

Strategy of resilient and sustainable development plan based on case study of Maldives

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Abstract

Considering the critical condition of the environment due to the rising sea level and the real threat to the existence of the Maldives, the aim of the scientific article is to focus on the ways in which the government of a small island state approaches building a resilient and sustainable economy through a case study. A scientific article relies on data collection and analysis of the following aspects. In the first part, we analyze the current state of the economy of the small island state, then we analyze how the government of the small island state approaches the building of a sustainable and resilient economy ready to face climate change, in the next part we focus on specific ambitious goals and plans to achieve the desired state, where they also appear a key foreign partner in the provision of financial and policy making assistance, and lastly we analyze the possible implementation of the set goals.

Key words

Sustainable, Resilient, Development, Environment, Economy.

JEL Classification: Q52, Q58, R58

Introduction

Government of the Maldives has announced its intention to fight climate change over the next decade, including a vision to reduce carbon emissions and achieve the goal of becoming a carbon neutral country. The Maldives has so far successfully met the challenges of climate change by finding effective mitigation and adaptation solutions. The island state has taken the initiative to achieve the ambitious goal of achieving zero net emissions by 2030.

The main motive for choosing the subject of research, which is the island state of the Maldives, is the fact that it is an example of an island state that is most affected by climate change. The Maldives is one of the lowest-lying countries in the world, with the average elevation of the islands hardly exceeding 1.5 meters above mean sea level. This is precisely why the Maldives is extremely vulnerable to climate change and subsequent sea level rise. The country is exposed to existential extinction. Priority vulnerabilities related to climate change include biodiversity loss, soil erosion, infrastructure damage, coral reef degradation, and adverse impacts on water resources, food security, human

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health, and the country's overall economy, which are most affected by these vulnerabilities (Ganguli, 2014).

With a population of 533,900 in 2019, the Maldives is also a unique society in terms of cultural and ethnographic heritage. The driving force behind the Maldivian economy is tourism, which accounts for approximately one-third of gross domestic product (GDP) and is also the country's fastest growing economic sector. Although the share of fisheries and agriculture in GDP has fallen to 3.5 % and 1.7 % respectively, these sectors are the main source of income and livelihood for rural communities. Current development challenges in the Maldives arise from climate change risks, disaster resilience and environmental sustainability with increasing levels of solid waste. The country's economy and society are particularly vulnerable to sea-level rise, coastal storms, and flooding, as much of the infrastructure for tourism, fisheries, population and residential structures and critical infrastructure (Datta and Mukhopadhyay, 2011).

1 Methodology

The case study will present an analysis of critical economic issues for climate change mitigation and the transition to sustainable and resilient economy. It will also provide analysis regarding the impact of climate change on macroeconomic and financial stability, including mitigation, adaptation, and transformation to sustainable and resilient country. Our research question of the case study is:

How does the country approach achieving development towards a sustainable and resilient economy?

Based on the established research question and to answer it, in the scientific article we focused on collecting data and analysis in the areas of the current economic situation of the country, the way the country approaches the building of a sustainable and resilient economy, and the way of creating strategic plans and goals towards the transformation of the economy into a sustainable and resistant to climate change. The case study is based on theoretical assumptions, with which it analyzes the future assumption of the investigated issue, specifically where the Maldivian economy wants to work in the future in connection with environmental protection and at the same time economic prosperity.

To develop the set goal, when choosing relevant literature, we primarily chose the process of researching scientific and book publications from available online databases, which are: Science Direct, Web of Science, Research Gate and Springer. To use the available performance data determined during the development of the sustainable and resilient economy of the Maldives, we analyzed official publications, strategic documents published through available online libraries: World Bank Database, Asian Development Bank and partly also the database of the International Monetary Fund. In the process of processing the literature survey of the topic of the scientific article, we proceeded with the methods of literature analysis for individual questions: analysis of scientific publications focused on the issue of the development of the Maldivian economy, analysis of scientific articles and strategic documents according to the investigated issue within the development of sustainability and resilience of the economy, and finally on the implementation of specific ambitious goals. Our research sample is the economy of the

Maldives, so when processing the data collection in this context, we considered Asian authors and local official documents and statistical reports.

