of the Bajo Mola settlement. To attract more visitors into the area, they built an on-water Bajo Museum in 2012. The museum was erected to display and preserve Bajo people's historical relics and cultural symbols. According to the initial plan, the museum would also exhibit Bajo fishing practices and display various types of marine life that inhabit the underwater world of the Wakatobi. Besides museum development, the local government also organized a temporal cultural event in the area, that is Bajo Cultural Festival. The event was held in 2013, and it was intended to gather Bajo people from all over the world. It was attended by Bajo communities from 21 Indonesian provinces and six foreign countries. A parade of 1,000 ornamental ships and an exhibition of historical objects from Bajo people ancestors were also held during the event. The intention of both measures, Bajo Museum development and Bajo Cultural Festival event, is to celebrate and publicize Bajo cultural assets and attract more tourists to come to Wakatobi.

The LEPA Mola organization and the tour that they offered have attracted tourists and stimulated tourism industry in the Mola settlement. The resident had started to open stalls and renovate their home to become a homestay. Several fishermen also benefit from supplemental income from operating tours. However, as the Wakatobi tourism growth stunted in the last five years, the tourism industry in Bajo has 'withered before blooming'. During the tourism bust period, tourists hardly visit Bajo Mola villages. The situation worsens during the Covid-19 pandemic era. A few stalls remain open to serve local people, but the residents rescind their interest in opening a restaurant that serve Bajo cuisines. The residents who seek to open homestay also withhold their investment in renovating their properties. Furthermore, despite its popularity, the Wakatobi regency government did not continue the Bajo Cultural Festival event. Meanwhile, the Bajo Museum, which is expected to draw tourist arrival, is in idle condition and abandoned by the local government, so the building condition is dilapidating.

Figure 27 Idle Bajo Museum

5.3 Housing and Settlement Issues

According to Wakatobi's Slum Improvement Action Plan (*Rencana Peningkatan Kualitas Permukiman Kumuh Perkotaan*/RP2PKP), Bajo Mola area is identified as one of the most deprived slums in the regency. The document also mentions Bajo Mola villages as one of the priorities for slum upgrading because of their vast area. There are several development issues in the villages regarding the human settlement.

Overcrowding and Housing Shortage

As mentioned before, the population growth is relatively high in Wakatobi, with many households consisting of more than five members. However, housing development is unable to balance the rapid population growth. One of the reasons is the limited space. Bajo houses were built above shallow water, which is only available in an area of 400-500 meter from the coastline. Limited space hinders new housing development and inhibits open public space as almost all space available has been occupied by houses. Other reasons for housing shortages include low-income generation, customary land management, and unavailability of building material, which will be discussed later.

According to Wakatobi SIAP, in all Bajo Mola villages, the sum of housing shortages reached 592 houses. There were 1,945 households in the area, but only 1,353 houses existed. The most serious deficit happened in Mola Selatan village, where housing deficiency has reached 293 houses. Although the data clearly shows the severity of the housing shortage, there are no homeless people in Bajo Mola villages. Families or relatives will provide accommodation to destitute households/person who does not have shelter.

Table 12 Housing shortages in Mola villages

Village	Population (2019)	Number of Households	Number of Houses	Housing Shortage
Mola Bahari	1 340	335	178	-157
Mola Utara	1 001	250	243	-7
Mola Samaturu	1 022	256	158	-98
Mola Selatan	2 084	521	228	-293
Mola Nelayan Bakti	2 332	583	546	-37
Total	**7 779**	**1 945**	**1 353**	**-592**

source: SLAP, 2019

Because of inadequate housing development, most of the houses are overcrowded. With an area of only 30-60 m^2, many houses are inhabited by more than two households. Living in a crowded home affects a person's well-being in several ways. Children are having difficulties studying due to a lack of comfortable and quiet places. It also may lower life satisfaction because of a lack of private space. Families have to sleep in cramped spaces reducing comfortability. Houses mostly have one bathroom, which is insufficient for multiple households; therefore, this circumstance may lead to open defecation and poor hygiene practice. Transmission of diseases like respiratory infections is also easier, making family members susceptible to health risks that will lower productivity to gain income.

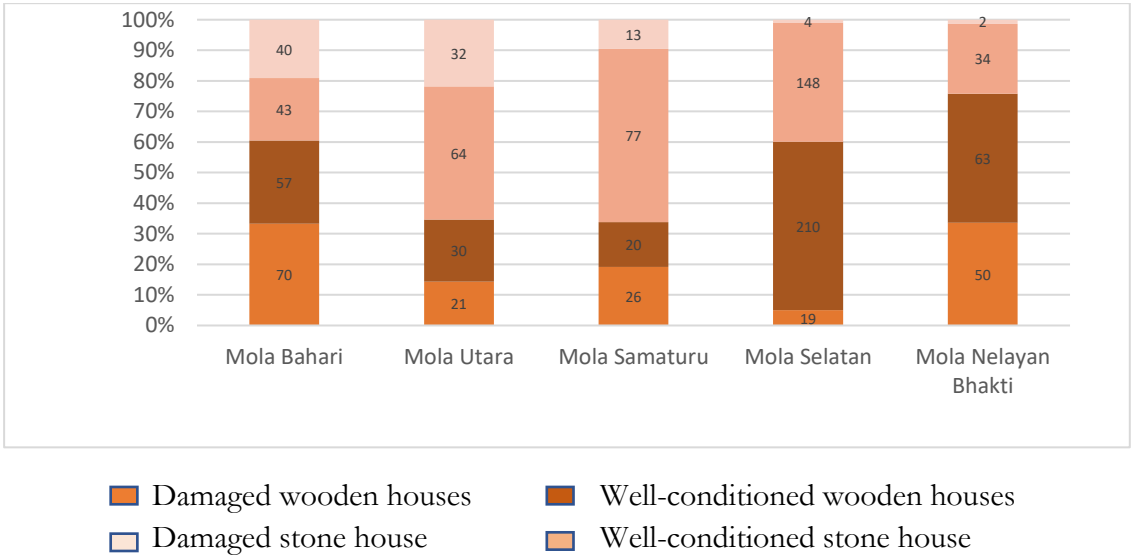
Deteriorating Housing

More than half of the houses use wood as the main materials, while others use brick and concrete. However, the quality of wood that they use for building and stilts are substandard. Therefore, it deteriorates over time because of weathering, cracks, and erosion caused by fungi, marine borers, and termites. Decades ago, Bajo people used strong wood materials such as ironwood or mangrove wood. With these kinds of wood, the house can survive for 15-20 years. However, because of over-exploitation, these woods became very rare and then protected by the government. Other types of hardwood are also becoming rare and expensive because of forest land-use change. Since Bajo people do not have land, they cannot cultivate woods for themselves. Therefore, they rely heavily on land-based society supply of building materials. As a result, a typical present-day wooden house can only be sustained for 10-15 years.

There has been a shift of building material usage from wood to brick housing with concrete foundations in recent years. Many people consider this as a sign of prosperity and modernity, and it is also more resilient to wind or ocean current. However, this kind of housing requires more capital. Instead of lending mortgage from the bank, which often declined because of uncertain income and lack of collateral assets, the Bajo opt to build their houses gradually.

Traditional fishermen rely on simple fishing gears; thus, their fishing time depends greatly on the season or weather, and their catch amount is uncertain. As a result, their income fluctuated over the years, affecting their housing development strategy. In the village, many houses are not fully built. The inhabitants are slowly investing in their house and make improvement gradually in accordance with their income from fishing. Nevertheless, a few of these stone houses are also deteriorating because of insufficient maintenance. As data from 2014 suggest, more than quarter, or 277 houses in the area were in heavily damaged condition both categorized as stone and wooden house.

Figure 28 Housing condition in Mola villages



Customary Land Tenure and Formal Land Tenure

Although Bajo people have lived in Mola villages for several decades, they are still perceived as outsiders by the Wakatobi people. The verbal agreement between Wangi-Wangi natives (Mandati community) and the Bajo dated back 70 years ago is still applicable until today. The agreement stipulates that The Bajo people are required to ask permission from Sara Mandati, council of Mandati community, in order to build new houses. Despite Bajo people building their own settlement, the Sara Mandati still holds the cultural administrative role over the settlement. However, recently, there was a conflict of power among the Mandati people which resulted in dualism of power holders. The Bajo do not want to interfere with the conflict, so they have to ask permission from both parties. This situation poses a significant problem for Bajo people because each party has different records and arrangements regarding home ownership.

However, the land arrangement changes if the space that was given by the Mandati council to Bajo Mola households is piled up and becomes land that sits above the ocean surface. Under

this circumstance, the Bajo Mola residents can register their land and obtain a land certificate. According to Land and Spatial Planning Minister Regulation Number 17 Year 2016, a title of land reclamation can be provided to indigenous people who have lived there for generations. As a result, many lands in the Mola villages are now registered despite the fact that they were above water at first. After the land title is obtained, the owner can use, or even sell, the land without the cultural restriction of Sara Mandati.

Reclamation

Bajo people used to live nomadic as they continue moving from place to place searching for new untapped marine resources. Accordingly, their houses were initially intended only for a non-permanent purpose. However, most of Bajo residents today, particularly in Mola villages, prefer sedentary living. Therefore, many house designs and structures are being transformed to make it durable for long term use. One way is to pile up dead coral reefs so the sea becomes 'land'.

One of the habits of Bajo people when they went fishing is to collect dead coral reefs. After that, they piled it below their house. This activity is mainly conducted by women. This practice continued for years, and gradually the pile of dead coral reefs became land above sea level. This way, they can apply for land registration and collect the land title, which can be used as tradeable and collateral assets.

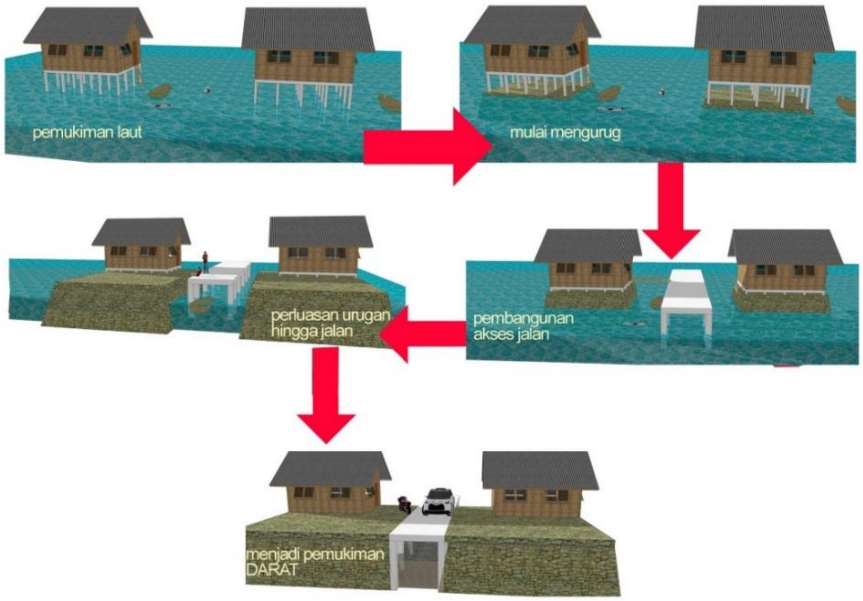


Figure 29 Land reclamation process (Urban design guideline, 2017)

The practice of coral mining is actually forbidden in Indonesia according to Law No 27 of 2007 regarding Coastal and Small Island Management. Those who systematically violate the law could

face prison up to 10 years. However, as the practice has been going on for years, the government only perform preventive measures such as public campaigns. Although local residents claimed that the practice has significantly been reduced in recent years, coral mining for land reclamation can easily be observed during the field observation.

Figure 30 Coral mining practices

Mixed used between fishing harbour and residential area

Fisheries are an integrated part of the Bajo culture as most of them gain income from cultivating marine resources. They land and process their catches within the Bajo Mola settlement area. They also used to anchor their most valuable asset, the boat, below their houses. Canals that run through the settlement provide accessibility for canoe movement in the area. No clear boundaries existed between settlements and fishing harbours. This condition resembles everyday life and social space of Bajo people which shows a strong connection between the community and the sea as their primary source of livelihood. The unique water-based landscape exhibits Bajo's maritime way of life and offers a serene atmosphere that fascinates visitors interested in the ocean and maritime lifestyle to stay at Bajo Mola villages. However, the mixed used of residential area and fishing harbour breach local spatial planning regulation. The Wakatobi's spatial plan only designates Bajo Mola villages as a settlement area, while fisheries-related activities such as fishing harbours and fish auctions should be conducted in Numana area, about 2 km from Mola villages. Even though fishing auction facilities have been constructed in Numana, the fishermen prefer to conduct land-based fisheries activities in Bajo Mola villages because it closer to fishermen's home and the market. As a result, the fish auction facility in Numana is currently neglected.

Figure 31 Fish processing in Mola streets

5.4 Implementation of Slum Upgrading Program in Bajo Mola Villages

The slum settlement survey conducted in Bajo Mola villages in 2014 concluded that the Bajo Mola was a slum settlement. The built environment was deemed as too dense, with more than 200 buildings per hectare. Existing houses and buildings were poorly planned or arranged. The house's material was mainly wood, but it weathers and deteriorates rather quickly, making the appearance look shabby. Because Bajo people mainly used canoe as their primary transportation mode, there was no urgency to develop streets; thus, the neighbourhood street network did not cover the whole village. Most of the streets were pedestrian made out of plank wood which could not be accessed by a fire truck. At that time, only half of the population had access to a drinking water pipeline, while almost all of them disposed of untreated domestic wastewater directly to the sea. Solid waste management was lacking, and people often litter on the sea. The drainage system and fire protection system were also non-existent. The assessment concluded that Bajo Mola villages were in extremely severe condition; hence, in the Wakatobi's SIAP, it has been recognized as a priority area for slum upgrading in the regency.

Because of its status as a priority slum settlement, slum upgrading efforts in the Bajo Mola area gained full support from the central government. Several infrastructure projects funded by the national government were carried out to improve the condition of each slum criteria. The list of the project can be seen in table 13:

Table 13 Bajo Mola upgrading project list

No	Project	Output	Value (Rp Million)	Fund
	2015			
1	Wakatobi SIAP Preparation	SIAP Document	800	National Gov't
2	Infrastructure Development in Slum Settlement	Neighbour street development	14.100	National Gov't
3	Community-Based Sanitation System Development	Communal toilet and septic tank	400	National Gov't
4	Community-Based Water Supply System Development	Tertiary pipe network	880	National Gov't
5	Drinking Water Supply Development*	Pipe connection to village	5.000	National Gov't
6	Solid Waste Final Disposal Site*	Wakatobi waste disposal site	8.600	National Gov't
	2016			
7	Infrastructure Development in Slum Settlement	Neighbour street development	10.500	National Gov't
8	Solid Waste Final Disposal Site Support Facilities*	Dump Truck, Site improvement	4.150	National Gov't
	2017			
9	Infrastructure Development in Slum Settlement	Neighbour street development	2975	National Gov't
10	Community-Based Sanitation System Development	Communal toilet and septic tank	500	National Gov't
11	Formulation of Urban Design Guideline	Urban Design Guideline	329	Local Gov't
	2018			
12	Infrastructure Development in Slum Settlement	Neighbour street development	5000	National Gov't
13	Integrated 3R Waste Processing Facilities*	Waste processing facilities	500	National Gov't
14	Community-Based Sanitation System Development	Communal toilet and septic tank	500	National Gov't

Note: *) conducted not in the village, but scope of service includes Bajo Mola villages

The original Wakatobi SIAP, which was formulated in 2015, mentioned six priority projects that would be implemented to improve the quality of Bajo Mola villages based on slum criteria. These projects are:

- Development of solid waste management through the establishment of Waste Bank

  The waste bank is an innovative concept of collecting and segregating solid waste involving banking systems in which savers deposit waste to earn loans. In order to be realized, it

requires government support to develop facilities, systems, and public awareness. However, the government has yet to support this cause; hence, solid waste is being managed conventionally.

- Development of new settlement in Oto'owe island

  The new settlement development in the neighbouring island of Oto'owe was intended to address overcrowding and housing shortage problems. However, this project requires a large budget to establish various public infrastructures system and facilities. Failure in providing these infrastructures will only transfer the problems of Mola villages to the new settlement. In addition, there is also objection from Sara Mandati who have cultural jurisdiction over the Mola villages and Oto'owe island. They argued that the new settlement development would violate the verbal agreement between the Bajo and the Mandati predecessors. With no funds and strong opposition, the project was failed to be realized.

- Development of open public space in Mola villages

  The effort in developing open public space in the area was hampered by the lack of available space in the settlement. Almost all spaces are occupied. With no public space, the residents use streets, skywalks, and parking spaces for social activities.

- Development of water reservoir

  Like open public space, this effort requires a wide space, an aspect that the settlement lacks. Nevertheless, an approach in providing drinking water was altered by relying on water pipe network connected to main island network. This approach proved to be sufficient for supplying drinking water to Bajo Mola households.

- Development of communal septic tanks

  Several communal toilets and septic tanks have been constructed by implementing community-based sanitation projects. The project had succeeded in connecting communal septic tanks to houses. At first, the infrastructure ran as it should, and houses connected were not disposing wastewater directly to the sea. However, the sludge treatment system in Wakatobi has yet to be set up. As a result, the affluent in the septic tanks cannot be drained and collected; thus, the septic tanks had reached its full capacity. For this reason, currently, all built communal septic tanks are not functional, so the residents return to dispose of wastewater carelessly.

- Development of a skywalk surrounding the villages

  The skywalk surrounding half of the villages was built in 2016. The skywalk provides walking access to the outermost houses. The skywalk was painted with colourful colours; thus, it is often called as rainbow bridge. It has attracted visitors who would like to see sunset from the

villages. The skywalk also functions as a development boundary for Bajo Mola settlement since no new housing built beyond the skywalk will be permitted.

From those planned priority projects, the first four projects have yet to be realized. Only development of the skywalk network and communal septic tanks were implemented. However, these two efforts have been ineffective in solving settlement problems of the area. In reality, the government pursued another approach that was not explicitly mentioned in Bajo Mola Villages' Urban Design Guideline or Wakatobi's SIAP, developing a street network throughout almost all parts of the villages. In constructing the streets, the government heaps soil on shallow waterways that used to be traversed by boats. Currently, the street network covers 70% of the villages, providing access for cars and motorcycles to traverse into the area. The objective for such action was to improve the presence and the quality of neighbourhood streets which is one of the criteria used in determining slums. Nevertheless, this action had altered the area's visual identity and, to some degree, changed residents' lifestyles and household assets. In general, the implemented upgrading project mainly focused on infrastructure development and was deemed to be lacking citizen participation and capacity development.

Figure 32 Street development of Bajo Mola area

Despite the well intention in developing neighbourhood street network, the result of the intervention has several weaknesses:

- Hindering canoe movement

Figure 33 Street development that hindered canoe movement

Previously, the canoe used by the Bajo people can pass through the settlement along the water space between rows of houses. However, the space of waterways has significantly reduced because of the street development and the heaping of the soil underneath them. Hence, it becomes difficult for the canoes to be manoeuvred, and there is no more space available to tie up these canoes within the settlement. In addition, land reclamation for street development had caused sedimentation of waterways which inhibit canoes or boats' movement, particularly during low tide. Street development did not consider the integration with the waterways. For example, many constructed bridges were designed without leaving enough room underneath for the canoe to pass, as seen in Figure 33.

- Losing the image of the historic urban landscape

The image of Bajo Mola villages was once comprised of waterways and rows of stilt houses. This landscape was Bajo's material culture which exhibited their maritime tradition and way of life. However, this unique image of a landscape has been lost. As the public space changes, private space and people's ways of life are expected to follow suit. Residents yearn to pile up their private spaces with a mixture of corals, stones, and soil to emulate the surrounding street network. Nowadays, only a small number of canoes pass through the settlement, instead more motorcycles are used. Few residents are concerned about the image transformation of the settlement, especially those who are involved in the tourism sector. They assume that the settlement has lost its uniqueness; thus, tourists may find it dull. The

slum upgrading process did not acknowledge planning efforts that seek to preserve historic landscape stipulated in Urban Design Guidelines.

- Piling up solid waste and untreated wastewater

  Slum upgrading through the street-led approach has not been followed by the improvement of community's sanitary and hygienic behaviour. Prior to the street development, the residents of Bajo Mola and neighbouring villages often disposed of waste (solid waste and human excreta) to the ocean, which was then washed away by the current. As street development blocks water flow, the household's waste is now piling up in the settlement, creating an unpleasant view of the villages. The waste not only comes from within the villages but also comes from the surrounding neighbourhood.

- The failing of public toilets and communal septic tanks

  The output of community-based sanitation programs comes in two forms, public toilets and communal septic tanks placed in a few locations. The communal septic tanks were connected to hundreds of houses through sewerage network in the villages. However, recently, the communal septic tanks have not been functioning properly because they were filled. Ideally, the sludge in the septic tanks must be removed periodically. However, there is no sludge treatment plant existed in Wakatobi Regency, so sludge has never been removed since the septic tanks were constructed in 2015. This shows the lack of integration in planning between city-wide and neighbourhood sanitation systems.

Figure 34 Abandoned public sanitation facilities (left) and contaminated waterscape (right)

The deficiency of program output shows two weaknesses in the slum upgrading process. First, the program was conducted with a very limited degree of citizen participation. Although a few community meetings were held during the preparation process, the meetings were attended by several elites who have financial capabilities to own cars and motorcycles or develop modern housing. These elites aspire to have a modern lifestyle; thus, they urged the government to build street network. However, the lack of participation from general residents who wanted to keep their lifestyle means that the intervention might not be entirely suitable for Bajo people's ways

of life. If the community's needs and aspirations were heard, slum upgrading program would have more potential to enhance community assets and livelihood than to disrupt their sense of place and ways of life.

Second, the implemented slum upgrading program was not in accordance with planning documents such as SIAP and urban design guideline. Street development, in particular, did not rigorously plan or thought of, causing various design problems. The weakness in planning was also related to the incoherence of infrastructures system. This is clearly shown in the failure of community-based sanitation projects. The piecemeal project disconnected the slum improvement effort from the city-wide system service delivery, whereas its success depends on the infrastructures system on a larger scale.

Regarding the way slum upgrading was conducted in Bajo Mola villages, which was heavily focused on street development, it can be assumed that the government was inspired by the street-led development approach to citywide slum upgrading popularized by UN-Habitat (UN-Habitat, 2012). However, the UN-Habitat guidelines (UN-Habitat, 2012, 2015a) mention skills and entrepreneurial development, participatory planning and community development, and local government capacity building as integral components of a slum upgrading project. These components are lacking in the case of Bajo Mola village. Hence, the outcomes and the impacts of the program would be significantly different from UN-Habitat's street-led slum upgrading approach. For example, the 'ideal' street-led upgrading also seeks to improve the awareness of residents on environmental sanitation. However, in the case of Bajo Mola villages, as in other infrastructure-oriented approaches that exclude community participation and development, the residents may continue their bad habits despite available facilities because of a lack of efforts to raise awareness and community organizing in maintaining built infrastructures. Furthermore, since skills and entrepreneurial capacity were seldom enhanced in the case of Bajo Mola villages upgrading, it is unlikely that the upgrading process would induce local economic development in the area.

5.5 Impacts on People-Place Relationship

The alteration of the physical landscape induced by the slum upgrading project consequently changed their perception of the place and their place-making practices. Several outcomes were selected to be analysed based on the condition before and after the program (pre-post design). These outcomes were selected based on interviews with the residents during the preliminary field study. These outcomes are related to housing design, home-based enterprise, transportation mode, fisheries activity, and noise pollution.

5.5.1 Housing Design

Experts and multinational institutions have argued that measures in supporting informal settlement (site and services or slum upgrading) incite incremental self-help improvement of housing (Turner, 1972; Wakely and Riley, 2011; UN-Habitat, 2012; Dovey, 2014; Adianto *et al.*, 2016). In many circumstances, incremental housing improvement is instigated by inhabitants assessment of the risk of eviction (Wakely and Riley, 2011; Adianto *et al.*, 2016). Even without land titling, slum upgrading can prompt subjective or de facto tenure security as the authority acknowledges the settlement through their intervention (Payne, 2004). In the case of Bajo Mola villages, the figure below show how the building material of houses has changed from 2015 (before slum upgrading intervention) to 2020 (after slum upgrading intervention).

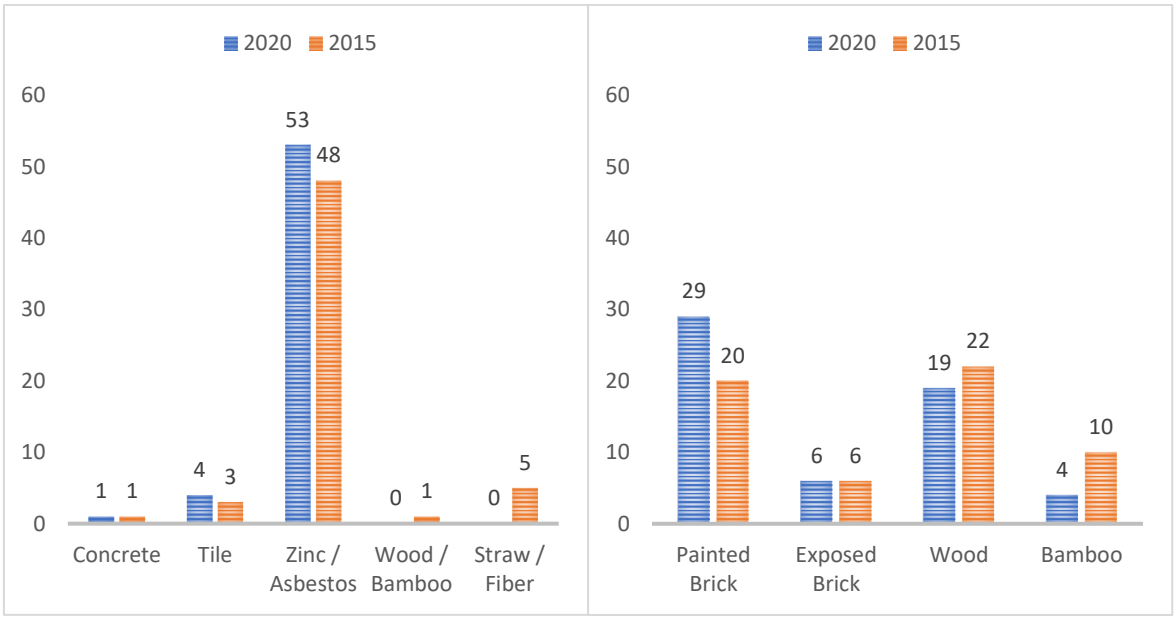


Figure 35 Roof (left) and wall (right) materials of houses in 2015 and 2020 (n=58)

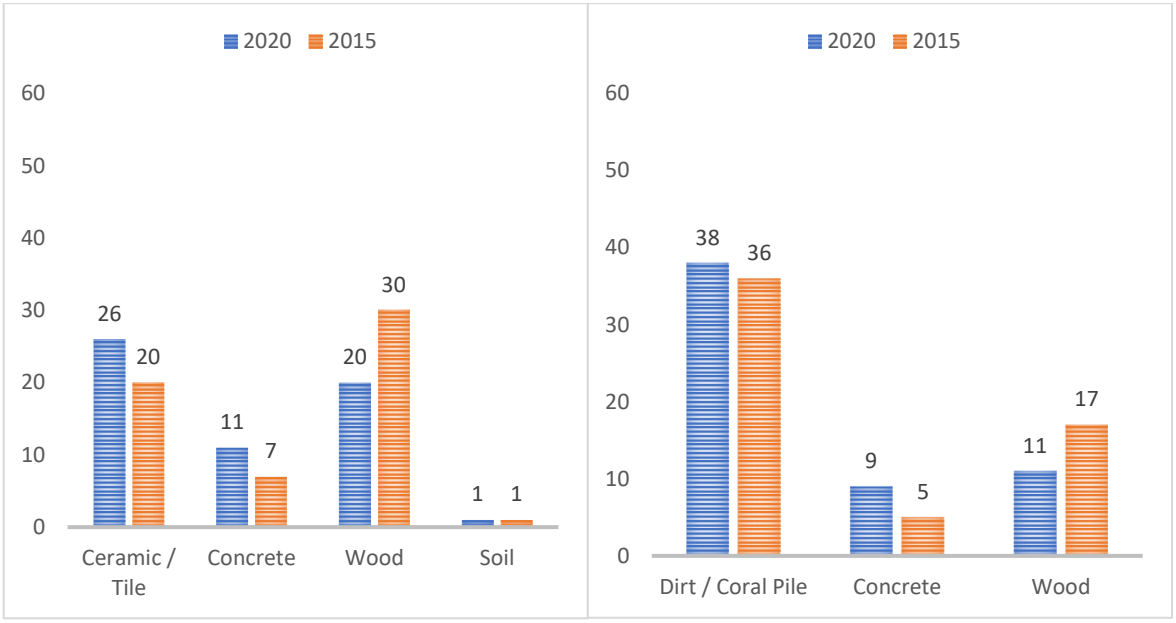


Figure 36 Floor (left) and foundation (right) materials of houses in 2015 and 2020 (n=58)

As the survey suggests, several Bajo Mola houses were upgraded to utilize more 'modern' material. Meanwhile, several households had also increased the floor space of their house, as suggested by the following figure.

