



Planning for Survival: How Can an Archipelago Island Nation Like Maldives Benefit from Spatial Planning?

Abdulla Afeef

*Department of Architecture, Faculty of Engineering, Science and Technology,
The Maldives National University, Male', Republic of Maldives;
abdulla.afeef@mnu.edu.mv;*

Abstract: Spatial planning can be defined as the approaches used by the public sector authorities to influence the distribution of resources and activities in spaces of various types and scale. Today, spatial planning is practiced and being adopted by many countries. However, lack of a formal and comprehensive spatial planning system in the country is leading the present pace of development in Maldives unsustainable. The purpose of this study is to propose relevant changes to the Maldives planning system in order to deal with the problems and threats identified for the short, medium, long run and assure a sustainable future. This study integrated an exploratory approach by exploring different existing literature related to the study area and developed a case study on Maldives. Interviews were conducted with relevant stakeholders to get further in-depth of spatial planning application in Maldives. The overall result shows that there is significant lack of academic research on spatial planning to cover the context of small island nations. Additionally, spatial planning can play a major role in the development of Maldives. Finally, a spatial planning system formulated for Maldives should be tailor-made to the context of Maldives and benchmarked to well-recognized spatial planning systems and practices to accommodate the singularities and specificities of the country.

Keywords: Spatial planning, Maldives, Sustainable development, Development challenges

1. INTRODUCTION

Maldives being a Small Island Developing States (SIDS) poses its own challenges for the future survival and faces a number of challenges and constraints in the country's pursuit of sustainable development due to its environmental fragility and economic vulnerability. Considering today's reality of the world and the threats ahead, non-action is not an option for a country like Maldives. Meantime, the archipelago island nation is faced with a planning dilemma on how to provide its citizens with the basic needs stipulated by the Constitutional Law (articles 17 and 23) of the state in an efficient and equitable manner. Hence, future survival and sustainable development needs to be the core in planning works in the country.

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Different approaches to spatial planning are being used across the nations. Nevertheless, compared to most of the European countries and developed nations in the world, there is less literature on spatial planning to cover the reality of developing small archipelago island nations like Maldives. Mabin, points out that urban research and publication remains overwhelmingly concentrated in places which decreasingly represent the urban world of the twenty-first century [1].

Due to the fact that, widely known spatial planning systems are made for a different reality than for many of the developing countries and island nations, like Maldives, it poses a huge knowledge gap and challenges in the application of those spatial systems. With this reality, a more profound approach to study how spatial planning can be introduced and implemented in an archipelago island nation needs its utmost priority considering the future survival of the nation. Maldives is strongly in need of a spatial planning framework appropriate to the singular nature of the island nation considering its own specificities, resources and constraints.

The paper aims to propose amendments to the current planning practice in Maldives to address existing problems and threats, thereby fostering sustainable development in the Maldives.

2. METHODOLOGY

This study integrated an exploratory approach by exploring different literature related to the study area and developed a case study on the Maldives. Interviews were conducted with relevant stakeholders to get further in-depth of spatial planning application in the Maldives.

Exploratory research is a methodology approach that investigates research questions that have not previously been studied in depth. There are no previous studies conducted regarding the application of spatial planning in the context of small island nations, especially in the Maldives. This approach enabled to gain insights, uncover trends, and generate initial hypotheses with regard to the past and current spatial planning practices carried out in the Maldives.

Furthermore, this research approach allowed to study varying spatial planning systems adopted by different countries and be more flexible and open-ended while proposing recommendations on how spatial planning could be adopted in Maldives to tackle its current survival problems.

Case study of the Maldives was developed in order to elaborate about its singularity and specificities and to understand how spatial planning can be adapted in the country. A Strength, Weakness, Opportunities and Threats (SWOT) analysis was carried out in order to understand the current status quo of Maldives. This is crucial to identify pros and cons of Maldives considering both its influencing internal and external factors/forces of Maldives.

Interviews were conducted with the relevant stakeholders to get further in depth into the spatial planning application in Maldives. Interviews were structured based on the information gained from the literature review and case study. The interviews conducted were divided into three parts; A, B and C. Part A inquired about the main survival

problems/challenges faced by the Maldives while Part B validated the SWOT analysis developed in this work. Finally, Part C, focused on the main area of research where the respondents were asked to identify the potential roles of spatial planning and how it could be adopted in the country to tackle the problems faced by the Maldives. A total of 24 people were interviewed categorized under four main groups; government authorities, people in the academia, built environment professionals and local and non-governmental organizations. Interviews were conducted for approximately 30-40 minutes.

Analysis of the collected information from the interviews was comprehensively discussed and detailed. Results and key conclusions derived from the analysis were highlighted. Using Microsoft Excel, collected data was analyzed in order to develop patterns and themes among the respondents regarding the understanding of spatial planning and its application in the Maldives. Main findings from the study are expressed as key recommendations that could be used to formulate an all-inclusive spatial planning system in Maldives.

3. LITERATURE REVIEW

In order to establish a solid theoretical framework about spatial planning, the literature review addressed the following topics; the concept of spatial planning, main European spatial planning systems, traditional spatial planning approaches and main trends of evolution, and finally spatial planning systems practiced in developing countries and small island states. Figure 1, illustrates the general scheme adopted in the literature review.