2 Results and discussion

2.1 Recent economic trend

The real gross domestic product (GDP) growth of the Maldives averaged 5.1 % per year between 2000 and 2019, while the decline caused by natural shocks (tsunami in 2004) led to a 13 % drop in GDP in 2005, while the economic decline also contributed to the global financial crisis of 2008 – 2009, when GDP saw a decrease of 7 % in 2009. During the annual range of 2014 – 2019, the service sector recorded a level of 75.0 % of GDP and the overall budget deficit reached an average level of 5.5 % of GDP, inflation recorded a moderate level, around 1 % per year. The current account deficit, averaging 18 % of GDP, was financed through capital inflows and growing foreign debt. The unfavorable situation associated with the COVID-19 pandemic in 2020 records an almost half decrease in tourists, which causes a significant drop in GDP (World Bank, 2020)

The island nation has huge challenges in terms of macroeconomic balances and debt sustainability. Structural economic factors lead to persistent budget and balance of payments deficits. While public revenues (26 % of GDP in 2014 – 2019) exceed the level of the current average, the availability of services to the population is costly and sufficient subsidies are provided to ensure affordability. Ambitious government investments in public infrastructure and social housing since 2015 have further burdened the public budget. The government's budget deficit was financed through foreign debt, leading to a high debt risk classification by the International Monetary Fund (IMF). Due to the high level of government debt in the portfolio of active domestic banks, it is crowding out loans to the private sector (International Monetary Fund, 2020.).

The island nation's small size and diversified domestic market discourage producers from domestic production and favor the import of agricultural commodities and industrial goods. The share of tourism revenue that remains in the country helps offset the trade deficit. The temporary limitation of revenues from international tourism to the state budget caused by external economic crises is so fragile that it quickly undermines the fiscal and external current account balance.

The factors of production and the competitiveness of the economy of the Maldives, like other small island states, are limited by their small land area, the structure of the domestic market and the high cost of transport between the scattered atolls. The named factors put a burden on public finances by increasing the cost of providing services. The high cost of inter-island transport is a consequence of a lack of investment in maritime infrastructure and a high dependence on imported fuels. The disproportionate connectivity and irregularity of the transport service limits the mobility of people and thus increases the costs of business activities. On the positive side, geographical accessibility to other economically important South Asian countries and the principle of the open skies policy eliminates the problem of isolation that limits many Pacific small island states and guarantee good connections with foreign markets.

The success of the Maldivian economy in promoting and modernizing the international tourism market has seen remarkable economic growth in the country, but

on the other hand, it has disadvantaged the main industrial sector away from the islands, where most of the domestic population lives and where the local economy is mainly concentrated. As a result, tourism centers rely heavily on sufficient foreign immigrants (foreign investors) to import the main inputs needed to support the industry, reducing employment and economic linkages in local industries. The rapid expansion of holiday resort rentals provided over the 2016 – 2018 period also resulted in a growing number of unfinished projects accumulating large arrears and penalties on the country's public debt repayments (Mohsin et al., 2021).

The small island state also faces challenges associated with a weak business environment and limited diversification of the economic sector. The World Bank's 2019 Doing Business report ranked the Maldives 147th out of 190 economies in the world. Among the most vulnerable areas, which are the basis of the economic start-up, are the construction industry, the insufficient framework for preventing insolvency and the insufficient regulation of fair business practices. In the field of international trade management, processing import-export transactions is cumbersome and costly. Tax policy is improperly regulated. Access to credit is a key obstacle for individuals as well as legal entities. Loans are usually unavailable and interest rates are high due to inefficient access to finance and high indebtedness of the public sector of the domestic financial market. Economic departments and institutions focus on providing loans to state-owned enterprises and large private companies, which have relatively higher profitability and lower credit risk, favoring borrowers from the private sector, to whom they provide premium interest rates. The revenues of state-owned enterprises for 2017 represented more than 11 % of GDP, thus dominating the economy apart from the economic sector of tourism and limiting the space for the private sector (Asian Development Bank, 2019).