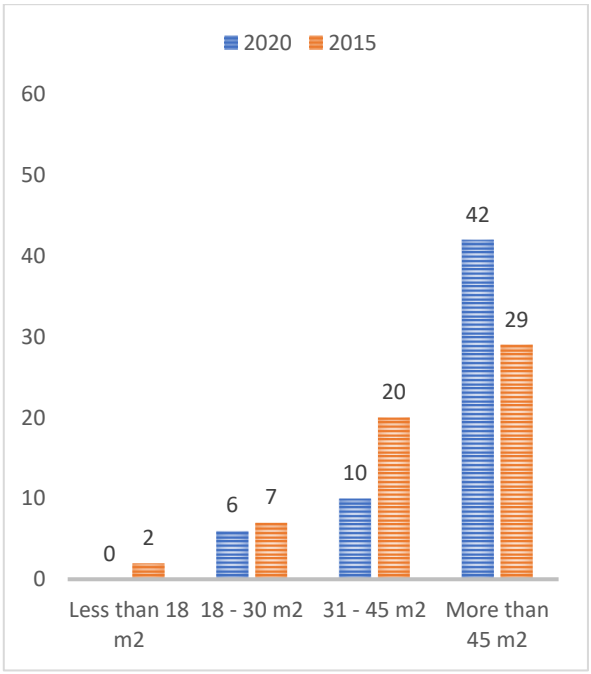


Figure 37 Floor area of Bajo Mola houses in 2015 and 2020 (n=58)

A Wilcoxon signed-rank test showed a statistically significant increase of house condition based on the roof, wall, floor, and foundation material as well as floor area (see table below). This means that the resident heavily invests in improving their houses autonomously.

Table 14 Wilcoxon signed-test of housing condition

House Improvement Factor	Negative Ranks		Positive Ranks		Ties	Z	p	Decision to H_0
	n	sum ranks	n	sum ranks	n			
Roof Material	1	6.00	8	39.00	49	-2.060	0.039	Reject
Wall Material	0	0.00	16	136.00	42	-3.624	0.000	Reject
Floor Material	1	4.50	12	86.5	45	-2.961	0.003	Reject
Foundation Material	0	0.00	5	15.00	53	-2.070	0.038	Reject
Floor Area	0	0.00	15	120.00	43	-3.626	0.000	Reject

Negative ranks: 2015>2020; Positive ranks: 2015<2020; the significance level is 0.050

According to resident interviews, there are three ways how the project induces house renovation. First, as the slum upgrading changed the neighbourhood's physical appearance, they were inclined to match their new surrounding environment. They felt that the old houses were ill-suited in the new landscape. Thus, they renovated their houses using more 'modern' materials. Second, as the movement pattern changed because of the street development, the residents seek to capture this opportunity by opening stalls or stores in their houses (which will be discussed further in the next section). This requires house modification and expansion to facilitate these activities. Third, the improved streets allow residents to bring heavier materials, such as bricks, concrete, cement, and steel, to their house locations. Previously, transporting these kinds of material was troublesome because the residents relied on canoes that have limited capacity to load such heavy materials. Hence, lighter materials such as wood and bamboo were more suitable.

Figure 38 Wooden houses on wooden stilts (left) and concrete stilts (right) (source: field study)

However, there are also other contributing factors to residents' motivation in renovating their houses. A few residents suggest that the wind and rain have become stronger in the last few years, indicating the effect of climate change. They perceived that the heavier materials are

stronger; thus, they utilize them on their house to anticipate serious extreme weather. Another factor is the scarcity of decent wooden materials. In the early development of settlement, houses in Mola villages were built using ironwood or mangrove wood, which is very durable and can last for 20 to 30 years. However, the government has formally banned the use of these kinds of wood because of overexploitation in the past. They currently use low-quality woods that deteriorated quickly because of weathering, cracks, and erosion caused by fungi, marine borer, and termites.

However, as a discussion with a local housing agency official revealed, self-help renovation by Mola household does not necessarily mean enhancing building durability and safety. Almost all home development and improvement in Mola villages are not registered; thus, the local government cannot ensure that it meets acceptable building standards. Not only once he discovers that the house was poorly constructed (e.g., cracked concrete, column bending, leakage), which can cause the building to collapse. Furthermore, most of the houses were designed by the owners or incompetent builders rather than by professional architects. Thus, the aesthetic and comfort element of the building is often neglected. Many people complain about the heat inside the stone building. Lack of ventilation inhibits fresh air circulation, so the enclosed space becomes hot and humid.

The residents build their homes gradually over time. One of the reasons is the fluctuation of fishermen income. Their income depends on the seasonality of fish catch, weather, and commodity price. Hence, disposable income can only be saved for construction during the high season, while construction may be stopped during low season. Another reason is that the building materials are not always available. The villagers depend on supplies from other regions, and with limited space, they cannot store materials either. They have to wait for the consignment of materials to arrive. Usually, the seller will hawk their goods on the street when these materials arrive. Because of the practice of building houses gradually, many unfinished houses can be observed.

Figure 39 House made from concrete bricks

5.5.2 Home-Based Enterprise

One of the arguments for the street-led upgrading approach is that "street-making creates jobs" (UN-Habitat, 2012, p. 33). The jobs are created not only from the involvement of local labour during the construction process, but also from the stimulation of local business due to improved connectivity to a wider scale economy. Opening streets ease transport of people and goods; thus, it enlivens activities of informal commerce such as hawking and vending, small manufacturing and repairing. Many of these activities are conducted by home-based enterprises run by the resident, especially female household members. This entrepreneurial endeavour generates income for the household, opens employment opportunities, provides personal services, and in many cases, empower women. The figure below shows the presence of home-based enterprises in Bajo Mola villages between 2015 and 2020.

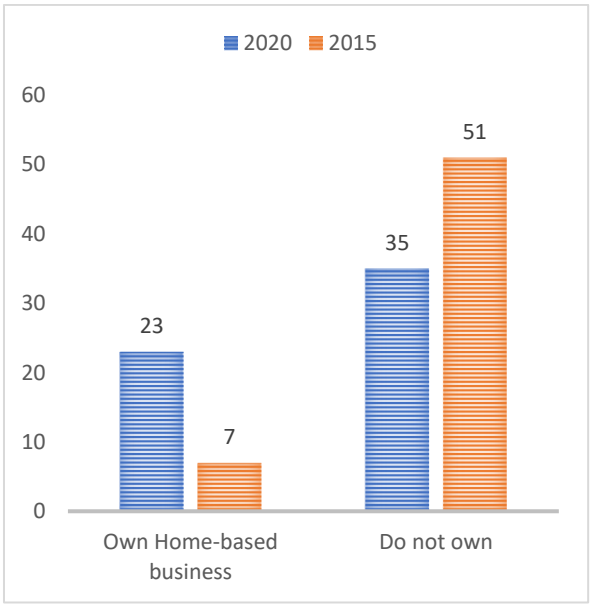


Figure 40 Ownership of home-based enterprise in 2015 and 2020 (n=58)

In the last five years, home-based enterprises has been bourgeoning in Bajo Mola villages. A McNemar test suggests that the proliferation of home-based enterprise among Bajo Mola households is statistically significant.

Table 15 Related-samples McNemar Test on home-based enterprise

	n	p	Decision to H_0
Home Based Enterprise	58	0.01	Reject

Street development allows the residents to travel easily and use the streets as public space. Hence, households seek to take advantage of the crowd of people moving and gathering by opening a

home-based retail business. This effort could generate additional non-fisheries income for households, especially considering income from fisheries activities had decreased (discussed in next sub-chapter). Apparently, this activity could be seen as an adaptive mechanism to compensate for decreasing fisheries income.

Figure 41 Stall opened in houses of Bajo Mola villages

However, the scale of home-based enterprises is far from optimal. As data from the household survey suggest (Figure 42), the main business type engaged by the resident is opening a stall in which they typically sell consumer goods such as cigarettes, sachet drinks, candies, and snacks. It is a simple business with low capital and human resources required. However, the income generated from this activity is relatively piecemeal. Almost all consumers are local people; thus, it does not bring wealth from the outside. Only several households participated in manufacturing or service industries such as fish processing and homestay, which can generate more income as their market is not limited to the village. This condition could happen because of the relatively low level of education and lack of skill of Bajo Mola villages, as suggested by the data from the household survey (Figure 43 and figure 44).

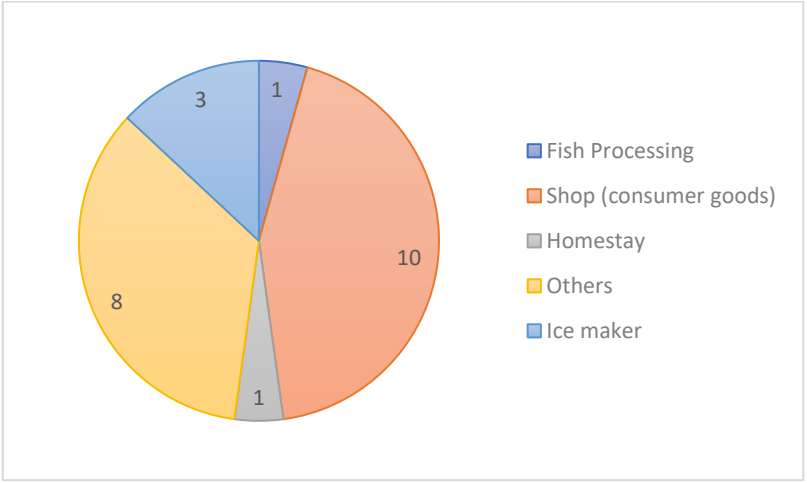


Figure 42 Type of home-based enterprise (n=23)

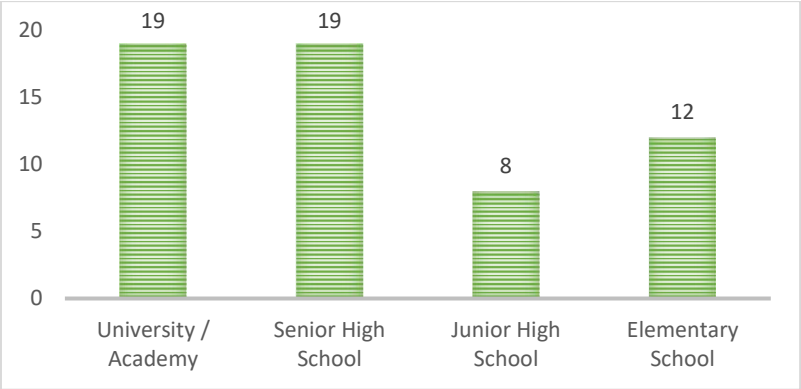


Figure 43 Highest level of education in household (n=58)

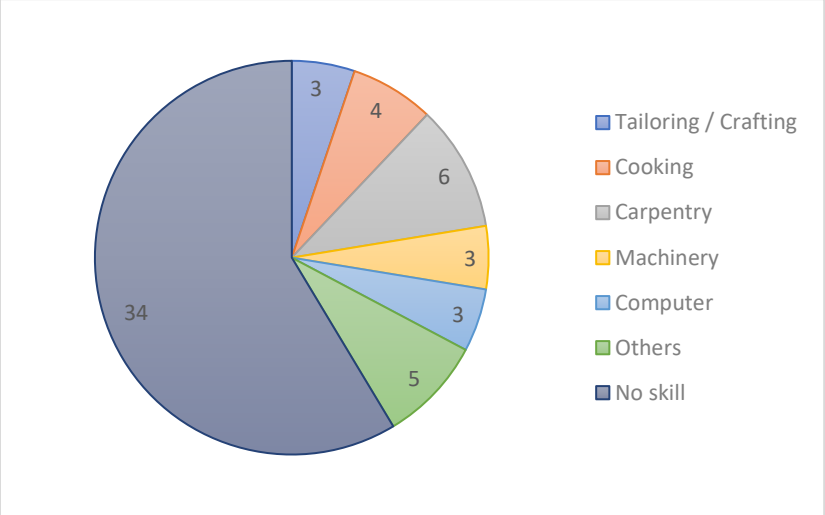


Figure 44 Non-fisheries skills obtained by member of household (n=58)

Necessarily, slum upgrading should include components of enterprise development to achieve optimal improvement of settlement and dwellers' quality of life. However, this was not the case in Bajo Mola villages, where entrepreneurial development was overlooked. This poses a potential risk for the Bajo Mola community as they may have to compete with external parties to provide goods and services for tourists in the coming future.

5.5.3 Mode of Transportation

Street development naturally increases the walkability for the residents. It also provides accessibility for land-based transportation modes such as bicycle, motorcycle, and car access. Prior to streets development, houses and facilities were connected by waterways in which only canoes, known as Lepa in Bajo language, and boats can pass through. Hence, their main transportation modes were canoes or boats. Today, even a truck can enter the village. The new landscape is more convenient to traverse by land-based vehicles than canoe or boat. Hence, the change of the main mode of transportation can be visibly observed from the data collected through the household survey (Figure 45).

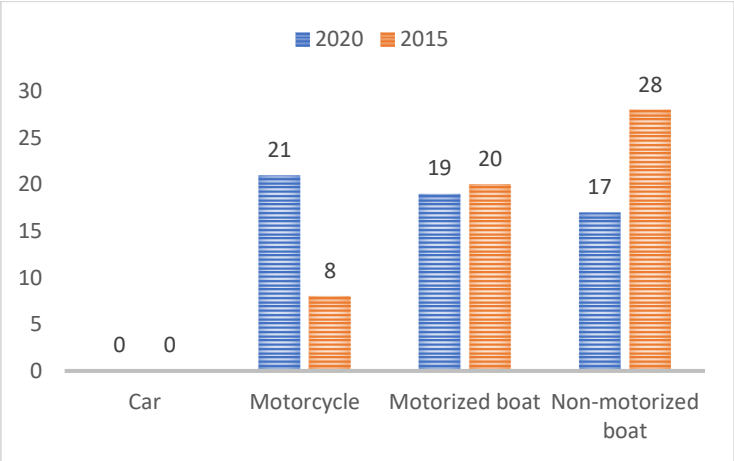


Figure 45 Ownership of transportation mode in 2015 and 2020 (n=58)

A McNemar test revealed that while changes in motorcycle and non-motorized boats are statistically significant, the change of motorized boats is not. Motorized boat owners are primarily fishermen who rely on their boats for fishing activities. Therefore, they keep their motorized boats and are unaffected by the street development. However, non-motorized boats such as Lepa are usually used for daily transportation. However, as previously mentioned, the street development had hindered canoe movement, making it more convenient to use a motorcycle. As a result, many of Lepa-users have converted to using motorcycles for their daily transport. Several respondents even suggest that they sold their Lepa to buy a motorcycle.

Table 16 McNemar test on transportation mode 2015-2020

	n	p	Decision on H_0
Motorcycle	58	0.001	Reject
Motorized boat	58	1.000	Accept
Non-motorized boat	58	0.019	Reject

Figure 46 Lepa as transportation mode

In the old days, Lepa usage used to be the main characteristic of Bajo people. Decreasing Lepa ownership symbolizes not only physical transformation of the settlement, but also transformation of everyday practices. However, this phenomenon may bring at least two consequences. First, the residents who disown Lepa will face difficulty entering fishing practice. Fishing activities have become the safety net for Bajo people in times of economic

hardship because anyone can exploit marine resources for subsistence needs. Without Lepa, they have to borrow others' or be part of a fishing group. Second, the residents who do not own Lepa cannot participate as canoe operators for tourism activities. Hence, they will miss the opportunity of generating additional income.

5.5.4 Fisheries and Non-Fisheries Income

For decades, the fisheries sector has been Mola villages' basic economic activity. In fact, almost all households are fisheries households. However, the marine resources they depend on are under heavy stress. As previously suggested, the catch quantity of almost all valuable fishery commodities had decreased. This situation obliges Mola households to seek income from the non-fisheries sector. Street development opens opportunities for the residents to start home-based businesses to offset decreasing income from fisheries. Besides, street development also improved connectivity of the village to Wakatobi city centre; thus, it facilitates residents to obtain jobs outside of their village, particularly in services sector of the city's economy. Supplemental non-fisheries income is also useful to make ends meet of expanding family in an inflated economic condition. Data from household surveys suggest a shift in how households obtain their income (figure 47 and figure 48).

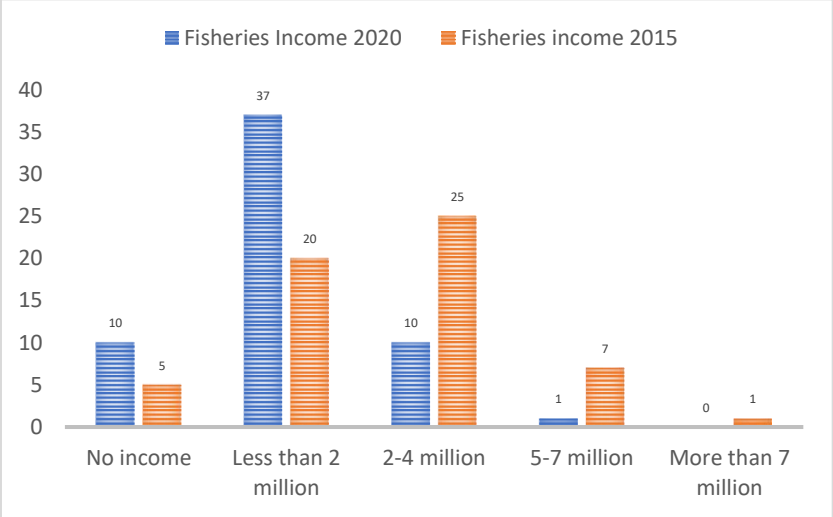


Figure 47 Household fisheries income in 2015 and 2020 (n=58)

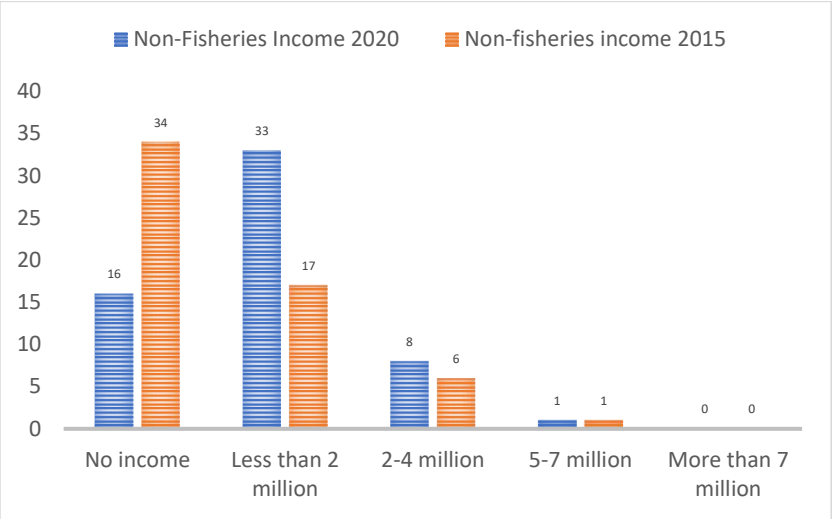


Figure 48 Household non-fisheries income in 2015 and 2020 (n=58)

A Wilcoxon signed-rank test shows that the difference in income pattern between 2015 and 2020 is statistically significant.

Table 17 Wilcoxon signed-test of fisheries and non-fisheries income

Source of income	Negative Ranks		Positive Ranks		Ties	Z	p	Decision to H_0
	n	sum ranks	n	sum ranks	n			
Fisheries	29	490.50	3	12.50	26	-4.472	0.000	Reject
Non fisheries	5	78.50	23	327.50	30	-3.109	0.002	Reject

Negative ranks: 2015>2020; Positive ranks: 2015<2020; the significance level is 0.050

This situation means that income-generating activities are diversifying in Bajo Mola villages as income from non-fisheries activities is increasing. Although households' fisheries income is decreasing, this does not mean the fisheries sector will not become the village's economic base in the near future. Interviews with the residents suggest that many people will continue conducting fisheries activities as their main occupation while maintaining income from non-fisheries activities for additional safety net.

5.5.5 Noise

Another outcome of the project explained by the residents is the increase level of noise generated from the streets. The main sources of this community noise are the gathering of people on the streets and vehicles (car, motorcycle, truck) passing through. The noise intensifies when a wedding party, which mostly takes place on the street, is held by community members. After prolonged exposure to noise, individuals, especially babies and the elderly, could suffer adverse health effects such as noise-induced hearing impairment, disturbance of rest and sleep, and effects on residential annoyance and performance (Berglund *et al.*, 1999). The survey result also revealed how people perceive noise between 2015 and 2020, as shown in figure 49 below.

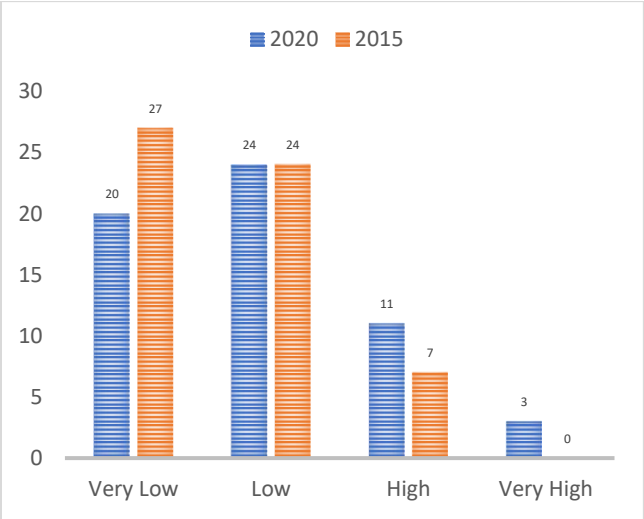


Figure 49 Noise level between 2015 and 2020 (n=58)

The difference is also statistically significant as Wilcoxon sign-rank test rejected the null hypothesis as presented in table 16.

Table 18 Wilcoxon signed-rank test result of noise level

	Negative Ranks		Positive Ranks		Ties	Z	p	Decision to H_0
	n	sum ranks	n	sum ranks	n			
Noise level	13	100.00	1	5.00	44	-3.090	0.002	Reject

Negative ranks: 2015>2020; Positive ranks: 2015<2020; the significance level is 0.050

However, although there is an increase of community noise level in the area, it has not reached the disturbing level yet. Most of the residents still perceived the community noise level as low level. In fact, one of the residents believes that gathering people creates a 'festive' atmosphere. Those who are concerned about the noise explain that it sometimes disturbs their rest and sleep during the night. However, several residents argued that the villages already never 'sleep' because it is the nature of fishermen villages. The night is when the fisherman sets sails, and they will come back in the morning before the fish market opens. Meanwhile, children can be observed playing in the street after school hours in the afternoon. Nevertheless, the increase of noise resembles changing atmosphere of the village, from a tranquil waterfront to become a bustling settlement. An elderly raised a concern that he felt foreign in the new environment as places that hold many memories were altered entirely. In other words, he lost his 'sense of place' because the place identity has changed significantly.

Figure 50 Utilization of streets as public space

5.6 Conclusion

Habitus of the 'sea people' and the informal habitus

The Bajo people often identify themselves as the 'sea people' whose life and death revolve around the oceans. For centuries, they lived at seas as marine nomads who sailed through the vast maritime region of insular South East Asia. When they began sedentary living, the Bajo people usually remained close to the sea by building settlements above waters. They are greatly dependent on marine environment resources of which they exploit for subsistence needs and economic livelihood. To this end, they have developed extensive knowledge about fishing techniques, boat-making, and navigation skills that are being passed and expanded from generation to generation. Beyond physical and economic rationale, their relationship with the ocean also extends to spiritual matter. The Bajo people believe in marine cosmology based on the existence of the ruler of the sea that will provide them with protection and good fortune. This belief shapes the Bajo people's customary practices, institutions, and rituals, especially of sailing and fishing activities. They claim the marine environment as their 'living space' (Chuo, 1997 in Stacey, 2007) as the opposite of 'watery voids'. Through prolonged interaction with the ocean and its elements, the Bajo people have constructed the habitus of sea people.

According to the Bajo's worldview, their living space, the marine environment, is not limited by any administrative boundaries defined by government entities. This understanding motivates them to travel freely across countries borders, especially during their nomadic era. They view all resources contained in the marine ecosystem belong to and only regulated by the 'ruler of the sea'. They believe that a fisherman's catches are gifts from the *Mbos*, reflecting one's personal relationship with the spirits. The Bajo people sought protection and welfare from the supernatural deity; hence, they did not adhere to known sovereign entities such as kingdom or government. Their relationship with the land-based society was more of a trading or cooperation

relationship than a patron-client relationship. Living at sea distances themselves from regulations and interventions imposed by the ruling institutions, and thus allow them to live relatively autonomous lives outside of dominant social structures. Thus they tend to live an informal life, of which "function as much as possible outside the boundaries of the state and modern bureaucratic institutions" (Bayat, 2007, p. 587).

The on-water settlement that the Bajo autonomously created is the concrete manifestation of the habitus of the sea people and the habitus of informal communities. It is situated above the water surface so that they can maintain their maritime lifestyle, their livelihood as fishermen, and their relationship with their ancestors or sea spirits. They apply their knowledge of understanding the seasons, winds, stars, currents, and tides, all of which influence sea water dynamics, to establish a settlement with flexible and open structures that allow the natural dynamic of water and boat movement. As such, the settlement can be perceived as a tangible cultural heritage of the Bajo people. The settlement was built initially without government or cultural authority support. Nevertheless, the Bajo community had shown the ability to be self-organized in creating a settlement that satisfied their social, cultural, and economic needs.

However, Bajo people's sedentarisation has increased their interaction with the social structures of land-based society. In fact, they have adopted mainstream cultures in their everyday life, such as education, religion, and the use of advanced technology. A more settled lifestyle accelerates further social and economic integration of Bajo people with wider modern society. However, this comes at the cost of obedience to rules and social institutions set by the culture of dominant agents.

This condition raises a question of whether the Bajo's capitals and habitus fit the modern social structures. Based on the explanation in this chapter, it seems that their capitals, which represent the product of their habitus, is insufficient to dominate the fields of modern life. First, it can be easily observed that the Bajo have limited economic capital. They are small-scale fishing communities equipped only with simple fishing gears; thus, their fishing income is continually fluctuating and uncertain for reasons as explained in chapter 2. In fact, in recent years, the quantity of fish catches has decreased because of overexploitation and destructive fishing practice. Exogenous factors drive the marketing of their fisheries products; hence, the economy fluctuates following the global market condition. Limited production and distribution infrastructures and the lack of technical, marketing, and entrepreneurial skills are why the Bajo could not place more added value on their products. Furthermore, because of their nomadic lifestyle and displacement of the past, they have yet to accumulate inter-generational wealth in

the first place. In addition, the Bajo community do not own land; thus, they cannot grow crops and thus depend on the asymmetrical relationship with land people for staple food, freshwater, and raw materials.

Although they have a strong sense of solidarity within the community, the social capital, which represent resources and powers that they obtain through their social networks with other agents, is limited as they were perceived as inferior to those of the dominant group. In fact, they experience political disempowerment because they do not have control over, or the ability to influence, many aspects of their life and livelihood. For example, in marketing fish products, the middlemen often settle the price based on the global market's demand, with small-scale fishermen having little influence. Another example is in the field of housing and settlement development which is governed and regulated by the Mandati council and the government. As the minority in the Wakatobi area, the Bajo people continue to be inferior in relation to major ethnic groups and suffer from stigmatization due to their lifestyle and capitals disadvantage.

Moreover, the Bajo people may also have low institutional cultural capital as their skills and knowledge were not formally recognized. They lack academic credentials or professional qualifications because many of them get premature learning periods. The habitus of sea people in which livelihood mainly related to fishing activities dissuade them from gaining formal education because fishing skill and knowledge are being transferred informally from one generation to another. However, they are mostly rich in embodied and objectified form of cultural capital. Through their intense relationship with the sea, the Bajo people have established a unique set of material and non-material cultures. Their material culture includes boats, fishing gears, and houses, while their non-material culture includes cultural norms and societal values, the ability to navigate on the ocean, and healing rituals and dances. These cultural capitals constitute valuable assets that can be utilized to improve the community's well-being. However, these capitals may not be necessarily as relevant as in previous centuries. With technology, other agents with larger economic capital may easily overshadow the Bajo people in cultivating marine resources.

