
ECONOMIC AND ENVIRONMENTAL VULNERABILITIES OF THE MALDIVES AND GRADUATION FROM LDC STATUS

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Abstract. The Maldives is a small island developing state, heavily dependent on fisheries and tourism, which are major sources of foreign exchange earnings and government revenue, and which together account for about 40 percent of gross domestic product. The success of these industries depends on climatic conditions. This renders the country very vulnerable economically and environmentally. The Least Developed Country status of the Maldives is under threat because the country has experienced relative economic improvements that, ironically, have to a large extent been possible by virtue of the support accorded to the Maldives as an LDC. This chapter argues that the criteria used in assessing LDC status need to be refined so as to give more weight to economic vulnerability. The chapter also proposes that no country should be graduated until the criteria are appropriately refined, so as to avoid the risk that the country in question ends up worse-off in spite of its economic successes.

1. Introduction

The Republic of Maldives (henceforth the Maldives) consists of a chain coral atolls, 80-120 km wide and 860 km long, which lie on the Laccadive-Chagos submarine ridge, in the Indian Ocean. There are 26 natural atolls over a total land area of about 300 square kilometres with an exclusive economic zone of approximately 859,000 square kilometres.

The population of the Maldives amounted to 270,010 in 2000 (Census, 2000) inhabiting 198 of the 1190 islands scattered through the atoll system. Given a birth rate of just under three percent per annum, the population would have exceeded 300 thousand by 2004.

The atolls vary in shape from oval to pearl-shaped and they surround lagoons 40-60 metres deep. The islands themselves vary in size, from

0.5 square kilometres to around two square kilometres. Some islands are sand banks with sparse vegetation while others are elongated strips of land. Some islands move as a result of storms and are often formed or destroyed by such storms.

The Maldives faces a variety of economic and development problems that are compounded by a restricted natural resource base and rapid population growth. The prospect of sea-level rise and increased storm damage, both driven by climate change and climate variability, pose major environmental and socio-economic threats. No island of the Maldives stands more than three metres above mean sea level and over 80 percent of the islands are less than one metre high (see Abdulla, 2000; Pernetta and Sestini, 1989).

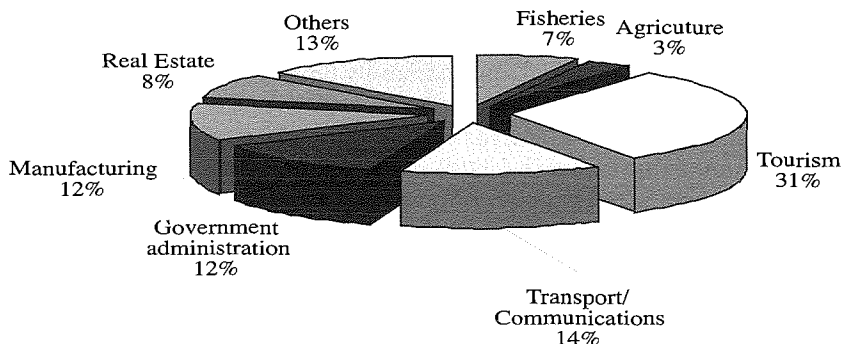
This chapter is divided into six sections. Section 2, which follows this introduction, gives an outline of the economy and the economic development policy. Section 3, deals with the reasons as to why the Maldives is environmentally and economically vulnerable. Section 4 explains the consequences that the Maldives will face if it graduates out of LDC status. Section 5 concludes the study.

2. The Economy

Like many other SIDS, development in the Maldives is constrained by the absence of land-based mineral resources and vulnerability to natural disasters and environmental hazards.

The GDP per capita of the Maldives in 2002 was US\$2,279 (Ministry of Planning and National Development, 2003). The economy is heavily dependent on fisheries and tourism (see Figure 1), which are the

Figure 1
The Composition of GDP (2002)



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major sources of foreign exchange earnings and government revenue, and which together account for about 40 percent of gross domestic product.