2.2 Building sustainability and resilience

Degradation of the small island state's environment is one of the biggest threats. The expansion of the tourism market and the continuous growth of the population are the biggest producers of CO² emissions. The biggest problem in handling the environment is the method of handling waste. Enterprises processing waste lack the capacity to process it in a sustainable manner. Environmentally damaging waste management practices are common on most islands, with significant impacts on groundwater resources, air quality, oceans, and fisheries. While access to clean drinking water is favorable, highly polluted sewage flows into reefs on most islands with direct impacts on the environment and other marine life due to the discharge of raw sewage (Royle et al., 2022).

The energy sector along with the transport sector in the Maldives is highly dependent on the import of fossil fuels, which creates a large amount of carbon dioxide emissions. The rapidly growing demand for energy also contributes to the country's persistent trade and fiscal imbalance, while the import of fossil fuels is very costly. Rising sea levels within 100 meters of the coast will threaten 42 % of the population and more than 70 % of critical infrastructure, which will have catastrophic social and economic consequences, especially for the most vulnerable. The loss of coral reefs due to rising ocean temperatures, pollution and infrastructure construction threatens the sustainability of the country's key economic sectors and its very existence. The need to

develop reasonable projects for the construction of infrastructure to mitigate climate change or adapt to it is particularly urgent for a small island nation (Keiner et al., 2022).

Government inefficiency and weak support from institutions are still critical obstacles to further development. Planning strategic plans to support development and environmental sustainability has been undervalued and lacks a legal framework for almost a decade. The presence of corrupt practices is high, leading to the leakage of public resources, undermining the provision and efficiency of public services, as well as discouraging private and foreign investments. State-owned enterprises should have a clearer management structure, a better overview of activities, which could improve the efficiency of the budget and the quality-of-service provision, and at the same time increase interest in foreign investments that could contribute to building an environment resistant to climate change (Zaman and Fardoush, 2021).

2.3 National strategy objectives in sustainable development of Maldives

The Strategic Action Plan, which was announced in October 2019, is a policy framework and strategic document in planning to meet the sustainability and resilience of the Maldivian economy. To achieve the Sustainable Development Goals, it sets out holistic strategies and programs for an inclusive, sustainable, and well-managed economy, formulating four priority areas in 33 sectors with time-bound prioritization of activities and measurable targets.

The priority areas are:

- making the blue economy more efficient, focusing on the expansion and diversification of the tourism, fishing, and agriculture sectors; MSME support; and job creation,
- building a state supporting the inclusive provision of quality healthcare, professional and higher education, and social protection,
- building environmental quality on the island, improving decentralization and water supply, sanitation, waste management and transport and community infrastructure to improve the island environment,
- good governance, increasing transparency and accountability, anti-corruption measures and institutions, gender equality, international cooperation, and sound macroeconomic policy, including public debt management.

Development assistance from foreign investors is a large share of government funding, with an estimated USD 316 million provided, which is equivalent to 16 % of all government spending and 5.6 % of GDP in 2019. The Asian Development Bank (ADB) is the second multilateral development partner after the World Bank and foreign investors in development strategies. The World Bank supports waste management, education development, fisheries, investments in renewable energy sources, public finance management and the development of urban sustainability and resilience. The International Monetary Fund supports revenue management, taxation, national accounts, and many other development sectors. UN agencies are joining the response

to support more ambitious goals, national climate disaster management, gender equality, education, and health.

The largest bilateral partners also include India, the People's Republic of China, and Japan. India supports the development of credit availability; currency swaps and provides grants for the development of various vulnerable sectors. The Republic of China supports the construction and sustainability of the airport runway, the construction of bridges between Malé and Hulhumalé, the provision of social housing, seawater desalination and electrification projects. The Japan International Cooperation Agency and the Government of Japan support the development of human resources, management of public finances, construction of infrastructure in the transport sector, streamlining of education, economic and social development, and telecommunications. The US Agency for International Development provides technical capacity building for government agencies and support for environmental protection (Asian Development Bank, 2020).