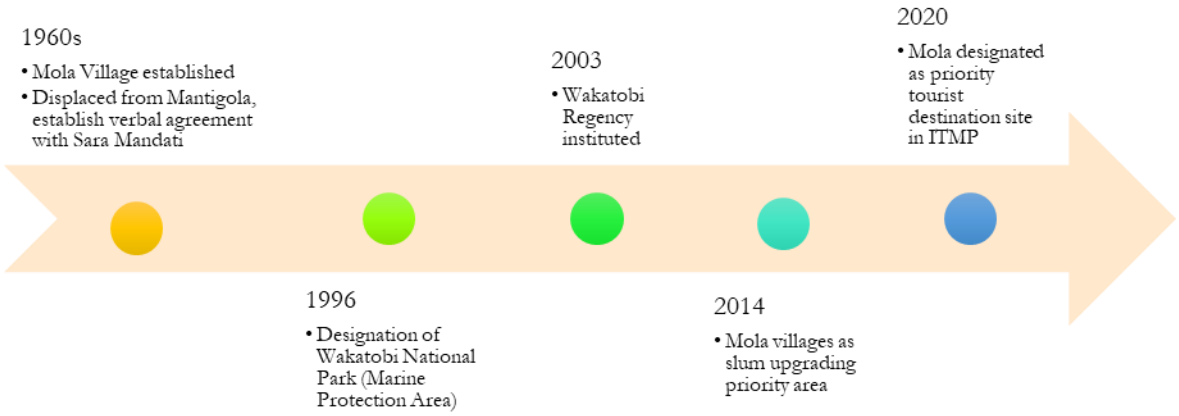


Figure 51 Bajo Mola villages historical events

Contemporary Bajo people strive to adapt their habitus and raise their capital. However, this may be a difficult task as many layers of structures are put in place. Figure 51 show the timeline of the introduction of strategic policies designated at the Bajo Mola villages. Because of its multifunctionality, the Mola settlement has become the locus of different fields, with the interests from different agencies holding symbolic power in each field. The villages are situated in the Wakatobi National Parks, which is a marine protected area regulated by Wakatobi National Parks. Thus, the villages and the residents have become the object of governance in preserving the natural ecosystem. Besides that, due to its status as a severe slum settlement, the Ministry of Public Works and Housing also have interest in upgrading the settlement. Designation of the villages as a priority tourism development area also brings attentions of the Ministry of Tourism, who seek to promote tourism attraction of the area. Meanwhile, the Ministry of Fisheries and Marine Affairs intends to improve fishermen welfare by improving fishing productivity. Furthermore, the Wakatobi regency government, who provide citizen administration services and urban infrastructure system, and the Sara Mandati, who hold the cultural authority over the Bajo people, have their own agenda and concerns regarding the development of Bajo Mola villages and its residents. The policy and the intervention of one institution may conflict with the others. Unfortunately, the Bajo community cannot influence the decision-making process of policies that influence their well-being. Presumably, a thought deliberation attempt that involves residents and relevant stakeholders would be beneficial in formulating development strategies in the increasing complexity of the fields.

Hysteresis effect of place-making practices

The settlement, which was built by the remarkable efforts of the Bajo people and reflect their maritime lifestyle, was considered as slum according to national regulation. The national regulation defines slum settlements based on seven physical criteria. In order to realize 'cities

without slum', the government intends to eliminate these physical deficiencies. Consequently, slum upgrading program is dominated by the construction of infrastructures to provide basic service. In the case of Mola villages, the most inadequate infrastructures were street networks and sanitation. Hence, the government's efforts were focused on the provision of both systems.

Participatory planning, community development, and local government capacity building are among the efforts that were missed in the case of Bajo Mola villages upgrading program. Although it can be argued that the emphasis on infrastructure improvement is justified in slum upgrading, these features are the sine-qua-non condition for the success of the program impact in the long run. These efforts are not only emphasized in UN-Habitat Guideline for street-led upgrading approach, but also clearly stipulated in Indonesian Government's guideline of NSUP program implementation, which are the standard for implementation of slum upgrading project in Indonesia. Since the upgrading efforts of Bajo Mola villages did not meet the applicable standards, it produces several unintended outcomes.

Slum upgrading of Bajo Mola villages theoretically can be recognized as restructurisation of the place-making field. The Bajo people used to build their settlement on their own according to their needs and aspiration. However, the slum upgrading project represent the intervention of agency who hold the symbolic power in this field. With the capitals they possess, the national government can enforce formalization of the settlement in which place-making practices are being regulated according to formal rules and norms. In such a short time, the national government, which once was 'non-existent' within the field of place-making in the Bajo Mola village, has occupied the most dominant positions.

The newly established structure turned the unique on-water settlement into a typical land-based settlement. The visual identity of the village has clearly been altered. Several residents felt that the recently built street network enhanced the physical features of their settlement. It becomes the symbolic showcase of the progress of the Bajo people's civilization and the integration of Bajo socio-economic structure with the broader society. Others suggested that the streets are helpful for practical reasons as it ease people movement and provides public space.

The settlement's dramatic remodelling has changed how the people perceive and use the space around them. In other words, their sense of place regarding the settlement, as the product of new personal experience with the new environment, has also been modified. In this case, it can be assumed that changes in the field of place-making has reconstruct residents' habitus (sense of place), which is in line with what Bourdieu claim as habitus and field being mutually generating and generated. However, in the case of Mola village, the field of power change rather

quickly, if not abruptly. Meanwhile, habitus adaptation always takes time as it tends to be durable. As a result, there is the mismatch or time lag between habitus and the field as the result of changes over time, a phenomonen of which Bourdieu terms this condition as hysteresis.

The hysteresis effect in place-making practices can be observed as the Bajo residents try to take in rules, disposition, and practice of land-based formal place-making, yet they do not have the capital to realize this intention. For example, in terms of housing design, the Bajo people may seek to develop modern housing using harder materials such as bricks and concretes. They believe this kind of house is more suitable in the new landscape and consider it as the new normal in today's era. However, such housing design is much more expensive than traditional Bajo wooden houses. The fishermen, being already poor, have difficulties developing and obtaining modern houses. They can not access mortgage financing schemes as they have no fixed income. Even the more affluent families may live in a poorly designed and badly constructed house because the local builders have yet endowed with sufficient designing capability and technical skills to properly build modern housing. Even though they are built with stronger material, many houses are damaged because of improper design and construction methods.

Another example of hysteresis can be observed in the changes of utilised transportation modes. The new street network, which hinders canoe movement, encourages a shift in the use of transportation mode from boat or canoe to motorcycle and car. Nevertheless, although the street ease people movement, it does not necessarily help the movement of goods that are usually still transported by boats. However, to travel by boats means they have to navigate the route outside of the settlement which not only troublesome, but also dangerous because the waters are deep and passed by large ships. This case implies that even though the Bajo people may still hold a part of their sea people habitus, it is not entirely convenient with the current structure of the built environment.

Hysteresis also occurs in relation to income-generating activities. The decreasing fish catch itself represents a structural change in Wakatobi's socio-ecological system dynamic. The fishermen seek to overcome decreasing fishing income by engaging in non-fishery economic activities. Tourism, home industry, and services are the business sectors that may add value to the cultural capital that the residents possess. The current government development policy also supports these activities. However, they are not equipped with the necessary financial capital and technical, marketing, and entrepreneurial skills to participate in these economic sectors. Thus, most residents can only start an informal business such as hawking and vending.

Bourdieu claims that the habitus will eventually match the field as individuals adapt to the stable environment. However, hysteresis highlights missed opportunities that arise from structural changes in the field. In the case of Bajo Mola, new challenges and opportunities have arisen from the changing landscape. Responding to this, new awareness, skills, and institutional arrangement are necessary so that the adaptation process runs smoothly. However, the intervention did not include institutional and community capacity development. As a result, instead of achieving multi-developmental objectives as they should be, the lack of comprehensiveness of the slum upgrading project design has turned it into a piecemeal development effort. By focusing only on the infrastructure development and overlooking the community's specific locality (local wisdom, skills, and institution), the projects failed to bring about meaningful public consolidation or institutional reform necessary to sustain settlement improvement in the long run.

In the case of the Bajo Mola settlement upgrading program, the government opts for an infrastructure-led approach as they intend to avert slum criteria in which the indicators are mostly related to infrastructure. However, the technocratic infrastructure-led upgrading approach brings at least two serious implication. First, it moves focus of attention from the development of human agency and their capabilities. Sen (1995) argue that development programs and policies should enhance people's capability to develop themselves as a human being and live more fulfilling lives. However, the case of Bajo Mola upgrading program showed that the citizen became passive onlookers as they watched their surrounding environment change; thus, the citizen was denied their entitled rights in creating and giving meaning to places. This hinder community to learn and to engage in the place-making process. Second, as the domain of settlement infrastructure development falls under the authority of a sectoral entity, that is the public works department, the approach alienated other sectoral divisions even though the settlement issue is cross-sectoral. In the case of Bajo Mola upgrading, the effort to avert structural slum criteria did not correspond with other sectors objectives. For example, street development had infringed local place identity, which is one of the charms that attract tourist visits. For these weaknesses, it can be argued that human and cultural development should be the focus of slum upgrading efforts instead of emphasizing only on infrastructure development as the main consideration of slum upgrading projects.

Chapter 6: Scenario Planning for Bajo Mola Villages

The process and the result of participatory scenario planning conducted with the youths of Mola residents and experts will be described in this chapter. The first stage of scenario planning, the formulation of the problem and strategic questions, is based on the research questions mentioned in the first chapter of this dissertation. The points of the strategic question are what the plausible scenarios of Bajo Mola Settlement in the future are and what urban upgrading strategies should be employed to achieve a desirable future. The second stage, understanding the past and the present, was described in the previous chapter. In Chapter 5, case-study research on the area identified key issues of settlement development and subsequent important events shaping the current situation. Analysis of key stakeholders and their interactions was performed to provide a context to consider in the next stage. The following inquiries are about to be presented in this chapter: exploration of the future, development of the desired vision, and recommendation for realizing the vision.

In conducting the scenario planning exercise, three FGDs workshops were held. The first FGD discussed each driver of changes and trends. Then, the local youth arrange these drivers of change based on the level of its impact and uncertainty. The second FGDs was intended to discuss and establish scenarios through strategic conversation. The team also decided which scenario was the most desirable one. Finally, during the third FGD, scenario team members discuss and propose strategic policies and contingent collective actions to achieve the desired vision.

Figure 52 Scenario planning exercise with Bajo youths

6.1 Exploration of the Future

6.1.1 Drivers of Change and Uncertainty

Based on the data collected from the fieldwork, the author identified several drivers of change across STEEP (Social, Technological, Economic, Environmental, and Political) dimensions that influence settlement development and the livelihood of the residents in Bajo Mola villages. The list was discussed and elaborated on during FGDs with the youths. These drivers of change are (in alphabetical order):

1. Climate Change

   Like other parts of the world, the Wakatobi ecosystem and its residents' livelihood are threatened by climate change. Climate change warm seawater temperature, contributing to widespread coral bleaching (Nicholls *et al.*, 2007; Wear, 2016). WWF Indonesia calls coral bleaching the biggest threat to the biodiversity in Wakatobi. Moreover, a study conducted in 2010 found that 60% of corals in WNP showed some signs of bleaching, and 10-20% of colonies were fully bleached (Wilson, Ardiwijaya and Prasetia, 2012). The frequency and the severity of coral bleaching in WNP are expected to increase, even in the future best scenario, because the majority of coral in the region is made of bleaching susceptible species (Hoegh-Guldberg *et al.*, 2009; Wilson, Ardiwijaya and Prasetia, 2012). Additionally, a higher concentration of carbon dioxide decreases seawater acidity in a process called ocean acidification, which reduces the coral growth rate. It has been projected that reef calcification in Coral Triangle region will decrease to very low levels if atmospheric average atmospheric CO2 concentration reaches 450 ppm (Hoegh-Guldberg *et al.*, 2009). The destruction of the coral ecosystem leads to a reduction of fishing stocks, disrupting the livelihood of coastal communities and food security.

   Besides threatening the coral ecosystem, climate change will place coastal settlements at risk because it affects weather patterns to stronger and more frequent storms. Without a proper coastal protection infrastructure, this situation threatens the coastal houses constructed on stilts or made of light materials. As rainfall pattern changes, more significant flood events and longer droughts are expected to happen in the future (Hoegh-Guldberg *et al.*, 2009). Unpredictable and extreme weather will also affect small-scale fishing activities which rely on simple boats and fishing gears.

2. Consumption Behaviour

   The development of transportation infrastructure in Wakatobi has eased logistic accessibility. Thus, many goods from outer regions, such as consumer goods, groceries, and clothes, are being sold in the local market. An interview with a local academician revealed

that Wakatobi people, including Bajo Mola residents, increasingly consume products wrapped in plastic, boosting plastic waste generated. Without a sufficient solid waste management system, these plastic wastes end up in the ocean. In 2018, a carcass of a sperm whale was found near Mola area with 6 kg of plastic waste found in its stomach. Besides becoming a threat to biodiversity, untreated plastic waste also discourages tourists who will be disgusted by waste piling up on the ocean floor.

Furthermore, Bajo Mola residents are becoming more attracted to modern goods. Nowadays, they would rather buy motorcycles and televisions than buy canoes or fishing rods. Building materials such as bricks and concrete are preferred to wood or bamboo despite being hotter. Phone credit purchase has become one of the main expenditures of Bajo people. This might imply welfare improvement, but it could also suggest increasing consumption spending which is often financed by debt.

3. Cultural Tradition

   Many Bajo Mola residents still adhere to beliefs and customs passed down from generation to generation. However, most of the customs that are currently being practiced are the ones associated with sailing and fishing. The role of customary leadership has been replaced by formal village governance, in which rituals are often ignored or modified for practicality. For example, a traditional house building ceremony (Mappatetong Bola) which based on local knowledge (pangatonang ruma'), is rarely practiced now in Mola villages. However, a healing ritual, called Duatta, practiced by a 'shaman' called Sandro, is still in demand since health facilities and health providers are limited in the area.

   The youth consider the verbal agreement with Sara Mandati regarding new housing development as a part of troublesome cultural traditions. Some youths argue that this agreement has been the core problem of worsening settlement conditions in Bajo Mola; thus, it is necessary to break this cultural restriction.

4. Disaster Risk

   Although major disasters have not been recorded since the first establishment of Bajo Mola villages, the Wakatobi spatial plan identifies the area as a tsunami and storm disaster-prone area. The country itself lies on the Pacific 'Ring of Fire', where tectonic plates collide, creating a string of volcanoes and seismic activities. Tsunami often occurs in many places in the country; for instance, the most recent major one happened in Sulawesi. The residents of Bajo Mola have experienced several earthquakes; however, the earthquakes never resulted in a tsunami. Heavy storms have hit the settlement several times as well, destroying

several houses in the area. Hence, one form of adaptation to anticipate the storms is by building stilts from stronger and heavier materials such as brick and concrete.

Some residents have a pragmatic view about the disaster risk. They perceive the risk of being unable to fish or separated from the ocean is more substantial than tsunami or storm risk[17]. They 'accept' disaster risk as a consequence of being a fishing community living in an on-water settlement.

5. Fishing Industry

   As previously explained, most Bajo families in Mola area are fishing households. Thus, any variation of fishing stocks price, cost, and other fishery-related factors will affect the village's whole social and economic aspects. In addition, a seemingly unrelated factors, such as the recent Covid-19 pandemic, have affected fishing income. The pandemic has significantly decreased demand for exported fish commodities; hence, the price of fish dropped dramatically. In addition, as the survey conducted during this research suggested, many fishermen are concerned about the increasing number of commercial fishing companies entering the Wakatobi area. Although WNPA claims that overfishing is unlikely at this point, the fishermen are concerned because they face stiff competition from large-scale fisheries that hold better gears. Furthermore, ecosystem sustainability is at risk because unscrupulous individuals still practice destructive fishing methods. Most citizens understand the consequences of bombing and poisoning methods and have abandoned these practices. However, a few people who are presumed by many people to be supported by corrupted officials still organize these kinds of operations. As a result, the sustainability of fishery activities is at stake.

6. Information Technology Advancement

   Information technology development has affected many aspects of humankind; Bajo people daily life is no exception. In the past, the Bajo lived a relatively exclusive life with limited exposure to foreign cultures. Nowadays, they are even well-connected to global communities through the internet. As mobile devices and internet connections become more accessible and affordable, the numbers of active internet users in Bajo Mola have increased dramatically in the last three years. However, most people use the internet for entertainment, such as gaming and social media. Only a few people use the internet to generate more income or increase their productivity. Many potential uses of information technology have not been worked on in Wakatobi. For example, in the fisheries sector,

[17] This sentiment was also shared by Bajo people in other regions. In 1992, a tsunami hit an on-water Bajo village in Maumere, in East Nusa Tenggara. The government was planning to relocate the people to inland area. However, most of them refuse this policy, suggesting inability to conduct their main livelihood (fishing) as the main reason.

information technology would enable fisher communities to monitor fish activities and maritime safety and access broader market opportunities.

7. Investment Policy

   To boost national economic growth, the Indonesian government pursues liberal economic policy. In 2020, the government enacted Job Creation Law, which acts as an omnibus law to attract foreign investment and ease business bureaucracy. The law is expected to bring a radical change in the country's natural resource management policy, including fisheries policy and environmental protection policy. For the small-scale fisheries of Bajo Mola villages, the law will put them in a competition with commercial fishing with larger capital and advanced technology. If it is not closely controlled and monitored, the policy will bring devastating impacts to the biodiversity and the availability of fishing stock in the region. On the other hand, the new law emphasizes streamlining the regulatory environment, which is expected to trigger tourism investment in Wakatobi. Thus, more tourism activities will flourish, and more alternative employment opportunities will be opened for the people of Bajo Mola villages.

8. Law Enforcement

   Law enforcement plays a major role in society as an enabler of public safety and a proponent of the rule of law. Trust and cooperation between community and law enforcement are essential in shaping a civilized society. However, in the case of the Bajo Mola people, the public confidence and trust in law enforcement have been fragile. There are two law enforcement agencies operating in Wakatobi. The first one is the forestry police, which serve under WNPA, and the second one is the police. Both agencies have enforcement and investigative authorities. However, the forestry police recently changed their main approach to community-based policing coupled with a public education program to increase residents' awareness. Meanwhile, the community considers the local police as a harmony enforcer instead of a protector. One of the residents recounted that Wakatobi people often sparked riots and attacked Bajo people if a community party was held in Mola villages. Instead of prosecuting the offenders, the police decided not to permit any Bajo community party to hold to avoid possible problems. Another resident assumed that the members of the police foster the illicit group that often bomb the reefs and poison the fish. Hence, the police do not have the complete trust of the community.

9. Local Leadership

   The village heads in Bajo Mola area are elected every five years through an election process. However, the leaders are often elected for their kinship with influential families instead of

their government capabilities or proposed programs. Under the 2014 Village Government Law, the leaders hold significant governmental authority, one of them is managing village funds. However, the village leaders have yet to introduce coherent policies to increase village revenue; hence, they still rely heavily on intergovernmental transfers to finance their program. As a result, the residents hardly experience positive changes because the village government's capacity is limited.

10. New Housing Development

    As previously explained, Bajo Mola villages suffer from a severe housing backlog. Often one house is occupied by several families, and many existing housing stocks are unsuitable to be inhabited. Based on an interview with several stakeholders, new housing development should be the priority for any development initiative in the Bajo Mola area. Living in an overcrowded house with limited sanitation facilities will increase the risk of disease transmission and thus hinder children development. The housing issue is one of the indicators of a slum settlement that has not been optimally addressed. The local government tried to persuade Bajo people to reside on the land, but the idea was rejected because they could not see themselves separated from the sea. According to a local government housing officer, two new housing development options are available. The first option is to assist in developing a new on-water settlement near the neighbouring island, Oto'uwe island. This option may be the most socially accepted solution because Bajo people may continue their habits and daily life. However the local government, WNPA, and Sara Mandati may oppose this option as it will put a heavy financial burden on the local government's budget because they have to build infrastructures from scratch. They are also concerned if the new settlement will only replicate the problems of the current Bajo Mola villages. The WNPA disapprove this plan because it violates the WNP zoning regulation, while Sara Mandati objected to the idea because it would disregard the old verbal agreement that stipulates the only available area for Bajo people. The second housing development option is to construct a low-rent apartment complex in Bajo Mola villages using the national government budget. Although this option is preferred by the local government, WNPA, and Sara Mandati, a more humanistic approach is required to make the Bajo families interested in modifying their living habits. For young Bajo people, living in vertical housing may not be a problem because many aspire to modern living like in the cities.

11. Local-level politic

    Wakatobi holds a general election to vote for a regent every five years. During this period, candidates come to Bajo Mola villages to campaign their political ideas to gain the villagers'

support. The village leaders should remain impartial; however, they indistinctly have affiliations with different political parties involved. Hence, the situation often becomes intense, although it has never escalated into a fight or riot. The youths assume that whoever is elected will not create a considerable difference to Bajo Mola area, because the Bajo is a minority group. Many policies are expected to be inclined more to Wakatobi people as the majority group in the area. However, many residents, mostly the ones who work in the tourism industry, felt the influence of the regent leadership. They suggest that many tourists came to Wakatobi during the previous regent period because of his aggressive campaign. Meanwhile, the current regent is perceived to lack innovative tourism initiatives.

12. Population Growth

    The population has grown rapidly in Bajo Mola villages, where many families have many members because their children are expected to provide additional income to the family when they reach adolescence. Besides the natural cause of population growth in the villages, the population has been rising due to the incoming immigrants, especially the Bajo diaspora from other regions. They came to the villages looking for better economic opportunities since Bajo Mola is well-connected to the regional economic centre and surrounded by rich-resources waters. However, because of the limitation of available space and insufficient housing stocks, the growth of immigrant numbers has been slowing down. In fact, many educated youths decide to leave Bajo Mola villages since the area is unavailable to develop new housing. The youths who stay mainly work as fishermen and are amenable to live in multiple-household estates.

13. Social Cohesion

    Having similar fate and close kinship ties, Bajo people develop a strong bond with each other. Their social life remains harmonious despite a few civil conflicts such as alcohol-induced altercation, divorce, or inheritance matter. However, a member of FGDs revealed a possibility of internal conflict due to growing income discrepancy, while the others dismissed this notion. In addition, the youths often have different opinions from the village leaders and the elderly because the formers are rarely involved in discussing public matters that the latter often decide. It is common for the youths to hold a rally to protest against the village leader.

14. Tourism Development

    By designating the Bajo Mola area as one of the key tourism areas in the Integrated Tourism Master Plan, the national government is expected to allocate funds and run projects aiming to increase the area's attractiveness. The government initiative will affect the

neighbourhood's social, economic, and physical aspects. Despite offering promising opportunities, the people have concerns over their role in the tourism industry and its impacts on the settlement. They are aware that currently, only a few Bajo people have the capacity to participate in the tourism business. Even among those people, the level of skills and resources to operate a tourism business is inadequate if they are about to compete with external tour operators. Hence, they fear losing the competition with the 'bigger player' from outside the area. As an example, items sold as Bajo merchandise and souvenirs may be produced overseas. If this happens, the tourism sector would not significantly improve households' income. In addition, members of FGDs are concerned about possible land-use changes that will further complicate their efforts in building their own houses. As a result of tourism initiatives, it is predicted that the expansion of retail facilities, restaurants, and guesthouses will take significant spaces. Without major housing development efforts, space will be increasingly contested if the tourism industry grows rapidly.

6.1.2. Clarification of the Level of Impact and Uncertainties

After discussing every driver of change and trends, the scenario team arranged each one of them based on the level of impact upon the problem or the strategic question and the degree of uncertainty. From the first FGD session, we came up with the chart below and classified them into four quadrants of issues and trends according to Krawzyck and Ratcliff (2005) as follows:

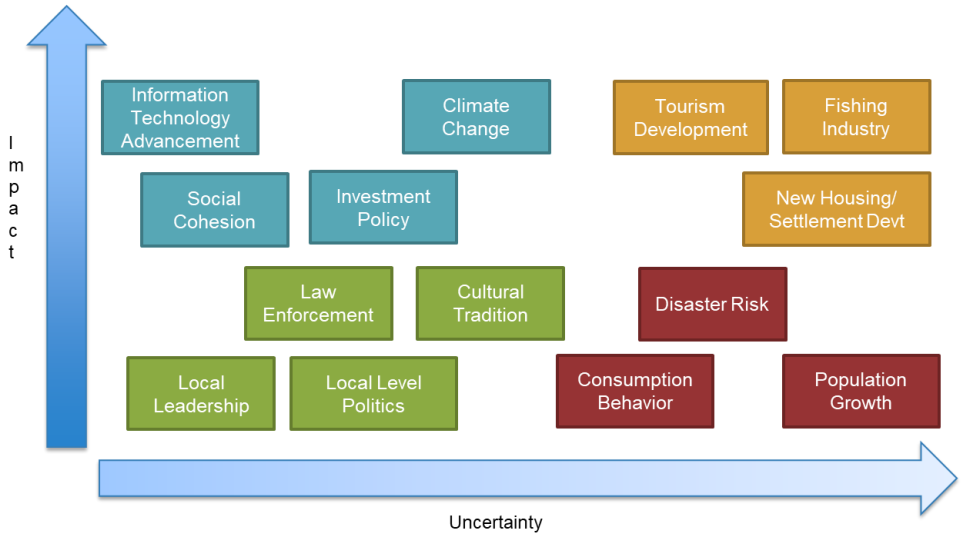


Figure 53 Level of impact and uncertainties of trends

1. Context shapers

   This type of issues and trends are relatively certain and have a low impact on the future of Bajo Mola villages, but undoubtedly will shape the future context. According to the team, the issues and trends that fall into this category are local leadership, local-level politics, law

enforcement, and cultural tradition. According to the youths, these local institutions have limited capability to generate substantial changes to citizens' welfare or Bajo Mola settlement as they lack authority and capacity to make significant changes. For example, the village leaders who represent the local leadership still rely on transfer funds from the central and local governments to manage the villages. The village of Mola Bahari and Mola Selatan, for instance, do not have internal sources of income. In addition, a large portion of the funds that they receive from the central and the local government was used for bureaucratic administrative purposes. For example, salaries and office operational budgets (31% for Mola Bahari and 40% for Mola Selatan) were larger than funds allocated for neighbourhood improvement (24% for Mola Bahari and 14% for Mola Selatan) or community development (24% for Mola Bahari and 19% for Mola Selatan). Furthermore, another local institution discussed in the FGD in regard to cultural governance is the Sara Mandati. The youths appeared very cynical toward the institution. Although the leader of the Mandati claims that the Bajo people in Mola villages is a part of their communities, the youth do not feel any contribution from Sara Mandati to the Bajo's welfare and their settlement. In fact, they consider Sara Mandati to hinder Bajo Mola settlement development by restricting new housing development. That being said, the youth assume that Sara Mandati will have no power to inhibit development initiatives undertaken by local government or national government. At last, they do not expect changes in local institutions soon; thus, external support is needed to direct them in the right direction.

2. Potential jokers

   This category includes uncertain issues and trends but deemed as less relevant. However, they should be monitored in the case of sudden changes in the future. The team decided on three issues that belong to this category: disaster risk, consumption behaviour and population growth. During the FGDs, the youths understood that a significant disaster occurrence such as a tsunami could significantly impact their lives. However, since the degree of uncertainty of the occurrence is very high, they were more concerned about issues affecting Bajo people's everyday lives. Regarding other issues in this category, they view it as dependent trends; thus, it comes with great uncertainty and unknown impact.

3. Significant trends

   This group has a significant impact on the Bajo Mola settlement development. However, the direction of the trend is known; hence, the community should anticipate their effects. Under this category, the group assigned information technology, climate change, social cohesion, and investment policy. For example, the scenario team members acknowledge that

technology will advance forward and profoundly impact Bajo people's lives and livelihood. As the education level rose within the community, they noticed that more people would take full advantage of information technology. They also believe that the social cohesion of Bajo people will remain strong despite growing inequality at least for the next 20-25 years. Additionally, the liberal investment policy is expected to increase job opportunities in tourism and other non-fisheries sectors. Climate change was an interesting topic discussed during FGDs. In the beginning, the youths were not familiar with the dire consequences of climate change to their life and livelihood. However, after an explanation from an expert, they gained knowledge about climate change and comprehended its impact on the whole aspect of the community and settlement. The trend of climate change is expected to continue, and the community has less capability to influence it; thus, they put it in a less uncertain category. Nevertheless, the youths' awareness of these factors has increased, which is critical to anticipate future effects.

4. Pivotal uncertainties

   This category is the one that will determine the shape of different scenarios because they are inclined to have a direct impact and uncertain outcomes. As Krawzyck and Ratcliff (2005) state, "the future will be influenced by these trends to a large degree, and as their outcome is very uncertain, a range of very different futures can unfold". According to the team, three issues and trends fit into this category: the fishing industry, new housing development, and tourism development. The fishery industry was identified as the most impactful issue because it is the economic base of Bajo Mola villages and residents' main source of income. However, the industry faces an uncertain future since it depends on vulnerable marine resources. Climate change, ocean pollution, and overfishing are among issues that affect fishing stocks in the ecosystem. Besides biological uncertainties, the fishery industry faces economic uncertainty (e.g., in the form of fluctuating price) and political uncertainty (e.g., regulation, fishing ground accessibility). The tourism sector would greatly impact the Bajo Mola community assets and livelihood. The designation of Bajo Mola as one of the vital tourism areas will bring significant changes to the settlement and the daily life and livelihood of the Bajo people. However, it is still uncertain whether the tourism initiative will succeed in bringing more tourists and the degree of its impact on the prosperity of the Bajo people. They are also concerned if the Bajo community would take full advantage of tourism since they lack the quality in human resources and financial capital to engage in the tourism-related business. It is possible that only a small group of people, or even non-Bajo people, will enjoy the benefit of tourism while the others only watch. Another issue discussed considerably

during the FGDs was the new housing development. The youth considered this an important issue because it would allow further development of the area and unleash its potential. Without new housing development, no meaningful physical project to support fishery, tourism, or other economic activities would be able to carry out because there is no available space. Furthermore, without founding a new home, it is also possible that the educated non-fishing youths will emigrate from Mola villages, which constitute a flight of valuable human resources. In addition, there is also uncertainty about the policy for new housing development, whether it is constructing a low-cost apartment complex or creating a new village or not at all.