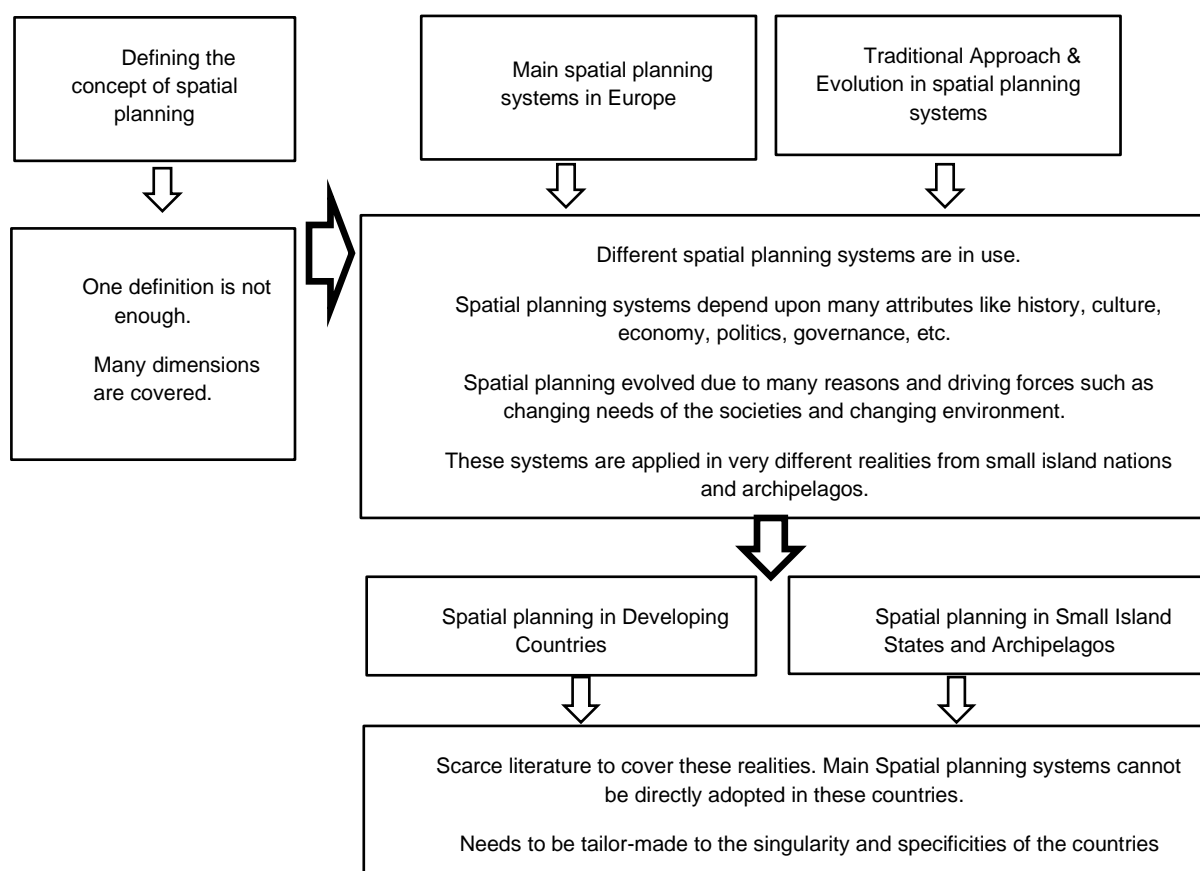


Figure 1. General scheme of literature review

The literature on spatial planning systems, shows that spatial planning is practiced across the countries and regions covering many dimensions and focused areas, hence it is not easy to express the concept of spatial planning using a single definition. Previous studies also indicate that different spatial planning systems are in use and these systems depend upon many attributes like history, culture, economy, politics, governance, etc. of a country or region. It is also understood that these spatial planning systems has evolved due to many reasons and driving forces such as changing needs of the societies and changing environment. With regard to the application of spatial planning in developing countries, small island states and archipelagos, there is a knowledge gap to cover the realities of these nations. Therefore, the main spatial planning systems in use cannot be directly adopted in these countries.

3.1 Concept of Spatial Planning

To define the concept of spatial planning, a single definition cannot cover the broad area included under spatial planning as it is very much dependent on many factors such as environment and geographic, historic, cultural, legal, governance, and socio-economic aspects of a place. Spatial planning is defined as the approaches used by the public sector authorities to influence the distribution of resources and activities in spaces of various types and scale. Additionally, spatial planning refers to the coordination of practices and policies affecting spatial organization inside a territory, including urban and rural planning, regional planning, environmental planning and sectorial planning. Planning is seen as a governance activity occurring in a complex and dynamic institutional environment, shaped by wider economic, social and environmental forces that structure, but do not determine, specific interactions [2]. Healey (2006), further argues the policies and practices of the planning system are deeply inter-linked with other fields of economic, social and environmental policy, and with a 'politics of place' [3]. Hence, spatial planning can be regarded as the core for civilized territories.

3.2 Spatial Planning in Europe

Spatial planning in Europe is often discussed as the most matured and well-applied planning systems in the world. These planning systems are also provided with a diverse background of different spatial planning practices across Europe. Most of the European Union (EU) countries introduced their first planning legislation in the beginning of the 20th century (EU compendium, 1997) [4]. These legislative frameworks came into existence to respond increase development pressure and the consequent problems of dense and disorganized development. EU countries exhibit considerable formal integration of social, economic, environmental and infrastructure planning within their spatial planning system.

The EU Compendium of Spatial Planning Systems and Policies identified spatial planning systems practiced in countries like the United Kingdom (UK), Netherlands, Belgium, Germany and Denmark as the main schools of spatial planning practiced in the continent. Spatial planning systems practiced in these countries differ among themselves as it was developed to different realities. Many authors have confirmed the influence of various factors on shaping the planning system of a country. These factors include the politics of the place and international politics [5 -6], the social set up, economic and environmental influence [3],

the inherent cultural traits of the people [7-8], and the institutional and governance culture among others [9].

Spatial planning systems in these five countries cover the territorial area of the individual countries and are uniform throughout except for the UK. The planning system is uniform across the four countries in the UK in most ways with few variations. Except for the UK, the remaining four countries have constitutional rights based on Spatial Planning Acts to guide the planning in those countries. Common for all, planning systems are decentralized to accommodate different levels of planning while in general national level planning sets up guidelines for planning in the lower levels, emphasis on sectorial planning and supervise and control the planning process in the country. No country adopts a national spatial plan. In the regional level, formulates and implements the prescribed guiding principles of spatial planning focused for regions while only the Netherlands, Denmark and Belgium develop regional plans. In all five countries, it is the local level where municipal councils are responsible for comprehensive municipal planning, detailed local planning and permits for construction and changes in land use in rural zones. Various levels of detailing and number of plans are made in this level which varies among the five countries.

3.3 Traditional approach of Spatial Planning – Master Plans (Comprehensive Planning)

After the Second World War, in many parts of the world, master planning became the dominant form of spatial planning. According to Watson [10], master plans are “spatial or physical plans which depict on a map the state and form of an urban area at a future point in time when the plan is realized”. In general, master planning, often known as comprehensive planning, was viewed as a technical activity, developing plans showing the projected density and intensity of various land uses and their spatial distribution. Master planning is the process by which projected requirements for a territory are spatially distributed within differentiated zones for residential, commercial, industrial and recreational or institutional uses. The purpose of such plans is to secure the planned and efficient use of land consistent with long-term policy objectives and to provide a lead within which public and private capital should be directed. Further, master planning centered on the production of plans on paper, with little attention to implementation [11]. The plan thus became an end in itself. It was not linked to sectorial departments or to budgets and the institutional organization and negotiations necessary to make it operable was seen as outside of its scope.

