

The Economic Value of Marine and Coastal Biodiversity to the Maldives economy

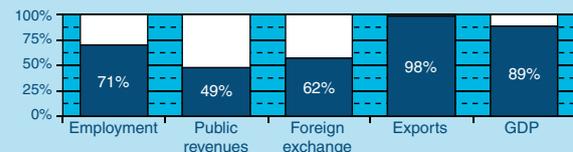


Over recent years coastal zones have become the focus of much attention at the global level. Their rich resources mean that they have long been important centres of trade and commerce. A large proportion of the world's population also live on the coast. Given the importance of coastal and marine areas in both conservation and development terms, there is increasing concern about the effects of environmental degradation, climate change and other human impacts on these precious but threatened ecosystems.

Nowhere are these links more evident than in the Maldives, a nation of small islands which depends entirely on marine and coastal resources, and contains some of the world's richest marine and coastal biodiversity. There are few other places where an entire nation's wellbeing is so closely linked to marine and coastal ecosystems. For the Maldives, any threat to biodiversity means adverse impacts on current economic wellbeing and future development. Clearly then, there is a strong imperative to recognise and demonstrate that there is an economic – in addition to a biological and ecological – rationale to biodiversity conservation.

Recognising the critical importance of the natural resource base, the Government of the Maldives has long pursued a strategy of marine and coastal conservation. The Atoll Ecosystem Conservation (AEC) project, implemented by the Ministry of Housing, Transport and Environment with the support of GEF and UNDP, is working for the "conservation and sustainable use of globally significant biological diversity in the Maldives' Baa Atoll". Activities to address the links between the economy and biodiversity conservation form an important part of the project. This briefing paper summarises the findings of a study recently carried out by the AEC project, which looked at the economic value of marine and coastal biodiversity in the Maldives. Other briefing papers have also been produced dealing with the topics of the value of biodiversity in Baa Atoll, financing biodiversity conservation, and economic incentives for biodiversity.

What biodiversity is worth to the National economy each year – direct values



Biodiversity-based sectors contribute:

- 71% of national employment (78,500 jobs)
- 49% of public revenue (Rf 2.5 billion)
- 62% of foreign exchange (US\$ 435 million)
- 98% of exports (Rf 1.7 billion)
- 89% of GDP (Rf 135 billion)

- Tourism employs 64,000 people or 58% of the workforce
- Tourism contributes public revenue of Rf 2.5 billion or 34% of all government receipts
- Tourism brings in US\$ 434 million in convertible currency or 70% of all foreign exchange earnings
- Tourism accounts for Rf 1,920 million in capital investments or 29% of all investment
- Tourism generates direct and indirect consumption and spending of Rf 9,413 million
- The current upstream contribution of tourism to the economy is US\$ 764 million or 67% of GDP
- Fisheries yield processed products worth Rf 960 million in company sales
- Fisheries add Rf 12 million to the public budget
- Fisheries create 14,500 jobs with wages worth Rf 510 million
- Fisheries produce export earnings worth Rf 1.7 billion or 99% of all exports

The problem of under-valuation

Biodiversity degradation and loss is often seen as being a solely biological or ecological problem. Far from this, it is also a critical problem in economic and development terms, due to the extremely high value of biodiversity. This is especially the case in a country such as the Maldives, where most levels and sectors of the economy depend intimately on biodiversity goods and services.

One of the most serious implications of under-valuing biodiversity is that it is not accorded a sufficient priority in national policies, planning and budgets as an economically productive sector. Current investment in biodiversity does not adequately reflect its immense value to the national economy and future development. As a result this vital asset, the "natural capital" of the Maldives, is being eroded with declines of several harvested marine species (sharks, lobsters, sea cucumbers, some reef fish), pollution and damage to reefs from construction.

The direct value of marine and coastal biodiversity to the national economy

The AEC study found that marine and coastal biodiversity plays an immensely important role in the national economy. The economic importance of biodiversity does not always show up in official statistics, because it remains buried in figures of output and income in other sectors.