6.1.3 Scenario Logic

The first FGD had identified the three most impact and most uncertain issues and trends. Based on these issues, a variation of each issue has been proposed as described below:

A. Fishery Industry

Variation A1 – In this variation, the marine resources, particularly fishing stocks, are depleting because of environmental damage. In this case, untreated household waste and human excreta are disposed into the sea without treatment; hence, prompting eutrophication. Destructive fishing methods continue to destroy coral reefs, diminishing the precious coral fish population. It hinders the recovery of the breeding population, which, along with rampant commercial fishing practice, will lead to overfishing. Climate change further exacerbates the damage to the coral reefs by increasing the frequency and the severity of coral bleaching.

Variation A2 – In this variation, the ecosystem is assumed to be maintained. Destructive fishing method practices are kept at a minimum level. Sanitary infrastructures are in place to prevent pollution and keep the residential environment's beautiful and clean. Small-scale capture fisheries dominate fishing activities. Conventional fish product marketing that relies on fresh fish is still employed. Harvested resources are sold to the middlemen who bring the commodities to markets outside Wakatobi. Export-oriented fisheries exporting raw goods will provide little added value for the benefit of the fishermen. In addition, the fishermen's profit depends on a highly volatile global market, and the fishermen have a small capability to influence it.

Variation A3 – In this variation, the ecosystem is also assumed to be maintained despite a growing number of commercial fishing. Marine resources are harvested at an optimum level, without exceeding ecosystem capacity to replenish fishing stocks. This condition is reached because of the implementation of a sustainable fisheries management system, including fair

allocation of fishing ground and fishing quota, and trustworthy law enforcement. Furthermore, fishermen's catch is mainly processed in the area to maximize added value. This condition requires capital investment to develop factories or initiate home-based industry through community organizing and entrepreneur and skill training. In addition, the fishermen came to engage in internet marketing to reach broader markets.

B. New Housing Development

Variation B1 – This variation assumes that new housing development will not take place. As a result, house overcrowding will be a major problem in which detached houses will be resided by multiple families. Presumably, it will lead to the emigration of educated youth because they have less place dependence and cannot fulfil their desire for single-dwelled property. In addition, the space will be unavailable for tourism and fishery industry development which would hinder them from reaching the full economic potential of emerging sectors.

Variation B2 – This variation assumes that a new housing project will be established in the form of a new village development or construction of a low-cost apartment complex. More housing options will keep more people in the Mola villages. In addition, it is expected that new housing development will be accompanied by an urban revitalization project necessary for tourism development and improving the effectiveness of the fisheries sector.

C. Tourism Development

Variation C1 – This variation assumes that Wakatobi tourist arrival stagnates or decreases, and limited tourism development investment is injected in the Mola Villages. As a result, a few tourists visit the area, mostly are backpackers who pursue a relaxed lifestyle or researcher who seek information about the Bajo culture and Bajo people's everyday lives. However, these kinds of tourism have small economic impact to the society.

Variation C2 – This variation assumes that the government will support Bajo village tourism initiative as stipulated in the Wakatobi tourism development plan. A large part of public investment is expected to aim at beautification projects. Tourism activities mainly revolve around existing Bajo cultural assets and existing tour packages. However, community capacity development is not implemented; thus, tourism only benefits a small number of tour operators rather than the whole society. Because of lack of capacity to produce goods and services, foreign actors may dominate tourism activities in the area, limiting local residents' roles in the tourism business.

Variation C3 – This variation assumes that the Bajo Mola residents engaged in tourism-oriented creative industries such as homestay, restaurant, handicraft, and fashion, making the

village a tourism centre. Under this circumstance, the tourists enjoy several activities, such as walking tours, culinary, cultural learning, shopping, or homestay offered by the community. Since many of the services and goods are produced by the community, a creative class[18] within the community is expected to rise. Thus, capacity development, skill training, and capital support are essential for this variation to happen.

Based upon the combination of those variations, four scenarios with code names that represent marine resources in Wakatobi was discussed in the second FGD as follow:

1. Combination of A1 – B1 – C1 → Deteriorating environment (code name: sea urchin)
2. Combination of A2 – B1 – C1 → Stagnant or Business-as-usual condition (code name: Halfbeak)
3. Combination of A2 – B2 – C2 → Growing but vulnerable economy (code name: Napoleon)
4. Combination of A3 – B3 – C3 → Financially prosperous community and vibrant settlement (code name: Marlin)

Under those scenario logics, the relationship between those scenarios can be presented in this Figure 63. The scenario logic of Bajo Mola future is inspired by Mont Fleur scenario exercise (Kahane, 2012), which connects each scenario to a prerequisite condition. This allows the identification of critical policies necessary to realize the desirable future.

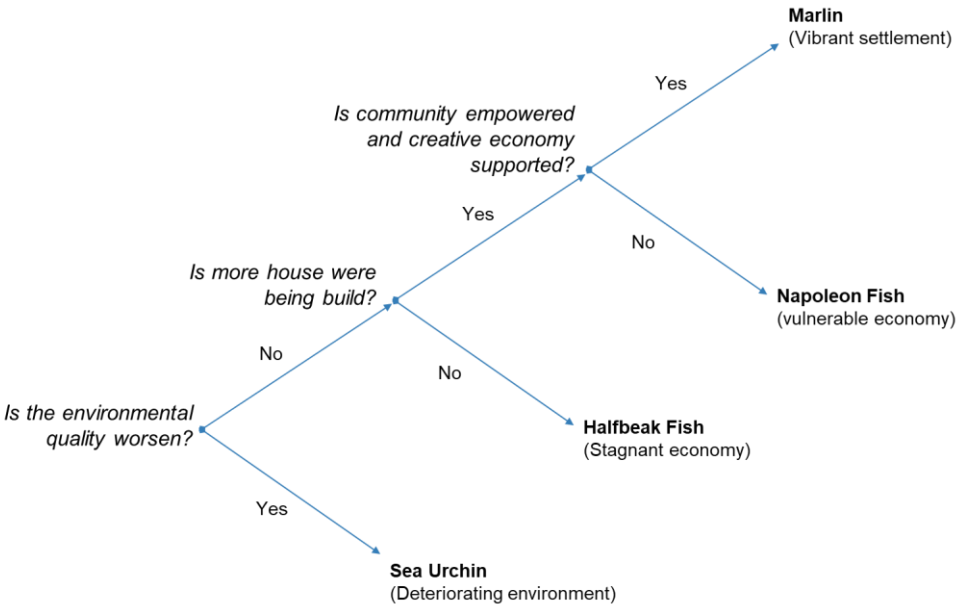
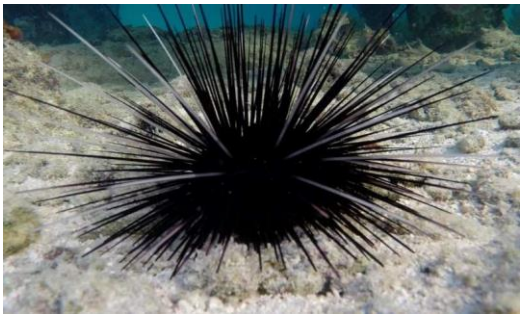


Figure 54 Scenario logic of Bajo Mola future

[18]The term creative class was popularized by Richard Florida (2002) who use the term to describe workers who fully engage in the creative process of creating commercial products and consumer goods. Florida suggest that this class is made up of knowledge-based workers, intellectuals and various types of artists which differ from the traditional agriculture- or industry-based economies.

6.2 Scenario Stories

6.2.1 Sea Urchin



Sea urchin primarily feed on algae which is an indicator polluted seawater. They are susceptible to ecosystem change. In the FGD, a team member said that like sea urchin, Mola villages in this scenario will have ugly outer physical appearance, but they are tasty in the inside inferring that the Bajo people are good at heart.

The basic assumption in this hypothetical future is that the current environmental problem intensifies in which the internal stakeholders (i.e., community members) are unable to consolidate resources, while external supports (i.e., local government, national government, NGOs) are withdrawn; thus, the settlement condition of Bajo Mola villages is worsening. Under this scenario, the residents continue to dispose of untreated residential wastewater to the sea because of poor sanitary infrastructures and lack of public awareness. The circumstance leads to eutrophication of inshore waters, as indicated by excessive growth of algae, which is detrimental to ecosystems and fish populations. Meanwhile, household solid wastes are piling up on the street and on the floor of shallow water because of trash littering. Residents consume more plastic-wrapped goods than before. The waste of this plastic packaging are often disposed to the sea. This marine plastic pollution destroys ocean habitat, entangles marine animals, and kills fish that often ingest it. Furthermore, coral bleaching, triggered by climate change, has further exacerbated the risks of ocean ecosystem collapse. The already vulnerable natural environment will also suffer from the continuing practice of destructive fishing methods such as bombing and poisoning if the residents remain ignorant and neglect the law. As the ecosystem is disrupted, its ability to replenish marine biodiversity will decrease. As a result, overfishing might happen, leading to deleterious impacts on Bajo Mola society's economic and social structures.

Under this scenario, it is expected that new housing development or settlement improvement will not be carried out because of the internal stakeholder's insufficient capacity, aggravating the existing housing problems. Nevertheless, a few households may upgrade, renovate, or repurpose their houses to facilitate retail or other alternative income-generating activities because of a slump in fishing income. In the tourism sector, the villages may face difficulties to attract tourists because of the deteriorating environment. The only people interested in visiting the area would be researchers studying the Bajo culture and other related subjects.

What leads to the occurrence of this scenario is the discontinuation of central government support towards the development of Bajo Mola village. This case could arise because of the limited government spending capacity or fund reallocation to other priority sectors or areas. On the other hand, internal stakeholders are disorganized and lack in capacity for development. Furthermore, the residents are mainly ignorant of long-term environmental problems; thus, they remain pragmatic and opportunistic in extracting marine resources.

This scenario leads to several implications on infrastructure, social, and economic or employment condition of the settlement:

- Infrastructure: Under this scenario, the infrastructure is severely deteriorating. The community is having difficulties maintaining the existing street network using minimal village funds; hence, potholes will be common. Furthermore, existing communal sanitary facilities are dilapidated, so they will not function properly.
- Social: The community feels somewhat distrusted to local authorities because of their incapability to improve the situation. This condition may lead to the community being apathetic to local governance. However, some scenario team members argue that attachment to the community and place may prompt the residents to greater involvement in the development process. One of the youths said during the FGD, "the frustration energy should be channelled through community organizing and mobilization."
- Economic / employment: Environmental degradation will diminish fishing stocks, which will reduce fishermen's income. It is projected that home-based informal retail activity (e.g., food stalls, shops) will provide supplementary income. Tour operators would also encounter decreasing income as a deteriorating environment might discourage tourist visits.

Another potential setback if this scenario occurred on a prolonged basis is the risk of relocation of Bajo Mola residents. Stigmatizing views from local government who think Bajo people are responsible for environmental degradation might reassure them to move the residents to a new place. Although this approach is costly, both financially and politically, local government could ask for support from the central government who prioritize environmental conservation in the area.

6.2.2 Halfbeak

This scenario represents the continuation of normal life or a business-as-usual storyline. In this alternate future, the environmental condition is sustained, or at least the degradation would not significantly affect the ability of the ecosystem to replenish fishing stock. This condition requires working sanitation infrastructure, and residents develop heightened hygienic awareness, which

Halfbeak fish, or Jolong-Jolong in Bajo language or Roa in Indonesian language is a fish that easily found in Wakatobi waters. The fish sometime consumed by the community, but mainly it is used as fish bait. The fish resemble a scenario in which Bajo Mola settlement still depend heavily in traditional fishing activities, unable to reach its potential and becoming ordinary village like any other villages.

is assumed to be achieved in this scenario. Small-scale capture fisheries remain the dominant form of fishing activities in the area, while the catch is directly sold in the local market or be given to intermediaries who bring the commodity to the outer market. The fishing income might fluctuate because this kind of fisheries is affected by external factors that fishermen often cannot influence, such as fish price and fuel cost.

Despite the fisheries sector running as it should be, no major housing development project will be carried out. As a result, the overcrowding problem intensifies. Members of the FGD suggest that one of the consequences of this problem might be the out-migration of educated youth. As education level increases among Bajo Mola villagers, various job opportunities with stable income arise for the educated youths to seize. These youths work in the non-fishery sector. Instead, they are employed in a public or private institution as teachers, administrative staff, shop attendants etc. Their economic endeavour is not connected to the water or to the settlement; thus, they have less attachment to the Bajo Mola area. This group might leave the village if they face difficulties meeting housing needs. If they left, it would be a major loss to Bajo Mola development because they are expected to become the future leader who contributes to generating a positive change in the area.

Under this scenario, tourism in Wakatobi remains sluggish. No new housing development means that tourism development efforts will face constraints on the land issue. Since almost all spaces in Bajo Mola are already occupied, the local government is required to acquire land for significant tourism development projects. Thus, some relocation of residential houses might be needed. The local government could encounter social unrest if the affected households are not resettled within the settlement. Under this condition, tourism initiatives could be opposed by the residents.

What leads to the occurrence of this scenario is the insufficiency of attention on housing issues given by the stakeholders. Compounded by the rapid population growth and the remaining high poverty levels, Bajo Mola residents face persistent challenges to meet their housing needs.

Housing stock stagnates while the development area is limited and restricted. The local government might be unwilling to invest in the new water village development or the construction of a low-cost apartment complex because of a lack of funding. The central government, which focuses on tourism, might allocate a budget for housing development because they might find it unrelated to meeting the tourism objectives. Furthermore, Sara Mandati might block new self-help housing construction because they perceive that someone takes financial advantage of such practice.

This scenario leads to several implications on infrastructures, social, and economic or employment condition of the settlement:

- Infrastructures: Under this scenario, it is assumed that significant investment in infrastructure or tourism development is not being made. As a result, the infrastructure condition remains unchanged compared to their current condition. An open public space will continue to be non-existent. The local government is expected to revitalise existing sanitation infrastructures, such as communal toilets and septic tanks, to reduce settlement's impact on the natural environment. Due to the massive housing backlogs, a rise in a population-to-house ratio is expected. Hence, following the current trend, the average floor area of housing is likely to increase for those who can afford house renovation. However, the poor households might aggrieve due to their inability to upgrade their houses.
- Social: Intensifying overcrowding will cause serious social problems to Bajo households. For instance, the risk of disease transmission could increase, or a child academic achievement could decline. To meet the needs of a large family, the head of a family bears a heavy financial burden. Thus, the sons might have to quit school to support family income by going fishing. In addition, there is also a risk of out-migration of the educated youth because of lack of opportunities in the non-fisheries sector, and they are less attached to Bajo Mola village.
- Economic / employment: The fisheries sector becomes the sole dominant economic sector. The sector might be thriving on the assumption that the environmental condition is preserved while other sectors remain the same. Due to the limited opportunities in the non-fisheries sector and the difficulties in owning a house, the educated youths who are expected to become members of creative workers are inclined to leave the villages. Accordingly, they will bring their creative capacities outside, aggravating the already poor creative economy[19] sector in the area.

[19] Creative economy refers to economic value generation activities which exploit human creativity as a distinctive input in the production process (Lee, 2017). It is a system for the production, exchange and us of creative products as an economic goods, service, or experience resulting from creativity (Howkins, 2002). In Indonesia, the sector

6.2.3 Napoleon

Napoleon fish, or humphead wrasse, is an exotic coral fish that can be found in Wakatobi waters. They are passive creatures that depend on other species activities for food. Because of slow breeding rate and easy to catch, they become an endangered species. However, the fish sometimes are consumed by the community and considered as delicacy. The fish resemble a scenario in which Bajo Mola settlement is attractive and economically striving. However, due to dependency to exogenous factors, it becomes vulnerable to shock and stress.

In this imaginary future, it is assumed that the government decides to heavily invest in developing the physical infrastructures of the village through beautification projects and developing a new village or building a low-cost apartment complex as a measure to increase the housing supply for Bajo people. These efforts not only will open opportunities in tourism sector but also will address housing backlog in the villages. The underlying assumption in this scenario is that the environmental condition is considerably preserved, and the fishing stock is protected; thus, fisheries remain as the economic base. As in the previous scenario, the fisheries sector relies on exogenous growth which depends on external and independent factors. This condition might make Bajo Mola fishermen vulnerable if a sudden external shock occurs and influences fishery commodity price such as an economic crisis or a pandemic.

In this scenario, the central government is thoroughly revitalizing Bajo Mola villages. Their main concern will be to develop Bajo Mola area tourism villages. To provide additional spaces for developing tourism facilities, the government must intervene in the housing supply of Wakatobi regency. Houses are essential features of the village landscape; hence, the government might fund housing renovation and regulate building development by enforcing strict building code. Another reason for housing development intervention is that the government may need to relocate several households to provide space for beautification or tourism attraction projects. New housing stock is urgently needed to accommodate ousted households and address current housing shortfall, which is vital to retain talent in the area. Two approaches can be adopted to create new housing stock: expansion (developing a new village) or densification (through building a low-cost apartment complex). These approaches have their own advantages and

consist of 16 sub-sectors, including: apps and game development; architecture; interior design; fashion; product design; visual communication design; movies, animation, and video; photography; crafts; culinary arts; music; publishing; advertising; performing arts; fine art; television and radio.

disadvantages from financial and environmental perspectives. Nevertheless, both will cause social unrest if carried out in a top-down manner without proper consultation with the residents.

This scenario also assumes that the ambitious and exciting physical infrastructure project will invigorate tourism activities in the Bajo Mola area. Most tourists will come to the villages for sightseeing, while a few participate in the LEPA Mola's tourist activities. They come and go because most of the accommodation, shopping centres, and restaurants are located outside the village. A few tour operators will benefit from such conditions but probably not most residents. The rest of the community do not have the capacity to set up and run a business due to the lack of investment capital and entrepreneurial skills. They will miss the opportunities arise from the tourism development in the area. As one of the FGD participants said, in this scenario the community would turn to be "the spectator in your own place". Hence, they might feel excluded from the tourism development because it adds little value to the community's economy.

What leads to the occurrence of this scenario is the top-down development approach conducted by the government, which prioritizes physical infrastructure development. Although infrastructure is necessary, the government often neglects community empowerment and capacity development which should be an integral part of slum upgrading or urban regeneration process. Overlooking these components might exclude citizens from the development process. If they cannot voice their opinions, the infrastructures built by the government might not be suitable to meet the community needs. In addition, without being empowered, in terms of skills and entrepreneurial capacity, the community will not reap the full benefit of the development. Instead, foreign actors who have sufficient human and financial capital may override the tourism industry in the area.

This scenario leads to several implications on infrastructures, social, and economic and employment conditions of the settlement:

- Infrastructure: A comprehensive infrastructure investment is expected in this scenario. This investment includes essential infrastructures for tourism development such as sanitation infrastructures, road networks, open spaces, and Bajo Museum revitalization. In this case, basic urban infrastructures will be reliable while public spaces and housing will be sufficient for local needs. However, because of limited public participation and lack of awareness, the infrastructures may not function effectively and be maintained appropriately. Furthermore, without proper citizen involvement, different perceptions might arise regarding urban landscape and image of the settlement. The government's main priority in developing the settlement will be providing easy access and movement for tourists and arranging the

settlement's visual beautification. Meanwhile, the community's primary concern is maintaining the identity of the villages and facilitating fishery activities. Conflict may arise if these differences are not being discussed among stakeholders.

- Social: Although the issue of home overcrowding is significantly dealt with through new housing development, a necessary social adjustment by the citizen is required to expedite adaptation in the new environment, especially if the vertical housing is constructed. The residents must change their way of life, which may lead to a culture shock. Minor social unrest is also expected if the inhabitants are excluded from the development process. Social conflict may potentially aggravate the condition if the relocation occurred without consent or proper compensation.
- Economic / employment: The tourism sector is inclined to grow because of massive investment from the government. Fishermen are likely to continue their traditional fishing activities. However, they could gain additional income from tourism industry which provides a safety net during unfavourable weather season. Small home-based retail might proliferate to catch opportunities from incoming tourists. However, the creative industry is yet to grow because the residents lack entrepreneurial capacity. These kinds of tourism means that the sector relies on exogenous factors.

One of the risks discussed for the scenario of a non-participatory infrastructure-led settlement development is the economic vulnerability towards shocks and stress. The scenario assumes that the infrastructure development will generate exposure and attract tourists, strengthening the local economy. However, questions were raised on whether this ambition could be realized considering the remoteness of Wakatobi islands, and its niche target market. Furthermore, the member of the scenario panel also concerned about external shock and stress, such as a pandemic or financial crisis. During the Covid-19 pandemic, the tourist arrival and the price of the fish dropped dramatically; thus, the Bajo Mola economy was hit severely.

6.2.4 Marlin

This scenario represents a condition that might be achieved if the government not only built infrastructure and housing but also empower the community and develop local economy in the process, which is a self-reliant local-led economic development and a vibrant settlement. This can be implemented through a series of training, community gathering and organizing, and capital and marketing support. This scenario emphasizes the importance of endogenous force

in which human capital, innovation, and knowledge are significant contributors to economic growth.

Marlin fish are aggressive fish that are among the fastest marine swimmers. Nevertheless, they are captured by Bajo fishermen mostly for export purpose. This fish represents a scenario in which The Bajo people are active and adaptive in taking advantages of economic opportunities.

Under this scenario, fishery products are processed within the area to assign more added value. This tendency can be obtained through capital-intensive means, through factory building, or through a societal-based approach which involves a network of home-based enterprises. According to FGDs, the second approach is preferred and more likely to be implemented. Nevertheless, it requires intensive entrepreneurial capacity building for the residents. The government and other external actors could also expand market outreach using available information technology. Thus, the fishermen can directly market their products to customers through social media platforms. Furthermore, as tourism grows, the fishermen can also sell their fish to restaurants and guesthouses as part of overall community-based tourism development. Since constant fish supply is needed, the panel members pointed out that aquaculture practice is likely to burgeon in the area.

In terms of housing and infrastructure development, it is assumed in this scenario that the community will play an active role in each phase of development as part of community empowerment. The government provide large-scale social infrastructure or provide services with particular participatory development. By considering local community needs and views, this approach will enhance the effectiveness of the development project because it can lessen negative consequences, optimize result, and potentially mobilize community capacity.

In this scenario, the Bajo Mola area is developed into a tourism centre that offers various products, services, and experiences for tourists. These offerings which include restaurant, shopping streets, museums, water sports centres, and guesthouses, can be provided by the residents themselves because of a string of community empowerment and local economic development program. Tourists will be offered a live-in experience that encourages them to stay overnight in the settlement. As a result, tourists would spend more time and money in the area, stimulating local economic growth. The tourism activities and community capacity development will enhance the creative industry in the area. Creative entrepreneurs and workers will initiate a

creative economy in Bajo Mola village, including culinary, fashion, art, and handicrafts. As a result of community capacity development, the resident can offer services and develop products that can be traded in the area or exported. Furthermore, this economic sector will bring trickle-down effects to other sectors. To fisheries, for example, restaurants and guesthouses will demand fresh fish harvested by the fishermen. To the fishermen, this creates another market to supply their products into.

This scenario leads to several implications on infrastructures, social, and economic or employment condition of the settlement:

- Infrastructure: The infrastructures need to be upgraded to support the growing economy, particularly the creative industry in the area. However, this necessity might be fulfilled because the village government will acquire locally generated revenue to maintain and upgrade infrastructure. The urban landscape will be directed to preserve the cultural identity and the image of the settlement. Public open space might be initiated to serve local needs and support cultural activities that attract tourists, such as dance performance. To preserve local place identity, regeneration requires strict building control. Thus, it is expected that self-help housing development in the area will be closely monitored. This condition might present difficulties for new families or low-income households to build houses that follow standard.
- Social: In this scenario, the community might become a capitalistic society because they aggressively pursue economic gain. As a result, there will be a widening gap between the rich and the poor. Furthermore, the role of cultural institutions is declining, and deep-rooted traditions might hardly survive. If Bajo Mola becomes a tourism village, the residents will be in daily contact with foreigners. Although this situation may enhance social networks, the influence of foreign cultures might be ill-suited to Bajo long-established value.
- Economic / employment: The villages will be known as a tourism centre. Thus, it is likely that the number of traditional fishermen will stagnate. The existing fishermen might also change their strategy. More aquaculture fishery practice is expected to supply local restaurants with fresh fish. The rise of the tourism industry and the creative economy will bring a substantial trickle-down effect to other sectors.

One of the concerns raised from this scenario is its impact on social and environmental aspects of Bajo life in the longer term. In this scenario, community welfare might improve, but the income gap is expected to widen. This condition might cause social conflict in the long term, especially if the cultural institutions become passive. A greater risk to sustainability is also a potential implication as the community becomes more money-oriented and opportunistic. In

this case, the role of village leaders in governing the area as well as resident awareness of the environment are crucial.

6.3 Desired Future and Suggestion for Actions

From the FGDs, it can be concluded that the panel members unanimously selected the Marlin scenario as the desirable future. They argue that social innovation and economic growth will bring advancement to Bajo civilization so that it can be equal with other cultures. They believe that as a society their livelihood should be diversified and reduce dependency on marine resources. Although situated in Marine Protected Area, they learned that the marine ecosystem is vulnerable, not only because of local factors such as destructive fishing methods, overfishing, and residential pollution, but also because of global factors such as climate change. They acknowledge the opportunities that may arise from tourism initiatives. However, they believe that the general residents might not reap the full benefit due to the lack of capacity to start and operate a business. Thus, they insisted on the importance of community capacity development and empowerment, particularly in the creative economy sector. Through back-and-forth discussions, they recognized that the creative industry is suitable to be developed further in the Bajo Mola area as an alternative economic activity that will provide more employment opportunities for Bajo people. They would like to see a convergence of modern technology and traditional value and lifestyle to reinforce social and economic development. Hence, they would like to utilize their cultural capital as an asset to generate more income. Furthermore, they also incline to redefine the cultural heritage, emphasising the celebration of maritime-based way of life rather than oppressive regimes such as the one related to Sara Mandati which hinders settlement development. They argue that settlement development should be governed formally based on common written law.

In terms of human settlement development, the youths envisioned a comfortable, vibrant waterfront settlement with sufficient space for growth and social activities while preserving the historic urban landscape as an image identity. They hope that environmental condition is well-preserved, uncontaminated from residential waste, and maintained its service in replenishing fishing stock. They would like to keep the existing vibrant and relaxed atmosphere and expect more interactions with foreigners who come as tourists in the future. Additionally, they expected to see a well-arranged settlement in which the road and the canal network join together as a connected and integrated network; hence, embracing the principle of multi-mode transportation that will benefit both road and canal users. They aspired to proper open public space as gathering places for families and social groups, promoting both social cohesion and the health

of individuals. These public spaces could also be utilized as an open-air venue used for entertainment, performances, and sports, which eventually could support the tourism industry. Likewise, they intended to preserve the historical landscape and vernacular architecture. However, they believe that redefinition of traditional housing designs is necessary because of the changing challenges faced by the current generation, for example, in terms of building material availability and durability and the issue of overcrowding.

In achieving a desirable future, external support from the government is desperately needed. The scenario planning process has identified three key policy interventions that will shape the future of the settlement. Under these policies, several actions are proposed under the scope of a comprehensive slum upgrading program. These policies are:

1. Enhance environmental conservation efforts through sanitation and solid-waste management

   Sanitary infrastructure and solid waste management are the most needed improvement that is necessary to protect the settlement environment. Not only are they critical services for a liveable and sustainable settlement, but also their existence is a prerequisite for tourism village development as tourists will be displeased using improper and unhygienic toilets or noticing and smelling nasty piles of rubbish on the street. Open defecation has to be avoided by several means, such as a campaign for healthy and hygienic living and the construction of public toilets. In treating wastewater, a decentralized water treatment system (DEWATS) will be a suitable system for the area. The system connects toilets and bathrooms within each household with a decentralised treatment plant through a simplified community-sewerage network. Communal septic tanks will also be applicable if a sludge treatment system is available in Wakatobi. In managing solid waste, trash can facilities and frequencies of waste collecting should be increased if the villages aspire to be a tourism centre. Another important activity is community education regarding Reduce, Reuse, Recycle (3R). As an incentive for waste collection and segregation, Bank Sampah or Waste Bank would be an engaging initiative. Through cooperation between the community, local government, and waste companies, residents could bring garbage to a waste bank in their neighbourhood to 'deposit' waste and receive monetary compensation.
2. New housing development and culture-led urban regeneration

   As housing stock is severely lacking in Bajo Mola, major new housing development will require intervention from the government using two available approaches. The first approach is expanding existing settlements or developing a new village from scratch. The second one is building a low-cost apartment complex. Not only will this effort address the problem of

house overcrowding, but it could also provide an opportunity to open up spaces for facilities development and settlement rearrangement. Nevertheless, both approaches require intense community development to establish new values or habits. In addition, these new housing development efforts should take place near the current Bajo Mola villages and the sea so that livelihood can be sustained. On the other hand, urban renewal is also desired to reinvigorate existing settlement and bring back its identity, which is essential for tourism village branding. This activity should be based on urban design guideline that acknowledges Bajo cultural asset. Hence, a cultural mapping should be conducted in the first place to portray local cultural assets, stories, practices, relationships, memories, and rituals that constitute places as meaningful locations. In fact, one member of the panel pondered that Bajo Mola villages should be designated as a cultural heritage site.