In terms of employment, these two sectors alone account for more than a third of total employment (2000 census). The total labour force of the country is estimated at around 50 percent of the working age population, which, coupled with the low level of educated labour, has led to a high proportion of expatriate workforce in the country. Expatriate labour has therefore played a key role in the development of the economy of the Maldives, and includes teachers, medical personnel and other professionals as well as a large number of lower-skilled workers, such as domestic helpers and construction workers.

The Government, the private sector and foreign donors have had a key role in the development process of the country. While the Government has concentrated on providing basic socio-economic services, the private sector has made a major contribution to the development of tourism, distribution, trade, transport and fisheries among other activities. External donor assistance has also been an important element in the development process. For example, in recent years, about 70 percent of total development expenditure was financed by external resources.

Economic Development Policy

The most recent development plan of the Maldives (Ministry of Planning and National Development, 2000) sets out three principal objectives for the country's social and economic development, namely:

- to improve the quality and living standards of the people;
- to balance the population density and the economic and social progress between the capital island Malé and the atolls;
- to attain greater self-reliance for future growth.

Among the strategies for improvement of living standards are better health services, higher education levels and higher national and per capita income. The government is aiming to attain greater economic independence by diversifying the productive base of the country and designing further cost-effective methods for building up the strength and volume of indigenous human and natural resources.

A development plan has been drawn, outlining the strategies to attain these objectives in the form of rationalising and diversifying and strengthening the country's export products and markets. The plan

also provides for improvements in financial resources by mobilising savings required for accelerated economic and social progress.

The plan further sets out certain priorities for development such as increasing the GDP and foreign exchange earnings, reducing infant, child and maternal mortality, achieving uniformity of integrated atoll development and balancing the economic and social progress between Male' (the main island) and the atolls. The plan also aims to relieve the population pressures in Malé and to protect the environment.

The Maldives has in general maintained liberal and pragmatic economic policies and encouraged growth in sectors such as fisheries and tourism. Strategies are being implemented to spread the benefits of such growth to the outer atolls by providing an essential social infrastructure.

Fisheries

Fisheries play a significant role in the economy and society of the Maldives. In 1985, the tourism industry surpassed that of fisheries, in terms of its contribution to GDP. However fisheries is a major contributor to exports and dominates the economy in terms of employment of the local labour force, employing over 20 percent. Most of the employment occurs in the outlying islands, rendering fisheries the primary source of income to the islands. Though the contribution of fisheries to GDP declined from about 11 percent in 1997 to about seven percent in 2002, the fisheries sector's gross earnings have been increased over the years.

The Maldives' fisheries are very dependent on tuna, rendering the industry fragile, especially due to the volatility of tuna prices in the international market. Export of tuna constituted about 77 percent of Maldives total marine exports by value in 2000. In recent years however, there was a tendency towards diversification into new fisheries and new products. One of the fastest expanding segments of the fisheries sector is the local yellowfin tuna fishery. While the Government-owned Maldives Industrial Fisheries Company (MIFCO) mainly exports yellowfin to European markets, the private sector mainly caters for the Japanese and the United States' market. Further measures are being undertaken to diversify the fisheries industry and add value to its products.

During 2000, the government initiated a programme to liberalise the export of frozen and canned skipjack tuna. The tuna liberalisation programme is expected to have a favourable impact on the fishing

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industry. More private sector involvement in the fisheries sector is expected as a result of this policy shift.

The Maldives has an existing pool of fishermen skilled in eco-friendly fishing methods such as pole and line fishing. The Maldivian *masdhoani* have been shown to be one of the most economically efficient fishing units. Although the fisheries industry is expanding through the mechanisation of the traditional fishing fleet, fuel distribution and fish collection systems, the fishing practice remained basically traditional.