Master planning was also often separate from development control and did not necessarily impact on these activities. Frequently planning was in a department which was not in a position to effect change after the plan was in place [12-13]. In addition, both funds and institutional capacity to give effect to the plans were lacking [12]. Planning was largely a technocratic process, with little attention to social diversity and little interest in public participation.

3.4 New approaches to Spatial Planning

New forms of planning are encapsulated in the Global Planner's Network document on ‘Reinventing Planning’, which defines principles for planning [14]. These include; sustainability, integration between sectors and budgets, participatory planning, bringing in a wide range of stakeholders, understanding markets and producing credible plans which are backed by public

investment where appropriate, recognition of the reality of informal settlements and slums, development of contextually appropriate, affordable, strategic and effective forms of planning and land use management and pro-poor and inclusive planning, recognizing diversity.

Due to the wide range of critiques towards master planning and new forms of planning in use, spatial planning has shifted from focusing purely on land use towards an emphasis on the spatial integration of sectors and policies in most European countries. Strategic spatial planning has become significant over the past decade as a way of shaping urban growth. These practices, in contrast to master planning, there is a strong emphasis on inclusive stakeholder participation processes, and planning focuses only on key strategic elements [3, 10]. Nevertheless, new forms of master planning focused on urban design have emerged since the 1980s in the context of large property-led urban regeneration initiatives in the United Kingdom. Critics argue that these approaches are also inappropriate due to their static nature and their marginalization of social questions [15].

In the context of sustainable development and sustainability, planning and management is considered to be one of the most important instruments to be implemented in a territory. There are high demands and expectations on spatial planning to support the society with physical structure and organization of spatial territory to make it possible for people to act and live in a more sustainable way. The concept of sustainable developments is often included in all official planning documents and is to have cohesion at the general visionary level.

3.5 Spatial Planning in Developing Countries

In developing countries, strategic structure planning, drawing from an action planning base, has been used by UN- Habitat in post conflict situations [16]. Integrated Urban Infrastructure Development Planning (IUIDP) attempted to provide an alternative form of planning, linking infrastructure development to planning [17-18]. IUIDP involved the development of a city level strategic plan, linking infrastructure development and budgets, and included a broad Physical and Environmental Development Plan (PEDP). Similar initiatives have occurred in Tanzania, with its Strategic Urban Development Plan.

South African planning in the post-apartheid era, for example, tended to emphasize strategic spatial planning focused on macro-level urban restructuring. From 2000, spatial frameworks were required as an element of statutory Integrated Development Plans (IDPs): strategic plans intended to guide the work of municipalities. Several municipalities are using precinct and local spatial plans or frameworks guiding the development of their territory. Indonesia sets out to be a good example to exhibit how changes in governance can affect the planning process in a country. Since 2001, the structure of government has shifted from a centralized into a highly decentralized structure. Most of the administration affairs, including the spatial planning, have been transferred from the central government to the provincial and local government(s) enabling autonomous decision making in the development and planning process. Spatial planning system in China differs from other countries in terms of the government system and rapidly changing economy. Spatial planning system in mainland China is gradually formed from scratch, and gradually formed by territorial planning, main functional area planning, land use planning, and city planning, etc., which are dominated by different branches of governments. Because of the advantages to ensure the professional depth, each government sector makes and implements its specific planning under professional expertise.

Spatial planning in developing countries should emphasize a number of factors, both internal and external and needs to be tailor-made to the singularities, specificities and needs of those countries. An integrated approach to spatial planning covering socio-economic aspects, politics and governance,

environment and sustainability issues along with public participation needs to be incorporated in the planning process for most developing countries.

3.6 Spatial Planning - Small Island States & Archipelagos

Numerous challenges and constraints are faced by island nations in their pursuit of sustainable development due to their ecological fragility and economic vulnerability. Small island environments are known to be particularly sensitive to external change and have been shown to experience major climate change impacts [19]. Their geographical isolation, small size of the economy and dependence on a narrow range of products often leads them to be highly dependent on international trade and therefore are vulnerable to external shocks [20]. Being highly dependent on coastal areas, many adaptation measures involving relocation of resources and activities are not feasible due to limited land availability [21]. Ecologically, most island nations are coastal entities with small and dispersed land areas. Urbanization is plentiful in these areas, where most are surrounded by a vulnerable environment, exposed to the influence of climate change and extreme weather events. Small islands are more vulnerable to sea-level rise, coastal erosion, and landward seawater intrusion [22].

With these many significant challenges and planning issues confronting small islands and, despite many efforts, the capacities available to respond to them comprehensively are limited. Therefore, the development of approaches that are capable of mediating tensions and grasping opportunities should be the central goal of policy making and planning in pursuit of equitable sustainable development in these small island states. Spatial planning in these island states should aim at organizing the physical territory, with vertical integration from national to local levels, horizontal integration among sectors, integration of the three E's (economic, environmental and equity), and the integration of citizens and stakeholders' views and concerns [23, 24, 25].

4. CASE STUDY - MALDIVES

The Maldives, officially known as the Republic of Maldives, is a South Asian country located in the North-central Indian Ocean. The Maldives' archipelago consists of chains of 26 natural atolls that vary in shape and size. Maldives is one of the world's most geographically dispersed countries, as well as one of the smallest by both land area and population, with around 515,122 inhabitants; this includes 382,751 Maldivians and 132,371 foreigners. Male' is the capital and most populated city, commonly known as the "Greater Male'" for its central location and availability of all services and commerce.

According to [26], the population of Maldives is 382,751 Maldivians. The population has increased over the last century, with the population growing from 72,237 in 1911 to 382,751 in 2022. This significant increase in population is due to improvements in medical services and control in infectious diseases such as cholera, improvements in living conditions that happened after the late 1970s. The spatial distribution of population in Maldives reflects a typical small island developing state, where a single island-the capital city, having a disproportionately larger concentration of people as a result of migration of people from outer islands for better living standards and services. Similar to several other small island developing states, the economy of Maldives is constrained by the absence of mineral and natural resources, limited scope for the expansion in the agricultural sector, limited land and human resources. Today Maldives economy is based on a few sectors like tourism, fisheries, shipping and agriculture.