3. Community capacity development and local enterprise support

   The government is expected to involve the community in the whole development process. The community should provide input in cultural mapping and built environment design and be given the roles in construction projects. Technical assistance in building renovation is also necessary to create a liveable environment for the residents and an attractive atmosphere for tourists. The residents also contribute to a rebranding strategy that emphasizes culture-led regeneration. Based on the rebranding strategy, the government should generate a campaign abroad and initiate the continuation of the International Bajo Cultural Festival. In tourism, the community should play a more prominent active role to reap the full economic benefit; hence, their capabilities in receiving and guiding guests should be improved through a series of training. Meanwhile, the government could also provide training to improve skills and competence, especially in the creative economic sector, such as culinary and souvenir creation. Moreover, the home-based industry should be supported with low-interest capital assistance and marketing outreach support.

Apart from external supports, internal consolidation should be carried out primarily to mitigate risk in each plausible scenario. Consolidation of local community efforts are highly important because, as mentioned by one of the members who quoted The Holy Qur'an: "God would never change a people's state until they change their own state". The youths understood that change should come within the community; thus, they proposed a set of contingent actions to anticipate the realization of each scenario.

1. Sea Urchin
   - Holding voluntary communal work to clean the settlement and collect disposed garbage
   - Revitalizing existing sanitation facilities that currently are neglected.

- Initiating coral replanting movement
- Establishing collaboration with a research institution such as The Wallacea Institute[20] and promoting Educative Tourist package
- Establishing community policing and a whistle-blower system for destructive fishing perpetrators
- Actively participating in aquaculture to ensure the supply of fish commodity

2. Halfbeak
   - Collaborating with voluntary architect non-profit organisation (such as Arkom[21]) or academic to design model for multi-level Bajo houses
   - Renegotiating verbal agreement with Sara Mandati collectively
   - Holding voluntary communal work to renovate dilapidated houses inhabited by low-income families/elderly (collaborative self-help housing)
   - Initiating community's microfinance housing credit scheme
3. Napoleon
   - Collaborating with online-based fishery trading companies to expand market outreach
   - Reactivating LEPA Mola as a community-based tourism organization, developing more tour packages, and building capacity of tour operator
   - Partnering with NGOs for souvenir making training
   - Refocusing village-own enterprise to manage tourism business or involved in aquaculture
   - Creating a network with major hotels and tour operators to promote community-based tourism within the area of Bajo Mola village
   - Appealing for the revitalization of Bajo Museum
4. Marlin
   - Initiating cultural mapping in collaboration with local academician
   - Encouraging faith-building and instil noble cultural value to the younger generation through creative means such as picture books or games
   - Organizing home-based industry and connecting it to internet marketing
   - Rebranding Mola villages and developing it as the cultural capital of the Bajo, and initiating for International Bajo Cultural Festival biennale
   - Improving skill and competency (personal mastery), especially entrepreneurial and creative skills

[20] Operation Wallacea is an UK-owned company that offers research ecotourism based in Hoga island, Wakatobi. They organise packaged expeditions designed around research projects on marine biology and geography.
[21] Arkom is an Indonesian NGO consisting of volunteer architects that often work with Marginalized community in the slum and rural area, heritage site and pre/post disaster.

- Increasing the scale of aquaculture and collaborating with academic or NGOs to develop sustainable fishery practice

These proposed actions are the result of the youth's brainstorming session. Thus, the youth have yet to elaborate further on the distribution of responsibilities or the use of resources. Nevertheless, this plan can serve as a guide for future actions in each scenario.

6.4 Learning from Scenario Planning

The scenario planning exercise was the first time the youth had a meaningful discussion about the Bajo Mola village's future. Although they represent a significant portion of the Bajo Mola demographic, the youth were not typically involved in discussions or decision-making processes to solve the Bajo Mola community's problem. Many of them seek a more significant role in the development of the area because they will be at the forefront of the social-economic change that is about to occur in Bajo Mola villages. The exercise marks the first collective attempt of the youth to critically reflect on the current condition and understand what the future may unfold. They learn about macro issues such as climate change, housing development, tourism policy, and investment policy and comprehend its impact on their modest daily life at the village. In addition, they also become acquainted with having a deliberate conversation in which every opinion is respected about crucial development issues of their settlement.

As previously implied, an organization or a community must become a learning organization if they are about to adapt in a volatile environment. Thus, the Bajo youth as a group should master the five disciplines of a learning organization prescribed by Peter Senge (1990): personal mastery, shared vision, mental model, team learning, and system thinking. In the case of Bajo Mola scenario planning, the youth have also begun to assimilate these disciplines, as explained in the following:

1. Mental Model

   Through the scenario planning process, the youths reflected and openly discussed views and assumptions of each other about the settlement they live in. In the beginning, their mental model was quite similar, probably because they came from the same ages and backgrounds. The mainstreams narrative held by most of them was that the most problems of Bajo Mola settlement could be attributed to a detrimental cultural agreement with the Mandati community. In this phase, their mental models suggest that they were helpless and could not develop further without rescinding the agreement. Nevertheless, as they identified the root of problems and imagined the future world of Bajo Mola village, they realized that the agreement relatively have a low impact on their fate. Their mental model has shifted from

blaming external factors to recognizing self-deficiency in anticipating future challenges. In Senge's words, they have "turning the mirror inward"(Senge, 1990, p. 6). Hence, they enthusiastically seek self-improvement and establish the network required for it.

Their mental models were sophisticated as they realized the importance of environmental conservation, cultivating their cultural resources, and adopting technology to maintain social-economic progress in the future. They become aware that the practice of disposing untreated wastewater and solid waste to the sea is damaging the environment especially considering the increasing volume (as a result of population growth) and the type (as a result of changes in consumption behaviour of which plastic use have been more common) of the substances that are being discarded. This condition will affect the community's livelihood, damaging their fishing endeavour and the local tourism sector. They also begin to recognize their cultural heritages as assets in development. They used to feel inferior because of the lack of capital and credibility relevant to the modern world. However, they came to understand that the practical knowledge related to traditional fisheries was remarkably regarded and promoted sustainable fisheries and sustainable tourism. Moreover, they came to believe that Bajo's cultural resources can be used as a guide for the urban regeneration process to revive place identity, which resuscitates a sense of community and cultural pride and attracts tourists visits. In addition, they seek to gain mastery in the creative and digital economy to increase the added value of fishermen products. They believe that by adding value to the products, the fishermen may gain more income without recklessly increasing the number of marine resources that they harvest. In conclusion, they came to believe that the social and economic changes of Bajo Mola community are inevitable and need to be embraced; however, the Bajo people in general, and the youth specifically, must be prepared to overcome potential adversities and take advantage of opportunities arising from such changes by increasing and making use of local capacities. They hope the Bajo community can be empowered through capacity development and public deliberation so the residents can play more active role in the development process.

2. Shared vision

The scenario planning exercise was the first time the youths discussed together about the issues on their settlement. Hence, they never had a vision, let alone a shared vision. Desired scenarios from the planning exercise provided them with an overview of a vision that they would like to achieve in the future. The exercise produces a desired vision akin to developing endogenous economy and creative culture through culture-led urban regeneration. This shared picture of the future binds the youths together. A unified view among the youth will

enhance their solidarity, which may strengthen their voice and position during discussion or negotiation with other development actors.

3. System thinking

   Through thescenario planning process, the youths also contemplate on how the social and economic system works. They understand that the change of each element of the system is affected by and influence other elements. Scenario planning allows them to think holistically to understand and predict many different types of relationships between the many elements in a complex system. For example, they become aware of the implication of rapid population growth to fishery resources and housing backlog that eventually may drive educated youth out of the village. They realize that decisions and actions taken at the larger geographical context will affect their livelihood and wellbeing to some degree. The exercise identified a few potential adversities and opportunities created by policy introduction at a higher level. For example, the implementation of a liberal investment policy (the Job Creation Law) may not only open more job opportunities, but also increase the competition for tapping infinite fishery resources.

4. Team learning

   The scenario planning exercise included the youths from all five Mola villages to work together and develop capacity for coordinated actions. It is inconclusive that this objective has been met through scenario planning at this point. Nevertheless, scenario planning exercise allows them to have strategic dialogues, which is a starting point to master this discipline. Through these dialogues, they came to know each other's concerns; hence, they may start to collaborate to deal with the issues.

5. Personal mastery

   Scenario planning not only analyses what will the future look like for the Bajo Mola community to anticipate, but also recognizes the current reality. This gap between vision and current reality, which Senge (1990) calls this gap as 'creative tension', is what drive creative energy. The youths acknowledged the creative tension to achieve desired visions because scenario planning exposes a gap between current capacities and future's necessities. Thus, hypothetically, they would be motivated to enhance their capacities to fill in the gaps. It is uncertain if they will embrace personal mastery by themselves because it requires perseverance and patience, which could only be judged in the long-term period. However, the exercise has identified the necessary capacity development activities that should be implemented to overcome capacity gaps, such as training of building construction,

aquaculture, and digital marketing techniques. These activities will be suggested to the government or other relevant institutions to help empower the residents of Bajo Mola village.

The exercise has broadened the youth's knowledge about the plausible futures of Bajo Mola village. Hence, some of the youths have taken concerted actions inspired by the result of scenario planning. For example, the youth from Mola Selatan village have initiated voluntary communal works to clean the settlement and renovate public toilet facilities. As an effort to comprehend creative business and digital economy, another group from the Mola Bahari village have established a start-up enterprise that markets Bajo's fishery products through the internet. This company sells processed ready-to-cook food, which adds value to the products. Besides, many of the youth have become actively involved in the village's political discourse and decision-making process in which they voice their concern and suggest actions based on the result of scenario planning. For example, the youth of Mola Utara have advocated for the development of a 3R (reduce, reuse, and recycle) solid waste management system and housing renovation during a village meeting. The youth of Mola Selatan also propose revitalization of Bajo Museum and suggest village-own enterprise to manage the facility. At the moment, the efforts taken by the youth may be insignificant to produce a transformative outcome in Bajo Mola villages. Nevertheless, assimilating knowledge gained from scenario planning is helpful to amend the youth's worldview of their social, economic, and ecological system. In this sense, the youth may have learned 'feel for the game' necessary to adapt to complex and uncertain futures.

6.5 Conclusion

One of the key missing activities of the slum upgrading project in Bajo Mola villages is the community members' visioning process. The vision for the village is only stipulated in an official document, but the residents do not internalize this vision. Despite its importance in directing development intervention, the visioning process is often underestimated. Thus, a better visioning process through scenario planning is conducted to analyse the gap between current realities and plausible futures.

The scenario planning exercise with Bajo Mola youth has produced four scenarios. A comparison of each scenario is presented in the table below.

Table 19 Scenario comparison

	Sea Urchin	Halfbeak	Napoleon	Marlin
Brief Description	Deteriorating environment	Stagnant or Business-as-usual condition	Growing but the vulnerable economy	Financially prosperous community and vibrant settlement
Basic Assumption	The environmental quality is worsening due to pollution and overexploitation	Small-scale fisheries are dominant, Bajo tourism remain sluggish	Bajo Mola strive as a tourism destination, but a small group of people benefit	The creative economy is flourishing
Enabling Condition	Insufficient sanitary infra-structure and government support discontinued	No major housing development project is carried out; thus, no available space for the development of the area	Government invests heavily in infrastructure development but overlook capacity development	Community capacity development followed by capital and marketing support from the government
Infrastructures	Existing infrastructure is not maintained; sanitary infrastructure is deficient	Existing infrastructure is maintained, but no significant improvement in public space and housing availability	Sufficient housing and basic urban infrastructures are in place, but it is developed without citizen participation	Infrastructures are sufficient to serve both community and tourism needs.
Social	Apathetic community (distrust toward authorities)	Out-migration of young, educated residents	Growing competition with outsiders	Possible loss of cultural value and significant foreign influence
Economic/ Employment	Retail ↑; Tourism ↓ ; Fisheries↓ ↓; Creative economy ↓ ↓	Retail ↔; Tourism ↑ ; Fisheries ↑ ↑ ; Creative economy ↓	Retail ↑ ↑ ; Tourism ↑ ↑ ; Fisheries ↑ ; Creative economy ↑	Retail ↑ ↑ ; Tourism ↑ ↑ ↑ ; Fisheries ↑ ↑ ; Creative economy ↑ ↑ ↑
Miscellaneous	Stigmatizing views towards the Bajo continue	Thriving but housing will become a major issue	High dependency of exogenous factors; thus, vulnerable if shocks happened	The income gap might grow further.

These scenarios represent the plausible structures of the 'field' in the future. Reflecting on these structures, the youth have reconstructed their dispositions, worldview, and attitudes on the issue of Bajo Mola village settlement development. They have internalized these potential structures and thus came to understand the necessary habitus and capitals required to strive in the future world. Because education is an essential factor in forming one's habitus, they have proposed a few capacity development strategies to assimilate the necessary habitus. Furthermore, they urge the residents to play a more significant role in the development process by proposing various community-based programs. This proposition is meant to allow residents to engage in task-oriented problem solving to attain practical mastery in settlement development and earning a

livelihood. By identifying the necessary habitus early, the disruptive effect of hysteresis can be avoided because the residents can readjust in time of changes.

Due to a certain limitation, exploratory scenario planning exercise conducted with the Bajo Mola youth is less than ideal. Scenario members came from specific demography with a similar background, experience, and perception; thus, bias is expected. However, the scenario planning exercise contributes significantly to the social learning process as the Bajo youths learned many lessons. The exercise stimulated discussions that produced valuable and interesting insights about the plausible futures of Bajo Mola communities to prepare better for each alternative future. Proactive actions taken by the community and policy support required from the government were identified; hence, it becomes a framework to realise sustainable and inclusive settlement development of Bajo Mola villages. With this framework, the Bajo youth can focus on solutions rather than continuously lament on the problems. As they update their mental models, the Bajo youth experience 'subjective reframing' of which Mezirow (1997) defined as critically self-reflecting on our own assumption. Self-reflection, as he argued, lead to significant personal transformation (Mezirow, 1997).

Interestingly, by reflecting on the plausible scenarios, the youth came up with a different strategic plan than the one devised by the government in the Wakatobi SIAP. While the government focus only on infrastructure development, the proposed actions from the youth also embrace capacity development, cultural development, and enterprise development. They become aware that in the future, the Bajo community will face multi-dimensional challenges that cannot be addressed only by infrastructure development. Thus, more comprehensive government supports under the scope of the slum upgrading program have been suggested.

However, for the plan can be implemented require government and other stakeholders' support. Although energetic and ambitious, the youths have limited resources, social networks, and the capacity to bring about significant transformative changes unilaterally. They need to be supported by other actors with more authority (symbolic power) and capital. To gain these supports, scenario planning has to be performed as a tool for political process in which stakeholders make a firm commitment to allocate resources following the strategic plan produced from the exercise. The effort may spur a more agile transformation process in Bajo Mola village.

From the exercise in this study, scenario planning procedural lessons have also been gained. First, it is necessary to increase awareness of the scenario members, particularly on contemporary issues, of which the impacts have not been perceived, but they will greatly affect

them in the future. As an example in this case is climate change. In the beginning, because of low awareness about its impact, several scenario members dismissed this as a driver of change. However, after hearing the explanation from the expert, they came to understand the significant impact posed by climate change in the future. For this reason, expert guidance or members education on issues is necessary before or during the scenario planning process. Second, it is also essential to understand the group dynamics of scenario members. Although coming from similar backgrounds, some members are more vocally active than others. Thus, scenario planning could employ methods that do not require verbal elaboration from the members, such as a scoring system to decide the most desirable future.

From the social experiment, it can also be concluded that the scenario planning process could be conducted at the community level and be a part of the slum upgrading process. Facilitators can carry the work without big budgets and complex computer modelling. A more robust community action plan could be generated by replacing a single visioning process with exploratory scenario planning in the slum upgrading phase. This plan will prepare the community not only for desired future, but also other plausible futures.

Chapter 7: Conclusion

The previous six chapters have presented a background for the study, theoretical discussions of related subjects, research methodology, and data analysis collected from the field works. This concluding chapter begins with a discussion section that will interpret and synthesize research findings to formulate a deeper understanding of the investigated research problem. The section will also provide perspective and practical recommendations towards policies and programs that deal with the issues of fishing villages and Bajo Mola socio-economic and cultural development issues. Next, the conclusion section briefly summarises key points covered in the research and their significance to theoretical development. Most importantly, the section also answers the research question posed in the introduction chapter. Finally, suggestions for future research related to the implementation of scenario planning for slum upgrading will be composed.

7.1 Discussion

7.1.1 Reflection on Settlement Development for Fishermen

Most literature on fisheries management focuses on the relationship between fishermen and nature (Bavinck, Jentoft and Scholtens, 2018). While matters such as overfishing and protection of marine ecosystem are indeed important, present-day fishers' face daily social struggles which centre on distributional justice as a result of disadvantageous power relations with others in the human environment: other fishers, government, and competing interest group (*ibid.*). These social struggles occur not only at sea, but also on the land in which contemporary fisher communities encounter considerable difficulties in obtaining decent housing and habitable human settlement in the coastal area.

As clearly shown by the dismal images of fishing villages in many developing countries, fishermen, particularly small-scale fishers in the Global South, live in categorically slum settlements, unable to enter formal land or housing market in bourgeoning coastal areas. This is clearly the manifestation of the low-income generation and political marginalization experienced by many small-scale fishers. However, the virtual absence of the most essential urban services and common goods hinder social prosperity and wealth generation of slum dwellers, creating a vicious cycle between poverty and degenerating settlement environment. In other words, because of poverty, small-scale fishermen have limited options aside from living in a slum settlement whose condition is often detrimental to economic productivity and well-being. Hence, the settlement issue has become one of the significant but often neglected development challenges faced by present-day fisher communities.

Governance failure is at the core of not only housing challenges in general, but also fishing villages' problem. One of the critical governance flaws is the rigid division of labour and organizational specialization influenced by Weberian bureaucracy principles. With so much focus on improving fisheries productivity and environmental sustainability, policy-makers in the fisheries sector often fail to acknowledge that fishing settlement is a part of fisheries issues. Meanwhile, authorities responsible for settlement development areas disregard the economic and cultural importance of coastal environmental service for the fishermen. In the silo-based bureaucracy arrangement, the coastal area is divided into two separate spheres, in which sea and land are being governed under different disconnected systems. The fishing village's domain has also been detached from the whole social-ecological system of fisheries sector. Fishing settlement is one of the social spaces of fishermen that cannot be separated from other social spaces: fishing harbour and fishing ground. Borrowing Lefebvre (1991) concept, these social spaces are the social product of fisher communities and their mode of production for commodities, culture, and network. Hence, fisheries productivity could only be enhanced if this linkage is maintained to avoid destabilising the existing intricate dynamic.

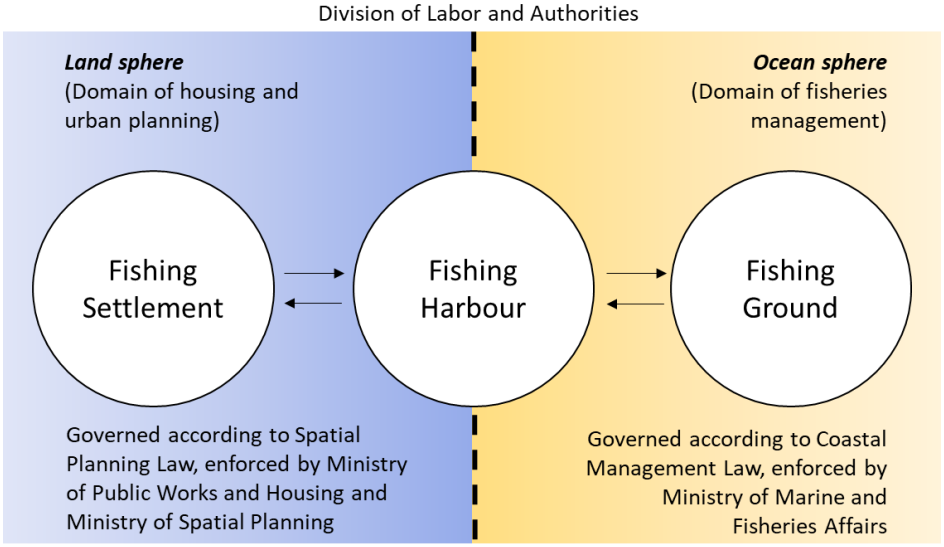


Figure 55 System of land-sea interface

Coastal problems are highly complex and often unstructured. They are complex because they consist of various social systems (e.g., communities, infrastructures, and land uses) and various natural systems (e.g., coastal lands and marine resources.) They are also unstructured due to multiple sets of uncertainties, non-linearities and risks, and the fact that costs and benefits often fall on different actors (Gupta and Bavinck, 2017). A single sectoral technocratic approach would be inappropriate to manage intricate coastal ecosystems as it may generate wider socio-economic risk. Conventional (Weberian) bureaucratic schemes rooted in principles such as

hierarchical structures of authority, strict on written rules and procedures, and organizational specialization have the opposite characteristics required to promote adaptive and integrated coastal management (Colenbrander and Bavinck, 2017).

In recent decades, a growing number of studies have sought for more collaborative bureaucratic arrangements that are responsive and inclusive. One of which is collaborative governance, defined by Ansell and Gash (2007, p. 544) as: "A governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets". In this case, the alliance of actors in fisheries sector and settlement development sector is crucial. This alliance can produce several actions that resolve both sectoral problems and concerns. Several cross-sectoral collective actions are proposed both at the national and local level as follows:

1. Establishing regulations to conserve and revitalize fishing villages as a legal basis for upgrading fishing settlement programs

   Although initiatives to upgrade fishing settlements have already been carried out, a legal basis is necessary to continue conservation and revitalization efforts in the long term. This regulation should ensure small-scale fisheries have the right to coastal space and set principles on fishing village governance.

2. Building capacity of fishery cooperatives to provide housing finance and manage property assets gained from slum upgrading

   Small-scale fishermen may not possess assets that can be used as collateral to obtain institutional loans from banks. Fishing cooperatives can be an alternative creditor to finance not only for purchasing fishing gears but also for housing renovation. These cooperatives could manage government-subsidized mortgages using group lending schemes. In addition, major slum upgrading programs include land rearrangement which can create unreserved space that can be utilized for the tourism or fish processing industry. These communal property assets should be managed by fishing cooperatives that can benefit from additional business activities. This way, the fishing cooperative would be interested to invest in maintaining the area. However, to diversify business operations, fishing cooperatives need technical and financial assistance from the government or other external sectors.

3. Designing for upgrading settlement that consider fishery production chains

Fishing settlements are also where land-based fishing related activities such as marketing, net mending, fish drying, or processing take place (Panayotou, 1982). Slum upgrading programs should accommodate these activities to maintain fishery outputs or increase added value.

4. Housing provision and infrastructure development that anticipate a further influx of poor migrants

   Open access to in-shore marine resources makes small-scale fisheries an employer of last-resort (Bene, 2003). Hence, poor rural migrants who enter fishing activities are likely to move to fishing villages to find affordable housing in coastal areas. If not anticipated, this situation will lead to further overcrowding or expansion of squatter settlements. The fishing village upgrading program should anticipate this issue by constructing housing and basic infrastructure which can grow as the population increases. Incremental housing can be an alternative as it allows households to expand their houses gradually in accordance with their needs. Land readjustment should also be considered to make space for future incoming settlers.

Fishing settlements are what hold the fisher community together. Without them, fishery activities and its contributions to food security and local economic development would only be severely inhibited. In this space, fishermen interact with one another, establish cooperation, and share information and knowledge about fishing ground and fishing methods which induce innovation and enhance productivity. This knowledge and innovation are transmitted to succeeding generations which ensure continuity of fishery practices in the future. Furthermore, in the fishing villages, they agreed upon values and norms and set up governmental institutions, governing their daily social behaviour on the land and the way of fisheries activities. Practices that support fishing activities or improve the added value of fishery products are parts of everyday life found in fishing villages, such as net mending, boat making, and fish processing. The fishing villages are also the place where home-based informal economic sectors strive; hence, they provide alternative employment for community members, reducing pressure off the fisheries resources.

Few governments have policies to provide or support housing for fishermen. However, most of their approaches replicate the intervention toward urban land-based society. These well-meaning intentions might be unsuitable for fisher communities because they maintain place-making practices based on liquid perception urbanism (Thaitakoo and McGrath, 2010). As the example of Bajo Mola suggests, slum upgrading that emphasises physical infrastructure building and neglected capacity development and participatory process may not necessarily address the

village's multi-dimensional development challenges. The slum upgrading intervention even induces hysteresis because the abrupt structural changes are not followed by immediate residents' habitus and capital transformation. Efforts to upgrade fishing villages should be tailored according to coastal environment features, maritime culture, and fishery-based livelihood. Design for fishing village upgrading projects should acknowledge existing social institutions which have progressed through history, defined by local discourses, which then develop into local practices (Gupta and Bavinck, 2017). Disintegration or further stratification within fishing communities should be avoided (Jentoft, 2000).

Chambers (1983) noticed the six biases in understanding rural development: spatial, project, person, seasonal, diplomatic and professional. He added two more biases in a more recent article: security and urban bias (Chambers, 2006). These biases are the causes of developmental problem misdiagnosis, which lead to either no intervention, wrong intervention, incomplete intervention, or unstandardized intervention. Based on the Bajo Mola villages case study, another additional bias can be suggested: 'land bias'. The people who regulate, plan, or conduct research on fishing villages are outsiders whose expertise in urban planning and settlement development discipline is dominated by land-based theories and practices. The introduced policies are mostly relevant to urban land-based communities that decision-makers can closely observe near the headquarters or capital cities. As a result, the policy often ignores specific conditions for rural or coastal residents. For example, slum settlement criteria created by the Indonesian government discourage coastline, riverbank, and on-water settlement development. To realize the vision of cities without slums, the local government may conceivably relocate these settlements inhabited by fishermen. This action would upset the social-economic progress of the resident and disrupt their cultural and economic contribution to the region.

To bridge the perception gap and avoid biases, it is critical to establish more communication, collaboration, and experiential learning among the stakeholders. This communicative process and collaborative governance should be established from the macro-level (national government, legislature) to the micro-level (fishermen cooperation, neighbourhood association). As the marine people generally lack representatives in the political arena, stakeholder forums, such as Mitra Bahari forum in Indonesia, would be an ideal platform for fishermen to voice their concerns regarding coastal management and fishing settlement. However, under the current law, this body only has a consultative role far from the actual decision-making process. Their role and legitimacy need to be strengthened so that they can decide or at least influence coastal policies. By doing so, the community will have real responsibility for policy outcomes since it involves joint activities, joint structures and shared resources (Ansell and Gash, 2007).

In government projects, the fisher community should be empowered to influence the direction and execution of projects rather than merely to receive a share of project benefits. The purpose of citizen participation is not only empowerment, building beneficiary capacity, project effectiveness and efficiency, and project cost-sharing as mentioned by Paul (1987), but also to ensure that the human rights of those who depend on the sea for their livelihoods are respected, that benefits of growth are equitably distributed, and that human well-being of coastal and marine-resource dependent people is maintained or enhanced (Leach *et al.*, 2012).

7.1.2 Reflection Bajo Mola Cultural Revival and Urban Regeneration

For centuries, the Bajo people have claimed the marine environment as their 'living space'. Responding to the structure of the natural marine ecosystem and its element (e.g., marine resources, wind, and tides), the Bajo have developed a maritime-based habitus, as the 'people of the sea', characterized by an intense economic and spiritual relationship with the marine environment. At sea, they were isolated from the social structure or cultural norms set up by land-based society; thus, they used to live somewhat autonomously and informally outside the boundaries of the state or the ruling institutions. With their habitus, they have constructed remarkable fisheries and ocean living related cultural capitals.

However, as they began sedentary living, they must assimilate and follow the social structures defined by the land-based society. Their cultural capitals are becoming less valued within the new modern social structures. The power relationship with the land-based society was often asymmetrical because the Bajo did not have access to land-based resources. They were often politically marginalized because they might not have elite representatives that could influence the decision-making of power holders. These conditions put Bajo people in an inferior position in the prevailing social structure.

Bajo people's cultural struggle also includes their efforts in place-making and settlement development. In Mola villages, they live under the Mandati council's customary rule, which tends to restrain Bajo people's place-making practices. By the government, the unique on-water settlement, which is the manifestation of 'sea people' and informal habitus, was labelled as a slum according to national law. This labelling ensued program intervention to 'upgrade' settlement to meet government standards. With limited participatory mechanisms, most residents were alienated from the development process; thus, they could not voice their values, ideas, desires, and narratives about their settlement. The project was also carried out without capacity development and community empowerment, so many residents struggled to adapt to

the new landscape and were unprepared for the lifestyle change required to maintain post-project development progress.