Tourism

Since 1972, the tourism sector has seen rapid progress. Tourism planning commenced in the 1980s and two ten-year master plans have been formulated, with implementation of the first phase of the second master plan being completed. The number of tourist arrivals doubled between 1992 and 2001, increasing from 235,852 in 1992 to 460,984 in 2001. Bed capacity in Maldives expanded accordingly, from 8,645 in 1992 to more than 17,006 in 2001. The tourism sector is one of the largest employers in the country. The direct employment in the tourist resorts for 2000 was 7,651 locals and 7,268 foreigners.

Tourism generates substantial economic benefits for the Maldives, contributing about 31 percent of GDP in 2002. The industry however is very fragile and volatile. This was clearly evident following the September 11 terrorist attacks on New York and Washington, which adversely affected the Maldives' tourism industry.

In the last three years, the European market has been the main supply of tourists, accounting for nearly 79 percent of the tourists in 2001. Many countries are getting an increasing number of Asian tourists, but this is not the case with the Maldives. Though there was an increase in the absolute number of Asian visitors, their percentage out of the total number of tourists has tended to decline.

In recent years, about a quarter of the resorts in the Maldives were either totally or partially foreign owned, while about half of the resorts were managed by foreigners. Foreigners also fill many of the high skilled positions such as managers, chefs and diving specialists.

The Maldives has a high propensity to import, and international tourist expenditure gives rise to substantial leakages of foreign exchange. In addition, there is an outflow of remittances by the large number of expatriate workers who work in the resorts.

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The economic linkages between tourism and other economic sectors are weak because of the limitation of natural resources, an inadequately developed manufacturing sector, unavailability of local labour and lack of capital. The strongest linkage with regard to tourism is with the construction and the financial services sector. Strengthening further linkages is important to enhance tourism earnings for the growth and development of the economy as a whole.

Tourism tends to over-rely on marine-based activities such as snorkeling and diving. This makes it very vulnerable to environmental changes, to which, as already explained, Maldives is very exposed.

Agriculture

Despite physical limitations such as lack of cultivable land, unfavourable climatic conditions and poor soil, a variety of food and cash crops are grown. Crops such as coconut, breadfruit, mango, papaya, lime, banana, pumpkin, watermelon, taro and chili have considerable economic value. The main market for agricultural produce is Malé and the tourist resorts.

However, large quantities of vegetables, fruits, meat and poultry products are imported, draining valuable foreign exchange. To reduce imports in this regard, the government has taken measures to encourage and improve agriculture in the country. Such measures include coconut rehabilitation, pest control, and provision of extension services, building new nurseries and encouraging maximum utilisation of uninhabited islands.

Industry

The traditional activities of the manufacturing sector of the Maldives consist of boat building, mat-weaving, rope-making, blacksmith activities, handicraft and other cottage industries. This sector employs a considerable number of women and accounts for about a quarter of the work force. The main activities in the modern sector include fish canning, manufacturing of garments, production of PVC pipes, construction of fibreglass boats, production of cleaning fluids, and bottling of aerated water. Other enterprises such as boat yards, transport services, electrical and mechanical workshops, carpentry and brick-making units also make a significant contribution to the sector.

Although it is recognised that the development of the industrial sector is important to meet the growing demands of the economy, the size of

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the domestic market, shortage of skilled and semi-skilled manpower, non-availability of raw materials and difficulties of transportation, pose major constraints of industrial development in the country. It is expected that with the development of transport, communication and other infrastructure facilities, the industrial base of the country will be broadened. Foreign investment is highly encouraged for initiating mutually beneficial investment projects.

3. The Vulnerability of the Maldives

There is no doubt that the Maldives has achieved considerable progress over the last two decades, leading to economic and social development. However, the Maldives remains a small island developing state with inherent vulnerabilities and structural constraints, place major obstacles in its development path. The Commonwealth Vulnerability Index (Atkins et al., 2000) ranks Maldives as one of the most economically vulnerable countries in the world. It is against this reality that Maldives must consider its development options and strategies in the 21st century.