4.1 Diagnosis of Maldives

To understand the current status quo of Maldives, a country diagnosis is performed in the form of a SWOT analysis. As practiced by many organizations, SWOT Analysis is a useful strategic planning technique for understanding the Strengths and Weaknesses of its own. It also identifies potential

opportunities that are possible to explore and threats to the future of the organization. Carrying out a SWOT analysis is important to understand pros and cons of Maldives considering both its influencing internal and external factors/forces. Hence, in this work, Strengths, Weaknesses, Opportunities and Threats of Maldives were identified by referring to reports on different subjects published by local and international authorities (refer to Table 1).

Table 1. Strengths, weaknesses, opportunities and threats of Maldives

Strengths	Weaknesses
<ul style="list-style-type: none"> • Situated in a strategic geographic location; located in the maritime trade route from the Indo Chinese Far East to the Middle East and Africa. • Pristine and singular environment with rich marine resources which benefits all the major industries. • Population following a positive trend with majority in the active population. • Low poverty incidence. • Highest literacy rate in South Asia. • Young and dynamic workforce. • The annual gross domestic product (GDP) is increasing and has a relatively high GDP per capita. • Tourism and Fishing are the major two sectors contributing to GDP and employment. • International arbitration in dispute settlement that can attract foreign investors 	<ul style="list-style-type: none"> • Geographically dispersed small coral islands. • Sixth smallest sovereign state in terms of land area. • Scarce land and natural resources. • High cost of providing and maintaining infrastructure and services for a dispersed population. • Seasonal flooding and coastal erosion. • 80% of the land area is less than 1 meter above mean sea level. • Little resilience and high exposure to natural disasters. • Spatial imbalance of population density. • Poor connectivity between islands. • Lack of energy and food security. • No proper waste management in most of the islands. • Drug abuse and high crime rate. • Increased income inequality. • Heavy import dependency. • Over-reliance on tourism. • High public debt and narrow fiscal space. • Political instability. • Young Democracy • Deterioration in the rule of law • High corruption index.
Opportunities	Threats
<ul style="list-style-type: none"> • In a strategic location to develop international economic, trade and logistic hubs/ports/airports. • Creation of Special economic zones to attract foreign investors • Global trend for renewable energy • Global initiatives to improve democracy • Increase number of ocean liners voyaging in the Indian Ocean 	<ul style="list-style-type: none"> • Subjected to Global Warming and sea level rise and vulnerable to environmental impacts • Strategic location; subject to interest of specific nations like India and China • High dependency on foreign aid • Vulnerable to changes and fluctuations in the global markets • High and unsustainable debt • Political instability and conflicts

4.2 Spatial planning in Maldives

Formal spatial planning is very new in the country and the planning practices carried out are very much different from what has been elaborated in the literature review. Spatial planning practiced in the country is very specific to the creation of regions of economic development by population consolidation through induced resettlement of people from smaller islands to bigger focal islands.

4.2.1 Overall view of past spatial planning in Maldives

Population of the Maldives is distributed from north to south; hence, developmental works were carried out randomly in different islands according to the needs of particular islands. Ad-hoc developments to provide basic public services and infrastructures were based on particular needs of specific island communities. In addition, often, specific regions were focused without any prior spatial planning considering the whole country.

The capital Male' had been the central point for all key developmental activities for ages. All commerce, trading and important services and facilities were developed in the Male' region, today known as Greater Male' Region.

Spatial planning in the Maldives was not formalized until the 1980s. From the charts of Malé from the early 1920s, the Male' was a planned city with ward squares, communal baths, a peripheral wall with gates and forts, and a hierarchy of roads – all the main roads leading to the Sultan's Palace. Figure 2 presents a detailed map of Male' from 1920 and figure 3 presents the junction between two main streets of Male' from 1963.

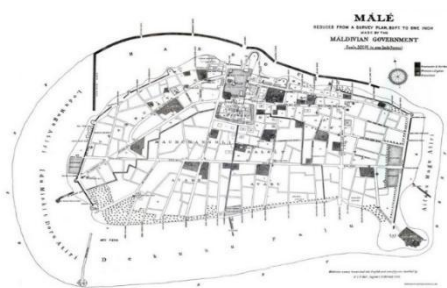


Figure 2. Detailed Map of Capital Male' from 1920
Source: Mapsland, 2018



Figure 3. Junction between Chandhanee Magu and Lily Magu from 1963
Source: Vonadhona Raajje, 2018

Some form of spatial planning was carried out by the first President of Maldives, Mohamed Amin Didi during his 8 months of rule in 1953 when all inhabited islands were required to have a major road running the length of the island and another across the island. Figure 4 shows the major road; Majeedhee Magu, running the length of capital Male'. In Male' the walls of the houses on Majeedhee Magu (one of the main streets in Male' running east to west of the island) were all built low, around 1.2 metres, and of similar shapes either side of Radhdhebai Magu (another key street in Male'). These reflect that, some form of planning regulations and spatial planning practices were in act from early as 1953.



Figure 4. Aerial view of Male' from early 1963 showing Majeedhee Magu

Source: Maldives Insider, 2018

During the 30 years of the rule of former president, Mr. Gayyoom, the country was divided into administrative 20 atolls and special importance was given to Atoll capital islands in establishing basic services such as schools and other infrastructure. Hence, this resulted in unequal distribution of such services and facilities among the citizens, especially the people living in the most remote islands. Lack of proper transport systems within the atoll, further escalated the situation of inequity among the communities. Some infrastructures and public services were established for particular regions. In this manner, regional airports, regional hospitals, regional schools and ports were developed to cater to the population. Anyhow, neither any particular studies nor long-term planning was carried out in identifying islands to host these services and infrastructure until the 1980s.

At different times, population consolidation in terms of population resettlement efforts were undertaken to overcome the spatial imbalance in the Maldives. Shaig [27], categorized these resettlements in the country as induced resettlements, planned resettlements and formal spatial planning activities.

4.2.2 Formal spatial planning activities in Maldives

From the 1980s onwards, succeeding governments of Maldives have adopted various measures to solve the apparent imbalance in spatial development in the country. For the very first time, an official department known as Office for Physical Planning was established in the President's Office in the early 1980s to tackle the planning dilemma in the country resulting from the unprecedented economic growth and the large population migration from outer islands to capital. The rationale behind this formal spatial planning was to alleviate the problem of congestion in Male' and the disparity of services provided within the atolls. Within this framework, different *attempts* and approaches, at different scales, undertaken in the country includes; selected Island development initiatives, regional development works and regional development and decentralization

- Selected Island Development Initiatives:

At the beginning, 68 islands were proposed for concentrated development. The proposed number of islands was eventually reduced to eight "*Focal Development Centers*" in the First National Development Plan [28]. Islands chosen were mainly Atoll Capitals and larger islands in size. The rationale behind the strategy was that concentrated development in these centers would attract population to these areas hence reducing the need to migrate to Male'. And also, to create alternative economic centers with optimum economies of scale that could maximize the returns from public investments.