In the field of human settlement development, the Bajo Mola residents have different views from the government. The differences come from different habitus engrained in the mind of actors. One holds the water perception based on the cultural capital of tradition and local knowledge of the 'sea people'. In contrast, the other holds a solid-state perspective that is bound by structures of bureaucratic regulation and indoctrinated by the habitus of discipline in which the planners/bureaucrats were trained. The structures (government policy on slums) and the habitus of educated bureaucrat comes from Java which serves as the national center for political, economic and education but have a different perspective on human-water relation to Eastern Indonesia maritime society. According to Webb *et al.* (2002), in Bourdieusian rhetoric, the government would be the most dominant, whose institutions, discourses, practices, technologies and general organization provide it with the means to impose particular beliefs and understandings on the whole social field. Research suggest that this dominant habitus inclines to be oppressive towards 'less civilized' society to which they employ symbolic capital to emphasize their authority and command deference from others (Gale, 2005; Hindess, 2005)). In the case of Bajo Mola, the designation of slum settlement of Mola villages and its upgrading intervention that exclude the residents can be seen as symbolic violence in which the norms of 'habitable settlement' of the dominant group was imposed on the subordinate group (Bajo people) and unconsciously agreed upon by both parties. As a result of symbolic violence, the Bajo Mola settlement lost its historic landscape identity that is necessary for tourism development and cultural practices, and the residents felt unpleasant in adapting to the new social space of the settlement. Furthermore, the community has lost its opportunity to learn 'feel for the game', in the sense of capability for community development and place-making, which could enhance their social, cultural, and symbolic capital.

Nevertheless, this does not mean that government intervention in settlement development is unnecessary. A long time ago, Ibn Khaldun (1958 [1377]) observed that buildings of a nomadic group of Bedouin Arabs were not solidly built because no sedentary culture (e.g., home-building, town-planning discipline) existed among them long enough to reach any degree of perfection. He noted that the Bedouin Arabs were unfamiliar with designing skills, home building craftsmanship, and construction machinery required to build a proper home and settlement (*ibid.*). The Bajo have an almost similar predicament. Hence, at the beginning of the sedentary life, they copied and modified the housing and settlement design of Gowa and Bone people. Since then, they began to comprehend sedentary lifestyle by establishing dispersed settlements

that were built spontaneously. The town planning was simply influenced by the course of canoes while sanitary infrastructures were missing because the household waste disposed to the sea was immediately swept away by the sea current. Their habitus as 'people of the sea' had focused their attention to hone their skills as fishermen; thus, home building crafts have not been firmly established among them. However, as the population grows, contemporary Bajo people experience settlement problems. With limited technical and financial capacity coupled with scarcity in building materials, they suffer significant housing shortages and dilapidated existing buildings. The problem of household waste and its implication to the marine environment has become too big to ignore. Climate change and overfishing also can disrupt livelihood and damage the assets of the Bajo people in an unprecedented way. Hence, government assistance is required to deal with these intensifying, unprecedented, contemporary development issues.

However, instead of only fixing the symptoms through pavement development projects, the government should assist the community in enhancing their cultural capitals and habitus of civic engagement. The Bajo society lacks the cultural capital of home building and large construction activities. Hence, the government could educate and empower them in developing not only objectified cultural capital such as physical infrastructures, but also embodied cultural capitals such as engineering skills and environmental sanitation awareness. In addition, the government should involve the community in all phases of slum upgrading development - planning, designing, organizing, implementing, and monitoring – exposing them to settlement development and planning. This would build a reasonable 'feel for the game' of place-making to obtain a pre-reflexive level of practical ability to solve urbanism problems, which is essential to progress from slum condition. This is following Bourdieu's (2018, p. 106) notion: "Yet one can physically occupy a location without inhabiting it properly if one does not dispose of the means tacitly required for that, beginning with the proper dispositions, for it is the habitus that makes the habitat".

In moving toward the future, the Bajo people need to expand or update their habitus following the plausible social structure of the future. In the course of Bajo history, their habitus has shifted from military men to become traders and explorers, and then fishermen of valuable marine products. What would be the proper habitus of Bajo people of the 21st century for the future? Redefining new habitus is crucial in navigating the future world of Bajo people. As scenario planning suggested, tourism and the creative industry are likely to be important sectors shaping their livelihood and social space, thus their habitus. It would be unwise for The Bajo people not to anticipate the trends and take advantage of the opportunities generated from tourism development, especially since the fisheries sector is experiencing Malthusian pressure. This new

habitus would create creative entrepreneurs and workers within the Bajo community who will invigorate the creative economic sector to make Mola villages a tourism center for the ocean lover or 'thallassophile'. Nevertheless, the new habitus influenced by tourism activities and creative economy should incorporate maritime-based habitus to preserve the heritage that forms the cultural identity of the Bajo people. In some sense, the Bajo could become like the Sherpa[22] of the ocean, whose wisdom, skills, and practices are worldly-famous as the guardian of the invaluable marine ecosystem and inspire love for the ocean for the whole world.

The next question that arises is how to create, let alone instil, this redefined new habitus. Bourdieu claimed that habitus is constructed through and, in turn, constructs capital. Since the Bajo people lack economic and social capital, they need to reinforce their cultural capital by revitalizing cultural values, restoring social pride, and reviving their place identity. As experiences in many parts of the world show, this can be done through culture-led urban regeneration (Bailey, Miles and Stark, 2004; Hwang, 2014; Chiu, Lee and Wang, 2019). Hwang (2014) suggests that this type of urban regeneration is suitable for an area with unique historic assets and local cultural potential that can be used to direct the regeneration process. Bajo Mola villages can be considered as culturally distinct settlement despite their status as slum settlements. Hence, slum upgrading strategies and plans must incorporate maritime-based wisdom and practices. For example, in terms of urban design, it is vital to harmonize the waterscape and landscape in Bajo Mola villages so that canoes can pass through the settlement. Another example, if the government intend to build vertical housing, then the design should acknowledge the social habits of fishing households, such as dining together and socializing in public space. The design process and principles can adopt Kampung Akuarium revitalization project where community participation and collaboration between government, community, and NGOs were embraced. The participatory process allows citizens to direct development according to their needs and aspirations. Furthermore, they can learn about settlement issues, place-making processes, establish networks, and strengthen solidarity.

The residents need to be involved in the place-making decision to revitalize existing local identity and sense of belonging. This approach will "re-establish ownership of their own sense of places and space" (Bailey, Miles and Stark, 2004) which is crucial to prompt community mobilization in the long term (Lin and Hsing, 2009). Furthermore, the process of comprehending the disposition of the new image and sense of space also requires the

[22] The Sherpa are one of the Tibetan ethnic groups native to the most mountainous regions of Nepal. They are highly regarded for their elite climbing and mountaineering skills in high altitudes of the Himalaya. They are famous as guides or climbing supporter hired for Mount Everest climbing expeditions.

rediscovery of intangible cultural assets to give meaning to tangible cultural spaces. Cultural urban strategies should not only focus on physical building but also encompass a wide range of cultural activities. Inspired by Taipei culture-led urban regeneration case study (Lin and Hsing, 2009), activities such as folk-culture festivals, art study camps, folklore story-telling can also be held in Bajo Mola villages to ingrain new habitus, a new sense of place, and enliven community's vitality. Nevertheless, for such a holistic approach of culture-led urban regeneration to be realized, it requires a cross-sectoral collaboration that encompasses wide-range institutions' involvement in upgrading Bajo Mola villages.

7.2 Conclusion

One of the persistence questions for slum upgrading practitioners in designing projects is how to ensure incremental development of the area, or at least operational of project output, maintained by the community after the intervention period finished. Most of the government slum upgrading initiatives are conducted in a one to five years span. Often without a proper exit strategy or considering community preparedness, the government's support is withdrawn just because the project period has finished. However, even properly executed projects may result in post slum upgrading problems, such as gentrification, infrastructure malfunction, and community-based organization disintegration, let alone the unstandardized intervention one. In many slum upgrading cases, the community has never been prepared for the post upgrading phase. Scopes and strategies of the slum upgrading projects tend to focus only on the objectives identified at the beginning of the project. After the government's intervention retreated, the community had to deal with different and new developmental challenges. Often these challenges cannot be anticipated in by the community themselves.

The theoretical basis of slum upgrading is rooted in the assumption that the residents will maintain or continue residential development using their own resources and capabilities according to their own needs. This quality can only be achieved if place-making practices are transformed in the area. Bourdieu's theory of practice, which employed as the analytical framework in this study, suggests that practices result from the relation between one's habitus and one's capital within the fields. In this context, it can be understood that slum upgrading should be cultivated upon sense of place as habitus, support community capacity development (capital), and promote institutional (or structural) reform of place-making fields.

The Bajo Mola villages were chosen as the research area of this study. The settlement constitutes a compelling case study because of its high degree of complexity, encompassing environmental protection, tourism development, housing backlog, fisheries management, and cultural

regeneration. From 2015 to 2018, the settlement received a slum upgrading intervention which carried out in the context of 'cities without slum' and strategic tourism destination development policy. The project was criteria-driven, meaning that a set of regulatory slum criteria determine the actions performed in the area. Since the criteria only incorporate infrastructural aspects, the intervention focused on neighbourhood street networks and sanitation facility development. The project does not address the specific locality and complexity of the area and fails to bring about meaningful capacity development or institutional reform that are necessary to transform place-making practice and sustain settlement improvement in the long run. In fact, the effort of street development completely altered the place identity and people's ways of using the space.

The act of the government who present themselves with symbolic power has regenerate the structure of place-making practices in Bajo Mola village. They establish a set of rules and norms that resemble national uniform standards of settlement development. However, the study reveals the hysteresis effect as habitus of Bajo people, who embodied marine and informal life, incompatible with the new institution. Furthermore, their economic, social, and cultural capitals are not reinforced; thus, they are ill-suited for such formal and bureaucratic arrangements. The hysteresis effect indicates missed opportunities for social change as residents struggle to adapt to the new environment appropriately.

The study proposes scenario planning as a tool for communicative action that can be incorporated under a slum upgrading framework to instigate the social transformation of a slum settlement. Drawing from the experience of conducting scenario planning with the Bajo Mola youth, it can be concluded that scenario planning can direct locally sensitive urban development process and bring about transformative changes by performing as a tool for communicative planning and as a tool for social learning. In this fashion, scenario planning can cause transformative governance and transformative learning, leading to transformative outcomes.

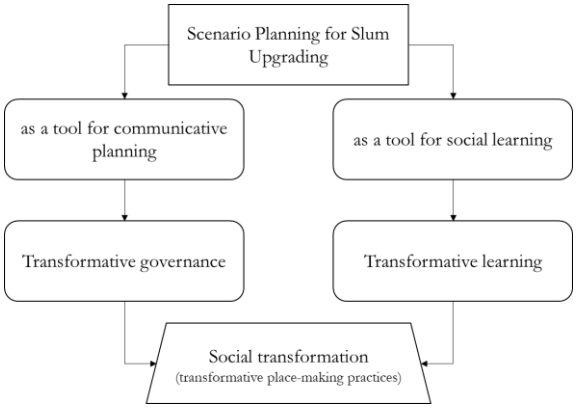


Figure 56 Dimensions of transformative scenario planning for slum upgrading

Scenario planning as a tool for communicative planning

The discrepancy of assumptions, interests, and knowledge among development stakeholders is unavoidable because each of them has different inner frameworks and systems of meaning within which they make sense of the world. To bridge these differences, a communicative approach is used to help stakeholders gain a shared understanding of the problem and reach a consensus on what to do (Healey, 1992; Innes, 1995) is necessary. This notion is fundamental in formulating public policies that seek to manage co-existence in a shared space in an efficient, effective and accountable manner (Healey, 1997). Furthermore, it is becoming even more relevant in analysing the future because all actors can only guess according to their own assumptions. Thus, scenario planning is proposed to be a valuable tool for communicative planning.

Scenario planning, in essence, seeks to gather stakeholders and engage them in the process of understanding the future and deciding how to anticipate or how to transform the situation of the plausible futures. This way, scenario planning operates as a political discourse in which members socially and deliberately formulate scenarios by which serve as the basis for reasoning for strategic actions and division of roles and responsibilities among stakeholders. By having a strategic conversation during scenario planning exercise, scenario team members planning may produce a strategic plan that fosters participation and allows coordinated actions of diverse entities over a long time. In the context of slum upgrading, a group of citizen representatives and relevant government agents and NGOs might construct a scenario about what could happen in and around the settlement and clarify what needs to be done to change the condition of their settlement.

Collaborative scenario planning that involves a wide range of stakeholders can transform relationships among actors (Kahane, 2012). The process builds trust and empathy for other actors and promotes the ability and willingness to work together (Kahane, 2012). Hence, scenario planning as a tool for communicative planning may lead to the transformation of the governance system, in which new rules and norms of power relations among the stakeholders in managing collective affairs are being established. Form of governance shaped by communicative action emphasises an interactive approach to strategy-making in which identification of both problems and solutions is socially constructed through consensus-building (Healey, 1997). This approach embraces a participatory process that positions all stakeholders at the same level at the negotiation table to reach a just agreement. In the context of slum upgrading, this kind of governance system will allow problem identification (e.g., criteria

of slum settlement) and upgrading intervention to be determined in accordance with the local sense of place and place-based specificity.

Although the scenario planning exercise conducted with the Bajo Mola youth generated a desirable future, which served as a vision, and proposed an action plan, the exercise did not necessarily function as a tool for communicative planning as it only involved similar actors. Thus, a transformation of the governance system cannot be observed. The exercise, however, tends to serve as a tool for social learning, as will be explained later.

Scenario planning as a tool for social learning

Proponents of scenario planning have been suggesting the educational value of scenario planning. Kahane (2012) explains that scenario planning transforms members' understanding of what is happening and what could happen in and around the system of which they are situated. Van der Heijden (1996, 2004) understands scenario planning as a cognitive device. As scenario team members came to comprehend the system dynamic, they know how to affect them. Through dialogues in scenario planning, people can explore and learn about issues and each other's perspectives about them. The scenario exercise conducted with Bajo Mola youth has stimulated discussion that expands team members' knowledge and produces valuable insights about the plausible futures of Bajo Mola communities and how to prepare better for each alternative future. This understanding of the system provides the basis for strategy-making. To that end, the scenario planning method provides the platform for interactive social learning.

More importantly, scenario planning can alter one's internal 'frame of reference' that underpins people's preferences, actions, and behaviour. As the scenario planning with Bajo Mola youths implies, the exercise has enhanced the mental models of the youth. The scenarios generated from the exercise represent the possible 'outer' structures in the future. However, the scenario planning also highlights the necessary response of the 'inner'. By reflecting on the condition of the future fields, the youth had identified a pathway to develop necessary habitus and capitals earlier so that they can readjust in time of changes and enhance social practices to strive in the future world. Shaping one's habitus may provide them with a practical mastery or feel for the game. In conclusion, the scenario planning exercise promotes the transformation of society by elucidating possible changes of outer structure and allowing strategies formulation for inner development. This condition may smooth the hysteresis effect that probably happens in the future due to accelerating changes.

By reflecting on the scenario, which represents a plausible 'outer' structure of the future, the youth have pursued subjective strategic reframing to have the necessary inner frameworks to strive in the plausible futures. By doing so, the youth have attempted critical reflection on their assumptions by having critical discourse under the scenario planning framework. As it engages critical reflection and discourse, scenario planning activity can be recognized as a transformative learning process.

The objective of transformative learning is to instigate independent and socially responsible thinking (Mezirow, 1997). In the context of slum upgrading, the slum dwellers would have the capacity for critical thinking and decision making in situations of rapid change. This requires them to continuously expand capacity in addressing upcoming challenges in developing their settlement and becoming a learning organization. The exercise with the Bajo Mola youth exhibits how scenario planning stimulates understanding of the Senge's five learning organisation disciplines. Scenario planning involves identifying a desired vision acknowledged by stakeholders, which becomes the shared vision. Furthermore, the process includes a dialogue among the team members who define each other as colleagues, not enemies, which is the starting point of team learning. Scenario planning also allows observation of a whole complex system and identification of the correlation between actions and consequences; hence, it encourages systemic thinking. Scenario planning could also trigger individual learning when there is a gap between personal vision and plausible reality. Scenario planning allows reflection of one's position and capacity required for the future so they can build upon their personal mastery. In conclusion, scenario planning would provide an excellent foundation for the transformation of slum dweller group into becoming a learning organization.

Scenario planning can be used one way or another to produce transformative outcomes. However, scenario planning as a tool for communicative planning and as a tool for social learning prompt transformative outcome, or place-making practice in this context, in a different manner. The former is able to directly provoke immediate changes as it calls for commitment from the stakeholder involved. However, the process is liable to the power dynamic exists within the group of members that may inhibit free speech. Instead of producing transformative outcomes, this condition may only reinforce the existing state of affairs (Fainstein, 2000). Meanwhile, the latter may avoid such a threat. However, scenario planning for social learning can only indirectly produce transformative outcomes as it does not command immediate actions. Consequently, scenario team members have to bring their updated mental models and suggestions for action in other political arenas to mobilize resources for actions.

Scenario planning is one of the many methods of participatory planning. Similar to other well-known participatory methods, such as Participatory Rural Appraisal (Chambers, 1983), Participatory Poverty Assessment (Norton *et al.*, 2001), or Participatory Assessment, Monitoring and Evaluation (Case, 1990), community-based scenario planning improve the quality of decisions, build social trust, and foster sense of ownership. However, unlike other methods that focus on the existing condition, scenario planning orients toward the future. It emerges as the only method that considers trends, uncertainties, and system dynamics. By doing so, scenario planning allows community or scenario team members to be adaptive in multiple plausible scenarios. In such a way, scenario planning may improve preparedness for emergencies and contingencies. Furthermore, as it depicts representations of plausible futures, scenario planning serves as a mean for the community to reflect on existing condition and their deficiencies to thrive in the future. Hence, it promotes social learning through which future-oriented knowledge is created. With this knowledge in mind, people can become agents of change rather than mere subjects of change. Moreover, the scenario planning exercise produces a common vision among participants that can direct long-term strategies and policy options. An action plan for realising the shared vision can be generated. Social transformation can not be achieved through a single project or by a single entity. The shared vision can guide and foster participation of different entities that may contribute through various projects over a long period of time.

7.3 Recommendation

This research has contributed to several areas of study. The study has acknowledged that the issue of fishing settlement of the Global South, which in most cases resemble slum settlements, has been a complex one as it corresponds with the field of fishery management and settlement development. The study has highlighted the role of fishing settlement and its intricate spatial relationship within the coastal social-ecological system with the fishing ground, fishing harbour, and fishing markets. Despite its importance, fishing villages rarely become the focus of an academic study; thus, a specific policy aimed at preserving and revitalizing of fishermen village has never been formulated. A single sectoral approach to a problem in the fishing village setting may only result in piecemeal development action. Hopefully, highlighting this complexity will lead to cross-sectoral collaborative planning and actions that promote transformative outcome.

The research has also revealed the limitation of the infrastructure-focus slum upgrading program. Using the analytical lens of Bourdieu's theory of practices, the study discovered the hysteresis effect that occurs in the field of place-making due to restructuring structure induced by slum upgrading intervention. In the case of Bajo Mola village, the residents, who embodied

maritime and informal habitus, face difficulties adapting to formal and modern structures enforced by the government through slum upgrading projects. Having unsuitable habitus compel slum residents to poor place-making practices. This revelation points out the importance of understanding the local sense of place and calls for the inclusion of capacity development in every implementation of slum upgrading projects.

The research also contributed to the effort in improving the quality of slum upgrading practices. The fishing villages and the slum settlements has become the locus of complex problems and increasing uncertainties. To navigate the future, the study argued for scenario planning to be integrated into the slum upgrading process, especially during community engagement and visioning phases. By doing so, strategies that anticipate plausible futures while meeting current needs can be formulated. Furthermore, the scenario planning exercise conducted with Bajo Mola youth suggests the method's potential transformative effect. By conducting scenario planning, proactive actions that can be taken by the community and policy support required from the government were identified; hence, it becomes a framework to realise sustainable and inclusive settlement development of Bajo Mola villages. This framework becomes the guiding principle in fostering the participation of diverse entities. Furthermore, the exercise function as the platform for the social learning process among the youth. In this vein, the youth have socially constructed the necessary habitus or inner frameworks in responding to the plausible outer structure of the future portrayed by the scenarios produced in the exercise. Through scenario planning, the youth engage in transformative learning and become a learning organization. Lessons learned from this social experiment confirm the merit of scenario planning for slum upgrading. Thus, this study recommends the implementation of scenario planning for slum upgrading to generate a more robust community action plan that anticipates future uncertainties and prompts transformative outcomes in place-making practices, which in turn sustain improvements in the long run. Ideally, scenario planning can be conducted as part of the slum upgrading process. In this sense, it will replace the single visioning activity performed before formulating the community action plan. However, as this study show, the scenario planning exercise can also be conducted as an additional activity separated from the framework of slum upgrading. This way, scenario planning is useful to induce transformative learning in terms of place-making practices that will eventually improve the living condition of slum settlements.

Authors have provided guidelines for conducting scenario planning workshops (e.g., Slocum, 2003; Krawczyk and Ratcliffe, 2005; Kahane, 2012; Goodspeed, 2020). Inspired by these papers and lessons learned from the practice in this study, a synthesis of guidelines for scenario planning for slum upgrading is being proposed as follows:

1. Pre-Workshop (preparation)

   Before the preparation begins, screening of slum settlement cases that necessitate scenario planning is necessary. The method is more relevant to cases facing complex problems and has a high probability of significant changes driven by disruptive trends. Next, a facilitator or a project team should be assigned to guide the scenario planning process from beginning to the end. They should have sufficient knowledge about the topic and the method, and possess considerable skill and experience in facilitating meetings. Since they play a crucial role in the process, a training of trainers may be deemed as mandatory. The first task of the facilitator is to understand the present situation and the factors that drive its development. By doing so, they may grasp how the existing system works and be able to identify relevant trends and uncertainties that affect settlement development of the slum area. They also need to recognize stakeholders with a vested interest in the research area and their relationship with key factors (policies, events, etc.). Data collection from these stakeholders is necessary to gather viewpoints and insights concerning issues of the settlement area. Thus, the facilitator need to come up with guiding questions. The facilitators also need to establish a good rapport with these stakeholders since they may become part of scenario team member. The number of scenario team members that can be invited should be less than 20 people for the workshop to be effective and efficient.

2. Workshop

   The facilitator convenes scenario team members in a 'strong container'[23] to conduct scenario workshop. Before the workshop starts, the facilitator should lay the ground rules, emphasizing the democratic principle of participatory planning in which each member has an equal position and power. In the workshop, the facilitator introduces the pre-determined focal issue to be discussed (i.e., slum upgrading), scope of analysis, time horizon, and workshop phase. At the beginning, relevant experts should educate scenario team members about contemporary global uncertainties such as climate change and globalization. This activity aims to increase members' awareness and to ensure a similar sense of knowledge. After that, two or three days of the workshop can be held. The first day should be focused on discussing key factors and drivers from the local and macro environment and ranking them according to the level of importance and uncertainties. The second day should be focused on selecting scenario logics, constructing multiple scenarios, developing a storyline that describes how the scenario state evolved from the present, and exploring the

[23] Strong container is Kahane's term to describe the boundaries that are set so that the team feels enough protection and safety, as well as enough pressure and friction, to be able to do their challenging work. This feature include the psychosocial conditions of the work and the physical locations of the meetings (Kahane, 2012).

implications of each scenario. Meanwhile, in the third-day scenario, team members should formulate an action plan for the attainment (or avoidance) of a particular scenario. This involves 'backcasting': a planning method that traces back from the desirable future to the present state to identify critical policies and events necessary to achieve it.

3. Post-Workshop

   To distinguish the occurrence of a certain scenario, it is necessary to select leading indicators and signposts so that the community or the government can monitor actual developments so that the strategies can be adapted appropriately (Slocum, 2003). Besides, the scenario and analysis produced from the workshop should be presented to the general public through written reports or community (town hall) meetings. This activity would allow more residents to be involved in the implementation of strategies formulated from the scenario planning exercise.

Scenario methods are more laborious and time-consuming than simple visioning exercise conducted in mainstream planning practices. Nevertheless, the method results in a more robust and durable plan than traditional forecasting and planning methods that often fail in turbulent times.

The study is only the first step of introducing scenario planning for slum upgrading. It has laid the groundwork for such an attempt of which could benefit from more research. Some of the suggestions for future studies namely:

- Quantitative evaluation on the effect of scenario planning on dimensions of learning organization

  Chermack and colleagues (2006) have formulated a quantitative methodology to evaluate scenario planning's impact on individual perception of learning organization at corporate setting. It would be useful to apply this methodology in the case of community-based scenario planning to test whether the same conclusion can be achieved in the scale of the neighbourhood. This attempt will strengthen the validity of theoretical assumption that ground the utilization of scenario planning for social learning.
- Exploration of scenario techniques

  As previously mentioned, the deliberative discourse in scenario planning does not necessarily guarantee free speech or power equality. This issue becomes a threat to the scenario planning process as it may result in biased and unjust scenario development. To minimize such threat, scenario planning may incorporate more rigorous, technical or quantitative techniques such as trend impact analysis or system modelling (for complete overview of scenario techniques,

see Bishop, Hines and Collins, 2007). These techniques are mainly implemented at corporate setting as they are complex and difficult to be applied with non-expert agents. However, utilization of these techniques for slum upgrading purposes may increase the reliability and objectivity of scenario planning analysis and results. It is intriguing to modify such techniques for the context of scenario planning for slum upgrading.

- Similar studies with a more diverse stakeholder that focuses on participants' habitus and power relations among them within the field of scenario planning

  The discrepancy of perceptions, attitudes, and behaviour between actors can be traced back to their unique habitus and frame of reference. Thus, to understand the power dynamic during critical discourse event in scenario planning exercise, it is beneficial to understand what kind of disposition every actor has, which predicates their assumption. This attempt can reveal the social dynamic among actors, such as between local and national government agents or between sectoral agencies whose habitus represent sectoral disposition.

Bibliography

Acheson, J. M. (1981) 'Anthropology of Fishing', *Annual Review Anthropology*, 10, pp. 275–316. Available at: https://www.jstor.org/stable/2155719.

Adger, W. N. (2003) 'Social Capital, Collective Action, and Adaptation to Climate Change', *Economic Geography*, 79(4), pp. 387–404. doi: 10.1111/j.1944-8287.2003.tb00220.x.

Adger, W. N., Arnell, N. W. and Tompkins, E. L. (2005) 'Successful adaptation to climate change across scales', *Global Environmental Change*, 15(2), pp. 77–86. doi: 10.1016/j.gloenvcha.2004.12.005.

Adianto, J. *et al.* (2016) 'The Tenure Security and Its Implication to Self-Help Housing Improvements in the Urban Kampong: The Case of Kampong Cikini, Jakarta', *Urban and Regional Planning Review*, 3, pp. 50–65. doi: 10.14398/urpr.3.50.

Andersson, E., Barthel, S. and Ahrné, K. (2007) 'Measuring Social–Ecological Dynamics Behind The Generation Of Ecosystem Services', *Ecological Applications*, 17(5), pp. 1267–1278. doi: 10.1890/06-1116.1.

Angel, S. and Boonyabancha, S. (1988) 'Land Sharing as an Alternative to Eviction: The Bangkok Experience', *Third World Planning Review*, 10(2), pp. 107–127. doi: 10.3828/twpr.10.2.v54j0130h27j4r32.

Ansell, C. and Gash, A. (2007) 'Collaborative Governance in Theory and Practice', *Journal of Public Administration Research and Theory*, 18(4), pp. 543–571. doi: 10.1093/jopart/mum032.

Antlöv, H., Wetterberg, A. and Dharmawan, L. (2016) 'Village Governance, Community Life, and the 2014 Village Law in Indonesia', *Bulletin of Indonesian Economic Studies*, 52(2), pp. 161–183. doi: 10.1080/00074918.2015.1129047.

Aoyama, W. (2016) *Creating Living Space against Social Exclusion: The Experience of Sama-Bajau migrants in Davao City, the Philippines*. Available at: https://www.harvard-yenching.org/wp-content/uploads/legacy_files/featurefiles/AOYAMA Waka_Creating Living Space against Social Exclusion.pdf.

Arroyo, I. and Åstrand, J. (2013) 'Organized Self-help Housing: lessons from practice with an international perspective', in *Proceedings of the 19th International CIB World Building Congress*. Brisbane: Queensland University of Technology. Available at: http://www.irbnet.de/daten/iconda/CIB_DC27382.pdf.

Asimaki, A. and Koustourakis, G. (2014) 'Habitus: An Attempt at a Thorough Analysis of a Controversial Concept in Pierre Bourdieu's Theory of Practice', *Social Sciences*, 3(4), pp. 121–131. doi: 10.11648/j.ss.20140304.13.

Asmal, I. and Amri, N. (2018) 'Housing Character in the Border Beach Area of Cambayya', *Journal of Architecture & Environment*, 17(1), pp. 1–16. doi: 10.12962/j2355262x.v17i1.a3394.