The existing combination of economic and environmental conditions in the Maldives, render the pursuit of sustainable development difficult. As already explained, the weakness of the Maldivian economy is aggravated by the heavy dependence on two main industries, namely fisheries and tourism, which are the major sources of foreign exchange earnings and government revenue. In addition, the cost of production tends to be relatively high due to geographic factors and limitation of exploiting scale economies, rendering the Maldives products non-competitive in international markets.

The forces of globalisation pose further challenges to the Maldives. The liberalisation of trade place many small island developing states in the same arena as larger developed economies, thereby leading to an unequal playing field in international trade. These challenges must be addressed adequately and the associated constraints must be defined, analysed and understood in order to device appropriate responses to overcome or lessen their negative impact on the society of the Maldives.

The National Vulnerability and Adaptation Assessment team for the first National Communication of the Maldives to the UNFCCC identified seven main areas of Vulnerability (MHAHE, 2001), namely:

- land loss and beach erosion;

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- infrastructural damage;
- damage to coral reefs;
- impact on the economy;
- food security;
- water resources; and
- human health.

Land Loss and Beach Erosion

Over 80 percent of the land area in the Maldives is less than one metre above mean sea level (see Manik, 1990). Being so low-lying, the islands of the Maldives are very vulnerable to inundation and beach erosion. Presently, 50 percent of all inhabited islands and 45 percent of tourist resorts face varying degree of beach erosion. Climate change and projected sea level rise would aggravate this problem. It is expected that a one metre rise in sea level would practically cause the loss of the entire nation.

Infrastructural Damage

All the human settlement, industry and vital infrastructures in the Maldives lie very close to the shoreline. Therefore, the projected rise in sea level poses a grave threat to the existence of these structures. Malé International Airport on Hulhule island is particularly vulnerable and needs to be given priority, as this is the only gateway to the Maldives. The highest point of the runway is 1.2 metres above mean sea level and is therefore extremely vulnerable to climate change and sea-level rise. Other important vulnerable infrastructures include the investments on the tourist resorts.

The water level record as measured at the Hulule tide gauge since December 1989 indicates that the mean level has increased from approximately 187 centimetres to 191 centimetres. However, the water level record is currently too short to allow long-term trends to be identified with a sufficient degree of confidence. Despite limitations in extrapolating long-term changes in sea level from an 11-year record, the data show significant short-term variability. At the annual timescale there is a strong seasonal fluctuation of between five and ten centimetres. There are also longer and larger inter-annual fluctuations in water level of +/- 0.3 metres.

Damage to Coral Reefs

The low lying islands of the Maldives are surrounded by coral reefs. These reefs not only provide protection to the islands, but also

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contribute to the success of the main economic activities, namely tourism and fisheries. Studies show that the corals are very sensitive to changes in sea surface temperature. Sea surface temperature ranges between 27°C to 29°C, and an abnormal sea surface temperature recorded (32°C) between February and March 1998 caused widespread bleaching in the coral reefs of the Maldives. If the observed rising trend of global temperatures continues, there would be a threat to the survival of coral reefs in the Maldives and of many other low-lying small island nations.

Impact on the Economy

The threats posed by climate change and climate variability to the beaches, reefs and infrastructure on resort islands renders the tourism industry very vulnerable. This greatly affects the economy as tourism contributes about a third to the GDP of the country.

Coral bleaching, already referred to above, affected the tourism sector especially with regard to diving and snorkeling activities. Cancellation of tourist arrivals in the event of such incidents have occurred in the past and as predicted by IPCC are likely to happen more frequently. Given the relatively large contribution of tourism to GDP, such events tend to have a high impact on the economy.

Fisheries in the Maldives is another economic activity which is affected by climate change and climate variability. Although no conclusive links have been established between tuna fishery and climate change, it is probable that seasonal monsoon changes do in fact affect tuna catches in the Maldives. In El Niño years catches of certain types of tuna tend to increase, while those of others tend to decrease, and the reverse catch pattern is seen during La Niña periods.