As this strategy failed to achieve its objectives, in 1987, this strategy was initially supplemented and then replaced by the "*Selected Island Policy*". The new policy acknowledged the dominance of "Male' region" as the key economic center of the country, and advocated developing two selected islands close to Male' [29]. In addition, seven outer islands from the atolls were identified as regional growth centers. These selected new islands had the characteristics of having large unused land. The new policy lasted for 13 years and significant investments were made in the selected islands.

Twenty years of selected island development approach did not serve its purpose of controlling migration to Male' and little progress was seen by the development in outer islands in terms of

attracting new people. Hence, the failures gave way to the regional development approach and population and development consolidation approach.

- Regional development:

A regional development approach to redress the spatial imbalance in Maldives was adopted during the year 2000 [30]. The rationale behind was to concentrate development activities and investments to stimulate growth within those regions. For the purpose of regional development, regions are defined as a group of atolls (refer to figure 5). This approach aimed to compensate for the approach of development in individual selected islands, but as the later, did not pull out the desired effects as individual growth centers did not attract enough people to compensate for the public investments in those islands. The regional development approach was directed to bring more interaction within the region to stimulate economic growth. Moreover, the investments in a region would have larger coverage, in terms of population, compared to individual growth centers [27].

In 1998, the government of Maldives proposed a settlement restructuring strategy, known as the “*Population and Development Consolidation*” (PDC) strategy encouraging voluntary internal migration. The main concept was to overcome the hurdles faced by the government in providing basic services and development among its citizens. The strategy focused on concentrating development and population into selected large settlements, through various policy measures. The overall objective of the policy was to maximize the use of public infrastructure (through infrastructure sharing), to save costs on the provision of education and health services, and to gain economies of scale while reducing social and economic vulnerabilities.

The first *Regional Development Projects* were undertaken between 2000 and 2005 covering the northern and southern most atolls. These developments also included key elements from the past selected island development program, such as development of growth centers. With this strategy, in 2002, the government of Maldives initiated a program of providing incentives for voluntary migration to larger islands - called regional development centers. For this purpose, the country was divided into five regions, namely, Northern Region, North Central Region, Central Region, South Central Region and Southern Region as shown in fig.5.

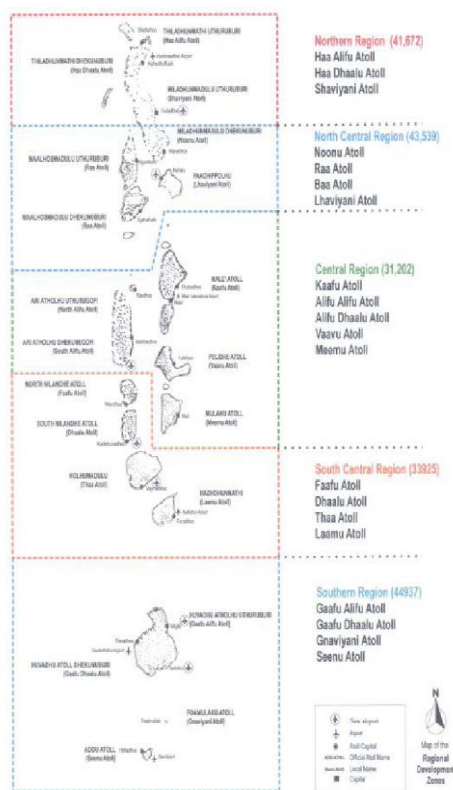


Figure 5. Division of atolls into Regions (Source: MPND [29] - Sixth National Development Plan 2001 – 2005)

Following the 2004 Indian Ocean Tsunami, the population and development consolidation program was revisited and the program was redeveloped as the “*Safer Island Development Program*” (SIDP). The 2004 tsunami disaster has illustrated clearly that the strategy of consolidating the population is in itself not sufficient to create the framework for sustainable development. It has become clear that not all islands are ecologically safe, and that it is critical to integrate safety considerations in planning the development of low-lying islands [31]. The idea of the *Safe Islands* concept was to extend the population consolidation approach to incorporate the aspect of extreme vulnerability and develop measures to mitigate ecological disasters. The rationale was to enable the communities to sustain social and economic development in times of emergencies and disasters, by providing ecologically safe zones.

- Regional development and decentralization:

With the transition to a democracy in 2008 and introduction of a multi-party presidential election system, the election manifestos put less emphasis on population and development consolidation, and prioritized transportation and connectivity among islands instead.

After the first multiparty election in the country, the government back then introduced the *Regionalization and Decentralization Program*. This program was envisioned to increase local participation in decision-making through social, political and economic empowerment at the local island level [32]. Regionalization and decentralization program was focused on guaranteed accessibility of services to all, realization of human rights and the principles of good governance at the local level. Under this program, the twenty atolls in the Maldives were grouped together into seven administrative provinces as shown in Figure 6.

Name of Regions	Atolls included in Region	Total Population
1 Upper North Province	Haa Alifu, Haa Dhaalu and Shaviyani	58, 268
2 North Province	Noonu, Raa, Baa, Lhaviyani	58, 109
3 North Central Province	Kaafu, Alifu Alif, Alif Dhaalu	28, 149
4 Central Province	Meemu, Faafu, Dhaalu	18, 642
5 South Central Province	Thaa, Laamu	29, 050
6 Upper South Province	Gaaf Alif, Gaaf Dhaalu	31, 547
7 South Province	Gnaviyani, Seenu	39, 862

Figure 6. Division of atolls into Provinces (Source: (President's Office, 2009) [32]. "Aneh Dhivehiraajje" - The Strategic Action Plan 2009 - 2013)

One administrative center and commercial centers in all provinces were to be developed in order to provide social and economic opportunities that would create a competitive environment through regionalization. In addition, de-concentration of functions of line ministries to the provinces through the program was one of its main objectives that could increase the development in both regional and local level.

4.2.3 Overall assessment of past efforts of spatial planning in Maldives

Though formal planning began in the country in the 1980s, looking back at the efforts undertaken in the past in tackling the spatial dilemma in the country, it is quite obvious that the results are not as expected. Spatial imbalance within the atolls is still very evident while the inner migration of people to Capital Male' is still at large.