Avin, U. (2007) 'Using scenarios to make urban plans', in Hopkins, L. D. and Zapata, M. A. (eds) *Engaging the future: Forecasts, scenarios, plans, and projects*. Cambridge: Lincoln Institute of Land Policy, pp. 103–134.

Avin, U. and Goodspeed, R. (2020) 'Using Exploratory Scenarios in Planning Practice', *Journal of the American Planning Association*, 86(4), pp. 403–416. doi: 10.1080/01944363.2020.1746688.

Babbie, E. R. (2010) *The practice of social research*. 12th ed. Belmont, Calif: Wadsworth Cengage.

Bailey, C., Miles, S. and Stark, P. (2004) 'Culture-Led Urban Regeneration and Revitalization of Identities in Newcastle, Gateshead, and The North East of England', *International Journal of Cultural Policy*, 10(1), pp. 47–65. doi: 10.1080/1028663042000212328.

Bartholomew, K. (2007) 'Land use-transportation scenario planning: promise and reality', *Transportation*, 34(4), pp. 397–412. doi: 10.1007/s11116-006-9108-2.

Baskara, B., Abdullah, I. and Suryo, D. (2014) 'The Construction and Contestation of Islamic Identity of The Bajo People in Wakatobi Islands, South East Sulawesi, Indonesia', *Humaniora*, 26(1), pp. 34–42. doi: 10.22146/jh.4698.

Bavinck, M. (2011) 'Wealth, Poverty, and Immigration: The Role of Institutions in the Fisheries of Tamil Nadu, India', in Jentoft, S. and Eide, A. (eds) *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries*. Dordrecht, Heidelberg, London, New York: Springer Netherlands, pp. 173–191.

Bavinck, M. *et al.* (2017) 'The impact of coastal grabbing on community conservation – a global reconnaissance', *Maritime Studies*, 16(1). doi: 10.1186/s40152-017-0062-8.

Bavinck, M., Jentoft, S. and Scholtens, J. (2018) 'Fisheries as social struggle: A reinvigorated social science research agenda', *Marine Policy*, 94(May), pp. 46–52. doi: 10.1016/j.marpol.2018.04.026.

Bayat, A. (2007) 'Radical Religion and the Habitus of the Dispossessed: Does Islamic Militancy Have an Urban Ecology?', *International Journal of Urban and Regional Research*, 31(3), pp. 579–590. doi: 10.1111/j.1468-2427.2007.00746.x.

Beatley, T. (2014) *Blue urbanism: Exploring connections between cities and oceans*, *Blue Urbanism: Exploring Connections between Cities and Oceans*. Washington DC: Island Press. doi: 10.5822/978-1-61091-564-9.

Béné, C. (2003) 'When fishery rhymes with poverty: A first step beyond the old paradigm on poverty', *World Development*, 31(6), pp. 949–975. doi: 10.1016/S0305-750X(03)00045-7.

Béné, C. and Friend, R. M. (2009) 'Water, poverty and inland fisheries: lessons from Africa and Asia', *Water International*, 34(1), pp. 47–61. doi: 10.1080/02508060802677838.

Béné, C. and Friend, R. M. (2011) 'Poverty in small-scale fisheries: Old issue, new analysis', *Progress in Development Studies*, 11(2), pp. 119–144. doi: 10.1177/146499341001100203.

Bennett, N. J., Kadfak, A. and Dearden, P. (2016) 'Community-based scenario planning: a process for vulnerability analysis and adaptation planning to social–ecological change in coastal communities', *Environment, Development and Sustainability*, 18(6), pp. 1771–1799. doi: 10.1007/s10668-015-9707-1.

Berglund, B. *et al.* (1999) *Guideline for Community Noise*. World Health Organizations.

Bergold, J. and Thomas, S. (2012) 'Participatory Research Methods: A Methodological Approach in Motion', *Historical social research (Köln)*, 37(4 (142)), pp. 191–222.

Berkes, F. *et al.* (2001) *Managing Small-Scale Fisheries: Alternative Directions and Methods*. Ottawa: International Development Research Centre. Available at: https://prd-idrc.azureedge.net/sites/default/files/openebooks/310-3/index.html.

Bhatkal, T. and Lucci, P. (2015) 'Community-Driven Development in the Slums: Thailand's Experience', *Development Progress*.

Bhattacherjee, A. (2012) *Social Science Research: principles, methods, and practices*, *Book 3*. Tampa:

University of South Florida Scholar Commons. Available at: https://scholarcommons.usf.edu/oa_textbooks/3.

Bianchini, F. and Parkinson, M. (eds) (1993) *Cultural policy and urban regeneration: the West European experience*. Manchester: Manchester University Press. doi: 10.1016/0264-2751(95)90067-5.

Billig, M. (2006) 'Is My Home My Castle? Place Attachment, Risk Perception, and Religious Faith', *Environment and Behavior*, 38(2), pp. 248–265. doi: 10.1177/0013916505277608.

Bird, J., Montebruno, P. and Regan, T. (2017) 'Life in a slum: understanding living conditions in Nairobi's slums across time and space', *Oxford Review of Economic Policy*, 33(3), pp. 496–520. doi: 10.1093/oxrep/grx036.

Bishop, P., Hines, A. and Collins, T. (2007) 'The current state of scenario development: an overview of techniques', *Foresight (Cambridge)*, 9(1), pp. 5–25. doi: 10.1108/14636680710727516.

Boonyabancha, S. (2009) 'Land for housing the poor — by the poor: experiences from the Baan Mankong nationwide slum upgrading programme in Thailand', *Environment and Urbanization*, 21(2), pp. 309–329. doi: 10.1177/0956247809342180.

Börjeson, L. *et al.* (2006) 'Scenario types and techniques: Towards a user's guide', *Futures*, 38(7), pp. 723–739. doi: 10.1016/j.futures.2005.12.002.

Bourdieu, P. (1977) *Outline of a Theory of Practice*. Cambridge: Cambridge University Press.

Bourdieu, P. (1984) *Distinction : a social critique of the judgement of taste*. London: Routledge & Kegan Paul.

Bourdieu, P. (1986) 'The forms of capital', in Richardson, J. (ed.) *Handbook of Theory and Research for the Sociology of Education*. Westport, CT: Greenwood, pp. 241–258.

Bourdieu, P. (1989) 'Social Space and Symbolic Power', *Sociological Theory*, 7(1), pp. 14–25. doi: 10.2307/202060.

Bourdieu, P. (1990) *The Logic of Practice*. Cambridge: Polity Press.

Bourdieu, P. (1998) *Practical Reason: On the Theory of Action*. Cambridge: Polity Press.

Bourdieu, P. (2000) *Pascalian Meditation*. Cambridge: Polity Press.

Bourdieu, P. (2018) 'Social Space and the Genesis of Appropriated Physical Space', *International Journal of Urban and Regional Research*, 42(1), pp. 106–114. doi: 10.1111/1468-2427.12534.

Bourdieu, P. and Wacquant, L. J. D. (1992) *An Invitation to Reflexive Sociology*. Cambridge: Polity Press.

BPS (2020) *Produk Domestik Bruto (PDB) Indonesia Triwulanan 2016-2020*. Jakarta.

Bradfield, R. *et al.* (2005) 'The origins and evolution of scenario techniques in long range business planning', *Futures*, 37(8), pp. 795–812. doi: 10.1016/j.futures.2005.01.003.

Brown, B., Perkins, D. D. and Brown, G. (2003) 'Place attachment in a revitalizing neighborhood: Individual and block levels of analysis', *Journal of Environmental Psychology*, 23(3), pp. 259–271. doi: 10.1016/S0272-4944(02)00117-2.

Buckley, R. M. and Kalarickal, J. (2005) 'Housing policy in developing countries: Conjectures and refutations', *World Bank Research Observer*, 20(2), pp. 233–257. doi: 10.1093/wbro/lki007.

Case, D. D. (1990) 'The community's toolbox: The idea, methods and tools for participatory

assessment, monitoring and evaluation in community forestry'. Bangkok, Thailand: FAO Regional Wood Energy Development Programme in Asia. Available at: https://www.fao.org/3/x5307e/x5307e00.htm.

Cernea, M. (1997) 'The risks and reconstruction model for resettling displaced populations', *World Development*, 25(10), pp. 1569–1587. doi: 10.1016/S0305-750X(97)00054-5.

Chakraborty, A. (2011) 'Enhancing the role of participatory scenario planning processes: Lessons from Reality Check exercises', *Futures*, 43(4), pp. 387–399. doi: 10.1016/j.futures.2011.01.004.

Chakraborty, A. *et al.* (2011) 'Robust Plans and Contingent Plans', *Journal of the American Planning Association*, 77(3). doi: 10.1080/01944363.2011.582394.

Chakraborty, A. and McMillan, A. (2015) 'Scenario Planning for Urban Planners: Toward a Practitioner's Guide', *Journal of the American Planning Association*, 81(1), pp. 18–29. doi: 10.1080/01944363.2015.1038576.

Chambers, R. (1983) *Rural development : putting the last first*. London: Longman.

Chambers, R. (2006) 'Poverty Unperceived: Traps, Biases and Agenda', *IDS Working Paper*, (270). Available at: https://www.ids.ac.uk/download.php?file=files/Wp270.pdf.

Chamlee-Wright, E. and Storr, V. H. (2009) '"There's No Place like New Orleans": Sense of Place and Community Recovery in the Ninth Ward after Hurricane Katrina', *Journal of Urban Affairs*, 31(5), pp. 615–634. doi: 10.1111/j.1467-9906.2009.00479.x.

Chapin, F. S. and Knapp, C. N. (2015) 'Sense of place: A process for identifying and negotiating potentially contested visions of sustainability', *Environmental Science & Policy*, 53, pp. 38–46. doi: 10.1016/j.envsci.2015.04.012.

Chermack, T. J. (2003) 'Mental Models in Decision Making and Implications for Human Resource Development', *Advances in Developing Human Resources*, 5(4), pp. 408–422. doi: 10.1177/1523422303257373.

Chermack, T. J. (2005) 'Studying scenario planning: Theory, research suggestions, and hypotheses', *Technological Forecasting and Social Change*, 72(1), pp. 59–73. doi: 10.1016/j.techfore.2003.11.003.

Chermack, T. J., Lynham, S. A. and van der Merwe, L. (2006) 'Exploring the relationship between scenario planning and perceptions of learning organization characteristics', *Futures*, 38(7), pp. 767–777. doi: 10.1016/j.futures.2005.12.010.

Chiu, Y.-H., Lee, M.-S. and Wang, J.-W. (2019) 'Culture-led urban regeneration strategy: An evaluation of the management strategies and performance of urban regeneration stations in Taipei City', *Habitat International*, 86, pp. 1–9. doi: 10.1016/j.habitatint.2019.01.003.

Cinner, J. E. *et al.* (2018) 'Building adaptive capacity to climate change in tropical coastal communities', *Nature Climate Change*, 8(2), pp. 117–123. doi: 10.1038/s41558-017-0065-x.

Coates, J. F. (2016) 'Scenario planning', *Technological Forecasting and Social Change*, 113, pp. 99–102. doi: 10.1016/j.techfore.2016.10.043.

Colburn, L. L. and Jepson, M. (2012) 'Social Indicators of Gentrification Pressure in Fishing Communities: A Context for Social Impact Assessment', *Coastal Management*, 40(3), pp. 289–300. doi: 10.1080/08920753.2012.677635.

Colenbrander, D. and Bavinck, M. (2017) 'Exploring the role of bureaucracy in the production

of coastal risks, City of Cape Town, South Africa', *Ocean and Coastal Management*, 150, pp. 35–50. doi: 10.1016/j.ocecoaman.2016.11.012.

Collier, P. and Venables, A. J. (2013) *Housing and Urbanization in Africa: unleashing a formal market process*. Oxford. Available at: https://ideas.repec.org/p/csa/wpaper/2013-01.htm.

Corburn, J. *et al.* (2020) 'Slum Health: Arresting COVID-19 and Improving Well-Being in Urban Informal Settlements', *Journal of Urban Health*, 97(3), pp. 348–357. doi: 10.1007/s11524-020-00438-6.

Cresswell, T. (2015) *Place : an introduction*. 2nd ed. Chichester, England ; Wiley Blackwell.

Creswell, J. W. (2007) *Qualitative inquiry & research design : choosing among five approaches*. 2nd ed. Edited by J. W. Creswell. Thousand Oaks: Sage Publications.

Cunningham, S. (1994) 'Fishermen's Incomes and Fisheries Management', *Marine Resource Economics*, 9, pp. 241–252. doi: 10.1086/mre.9.3.42629083.

Dadon, J. R. and Oldani, J. I. (2017) 'Interjurisdictional coastal management in metropolitan areas', *Ocean and Coastal Management*, 148, pp. 260–271. doi: 10.1016/j.ocecoaman.2017.08.002.

Das, A. (2015) 'Slum upgrading with community-managed microfinance: Towards progressive planning in Indonesia', *Habitat International*, 47, pp. 256–266. doi: 10.1016/j.habitatint.2015.01.004.

Davis, M. (2006) *Planet of Slums*. London; New York: Verso.

Dharma, I. M. K. A., Ikhsan, A. Al and Hasan, L. O. A. (2017) 'Respon Rumah Tradisional Suku Bajo terhadap Iklim Tropis', in *Temu Ilmiah Ikatan Peneliti Lingkungan Binaan Indonesia 6*. Ikatan Peneliti Lingkungan Binaan Indonesia, pp. 97–112. doi: 10.32315/ti.6.h097.

Douglas, I. *et al.* (2008) 'Unjust waters: climate change, flooding and the urban poor in Africa', *Environment and Urbanization*, 20(1), pp. 187–205. doi: 10.1177/0956247808089156.

Dovey, K. (2014) 'Incremental Urbanism: The Emergence of Informal Settlements', in Haas, T. and Olsson, K. (eds) *Emergent urbanism : urban planning & design in times of structural and systemic change*. 1st edn. London: Routledge, pp. 61–70.

Edgerton, J. D. and Roberts, L. W. (2014) 'Cultural capital or habitus? Bourdieu and beyond in the explanation of enduring educational inequality', *Theory and Research in Education*, 12(2), pp. 193–220. doi: 10.1177/1477878514530231.

Eide, Arne, Bavinck, M. and Raakjær, J. (2011) 'Avoiding Poverty: Distributing Wealth in Fisheries', in Jentoft, S. and Eide, A. (eds) *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries*. Heidelberg: Springer Netherlands, pp. 13–25. doi: 10.1007/978-94-007-1582-0_2.

Eryano, L. M., Sudaryono, S. and Iskandar, D. A. (2020) 'Strategi bermukim Suku Bajo di Desa Mola, Kabupaten Wakatobi', *Region : Jurnal Pembangunan Wilayah dan Perencanaan Partisipatif*, 15(2), pp. 277–288. doi: 10.20961/region.v15i2.31960.

Everett, M. (2001) 'Evictions and human rights: Land disputes in Bogotá, Colombia', *Habitat International*, 25(4), pp. 453–471. doi: 10.1016/S0197-3975(01)00015-7.

Exton, D. A. (2010) 'Nearshore fisheries of the Wakatobi', in Clifton, J., Unsworth, R. K. F., and Smith, D. J. (eds) *Marine Research and Conservation in the Coral Triangle*. New York: Nova Science Publishers.

Ezeh, A. *et al.* (2017) 'The history, geography, and sociology of slums and the health problems

of people who live in slums', *The Lancet*, 389(10068), pp. 547–558. doi: 10.1016/S0140-6736(16)31650-6.

Fainstein, S. S. (2000) 'New Directions in Planning Theory', *Urban Affairs Review*, 35(4), pp. 451–478. doi: 10.1177/107808740003500401.

FAO (2015) *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication*. Rome.

FAO (2018) *The State of Fisheries and Aquaculture in the world 2018: Meeting the sustainable development goals*, *Fao*. Rome. Available at: http://www.fao.org/documents/card/en/c/I9540EN/.

Firman, T. (2009) 'Decentralization reform and local-government proliferation in Indonesia: towards a fragmentation of regional development', *Review of Urban & Regional Development Studies*, 21(2–3), pp. 143–157. doi: 10.1111/j.1467-940X.2010.00165.x.

Firth, L. B. *et al.* (2016) 'Ocean sprawl: Challenges and opportunities for biodiversity management in a changing world', in Hughes, R. N. et al. (eds) *Oceanography and Marine Biology: An Annual Review*. Taylor & Francis, pp. 189–262. doi: 10.1201/9781315368597.

Florida, R. L. (2002) *The rise of the creative class: and how it's transforming work, leisure, community and everyday life*. New York: Basic Books.

Fox, S. (2014) 'The Political Economy of Slums: Theory and Evidence from Sub-Saharan Africa', *World Development*, 54, pp. 191–203. doi: 10.1016/j.worlddev.2013.08.005.

Friedmann, J. (2007) 'Reflections on Place and Place-making in the Cities of China', *International Journal of Urban and Regional Research*, 31(2), pp. 257–279. doi: 10.1111/j.1468-2427.2007.00726.x.

Friedmann, J. (2010) 'Place and Place-Making in Cities: A Global Perspective', *Planning Theory & Practice*, 11(2), pp. 149–165. doi: 10.1080/14649351003759573.

Fuentes, N. M. and Pirzkall, H. C. P. (2020) 'Slum upgrading and placemaking: improving informal settlements and creating places', *Revista Brasileira de Planejamento e Desenvolvimento*, 9(2), pp. 285–316. doi: 10.3895/rbpd.v9n2.8906.

Gale, F. (2005) 'The Endurance of Aboriginal Women in Australia', in Rooksby, E. and Hillier, J. (eds) *Habitus: A Sense of Place*. 2nd edn. London, pp. 356–370.

Garfias Royo, M. *et al.* (2018) 'Using Future Scenario Planning as a tool for informed decision making on infrastructure interventions in Kibera, Nairobi in Kenya', *Habitat International*, 79, pp. 30–41. doi: 10.1016/j.habitatint.2018.07.009.

Garvin, D. A. (1993) 'Building a Learning Organization', *Harvard Business Review*, 71, pp. 78–91. Available at: https://hbr.org/1993/07/building-a-learning-organization.

de Geus, A. (1988) 'Planning as Learning', *Harvard Business Review*. Brighton, MA, pp. 70–74. Available at: https://hbr.org/1988/03/planning-as-learning.

Gieryn, T. F. (2000) 'A Space for Place in Sociology', *Annual Review of Sociology*, 26(1), pp. 463–496. doi: 10.1146/annurev.soc.26.1.463.

Gilbert, A. (2007) 'The Return of the Slum: Does Language Matter?', *International Journal of Urban and Regional Research*, 31(4), pp. 697–713. doi: 10.1111/j.1468-2427.2007.00754.x.

Gillam, C. and Charles, A. (2018) 'Fishers in a Brazilian Shantytown: Relational wellbeing supports recovery from environmental disaster', *Marine Policy*, 89, pp. 77–84. doi: 10.1016/j.marpol.2017.12.008.

Glaeser, E. (2012) *Triumph of the City : How Urban Spaces Make Us Human*. Unabridged. London: Pan MacMillan.

Glick, M. B. *et al.* (2012) 'Effects of scenario planning on participant mental models', *European Journal of Training and Development*, 36(5), pp. 488–507. doi: 10.1108/03090591211232066.

Godet, M. (2000) 'The Art of Scenarios and Strategic Planning: Tools and Pitfalls', *Technological forecasting & social change*, 65(1), pp. 3–22. doi: 10.1016/S0040-1625(99)00120-1.

Goodspeed, R. (2019) *Scenario Planning: Embracing Uncertainty to Make Better Decisions*, *Lincoln Institute of Land Policy*. Available at: https://www.lincolninst.edu/publications/policy-briefs/scenario-planning (Accessed: 21 January 2021).

Goodspeed, R. (2020) *Scenario Planning for Cities and Regions: Managing and Envisioning Uncertain Futures*. Cambrige: Lincoln Institute of Land Policy.

Goodspeed, R. and Deboskey, D. (2020) *Scenario Planning for Smaller Places: Aligning Methods and Context Working Paper WP20RG1*.

Groeneveld, R. A. (2020) 'Welfare economics and wicked problems in coastal and marine governance', *Marine Policy*, 117(103945), pp. 1–8. doi: 10.1016/j.marpol.2020.103945.

Gulyani, S. and Talukdar, D. (2008) 'Slum Real Estate: The Low-Quality High-Price Puzzle in Nairobi's Slum Rental Market and its Implications for Theory and Practice', *World Development*, 36(10), pp. 1916–1937. doi: 10.1016/j.worlddev.2008.02.010.

Gupta, J. and Bavinck, M. (2017) 'Reprint of "Inclusive development and coastal adaptiveness"', *Ocean and Coastal Management*, 150(October), pp. 73–81. doi: 10.1016/j.ocecoaman.2017.10.020.

Guthey, G. T., Whiteman, G. and Elmes, M. (2014) 'Place and Sense of Place', *Journal of Management Inquiry*, 23(3), pp. 254–265. doi: 10.1177/1056492613517511.

Haeffner, M. *et al.* (2012) 'The Effects of Scenario Planning on Participant Perceptions of Learning Organization Characteristics', *Human Resource Development Quarterly*, 23(4), pp. 519–542. doi: 10.1002/hrdq.21147.

Hardin, G. (1968) 'The tragedy of the commons', *Science*, 162(3859), pp. 1243–1248. doi: 10.1126/science.162.3859.1243.

Hardy, C. (2012) 'Hysteresis', in Grenfell, M. (ed.) *Pierre Bourdieu: Key concepts*. 2nd edn. London: Acumen Publishing, pp. 126–145.

Hashem, H. *et al.* (2013) 'Between sense and attachment: Comparing the concepts of place in architectural studies', *Geografia : Malaysian journal of society and space*, 9(1), pp. 96–104. Available at: http://www.ukm.my/geografia/images/upload/11.geografia-jan2013-hashem-edam(96-104)1.pdf.

Healey, P. (1992) 'Planning through Debate: The Communicative Turn in Planning Theory', *Town planning review*, 63(2), pp. 143–162. doi: 10.3828/tpr.63.2.422x602303814821.

Healey, P. (1997) *Collaborative planning : shaping places in fragmented societies*. Houndsmills, England: Macmillan.

van der Heijden, K. (1996) *Scenarios: The Art of Strategic Conversation*. 1st edn. Chichester: John Wiley & Sons.

van der Heijden, K. (2004) 'Can internally generated futures accelerate organizational learning?', *Futures*, 36(2), pp. 145–159. doi: 10.1016/S0016-3287(03)00143-5.

von Heland, F., Clifton, J. and Olsson, P. (2014) 'Improving Stewardship of Marine Resources: Linking Strategy to Opportunity', *Sustainability*, 6(7), pp. 4470–4496. doi: 10.3390/su6074470.

Henn, M., Weinstein, M. and Foard, N. (2009) *A critical introduction to social research*. 2nd ed. Edited by M. Weinstein, N. Foard, and M. Henn. Los Angeles: SAGE.

Hernández, B. *et al.* (2007) 'Place attachment and place identity in natives and non-natives', *Journal of Environmental Psychology*, 27(4), pp. 310–319. doi: 10.1016/j.jenvp.2007.06.003.

Hillier, J. and Rooksby, E. (2005) 'Habitus : a sense of place', in Hillier, J. and Rooksby, E. (eds). Aldershot: Ashgate.

Hindess, B. (2005) 'Metropolitan Liberalism and Colonial Autocracy', in Rooksby, E. and Hillier, J. (eds) *Habitus: A Sense of Place*. 2nd edn. London: Routledge, pp. 117–130.

Hoegh-Guldberg, O. *et al.* (2009) *The Coral Triangle and climate change: ecosystems, people and societies at risk*. Brisbane. Available at: www.panda.org/coraltriangle.

Hofman, B. and Kaiser, K. (2004) 'The making of "Big Bang" and its aftermath: A political economy perspective', in Alm, J., Martinez-Vazquez, J., and Indrawati, S. M. (eds) *Reforming intergovernmental fiscal relations and the rebuilding Indonesia: The 'Big Bang' program and its economic consequences*. Cheltenham: Edward Elgar Publishing, pp. 15–64.

Holloway, L. and Hubbard, P. (2001) *People and Place: The Extraordinary Geographies of Everyday Life*. Harlow: Prentice Hall.

Hopkins, T. S. *et al.* (2012) 'A systems approach framework for the transition to sustainable development: Potential value based on coastal experiments', *Ecology and Society*, 17(3). doi: 10.5751/ES-05266-170339.

Horwath HTL and Surbana Jurong (2017) *Wakatobi: Market Analysis and Demand Assessment*.

Howe, J. and Langdon, C. (2002) 'Towards a Reflexive Planning Theory', *Planning Theory*, 1(3), pp. 209–225. doi: 10.1177/147309520200100302.

Howkins, J. (2002) *The Creative Economy: How People Make Money from Ideas*. London: Penguin Books.

Hull, R. B., Lam, M. and Vigo, G. (1994) 'Place identity: symbols of self in the urban fabric', *Landscape and Urban Planning*, 28(2–3), pp. 109–120. doi: 10.1016/0169-2046(94)90001-9.

Huss, W. R. and Honton, E. J. (1987) 'Scenario planning-What style should you use?', *Long Range Planning*, 20(4), pp. 21–29. doi: 10.1016/0024-6301(87)90152-X.

Hutama, I. A. W. (2016) *Exploring the Sense of place of Urban Kampung*. University of Twente. Available at: http://essay.utwente.nl/83897/1/hutama.pdf.

Hwang, K. H. (2014) 'Finding Urban Identity through Culture-led Urban Regeneration', *Journal of urban management*, 3(1–2), pp. 67–85. doi: 10.1016/S2226-5856(18)30084-0.

Innes, J. E. (1995) 'Planning Theory's Emerging Paradigm: Communicative Action and Interactive Practice', *Journal of Planning Education and Research*, 14(3), pp. 183–189. doi: 10.1177/0739456X9501400307.

Inniss, L. *et al.* (2017) *The first global integrated marine assessment: World ocean assessment I*, *The First Global Integrated Marine Assessment: World Ocean Assessment I*. New York: United Nations. doi: 10.1017/9781108186148.

IPCC (2014) *Climate Change 2014: Synthesis Report*, *Contribution of Working Groups I, II and III to the*

Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Edited by Core Writing Team, R. K. Pachauri, and L. Meyer. Geneva, Switzerland: IPCC.

Islam, M. M. (2011) 'Living on the Margin: The Poverty-Vulnerability Nexus in the Small-Scale Fisheries of Bangladesh', in *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries*. Dordrecht: Springer Netherlands, pp. 71–95. doi: 10.1007/978-94-007-1582-0_5.

Islam, M. M. and Chuenpagdee, R. (2013) 'Negotiating risk and poverty in mangrove fishing communities of the Bangladesh Sundarbans', *Maritime Studies*, 12(1), pp. 1–20. doi: 10.1186/2212-9790-12-7.

Isserman, A. (2014) 'Dare to plan: an essay on the role of the future in planning practice and education', *Town Planning Review*, 85(1), pp. 9–18. doi: 10.3828/tpr.2014.3.

Jabeen, H., Johnson, C. and Allen, A. (2010) 'Built-in resilience: learning from grassroots coping strategies for climate variability', *Environment and Urbanization*, 22(2), pp. 415–431. doi: 10.1177/0956247810379937.

Jacob, M. J. K. and Rao, P. B. (2016) 'Socio-ecological studies on marine fishing villages in the selective south coastal districts of Andhra Pradesh', *Ecotoxicology and Environmental Safety*, 134, pp. 344–349. doi: 10.1016/j.ecoenv.2015.08.026.

Jentoft, S. (2000) 'The community: a missing link of fisheries management', *Marine Policy*, 24(1), pp. 53–60. doi: 10.1016/S0308-597X(99)00009-3.

Jentoft, S. and Eide, A. (eds) (2011) *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries*. 1st edn, *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries*. 1st edn. Dordrecht, Heidelberg, London, New York: Springer Netherlands. doi: 10.1007/978-94-007-1582-0.

Johnson, K. A. *et al.* (2012) 'Using Participatory Scenarios to Stimulate Social Learning for Collaborative Sustainable Development', *Ecology and Society*, 17(2). doi: 10.5751/ES-04780-170209.

Jones, N. A. *et al.* (2011) 'Mental Models: An Interdisciplinary Synthesis of Theory and Methods', *Ecology and Society*, 16(1). Available at: https://www.ecologyandsociety.org/vol16/iss1/art46/.

Jorgensen, B. S. and Stedman, R. C. (2001) 'Sense of place as an attitude: Lakeshore Owners attitudes toward their properties', *Journal of Environmental Psychology*, 21(3), pp. 233–248. doi: 10.1006/jevp.2001.0226.

Juhana (2000) 'Pengaruh Bentukan Arsitektur dan Iklim Terhadap Kenyamanan Thermal Rumah Tinggal Suku Bajo Di Wilayah Pesisir Bajoe Kabupaten Bone Sulawesi Selatan'. Universitas Diponegoro. Available at: http://eprints.undip.ac.id/12110/.

Juliman, D. and Darundono (2006) *The world's first slum upgrading programme*. Vancouver. Available at: https://mirror.unhabitat.org/cdrom/docs/WUF7.pdf.