2.4 Strategic objectives and Operational Priorities in building sustainable and resilient environment in Maldives with support of Asian Development Bank

The strategic goals of the country's partnership will be supported by the governments of the partnership's members, including efforts to address the impact of COVID-19, mainly to ensure a resilient and sustainable island life for the population and the economy, aimed at supporting three common strategic goals. The first objective is to increase public sector efficiency and fiscal sustainability to improve the quality of public services; reduce their costs; and increase the efficiency of tax administration and the efficiency and business orientation of state-owned enterprises. The second goal is to achieve competitiveness and diversify the economic base by removing obstacles in the business environment, facilitating access to finance for SMEs, supporting international trade, improving the quality of human capital to increase the relevance of the labor market and the extensive health system of the country. The goal is to improve the quality of life of island communities while ensuring environmental sustainability by investing in better infrastructure and services in the areas of solid waste and clean energy, increasing resilience and preserving the marine environment for future generations (Sattar et al., 2022).

The Asian Development Bank will plan operations to:

- expand non-government financing using the private sector instead of government financing for loans to SMEs, financial sector expansion and investment in infrastructure construction,
- expand the specific focus of infrastructure from investment to effective management of the development of infrastructure services in sectors, thereby helping to improve the management and efficiency of public services and service providers and assisting authorities in setting service standards and tariffs,
- support more advanced technologies,
- digital solutions in education, healthcare, and public administration,
- converting waste into energy,

- diversified low-carbon or carbon-free energy solutions,
- intensify the approach to gender equality by supplementing the previous focus on gender mainstreaming in each project by continuing to support the implementation of the Gender Equality Act and related services that address women's issues (Asian Development Bank, 2020).

**Development strategic sustainable and resilient plan of Asian
Development Bank for economics of Maldives, 2020-2024**

1. Strategic goal	2. Strategic goal	3. Strategic goal
Efficiency of governance <i>Increase public sector efficiency and fiscal sustainability</i>	Blue economy <i>Strengthen the competitiveness of the economy and diversify the economic base with respect to the environment</i>	Ensure quality of life in Island <i>To improve the standard of living of island communities while ensuring environmental sustainability</i>

Political regulatory reforms of state enterprises <ul style="list-style-type: none"> Strengthen the institutional capacity and improve the efficiency of the services of state enterprises (water, waste management, transport). Support regulatory authorities in setting service standards and tariffs. Systems and processes of public administration <ul style="list-style-type: none"> Efficiency and digitization of public administration processes. Regulation of public expenditure and fiscal administration (debt and revenue management) <ul style="list-style-type: none"> Support for the implementation of state budget revenues launched in 2020 and overall revenue mobilization. 	Development of better business environment <ul style="list-style-type: none"> Improve the business environment and access to finance for micro, small and medium-sized enterprises, including enterprises in tourism and related industries. Development in the health and education sector to improve human well-being <ul style="list-style-type: none"> Strengthen the quality and reliability of medical personnel and the ability of the health system Strengthen the education of the population to meet the needs of the industry. International and regional trade and investments <ul style="list-style-type: none"> To improve the international trade environment of trade facilitation under the regional economic cooperation program in South Asia. 	Sustainable and clean energy <ul style="list-style-type: none"> Continue the expansion of the transition to renewable energy on the outer islands in the resorts. Investments in diversified and cleaner energy sources in the capital region. Development of solid waste management <ul style="list-style-type: none"> Establish a sustainable solid waste management system mainly for the main island - capital region. Protection of environment, disaster risk management and adaptation to climate change <ul style="list-style-type: none"> Capacity building, knowledge activities, political dialogue related activities related to the protection of the marine environment and adaptation to the effect caused by climate change.
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Source: The Asian Development Bank (ADB) country partnership strategy (CPS), 2020 – 2024 supports of a resilient and sustainable island life for all Maldivians, 2020, p. 9