Some reasons that account for this failure may include;

- Lack of national spatial policy guiding the state, regional and local level spatial development.
- Failure to deliver the same quality of services in the islands as compared to Male'.
- Discrepancies in the price of goods and services provided between Male' and other islands.
- Incapacity to attract enough people to the growth centers and regions to generate the required economies of scale. Hence, did not compensate for the public investments in those areas.
- "Imprisonment of locals" in the islands due to lack of efficient nationwide transport system hindering the progress of the growth centers.
- Negative mindset of the locals towards leaving their native islands.
- New settlers are not welcomed and accepted by the host island community.
- Conflicts between the locals of the host island and new settlers.
- Inconsistencies and gaps in the Maldives' legislation further delayed the spatial development. For instance, the Maldives Parliament passed the Decentralization Act in April 2010, to formalize the roles and responsibilities of Atoll and Island Councils and required that they would be democratically elected; and established Local Government Authority to which the councils would be accountable. However, although mandated to provide basic municipal services, island councils did not control the assets of the atolls and islands, which was under the control of the utility corporations that were established in 2009 or central government. In addition, the Land Act which limited Atoll and island councils' discretion on land use, thereby affected their capacity to implement their development plans.
- The governments after 2009 abandoned the National Development Plans in favor of the development paradigm outlined in its election Manifesto. Governments were often driven by a need to show quick results in order to generate political capital rather than long term planning.

- Lack of clear long-term national strategic framework and frequent changes of government structures and institutional mandates affected sustainable development in the country.

However, it is also important to highlight that some relocation and resettlement projects within the islands were successful in developing growth centers within the atolls.

4.2.4 *Current spatial planning initiatives*

Till date, Maldives does not have a fully established functional spatial planning system implemented in the country. It is yet to enact a Planning Act to guide its planning and development works in the country. A draft of the spatial planning act was circulated among the key stakeholders in the year 2020.

With the introduction of the Decentralization Act in 2010, development of land use plans (LUP) was made mandatory in each inhabited island. These plans are in the form of Master Plans and Zonal Plans developed by the island councils specifying key infrastructures and services in the community and defining residential, commercial and industrial zones in the island. However, prior to this Decentralization Act, some islands did develop their own LUPs which were used to direct the future land use and development works in those islands.

From 1985 onwards, National Development Plans (NDPs) were developed in the country to guide its development. These National Development Plans were the key strategic plans that directed the development of the Maldives over a selected period, most common 5-year terms. These plans established priority development areas, set goals and targets that guided decision-making and investment over the specified period of the plan. Long-term developmental goals and perspectives in sectorial master plans, strategic plans of Government offices, as well as Atoll and Island Development Plans were considered when these plans were formulated. It is important to note that National Development Plans (NDPs) were discontinued since the 7th NDP which was published in 2007. With the introduction of the multiparty presidential election system in the country in 2008, regional and country level development plans are more focused in the political manifesto of the ruling party.

Recent governments give special importance to the development of the Greater Male' region, which is a part of the selective island development program. Greater Male' region consists of seven islands which is to be connect by bridges; Male' Hulhule, Hulhumale', Viligili, island to be developed in Gulhifalhu, Thilafushi and island to be developed in Giraavaru as shown in figure 7. The ultimate goal of this ambitious strategy could be to relocate possibly 100,000 people in Hulhumale. This would mean that about two-thirds of the total population of Maldives could eventually be relocated on a few islands in the administrative island of Male' [33].

Over the years, the different governments have established a list of growth centers and economic hubs across the country to undertake key development projects.



Figure 7. Composition of Greater Male' Region (Source: Google Maps, 2023)

5. ANALYSIS AND DISCUSSION

According to respondents, 41 different survival problems/challenges were identified and classified under four main categories. 13 were identified as *Environmental and Geographic*, 14 identified as *Social and Cultural*, 9 identified as *Politics and Governance* and 5 identified as *Economic* problems/challenges.

Out of 41 problems, seven most crucial problems/challenges were identified (refer to Table 2). For the purposes of analysis, if 20 percent of respondents had agreed on a specific challenge/problem, it is considered as crucial for the future survival of Maldives. Majority of crucial problems/challenges identified fall under the category of Environment and Geography which very well reflects the vulnerable and unique environmental setup of the Maldives. According to Table (2) it is clear to see that there is consensus among the groups for the first two problems.

Table 2. The most crucial problems/challenges according to interviewees

Top Problems/Challenges	Number of respondents per group				Total number of respondents
	Group 1	Group 2	Group 3	Group 4	
Climate change, sea-level rise and global warming	6/7	4/5	5/6	6/6	21
Seasonal flooding	6/7	4/5	4/6	4/6	18
Food security	3/7	4/5	1/6	3/6	11
Shortage of access to safe drinking water and water security	3/7	2/5	3/6	2/6	10
Coastal land erosion	4/7	1/5	1/6	3/6	9
Lack of proper waste management system	1/7	4/5	1/6	3/6	9
Lack of an efficient transportation system(s)	0/7	1/5	3/6	1/6	5

According to respondents, the majority of these problems need action(s) to be undertaken within a short-term of less than 10 years.

Most of the participants agreed to the strengths, weaknesses, opportunities and threats identified in this study. However, there were differences of opinions regarding the SWOT analysis performed. Table (3), represents additional strengths, weaknesses, opportunities and threats suggested by the respondents to understand the micro and macro environment factors that may influence the planning process in the Maldives.

Table 3. Additional strengths, weaknesses, opportunities and threats suggested by the respondents

Strengths	Weakness
<ul style="list-style-type: none"> ● Dispersion of islands avoid conflicts ● Unique identity with an authentic language and script ● One religion and one ethnic group 	<ul style="list-style-type: none"> ● Legal issues for land and property transfer (Land regulations too tight; Foreigners cannot own land) ● No policy to protect built reserve and heritage
Opportunities	Threats
<ul style="list-style-type: none"> ● Global trend for development of Eco-tourism and local tourism ● Global awareness for the need of proper sewerage, sanitation and drinking water 	<ul style="list-style-type: none"> ● Global conflicts ● Conflicts between India and China ● Religious extremism

SWOT(s) identified in this study along with additional SWOT(s) suggested by respondents, certainly play a vital role in addressing and tackling the survival problems/challenges and should be considered during the spatial planning process in the country.

All respondents agreed that a spatial planning system is indeed important and plays a key role in the future survival and sustainable development of Maldives. According to respondents, a National Spatial Planning Policy Framework and National Development Strategies can be formulated where all sectors can integrate, coordinate and coexist to attain sustainable development. With good governance and a proper spatial planning system can guide the nation development works in a more preplanned and systematized manner rather than ad-hoc development. However, some respondents expressed concerns that it is foremost important to decide, if the spatial planning system should address whether, a population consolidation strategy versus a connected dispersed population is better suited for the country before the spatial planning regime to follow.