Food Security

Due to poor soil quality in the Maldives, agriculture is a relatively small sector, contributing just about three percent to GDP. This creates a high dependency on imported food, except for tuna and coconut.

The imported food items are brought first to the capital and later distributed to other islands by sea transport. The distribution of food to these islands is very vulnerable to changes in weather. Extreme storm events have led to food scarcity in certain islands. These events sometimes last for a period of 15 days. With climate change, it is expected that more storm events would occur, thereby threatening food security in this island nation.

Water Resources

The population of the Maldives mainly depends on groundwater and rainwater as a source of freshwater. Both of these sources of water are vulnerable to climate change and sea-level rise. With the islands of the Maldives being so low-lying, the rise in sea levels would force saltwater intrusion into the freshwater lens. The ground water is replenished by a burst of rain and although there is a predicted increase in the amount of rainfall to the region, the spatial and temporal changes in the rainfall pattern is uncertain. For these reasons, climate change and climate variability pose a threat to water availability.

Human Health

The affects of climate change on the health sector need to be studied further. Notable changes associated with the climate have been noted for dengue and dengue haemorrhagic fever in the Maldives. Although malaria has been eradicated from the country, with climate change there might be the threat of Malaria outbreaks occurring in the country. Poor sanitation combined with the possibility of increased rainfall would cause more outbreaks of water-borne diseases such as diarrhoea.

Access to health services and facilities during severe weather is a major concern for the rural island communities of the Maldives. Other major health concerns arising from climate change relate to heat stresses and urban air quality. Based on the IPCC regional climate change scenarios, it is estimated that air temperatures in the region may rise by 2-3.8°C by the year 2100.

4. Consequences of Graduation from LDC Status

The United Nations Committee for Development Planning (CDP) in 2000, recommended the graduation of the Maldives from the Least Developed Country (LDC) status (see *Encontre*, chapter 4 this volume). One reason for this is the relatively high GDP per capita, which meets the graduation criteria set by it.

There is concern by a number of small island developing states (SIDS), which are also LDCs, that the criteria used by the CDP to determine LDC status do not adequately take into account the special conditions of SIDS, particularly those arising from economic and environmental vulnerability. Although an Economic Vulnerability Index is used by the CDP as a criterion, the other

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criteria, namely, income per capita and human capital criteria may mask the high degree of vulnerability of SIDS.

The Maldives has achieved significant material progress over the last two decades or so, due to, amongst other things, tourism revenue. However, like several other SIDS, development in Maldives is constrained by the limited natural resources endowments and vulnerability to natural disasters and environmental hazards. There is no doubt that the Maldives is one the most economic and environmentally vulnerable countries on the face of the entire planet.

The concessions accorded to countries classified as LDCs to an extent shield these countries from the disadvantages of an uneven playing field in international trade. For example, if the Maldives graduates out of its LDC status in the next five years, the country will lose its duty-free access to the EU market for tuna, thereby making its main fish product, canned tuna, non-competitive in its major export market. As noted, the fisheries sector contribute seven percent of the country's GDP.

If the Maldives loses access to markets, there would also be a number of indirect effects, including loss of attraction for foreign investment, as potential investors would see no point in putting their money in a risky venture. Another indirect effect relates to loss of experts and professionals who would migrate to other parts of the world, growing levels of under-employment, and weakness in the development of the private sector.

The Maldivian economy is very dependent on tariffs on imports to generate revenue for social investment. If the Maldives graduates out of LDC status, the country's ability to retain relative control of its tariff levels to suit its unique circumstances—which it can currently do as an LDC member of the WTO—would be under serious threat. As a result the resources for investing in social welfare services, to the extent necessary to meet international objectives, such as the Millennium Development Goals (MDGs), will be greatly reduced.