Strategic goal 1 – Increase the efficiency of the public sector and fiscal sustainability. It contains a broad governing legal agenda for system reform, elimination of corruption, increased transparency, strengthened management of state-owned enterprises, public service reform and gender equality. Other development partners support the responsibility and involvement of citizens in the implementation of strategic plans to improve sustainable economy and fiscal policy management. The Asian Development Bank plans to provide targeted support to two priority areas of the fair governance program: gender equality; and accountability, efficiency and governance of state-owned enterprises and other vulnerable sectors. The Asian Development Bank will support the development of political options and digitization of key public administration processes to increase efficiency. In the case of state-owned enterprises, the strong relationship established with public services was used to increase their efficiency and strengthen the regulatory environment. The Asian Development Bank is also responding to adverse economic losses caused by the COVID-19 pandemic and the introduction of time-bound additional subsidies for water and electricity, mitigating the economic impact of the crisis on families and businesses and the cost of electricity production. Building on the continuity of support to improve energy and waste management services, ADB will support capacity-building infrastructure investments to improve efficiency that will increase the quality of public services and reduce production costs (e.g., intensive energy production and waste disposal methods, better and cost-effective combined revenue collections, and technological innovation). Analytics initiated by both the Asian Development Bank and the International Monetary Fund, shared with the Maldivian government, can contribute to increased oversight and governance of state-owned enterprises that engage in economic activities. The resulting stronger budgetary discipline will help reduce the high risk of debt bondage in coordination with IMF and World Bank initiatives and thus encourage greater investment activity towards sustainable and resilient development.

Strategic goal 2 – Strengthen the competitiveness of the economy and diversify the economic base with respect to the environment. Within this strategic objective, the Asian Development Bank will support the development of the private sector and the prerequisites for economic diversification, improving the business environment and the access of small and medium enterprises to finance, human resources, and the international business environment. The operations will focus on the policy environment and gaps to support the environment and the legal framework for private-public partnership and support potential banking projects. Future financing support for small and medium-sized enterprises will be subject to stricter control and market discipline of non-state operations. Non-state operations also help to support the economic base and develop the economic network between local communities and the economy of tourism resorts through the active involvement of the Asian Development Bank's operations department in the private sector in designing strategy and projects and identifying policy gaps. To maximize the benefits of economic diversification, it will help to improve the education system to develop graduates with skills that match the demand in the labor market. The Maldives has a significant structural trade deficit. Economic diversification would help increase the export potential of the Maldives, which is now largely based on fishery products. The Asian Development Bank will continue to facilitate regional and international trade by securing membership of the Maldives in the South Asia Subregional Economic Cooperation Program – Trade Facilitation Program. Digital solutions will be implemented in cooperation between customs and ports.