All respondents highlighted the importance of a Nationwide Spatial Plan, as they believed the current need base development in the country is unsustainable. Varied opinions regarding the planned period of such a national plan were seen among the respondents. Respondents also agreed that lack of a spatial planning legal framework and policies like fiscal decentralization, population consolidation, etc., hinders the process of adopting such a spatial planning system in the country. According to respondents, spatial planning should also tie together the socio-economic strategic plan of the country to eliminate the spatial imbalance in the country.

With regarding the population consolidation, majority of respondents believed it is the best option to overcome the spatial imbalance for a country like Maldives. 21 respondents believed that Maldives should opt for a decentralized system of governance in order to fully benefit from spatial planning and 23 respondents agreed that besides national level spatial planning, regional and local level planning is extremely important for a country like Maldives, especially to avoid top-bottom decision making. Except for 2 respondents, all agreed that informal planning solutions should be allowed in a country like Maldives.

There were two main views regarding the criteria to define a “region” for regional development among the respondents. Maldives being a geographically dispersed island nation, 33 percent of respondents agreed that geographical setup of islands/atolls and technical efficiency to connect the region by transport system(s) as the criteria to define a region for regional development. 6 respondents, 25 percent believed that the criteria to define a region are not as simple as it appears and expressed that this criterion should be a combination of many factors. These factors signify a number of attributes such as geographically interrelated zones with cultural relationships and economic activities, proximity, population, size of islands, number of islands, functions, services and based on technical efficiency in connectivity.

All the respondents agreed that real estate development and privatization of this sector could improve and bring faster urban development in the country if incorporated with spatial planning. It is also agreed that it helps in the population consolidation program and development of regional areas of the country.

According to respondents, the current situation of Maldives is a good example of how political instability in a country could affect long term planning. Respondents believed that governments always use development policies to gain short-term political support rather than long-term sustainable development. Policies, tools and measures are needed to deal with impacts on long-term planning due to political unrest and needs to be addressed in a National Spatial Planning Framework formulated for Maldives.

6. OVERALL CONCLUSION

Maldives being a small island developing state is facing many problems, challenges and constraints in pursuing sustainable development due to its ecological fragility and economic vulnerability. Spatial planning can play a vital role in the country to overcome these problems, challenges and constraints. Formal spatial planning is very new and the country lacks a formal and comprehensive planning system, Maldives is strongly in need of a framework of spatial planning systems and tools that are appropriate to the singular nature of the island nation considering its own specificities, resources and constraints.

The majority of the problems identified by the respondents as future challenges/problems in Maldives are very much related to the geographical setup of Maldives islands and its vulnerable environment. Maldives has its own strengths and opportunities that could be utilized to overcome some problems at hand by adopting a spatial planning system in the country. All respondents are fully supportive of this approach to bring sustainable development to the country. However, as agreed by the respondents, there are critical concerns that should be addressed prior, if spatial planning is to benefit a country of singular nature like Maldives.

With reference to the literature review, country’s diagnosis performed and interviews conducted, below mentioned are the key conclusions made regarding the spatial planning background in Maldives.

- There is a vast literature about the most known spatial planning systems. However, there is a significant scarcity of literature to cover spatial planning in the context of small island nations. This poses relevant challenges in the application of those spatial systems in a small island nation like Maldives.
- Spatial planning system formulated for Maldives should follow a *tailor-made* approach taking into account the context of Maldives and benchmark to other known spatial planning systems and practices.

- Spatial planning can play a major role to address the key survival problems/challenges, strengths, weaknesses, threats and opportunities in the country as identified in this study.
- Spatial planning system in Maldives should be a combined approach of strategic and operational planning.
- A significant number of important challenges/constraints were identified such as; lack of specialized institution setup for spatial planning in the country, lack of legal framework and policies for spatial planning, lack of political will for spatial planning and lack of expertise in the field of spatial planning, especially in the island level, which can hinder the adaptation of spatial planning system in the country.

Despite the fact that there is a *hostile* environment to implement a planning system in Maldives, adopting a formal spatial planning system in the country is very much desirable and possible with inputs and collaboration from all levels including the government, public and local associations.

7. RECOMMENDATIONS FOR SPATIAL PLANNING IMPLEMENTATION IN MALDIVES

The findings of the study give an analysis of the current spatial planning scenario in Maldives. Given below are the key recommendations that could be used when adopting a formal spatial planning system in Maldives.

7.1 Spatial planning system

A three-tier spatial planning system covering National, Regional and Local level should be used in Maldives as represented in figure 8. Despite all the differences between the reality in Maldives and the Netherlands, the Dutch planning system can be a good benchmark for the spatial planning system in Maldives, as the spatial planning framework in Netherlands addresses key aspects such as integration of key sectors, fragile and vulnerable environment and long-term strategies to deal with sustainable development. Spatial planning should be flexible, pro-active and performance-oriented and needs to address key survival problems/challenges in the country. A complete description of the principal roles and obligations of the respective bodies and instruments at the three levels needs to be set out in a *Spatial Planning Act*. The planning system in the country should be based on key principles such as; decentralization responsibility, public participation, universal public access to plans and data, veto, dialogue and cooperation, sectorial planning and monitoring and reporting.