In order to highlight these “hidden biodiversity values”, the AEC study analysed two of the economic sectors in the Maldives that depend most on coastal and marine biodiversity: fisheries and tourism. This involved tracing through all of the values that biodiversity provides to the economy via these sectors, such as income, employment, government earnings, foreign exchange and exports.

It is clear that the national economy could not prosper and grow without marine and coastal ecosystems and biodiversity. Fisheries and tourism directly and indirectly generate just under three quarters of national employment, half of public revenues, nearly two thirds of foreign exchange earnings, almost all of exports, and close to ninety percent of GDP. The results underline the fact that the vast majority of production, consumption, income, employment and trade in the Maldives relies directly on biodiversity. Together these two biodiversity-based sectors form the mainstays of the national economy, and are the main engines for growth and development.

The indirect value of ecosystem protection to human settlement and production

As well as the physical products and raw materials that underpin income and employment, marine and coastal ecosystems generate a number of life support services that are extremely important to the functioning of the Maldives economy, and the wellbeing of the human population. The tourism and fisheries sectors, for example, rely not just on the commodities that biological resources and ecosystems provide, but also on the mangroves, coral reefs, seagrass beds and other natural ecosystems which provide the habitat and breeding grounds for fish and other species, and maintain the productivity of coastlines and oceans.

Another set of marine and coastal ecosystem services which are incredibly valuable are those which help the government and people of the Maldives to avoid economic losses, damages and costs. In particular, coral reefs, mangroves and coastal vegetation help to protect the islands’ shorelines and settlements, and act as physical buffers against the forces of storms, waves and tidal surges. The critical importance (and high value) of these ecosystem services was made only too apparent during the 2004 Tsunami, and is becoming an ever-growing concern as the impacts of climate change threaten the Maldives, and as natural disasters increase in frequency and severity.

The AEC study looked at the value of the physical protection services which are provided by coastal and marine ecosystems in the Maldives. It found that the total costs of constructing seawalls, breakwaters and other structures to replace the barriers currently provided by coral reefs would be between Rf 20 billion and Rf 34 billion. The costs of the damages that would be caused to towns, villages, hotels, and other infrastructure and industries, should the physical protection afforded by coral reefs be degraded or lost would be even higher than this.

What biodiversity is worth to the National economy each year – indirect values

For the 195 inhabited islands of the Maldives, the cost of replacing coral reef shoreline protection services with man-made infrastructure ranges between Rf 20 billion and Rf 34 billion.

How Maldivians and overseas tourists value marine and coastal biodiversity

In addition to the values which are reflected in the national economy and through costs and damages avoided, humans value the Maldives’ marine and coastal biodiversity and ecosystems for a number of other important reasons. The material benefits gained from biodiversity and its provisioning, regulating and supporting services is one reason for this value, but other factors such as enjoyment of the beauty of these natural ecosystems, interest in the unique and rare species they contain, appreciation of their cultural, traditional and iconic significance, and wishes to ensure that coastal and marine biodiversity remains for the benefit of future generations, all also contribute to these human values.

The AEC project conducted and reviewed surveys of the way in which Maldivians and overseas tourists value marine and coastal biodiversity. Interviews and questionnaires were administered in Male’ and Baa Atoll to collect information about how people perceive these values. They found that more than three quarters of tourists and residents of Male’ and over 90% of the inhabitants of Baa Atoll considered marine and coastal biodiversity to hold a personal value to them, reflected in their willingness to contribute funds towards conservation. Survey findings indicate that these economic values total come to Rf 6 million a year for Maldivian residents, and just under Rf 230 million a year for overseas tourists.

How people value biodiversity – direct, indirect and existence values

More than three quarters of overseas tourists visiting Baa Atoll express the value they place on marine and coastal biodiversity through a willingness to pay more than US\$30 per visit to support conservation.

Around 75% of the residents of Male’ express the value they place on marine and coastal biodiversity through a willingness to pay more than Rf 120 a year to support conservation.

More than 90% of the residents of Baa Atoll express the value they place on marine and coastal biodiversity through a willingness to pay more than Rf 120 a year to support conservation, as well as providing in-kind support.