It is noteworthy that at present the only LDCs that are being considered for graduation are SIDS. It is worrying that there is, so far, no agreed policy or process on the part of development partners, for a “smooth transition” to a path of sustainability for countries graduating from LDC status. This is despite significant efforts by the UN to encourage smooth transition policies. Premature graduation of the Maldives, Cape Verde and other similar small island states (see *Encontre*, chapter 4, this volume) will surely

negatively affect the quality of life of their populations, given the structural economic weaknesses of these states and their very high exposure to external shocks.

For these reasons, graduation from LDC status should not be effected unless the country concerned has made structural socio-economic progress, so as to avoid the “GNP per capita trap” whereby an increase in GNP may make a country worse-off if this leads to graduation out of the LDC status. Any meaningful interpretation of the socio-economic performance of a country nearing graduation thresholds should give adequate weight to the underlying economic and environmental vulnerability of the country concerned.

For this reason, the criteria used by the CDP to establish LDC status need to be refined so as to give more weight to economic vulnerability. In addition, it is important that the CDP adopts a graduation policy based on the need for a smooth transition, taking into account the costs of being excluded from LDC status.

In the absence of such considerations, the Maldives and other SIDS will face an uncertain future, with very little possibility of maintaining the social gains achieved so far.

5. Conclusion

The economic base of the Maldives is very narrow and undiversified. The heavy dependence on two main industries, namely fisheries and tourism, for the country’s fiscal revenues, foreign exchange earnings, and employment, render the Maldives very economically vulnerable. Both these industries face stiff international competition, and are dependent on climatic factors. Fisheries products are, in addition, subject to external price fluctuations, exposing the economy to periodic contraction in earnings, as was the case in the year 2000.

The tourist industry is very fragile, and even a negative media report could have major adverse impacts on the country’s tourism performance. The Maldives is often sold to tourists as a pristine and a beautiful destination, but the beaches and the coral reefs are under threat from sea-level rise and coral bleaching. There is no doubt that the Maldives has one of the most vulnerable economies in the world.

The LDC status of the Maldives is under threat because the country has experienced relative economic improvements that, ironically, have to a large extent been possible by virtue of the support accorded to

the Maldives as an LDC. This chapter has argued that the criteria used in assessing LDC status need to be refined so as to give more weight to economic vulnerability. The chapter also proposed that no country should be graduated until the criteria are appropriately refined, so as to avoid the risk that the country ends up worse-off in spite of its economic successes.

Although the Maldives has registered economic growth, its economy is still very fragile. Indeed it will find it very difficult to maintain the level of development it has attained in recent decades if it is thrust into the international arena, without a sufficiently long and well-planned transition phase.

References

- Abdulla, A. (2000). *Adaptation to Impacts of Climate Change and Sea Level Rise for Small Island Developing States with Particular Reference to the Maldives*. MSc Dissertation, Department of Economics and International Development, University of Bath, UK.
- Atkins, J., Mazzi, S., and Easter, C. (2000). "Commonwealth Vulnerability Index for Developing Countries: The Position of Small States." *Economic Paper*, No. 40. London: Commonwealth Secretariat, London.
- Manik, H.A. (1990). *Changes in the Topography of the Maldives*. Forum of Writers on Environment (Maldives), Malé: Novelty Press.
- Ministry of Home Affairs, Housing and Environment (1999). *Second National Environment Action Plan*. Malé: Maldives.
- Ministry of Home Affairs, Housing and Environment (2001). *First National Communication of the Republic of Maldives to UNFCCC*. Malé: Maldives.
- Ministry of Planning and National Development (2000). *Sixth National Plan*. Malé: Maldives.
- Ministry of Planning and National Development (2003). *Statistical Year Book*, Malé: Maldives.
- Pernetta, J.C. and Sestini, G. (1989). "The Maldives and Expected Climate Changes." *UNEP Regional Seas Reports and Studies*, Vol. 104. Nairobi: UNEP.