Kahane, A. (2012) *Transformative scenario planning : working together to change the future*. 1st edn. Oakland, CA: Berrett-Koehler Publishers.

Kahn, H. (1965) *On Escalation: Metaphors and Scenarios*. 1st edn, *The Western Political Quarterly*. 1st edn. Routledge. doi: 10.2307/445922.

Khakzad, S. and Griffith, D. (2016) 'The role of fishing material culture in communities' sense of place as an added-value in management of coastal areas', *Journal of Marine and Island Cultures*, 5(2), pp. 95–117. doi: 10.1016/j.imic.2016.09.002.

Khaldun, I. (1958) *The Muqaddimah : an introduction to history*. Edited by F. Rosenthal. New York:

Pantheon Books.

Khan, S. *et al.* (2015) 'Scenario Building as a Process and Tool in Urban Governance', in *Geographies of Urban Governance*. Cham: Springer International Publishing, pp. 193–214. doi: 10.1007/978-3-319-21272-2_10.

Kitchenham, A. (2008) 'The Evolution of John Mezirow's Transformative Learning Theory', *Journal of Transformative Education*, 6(2), pp. 104–123. doi: 10.1177/1541344608322678.

Knudsen, M. (2016) 'Poverty and Beyond: Small-Scale Fishing in Overexploited Marine Environments', *Human Ecology*, 44(3), pp. 341–352. doi: 10.1007/s10745-016-9824-y.

Knudsen, S. and Koçak, H. (2011) 'Through Boom and Bust: Coping with Poverty in Sea Snail Fisheries on the Turkish Black Sea Coast', in Jentoft, S. and Eide, A. (eds) *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries*. Dordrecht: Springer Netherlands, pp. 221–249. doi: 10.1007/978-94-007-1582-0_11.

Krawczyk, E. and Ratcliffe, J. (2005) 'Imagine ahead, plan backwards: prospective methodology in urban and regional planning'. Dublin: Dublin Institute of Technology.

Leach, M. *et al.* (2012) 'Transforming Innovation for Sustainability', *Ecology and Society*, 17(2), p. art11. doi: 10.5751/ES-04933-170211.

Lee, H.-K. (2017) 'The political economy of "creative industries"', *Media, culture & society*, 39(7), pp. 1078–1088. doi: 10.1177/0163443717692739.

Lefebvre, H. (1991) *The production of space*. Malden, MA: Blackwell.

Lewicka, M. (2008) 'Place attachment, place identity, and place memory: Restoring the forgotten city past', *Journal of Environmental Psychology*, 28(3), pp. 209–231. doi: 10.1016/j.jenvp.2008.02.001.

Lin, C.-Y. and Hsing, W.-C. (2009) 'Culture-Led Urban Regeneration and Community Mobilisation: The Case of the Taipei Bao-an Temple Area, Taiwan', *Urban Studies*, 46(7), pp. 1317–1342. Available at: www.jstor.org/stable/43198028.

Lombard, M. (2014) 'Constructing ordinary places: Place-making in urban informal settlements in Mexico', *Progress in Planning*, 94, pp. 1–53. doi: 10.1016/j.progress.2013.05.003.

Low, S. M. and Altman, I. (1992) 'Place Attachment', in Altman, I. and Low, S. M. (eds) *Place Attachment*. Boston, MA: Springer US, pp. 1–12. doi: 10.1007/978-1-4684-8753-4_1.

Mace, A. (2017) 'Spatial capital as a tool for planning practice', *Planning Theory*, 16(2), pp. 119–132. doi: 10.1177/1473095215617000.

MAFF (2019) *FY2019 Trends in Fisheries FY2020 Fisheries Policy (Summary)*. Tokyo. Available at: https://www.maff.go.jp/e/data/publish/attach/pdf/index-180.pdf.

Mangin, W. (1967) 'Latin American Squatter Settlements: A Problem and a Solution', *Latin American Research Review*, 2(3), pp. 65–98. Available at: www.jstor.org/stable/2502178.

Manzo, L. C. and Perkins, D. D. (2006) 'Finding Common Ground: The Importance of Place Attachment to Community Participation and Planning', *Journal of Planning Literature*, 20(4), pp. 335–350. doi: 10.1177/0885412205286160.

Marlow, J. *et al.* (2015) *Integrating Exploratory Scenario Planning into a Municipal General Plan Update*. Cambrige.

Marpaung, B. O. (2017) 'Unplanned Settlement of Fishing Village Belawan in Medan City, Indonesia', *Environment-Behaviour Proceedings Journal*, 2(5), p. 333. doi: 10.21834/e-bpj.v2i5.612.

Massey, D. (1991) 'The Political Place of Locality Studies', *Environment and Planning A: Economy and Space*, 23(2), pp. 267–281. doi: 10.1068/a230267.

Masterson, V. A. *et al.* (2017) 'The contribution of sense of place to social-ecological systems research: a review and research agenda', *Ecology and Society*, 22(1), pp. 49–63. doi: 10.5751/ES-08872-220149.

Maton, K. (2008) 'Habitus', in Grenfell, M. (ed.) *Pierre Bourdieu: Key concepts*. 2nd edn. London: Acumen Publishing, pp. 49–66.

McGranahan, G., Balk, D. and Anderson, B. (2007) 'The rising tide: assessing the risks of climate change and human settlements in low elevation coastal zones', *Environment and Urbanization*, 19(1), pp. 17–37. doi: 10.1177/0956247807076960.

Meadows, D. H. *et al.* (1972) *The Limits to Growth: A report for the Club of Rome's project on the predicament of mankind*. First Edit. New York: Universe Books.

Mezirow, J. (1997) 'Transformative Learning: Theory to Practice', *New Directions for Adult and Continuing Education*, 1997(74), pp. 5–12. doi: 10.1002/ace.7401.

Mezirow, J. (2000) 'Learning to Think like an Adult: Core Concepts of Transformation Theory', in J. Mezirow & Associates (ed.) *Learning as Transformation. Critical Perspectives on a Theory in Progress*. San Francisco, CA: Jossey-Bass, pp. 3–33.

Midheme, E. (2013) 'Venturing off the beaten path: social innovation and settlement upgrading in Voi, Kenya', in Moulaert, F. et al. (eds) *The International Handbook on Social Innovation*. Cheltenham, UK: Edward Elgar Publishing, pp. 207–218. doi: 10.4337/9781849809993.00029.

Misund, O. A., Kolding, J. and Fréon, P. (2008) 'Fish Capture Devices in Industrial and Artisanal Fisheries and their Influence on Management', in Hart, P. J. B. and Reynolds, J. D. (eds) *Handbook of Fish Biology and Fisheries*. Oxford: Blackwell Science, pp. 13–36. doi: 10.1002/9780470693919.ch2.

Mitra, S. *et al.* (2017) 'Developing risk or resilience? Effects of slum upgrading on the social contract and social cohesion in Kibera, Nairobi', *Environment and Urbanization*, 29(1), pp. 103–122. doi: 10.1177/0956247816689218.

Moore, R. (2012) 'Capital', in Grenfell, M. (ed.) *Pierre Bourdieu: Key concepts*. 2nd edn. London: Acumen Publishing, pp. 98–113.

Moulaert, F., MacCallum, D. and Hillier, J. (2013) 'Social Innovation: Intuition, Precept, Concept, Theory, and Practice', in Moulaert, F. et al. (eds) *The International Handbook on Social Innovation: Collective Action, Social Learning and Transdisciplinary Research*. Cheltenham, UK: Edward Elgar.

Muawanah, U. *et al.* (2018) 'Review of national laws and regulation in Indonesia in relation to an ecosystem approach to fisheries management', *Marine Policy*, 91, pp. 150–160. doi: 10.1016/j.marpol.2018.01.027.

Nagatsu, K. (1994) 'The Influence of Modernization upon Traditional Societies:A Study of the Bajaus in the Sulu Archipelago', *Tropics*, 3(2), pp. 169–188.

Nagatsu, K. (1997) 'Coral reef fisherfolks and their space cognition: Notions of "land," "sea," and coral reef space among sama in Sitangkai, Sulu Archipelago', *Southeast Asian Studies*, 35(2), pp. 261–300. doi: 10.20495/tak.35.2_261.

Nagatsu, K. (2017) 'Maritime Diaspora and Creolization : Genealogy of the Sama-Bajau in

Insular Southeast Asia', *Senri Ethnological Studies*, 95, pp. 35–64. doi: 10.15021/00008578.

Nasution, A. (2017) 'The government decentralization program in Indonesia', in Yoshino, N. and Morgan, P. J. (eds) *Central and Local Government Relations in Asia: Achieving Fiscal Sustainability*. Cheltenham: Edward Elgar Publishing, pp. 276–305.

Natarajan, L. (2017) 'Socio-spatial learning: A case study of community knowledge in participatory spatial planning', *Progress in Planning*, 111, pp. 1–23. doi: 10.1016/j.progress.2015.06.002.

Neumann, B. *et al.* (2015) 'Future Coastal Population Growth and Exposure to Sea-Level Rise and Coastal Flooding - A Global Assessment', *PLOS ONE*. Edited by L. Kumar, 10(3), p. e0118571. doi: 10.1371/journal.pone.0118571.

Ngau, P. M. and Blanco, Z. G. (2019) 'The Production of Space and Place in Informal Settlements: A Case Study of Mukuru Kwa Njenga, Nairobi', *Africa Habitat Review Journal*, 13(1), pp. 1561–1573.

Nicholls, R. J. *et al.* (2007) 'Coastal systems and low-lying areas', in Parry, M. L. et al. (eds) *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press, pp. 315–356.

Nijman, J. (2010) 'A Study of Space in Mumbai's Slums', *Tijdschrift voor economische en sociale geografie*, 101(1), pp. 4–17. doi: 10.1111/j.1467-9663.2009.00576.x.

Norton, A. *et al.* (2001) *A rough guide to PPAs: Participatory Poverty Assessment an introduction to theory and practice*. London: Overseas Development Institute.

van Notten, P. W. . *et al.* (2003) 'An updated scenario typology', *Futures*, 35(5), pp. 423–443. doi: 10.1016/S0016-3287(02)00090-3.

Okamoto, I. (2011) 'How Do Poor Rural Households In Myanmar Cope With Shocks? Coping Strategies In A Fishing And Farming Village In Rakhine State', *The Developing Economies*, 49(1), pp. 89–112. doi: 10.1111/j.1746-1049.2010.00123.x.

Olds, K., Bunnell, T. and Leckie, S. (2002) 'Forced Evictions in Tropical Cities: An Introduction', *Singapore Journal of Tropical Geography*, 23(3), pp. 247–251. doi: 10.1111/1467-9493.00129.

Ooi, G. L. and Yuen, B. (eds) (2009) *World Cities: Achieving Liveability and Vibrancy*. Co-Published with Civil Service College Singapore and Institute of Policy Studies, National University of Singapore. doi: 10.1142/7398.

Pacione, M. (2009) *Urban Geography: A Global Perspective*. 3rd edn. London: Routledge.

Pahl-Wostl, C. *et al.* (2007) 'Social Learning and Water Resources Management', *Ecology and Society*, 12(2). doi: 10.5751/ES-02037-120205.

Panayotou, T. (1982) *Management concepts for small-scale fisheries. Economic and social aspects.*, *FAO. Fisheries Technical Paper*. Available at: http://www.fao.org/documents/card/en/c/cc31e3f0-1fcb-5247-8d32-17619c2467ca/%5Cnhttp://www.fao.org/3/a-x6844e/index.html.

Paul, S. (1987) *Community participation in development projects*. Washington DC. Available at: http://documents1.worldbank.org/curated/en/850911468766244486/pdf/multi-page.pdf.

Payne, G. (2004) 'Land tenure and property rights: An introduction', *Habitat International*, 28(2), pp. 167–179. doi: 10.1016/S0197-3975(03)00066-3.

Perez-Casas, M. (2017) 'Impact Evaluation for Comprehensive Slum Upgrading Projects: Effects in Housing Deficits, Health, Poverty, Security and Life Quality in Nicaragua', *SSRN Electronic Journal*. doi: 10.2139/ssrn.3087119.

Phuong, L. T. H., Biesbroek, G. R. and Wals, A. E. J. (2017) 'The interplay between social learning and adaptive capacity in climate change adaptation: A systematic review', *NJAS - Wageningen Journal of Life Sciences*, 82, pp. 1–9. doi: 10.1016/j.njas.2017.05.001.

Power, E. M. (1999) 'An Introduction to Pierre Bourdieu's Key Theoretical Concepts', *Journal for the Study of Food and Society*, 3(1), pp. 48–52. doi: 10.2752/152897999786690753.

Proshansky, H. M., Fabian, A. K. and Kaminoff, R. (1983) 'Place-identity: Physical world socialization of the self', *Journal of Environmental Psychology*, 3(1), pp. 57–83. doi: 10.1016/S0272-4944(83)80021-8.

Purwanto, E., Sugiri, A. and Novian, R. (2017) 'Determined Slum Upgrading: A Challenge to Participatory Planning in Nanga Bulik, Central Kalimantan, Indonesia', *Sustainability*, 9(7), p. 1261. doi: 10.3390/su9071261.

Putnam, R. D., Leonardi, R. and Nanetti, R. (1993) *Making democracy work : civic traditions in modern Italy*. Princeton, N.J: Princeton University Press.

Ratcliffe, J. and Krawczyk, E. (2011) 'Imagineering city futures: The use of prospective through scenarios in urban planning', *Futures*, 43(7), pp. 642–653. doi: 10.1016/j.futures.2011.05.005.

Relph, E. (1976) *Place and Placelessness*. London: Pion Limited.

Revi, A. *et al.* (2014) 'Urban Areas', in Field, C. B. et al. (eds) *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, United Kingdom and New York, USA: Cambridge University Press, pp. 535–612.

Rittel, H. W. J. and Webber, M. M. (1973) 'Dilemmas in a general theory of planning', *Policy Sciences*, 4(2), pp. 155–169. doi: 10.1007/BF01405730.

Ross, C. T., Bonaiuto, M. and Breakwell, G. M. (2003) 'Identity theories and environmental psychology', in Bonnes, M. and Lee, T. R. (eds) *Psychological Theories For Environmental Issues*. Aldershot: Ashgate, pp. 203–234.

Roy, A. (2005) 'Urban Informality: Toward an Epistemology of Planning', *Journal of the American Planning Association*, 71(2), pp. 147–158. doi: 10.1080/01944360508976689.

Roy, A. (2011) 'Slumdog Cities: Rethinking Subaltern Urbanism', *International Journal of Urban and Regional Research*, 35(2), pp. 223–238. doi: 10.1111/j.1468-2427.2011.01051.x.

Roy, D. *et al.* (2014) 'The emergence of slums: A contemporary view on simulation models', *Environmental Modelling & Software*, 59, pp. 76–90. doi: 10.1016/j.envsoft.2014.05.004.

Ruddle, K. (2014) 'Tropical small-scale fisheries — some interwoven issues', *SPC Traditional Marine Resource Management and Knowledge Information Bulletin*, 34(December), pp. 36–44.

Saat, G. (2003) 'The identity and social mobility of Sama-Bajau', *Sari*, 21(1), pp. 3–11.

Sale, P. F. *et al.* (2014) 'Transforming management of tropical coastal seas to cope with challenges of the 21st century', *Marine Pollution Bulletin*, 85(1), pp. 8–23. doi: 10.1016/j.marpolbul.2014.06.005.

Sather, C. (1997) *The Bajau Laut : adaptation, history, and fate in a maritime fishing society of south-eastern*

Sabah. Edited by C. Sather. Kuala Lumpur ; Oxford: Oxford University Press (South-East Asian social science monographs).

Satterthwaite, D. (2008) 'Building Homes: The Role of Federations of the Urban Poor', in Moser, C. and Dani, A. A. (eds) *Assets, Livelihoods, and Social Policy*. Washington DC: The World Bank, pp. 171–193.

Schneekloth, L. H. and Shibley, R. G. (1995) *Placemaking : the art and practice of building communities*. New York: Wiley.

Schoemaker, P. J. H. (1995) 'Scenario planning: a tool for strategic thinking ? Sloan Management Review 36 (2), 25–40 (Winter 1995)', *Sloan Management Review*, 36(2), pp. 25–40.

Schuhbauer, A. and Sumaila, U. R. (2016) 'Economic viability and small-scale fisheries - A review', *Ecological Economics*, 124, pp. 69–75. doi: 10.1016/j.ecolecon.2016.01.018.

Sen, A. (1981) *Poverty and Famines: an Essay on Entitlement and Deprivation*, *Oxford University*. New York: Oxford University Press.

Senge, P. M. (1990) *The fifth discipline : the art and practice of the learning organization*. 1st ed. New York: Doubleday/Currency.

Senge, P. M. (1994) *The Fifth discipline fieldbook : strategies and tools for building a learning organization*. Edited by P. M. Senge. New York: Doubleday/Currency.

Septanti, D. (2016) 'The empowerment of community by C-KIP to improve the slums', *Journal of Architecture & Environment*, 15(1), pp. 53–62. doi: 10.12962/j2355262x.v15i1.a2147.

Shafqat, R., Marinova, D. and Khan, S. (2021) 'Placemaking in Informal Settlements: The Case of France Colony, Islamabad, Pakistan', *Urban Science*, 5(2), p. 49. doi: 10.3390/urbansci5020049.

Shamai, S. (1991) 'Sense of place: an empirical measurement', *Geoforum*, 22(3), pp. 347–358. doi: 10.1016/0016-7185(91)90017-K.

Shin, Y. (2013) 'Bourdieu and urban politics: Conceptualizing a Bourdieusian relational framework for urban politics research', *Planning Theory*, 12(3), pp. 267–289. doi: 10.1177/1473095212465926.

Shoesmith, D., Franklin, N. and Hidayat, R. (2020) 'Decentralised Governance in Indonesia's Disadvantaged Regions: A Critique of the Underperforming Model of Local Governance in Eastern Indonesia', *Journal of Current Southeast Asian Affairs*, 39(3), pp. 359–380. doi: 10.1177/1868103420963140.

Siisiainen, M. (2003) 'One Concept, Two Approaches: Bourdieu and Putnam on Social Capital', *International journal of contemporary sociology*, 40(2), pp. 183–203.

Silberberg, S. *et al.* (2013) *Places in the Making: How placemaking builds places and communities*. Boston, MA. Available at: https://dusp.mit.edu/sites/dusp.mit.edu/files/attachments/project/mit-dusp-places-in-the-making.pdf.

Slocum, N. (2003) *Participatory Methods Toolkit: A practitioner's manual*. Brussels: King Baudouin Foundation & the Flemish Institute for Science and Technology Assessment. Available at: https://collections.unu.edu/view/UNU:6762.

Smit, B. and Wandel, J. (2006) 'Adaptation, adaptive capacity and vulnerability', *Global Environmental Change*, 16(3), pp. 282–292. doi: 10.1016/j.gloenvcha.2006.03.008.

Smith, S. S. and Kulynch, J. (2002) 'It May be Social, But Why is it Capital? The Social

Construction of Social Capital and the Politics of Language', *Politics & Society*, 30(1), pp. 149–186. doi: 10.1177/0032329202030001006.

Soja, E. W. (1996) *Thirdspace : journeys to Los Angeles and other real-and-imagined places*. Cambridge, Mass: Blackwell.

Stacey, N. (2007) *Boats to Burn: Bajo Fishing Activity in the Australian Fishing Zone*, *Asia-Pacific Environment Monograph 2*. Canberra: ANU E Press. doi: 10.26530/oapen_458834.

Stacey, N. *et al.* (2017) 'Impacts of Marine Protected Areas on Livelihoods and Food Security of the Bajau as an Indigenous Migratory People in Maritime Southeast Asia', in Westlund, L. et al. (eds) *Marine Protected Areas: Interactions with Fishery Livelihoods and Food Security*. Rome: Food and Agriculture Organization of the United Nations. Available at: http://www.fao.org/3/a-i6742e.pdf.

Stedman, R. C. (2002) 'Toward a Social Psychology of Place', *Environment and Behavior*, 34(5), pp. 561–581. doi: 10.1177/0013916502034005001.

Stedman, R. C. (2003) 'Is It Really Just a Social Construction?: The Contribution of the Physical Environment to Sense of Place', *Society & Natural Resources*, 16(8), pp. 671–685. doi: 10.1080/08941920309189.

Subardjan (2017) 'Perencanaan Keluarga dan Fertilitas Suku Bajo di Era Perubahan (Studi Kasus: Suku Bajo di Perkampungan Mola Kecamatan Wangi-Wangi Selatan Kabupaten Wakatobi)', *Media Komunikasi Geografi*, 18(1), pp. 40–53. doi: 10.23887/mkg.v18i1.10556.

Sverdlik, A. (2011) 'Ill-health and poverty: a literature review on health in informal settlements', *Environment and Urbanization*, 23(1), pp. 123–155. doi: 10.1177/0956247811398604.

Syam, S. *et al.* (2018) 'Social Spaces Territory of Bajo Tribe's Settlement', *SHS Web of Conferences*. Edited by R. B. Santosa et al., 41, p. 04006. doi: 10.1051/shsconf/20184104006.

Tahara, T. (2013) 'Kebangkitan Identitas Orang Bajo di Kepulauan Wakatobi', *Antropologi Indonesia*, 34(1), pp. 41–57. doi: 10.7454/ai.v34i1.3196.

Talitha, T., Firman, T. and Hudalah, D. (2020) 'Welcoming two decades of decentralization in Indonesia: a regional development perspective', *Territory, Politics, Governance*, 8(5), pp. 690–708. doi: 10.1080/21622671.2019.1601595.

Tampe, T. (2020) 'Potential impacts of COVID-19 in urban slums: addressing challenges to protect the world's most vulnerable', *Cities & Health*, pp. 1–4. doi: 10.1080/23748834.2020.1791443.

Thaitakoo, D. and McGrath, B. (2010) 'Bangkok liquid perception: waterscape urbanism in the Chao Phraya river delta and implications to climate change adaptation', in Shaw, R. and Thaitakoo, D. (eds) *Water Communities (Community, Environment and Disaster Risk Management, Vol. 2)*. Bingley: Emerald Group Publishing Limited, pp. 35–50. doi: 10.1108/S2040-7262(2010)0000002006.

Thomson, P. (2012) 'Field', in Grenfell, M. (ed.) *Pierre Bourdieu: Key concepts*. 2nd edn. London: Acumen Publishing, pp. 65–80.

Thorpe, A., Andrew, N. L. and Allison, E. H. (2007) 'Fisheries and poverty reduction', *CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources*. doi: 10.1072/PAVSNNR20072085.

Timmerman, P. and White, R. (1997) 'Megahydropolis: Coastal cities in the context of global

environmental change', *Global Environmental Change*, 7(3), pp. 205–234. doi: 10.1016/S0959-3780(97)00009-5.

Tuan, Y. (1977) *Space and place : the perspective of experience*. Minneapolis: University of Minnesota Press.

Turner, J. F. C. (1969) 'Uncontrolled urban settlement: problems and policies', in Breese, G. (ed.) *The City in Newly Developing Countries: Readings on Urbanism and Urbanization*. Engelwood Cliffs, NJ: Prentice-Hall.

Turner, J. F. C. (1972) 'Housing as A Verb', in Turner, J. F. C. and Fichter, R. (eds) *Freedom to Build: Dweller Control of the Housing Process*. New York: Collier Macmillan, pp. 148–175.

Ujang, N. and Zakariya, K. (2015) 'The Notion of Place, Place Meaning and Identity in Urban Regeneration', *Procedia - Social and Behavioral Sciences*, 170, pp. 709–717. doi: 10.1016/j.sbspro.2015.01.073.

UN-Habitat (2003) *The challenge of slums: Global report on human settlements 2003*, *The Challenge of Slums: Global Report on Human Settlements 2003*. Nairobi: United Nations Human Settlements Programme.

UN-Habitat (2012) *Streets as Tools for Urban Transformation in Slums: A Street-Led Approach to Citywide Slum Upgrading*. Nairobi: United Nations Human Settlements Programme.

UN-Habitat (2015a) *A Practical Guide to Designing, Planning, and Executing Citywide Slum Upgrading Programmes*. Nairobi: United Nations Human Settlements Programme.

UN-Habitat (2015b) *Habitat III Issue Paper: 22 - Informal Settlement*. New York. Available at: https://unhabitat.org/habitat-iii-issue-papers-22-informal-settlements.

UN-Habitat (2016) *Urbanization and Development: Emerging Futures*, *UN Habitat World Cities Report 2016*. Nairobi: United Nations Human Settlements Programme.

United Nations (2015) *The Millennium Development Goals Report*. New York: The United Nations. Available at: https://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG 2015 rev (July 1).pdf.

Urquhart, J. and Acott, T. (2013) 'Constructing "The Stade": Fishers' and non-fishers' identity and place attachment in Hastings, south-east England', *Marine Policy*, 37, pp. 45–54. doi: 10.1016/j.marpol.2012.04.004.

Wack, P. (1985) 'Scenarios: Uncharted Waters Ahead', *Harvard Business Review*, 63(5), pp. 72–89.

Wakely, P. and Riley, E. (2011) *The Case for Incremental Housing*, *Cities Alliance Policy Research and Working Papers*. 1. Washington DC.

Wear, S. L. (2016) 'Missing the boat: Critical threats to coral reefs are neglected at global scale', *Marine Policy*, 74, pp. 153–157. doi: 10.1016/j.marpol.2016.09.009.

Webb, J., Schirato, T. and Danaher, G. (2002) *Understanding Bourdieu*. London: Routledge. doi: 10.4324/9781003118305.

Werlin, H. (1999) 'The slum upgrading myth', *Urban Studies*, 36(9), pp. 1523–1534. doi: 10.1080/0042098992908.

Wilson, J. R., Ardiwijaya, R. . and Prasetia, R. (2012) *Study of the Impact of the 2010 Coral Bleaching Event on Coral Communities in Wakatobi National Park*. Available at: https://www.conservationgateway.org/Files/Pages/study-2010-coral-bleachin.aspx.

Winarso, H. (2021) 'Slum-upgrading trough physical or socio-economic improvement? lessons from Bandung, Indonesia', *Journal of housing and the built environment*. doi: 10.1007/s10901-021-09859-4.

Wiseman, J. *et al.* (2011) *Scenarios for Climate Adaptation Guidebook for Practitioners*. Melbourne: Victorian Center for Climate Change Adaptation Research.

WNPA (2017) *Rencana Pengelolaan Jangka Panjang Taman Nasional Wakatobi Periode Tahun 2018-2027*. Bau-Bau: Wakatobi National Parks Authority.

Woetzel, J. *et al.* (2014) *A blueprint for addressing the global affordable housing challenge*, *McKinsey Global Institute*. Seoul; San Fransisco; Shanghai: McKinsey Global Institute. Available at: https://www.mckinsey.com/~/media/McKinsey/Featured Insights/Urbanization/Tackling the worlds affordable housing challenge/MGI_Affordable_housing_Full Report_October 2014.pdf.

Wong, P. P. *et al.* (2013) 'Coastal Systems and Low-Lying Areas', in *Ipcc Wgii Ar5*, pp. 1–85.

Wong, P. P. *et al.* (2015) 'Coastal systems and low-lying areas', in Field, C. B. et al. (eds) *Climate Change 2014 Impacts, Adaptation and Vulnerability: Part A: Global and Sectoral Aspects*. Cambridge, United Kingdom and New York, USA: Cambridge University Press, pp. 361–409. doi: 10.1017/CBO9781107415379.010.

World Bank (2012) *Hidden harvest : The global contribution of capture fisheries*, *The World Bank. Economic and Sector Work*. Washington DC. Available at: http://documents.worldbank.org/curated/en/515701468152718292/Hidden-harvest-the-global-contribution-of-capture-fisheries.

World Bank (2015) *Competitive Cities for Jobs and Growth*, *Competitive Cities for Jobs and Growth*. Washington DC: The World Bank Group. doi: 10.1596/23227.

World Bank (2016) 'National Slum Upgrading Project: Project Appraisal Document'. Available at: http://documents1.worldbank.org/curated/en/226091468417040569/pdf/PAD1477-PAD-P154782-OUO-9-R2016-0115-1-Box396265B.pdf.

Wyckoff, M. A. (2014) 'Definition of Placemaking: Four Different Types', *Planning & Zoning News*. Available at: http://pznews.net/media/13f25a9fff4cf18ffff8419ffaf2815.pdf.

Yahya, S. *et al.* (2001) *Double Standards, Single Purpose: Reforming housing regulations to reduce poverty*. London: ITDG Publishing.

Yin, R. K. (2009) *Case study research : design and methods*. 4th ed. Los Angeles, Calif: Sage Publications (Applied social research methods series ; v. 5).

Yu, J. *et al.* (2016) 'Slum Upgrading Programs and Disaster Resilience: A Case Study of an Indian "Smart City"', *Procedia Environmental Sciences*, 36, pp. 154–161. doi: 10.1016/j.proenv.2016.09.026.

Zapata, M. A. and Kaza, N. (2015) 'Radical uncertainty: scenario planning for futures', *Environment and Planning B: Planning and Design*, 42(4), pp. 754–770. doi: 10.1068/b39059.