If these figures are extrapolated across all Maldivians and overseas tourists, they come to a total willingness to pay for biodiversity conservation of almost Rf 235 million a year.

What are the ways forward?

This brief has made it clear that there is a strong economic rationale to conserving marine and coastal biodiversity: in the interests of current and future national economic growth and development in the Maldives. Biodiversity comprises a valuable national asset, which if managed and used sustainably, will continue to generate these important economic benefits and to underpin the economy.

In the light of these findings, key recommendations include:

- Biodiversity should be accorded a high priority in economic policies and planning, in line with its immense value to national development.
- Awareness of the economic importance of biodiversity conservation should be raised in all sectors and among the general public.
- A national policy for atoll ecosystem conservation is needed that recognises the importance of safeguarding biodiversity as a major asset of the Maldives, underpinning economic growth and social development.
- Existing sectoral laws, regulations and incentives should be aligned with this national policy.
- Appropriate institutional and financial arrangements should be provided to safeguard and sustainably manage the biodiversity of atoll ecosystems.

Atoll Ecosystem Conservation Project

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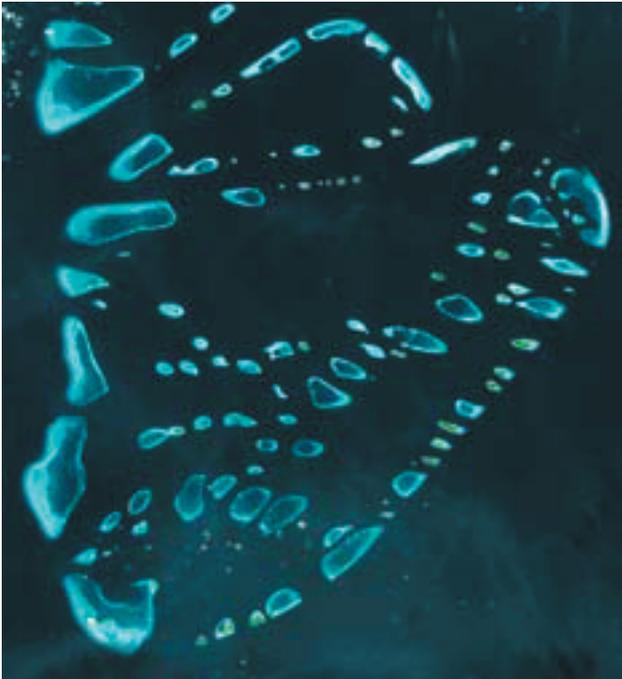
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The Economic Value of Marine and Coastal Biodiversity to Baa Atoll economy



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Baa Atoll's biodiversity

The Maldives contains by far the largest group of coral reefs in the Indian Ocean, as well as extensive shallow and deep lagoons, sandy beaches, and mangrove and seagrass areas. Baa Atoll (and its 75 component islands) has a particularly distinctive biodiversity. It features certain species that have not yet been recorded elsewhere in the country, as well as those which are found nowhere else in the world. Many of the species found on Baa Atoll are of international conservation significance, and some are globally rare or threatened.

In particular, Baa Atoll is an important nesting area for green and hawksbill turtles and also hosts significant concentrations of whale sharks and manta rays. The island of Olhugiri provides one of only two roosting sites in the country for the frigate bird. Baa Atoll also has one of the largest areas of mangroves in the central part of the Maldivian atoll chain. One Marine Protected Area is located in Baa Atoll, Dhigali Haa (established 1999). This is a rich coral reef area where grey reef sharks, white tipped reef sharks, barracudas, jacks and turtles are frequently sighted. It is situated in close proximity to all the resorts in Baa Atoll and hence is easily accessible to resort dive centres.

Baa Atoll's economy

The resident population of Baa Atoll is currently estimated at 12,170 people or 2,154 households, spread over 13 inhabited islands. According to the Ministry of Atolls Development this population is engaged primarily in fishing, supplemented by farming, thatch weaving, masonry, carpentry and various tourism related activities.