Strategic goal 3 – To improve the standard of living of island communities while ensuring environmental sustainability. As part of this strategic objective, the Asian Development Bank, in line with the Healthy Oceans Action Plan, will focus on solid waste management and energy, ensuring continuity with successful ongoing strategic sustainability plans. Investments in waste management will continue to be concentrated in the hotspot of the small island state – capital region (Great Malé region), where half of the Maldivian population lives. The Great Malé region produced 836 tons of mixed solid waste per day in 2019, with waste production expected to increase to 924 tons per day by 2022. Investments in cleaner and renewable energy will of course be implemented on all islands. The management of all operations to improve the investment climate to attract more private sector participation will be reviewed. This approach will ensure strong complementarity with the activities of other development partners. The World Bank supported solid waste management. The Asian Development Bank has directly supported and financed the transition to renewable energy, the modernization of the renewable energy distribution network, the installation of hybrid photovoltaic energy efficient diesel systems and battery storage in 160 of the 187 inhabited islands, creating the conditions for further investment in renewable energy, including from private sector parties. Future investments will focus on filling remaining capacity gaps and expanding coverage nationwide, while policy dialogue concerns the expansion of energy supply to households and private suppliers and tariff policy. To meet the growing demand for electricity, the Asian Development Bank will support the deployment of advanced technologies to ensure sustainability, such as waste-to-energy and the use of liquefied natural gas to supplement solar energy. In both cases, where the situation allows, private sector involvement will be promoted through design and infrastructure, build, and operate contracts or other arrangements. Based on the strategic plan, the feasibility of using non-state funding to accelerate the adoption of clean energy will be examined. For further long-term diversification and climate change mitigation of future knowledge operations, analyse the potential of using hydrogen to meet the energy demand of the Maldives in a clean energy transition. The Asian Development Bank will help the Maldives from an unconditional commitment to target Nationally Determined Contributions (NDCs) of 10 % reduction in greenhouse gas emissions towards the 24 % target, which was conditional on „availability of financial resources, technology transfer and capacity building“. To ensure this resilience of investments in the economic prosperity of the islands, the Asian Development Bank is preparing a climate change adaptation plan and incorporating recommended activities into infrastructure development planning. ADB will also help to develop and spread knowledge about environmental protection, especially to the most vulnerable regions where environmental disaster threatens. For a strategic plan for sustainability and resilience in adapting to climate change, it will be necessary to find effective and efficient solutions to the risks of environmental disasters through capacity building, political dialogue, and actions to protect the marine environment.

Funding within the implementation of strategic goals will be planned based on indicative available resources in the amount of 60.12 million dollars in 2020 and 68.37 million dollars for the period 2021 – 2023. The Maldives is classified in the Vulnerable Country category of the ADB Country Group and is eligible for a 100 % grant share of Asian Development Fund (ADF) allocations from 2021 based on a „high debt risk“ classification in 2020. Final country allocations for 2021, 2022 and 2023 will depend on the result of meeting the set development goals. A cost-sharing arrangement continues

to apply, with ADB financing covering up to 99 % of project costs on the total portfolio, including tax and target financing without restrictions.

ADB expects to provide annually a total of approximately US\$1.0 million from its Special Technical Assistance Fund and additional funding from other sources to build knowledge products and services for the Maldives during 2020 – 2024 through staff input, staff mentoring and country-specific assistance countries. The Maldives will be eligible for financing from ADB's relevant development funds, including its output to support public financial management and debt sustainability, gender equality, and regional cooperation (Asian Development Bank, 2020).

Conclusion

Economic modeling by ADB (2014) shows that the Maldives may be the most affected of 6 South Asian countries (including Bangladesh, Bhutan, India, Nepal, and Sri Lanka) in terms of total economic losses due to climate change — the average simulation result suggests that the economic damages may average 2.3 % of GDP in 2050, with an estimated 12.6 % of GDP by 2100. At the same time, the Maldives still faces problems related to multidimensional poverty and malnutrition. The Maldives NDC identifies the country's significant vulnerability to climate change impacts on the country's population and economic activities, especially its fisheries, tourism, agriculture, infrastructure, and health sectors. The Maldives submitted its second national notification to the UNFCCC in 2016. The country is highly vulnerable to extreme weather events, temperature rise, flooding, and sea level rise. The country is committed to increasing its adaptive capacity, reducing erosion and soil loss due to uncontrolled human settlements.

The Maldivian government has determined to achieve carbon neutrality of the economy by 2030 in connection with the adverse effect of climate change. For the small island state to be able to achieve its commitment to the environment, it will have to fairly, efficiently, and purposefully use the funds provided by foreign partners. The small island nation is heavily dependent on the import of fossil fuels, because of which it will be necessary to provide the widest possible measures for the country to succeed in transforming its energy to renewable sources. Due to the economic indebtedness of the small island state, it appears from the scientific article that the Maldives is dependent on foreign capital. On the example of the Asian Development Bank, we see that the strategic plan towards achieving sustainable and resilient development is based on the ambitious goal of moving the country forward. It will require a deep effort of the local economy as well as the local population to work together to achieve a sustainable and resilient goal.

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