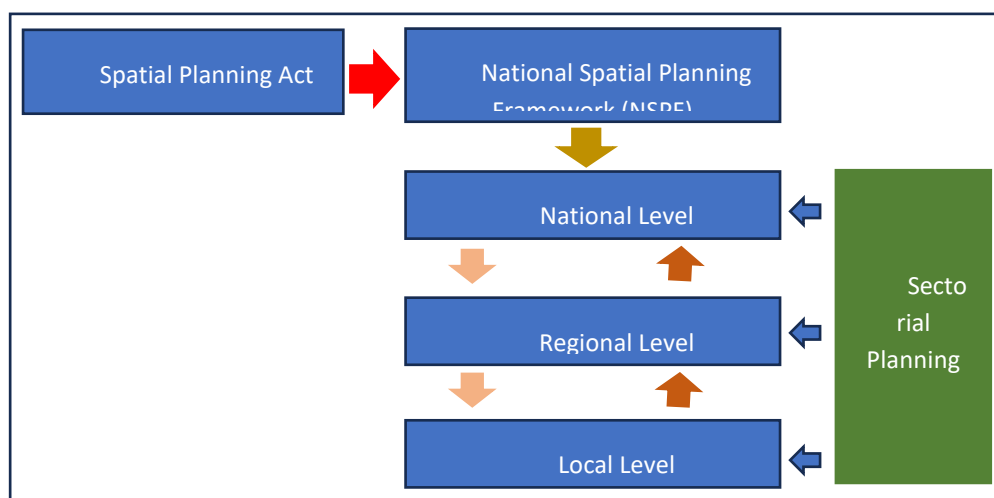


Figure 8. Proposed three-tier spatial planning system

National level planning should be limited essentially to the development of guiding principles and principles of spatial planning. It should be composed of sectorial laws, regulations and orders, circulars and planning policy guidance. More importantly, a nationwide spatial plan should be the key instrument to guide planning in the country. At the same time, it should be the legal basis for regional spatial planning and superordinate specifications for sectoral planning. Planning should emphasize on how public investments should be utilized from the point of view of regional and national structural policy. Government should at national level drive planning strategically while leaving local government at regional levels to plan for their territory. Instruments to be used in the national planning level should include; Spatial Planning Act, National Planning Reports, National Planning Directives, Vetoes and Orders, Overview of national interests in regional and local level planning and information and guidance.

7.1.1 *National Spatial Planning framework*

A plan-led system is needed in Maldives. A National Spatial Planning Framework (NSPF) needs to be formulated. This framework needs to be legitimated by a *Spatial Planning Act*. This Act should be a guiding platform to formulate the national spatial planning framework. It is important that during the formulation of this Act, all key stakeholders are involved in the process. A National Spatial Planning Framework should consist of;

- Policy guidelines for different levels of planning (national, regional and local) and different sectorial areas (e.g.: major infrastructure, transport, energy, housing, tourism);
- National Spatial Development Perspective with special emphasis on sustainability, (e.g.: development of strategies and programs for selection of safe Islands and reducing number of inhabited islands);
- Regional development perspectives: defining regions for development, selection of regional economic and service centers and zoning plans;
- General structure and the framework for local planning;
- Responsibilities and mandates for authorities in each level of planning

7.1.2 *National Spatial plan*

A nationwide spatial plan formulated for a period of 20 years with interim goals and objectives is needed in Maldives. Interim evaluations are needed every five-year. All development works in the country should align with this plan. All political manifestos should support and complement the National Spatial Plan. Spatial Planning Act to clearly define how amendments and review can be brought to this plan.

7.1.3 *Regional level planning*

The planning done in this level should be strategic planning, which comprehensively describes the desired future spatial development for each administrative region in the country. Regional planning should be concerned with the detailed elaboration, sectoral integration, and implementation of the goals of national spatial planning and mediates between national spatial planning and local urban land-use planning. Regional planning must align with national level planning and should ensure cohesion with other national strategies. At this level planning guidelines and strategic visions should be set for the local level. At the Regional level, the key planning instruments should be the Regional Plans, Regional Planning Guidance and Strategic Planning Guidance. The regional development plans should consider these main areas of concern; nature and the environment, business, employment, education and training, health and culture when formulating such spatial plans. These regional plans should be developed for a period of 10 years.

7.1.4 Local level planning

The local councils at the islands should be responsible for comprehensive island planning, detailed local planning and permits for construction and changes in land use in their territory. Land use plans and development plans should be the local planning policy instrument to be used. The development plan may comprise a number of different documents depending on progress in preparing plans. These plans include, structure plans, zoning plans and project plans.

Along with formal top-bottom planning at the local level, informal planning, bottom-up approach of planning should be adopted in the planning system. However, it is extremely important to have the right balance between these two approaches to planning. Through informal planning approaches, local associations and communities could contribute to establish a practice of community-led planning in the local islands, in moderation and mediation to find a consensus in different local problems, to get public participation and grassroots views in planning, to make public aware of environment threats, and to make locals aware of sustainable development and its importance.

7.2 Governance and Planning

Decentralization in the country should be implemented and strengthened to allow for an effective spatial planning system in the all three levels of governance. Vertical and horizontal integration and coordination between and within all levels of government is vital in adopting contemporary spatial planning. Integrated planning under a unified planning system is needed as a pre-condition for effective multi-level policy integration.

There should be transparency in decision-making and corrupt practices should not be permitted. Legitimize public participation during the planning process should be implemented to make planning authorities accountable and responsible and to ensure all decisions are made for the benefit of the community. Along with a good governance system, institutional restructuring is necessary to establish a tradition of integrated planning. Independent institutional bodies, concerning ministry and a regulatory body for planning works are needed in the country. Meantime, it is important to review conflicting laws, regulations and mandates of different ministries and departments. Fiscal decentralization is also vital for the country in adopting a three-tier planning system in the country.

Politicians should be made aware of the benefits of spatial planning and to have the political will to implement spatial planning in the country. The policy makers should promote hybridizing or synthesis, rather than copying or adoption, in transferring policy ideas in developing needed legal framework and policies.

7.3 Digitalize the planning system

Spatial data and all other relevant country data and statistics need to be accessible in a spatial planning database by experts and the public. Central digital portal for publishing and compiling plan proposals and adopted plans needs to be implemented. Digitalizing the planning systems could enhance the knowledge sharing among the local communities to tackle common problems faced by them.

8. FUTURE RESEARCH DEVELOPMENTS

The main findings of the study are: an analysis of the current spatial planning scenario in Maldives, the identification of the main challenges to adopt a (in)formal and comprehensive spatial planning system in the country; and recommendations for implementation of spatial planning in Maldives for its survival. Nonetheless, there are still some areas regarding the adaptation of the spatial planning

system in Maldives that can be looked into to conduct future research where further improvement could be made. The following recommendations could be considered and used as reference for future study purposes.

1. To study in detail how sectoral planning can be integrated in the spatial planning framework of the country.
2. To perform comparative analysis (including similar case studies to Maldives) to study spatial planning in developed and developing countries to learn the experience of developing countries.
3. To study in detail the effect of governance practices that could contribute to successful implementation of spatial planning in Maldives
4. To study in detail whether population and development consolidation is the best option for a country like Maldives to overcome spatial imbalance in the country.
5. To study the role(s) that could be played by informal planning practices that could lead to successful planning in the country.

The main limitations for the current study are; lack of literature to cover spatial planning in small island(s) and archipelago nations, lack of published and accessible information regarding spatial planning in Maldives and difficulty in reaching the locals from islands to conduct interviews to collect primary data.

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