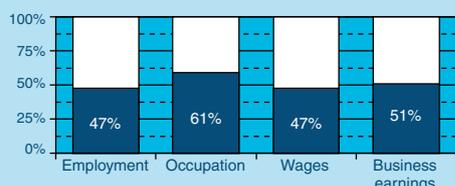
There is a fleet of 127 mechanised masdhoni and vadhu dhoni in Baa Atoll, making more than 12,500 fishing trips a year. Fishing activities yield a wide range of products, including grouper, reef fish, sharks, tuna, bait fish, lobster, octopus and sea cucumbers. While a small portion of this catch is retained for home consumption, much of it is sold locally and in Male', to

nearby resorts, and to commercial companies such as MIFCO for eventual export to other parts of the world.

Many other non-fish biological resources are also harvested and used by Baa Atoll households at home and to sell. These include coral and sand mining, firewood, turtles and turtle eggs, seabirds, shells, medicinal plants, wood for boat-building, wood for the production of lacquer ware, palm fronds and materials for other handicrafts.

Baa Atoll is also a popular destination for international visitors, generating substantial revenue from tourism. According to the Ministry of Tourism and Civil Aviation, almost 45,000 tourists visited Baa Atoll last year, spending around 350,000 nights there. At present there are six resorts in Baa Atoll, each with its own dive centre – Reethi Beach Resort, Sonevafushi Resort, Club Valtur, Royal Island, Four Seasons Landaa Giraavaru and Coco Palm. Two more resorts are currently under construction.

The contribution of biodiversity to economic and development indicators in Baa Atoll

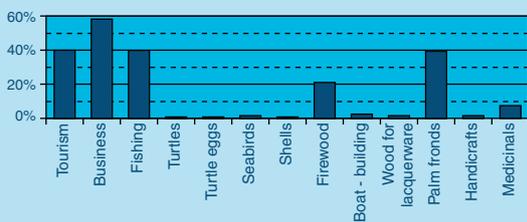


For households, biodiversity-based activities contribute:

- employment worth Rf 78 million
- business earnings worth Rf 80 million
- fresh fish worth Rf 1.8 billion
- other biological resources worth Rf 19 million
- 47% of employment
- 47% of wages
- 51% of business earnings
- and occupy 61% of the population

- 40% of households have members employed in the tourism sector, earning Rf 68 million
- 60% are engaged in biodiversity-based business, which contributes 51% of all business earnings and generates income of Rf 80 million
- More than 40% engage in fishing with a catch worth Rf 1.8 billion
- 55% harvest other biological resources together worth well over Rf 19 million
- Six tourist resorts entertain 45,000 tourists a year, selling bednights worth around US\$ 160 million
- Six dive centres generate income of around US\$ 2.3 million

Percentage of Baa Atoll households participating in biodiversity-based activities



What biodiversity is worth to the Baa Atoll Economy

As is the case in most other parts of the Maldives, the economy of Baa Atoll and its component islands is highly dependent on marine and coastal biodiversity, through employment and business based on fisheries and tourism, and other activities involving the harvesting and processing of biological resources.

In 2008 the AEC project carried out a series of surveys among households, resorts and tourists in Baa Atoll. These aimed to gather information about the value of biodiversity for local livelihoods and the private sector. They underlined the massive economic importance of biological resources and ecosystems to the Baa Atoll economy, as summarised in the box below.

The surveys found that marine and coastal biodiversity forms the basis for almost half of employment, occupies more than 60% of the population, and generates around a half of wages and business earnings. Marine and coastal tourism, meanwhile, is an important source of income and foreign exchange earnings, generating gross income in excess of US\$ 160 million a year.

Conserving biodiversity: sustaining Baa Atoll's economy and development

Baa Atoll's rich biological and ecological resources are of immense economic value. They produce a flow of goods and services, which in turn generate economic benefits for the government, businesses and households in Baa Atoll, as well as for the national economy. As well as providing significant values for the Baa Atoll's economy directly, biodiversity-based activities (and therefore the biodiversity and ecosystems upon which they depend) have a substantial multiplier effect.

Tourism, for example, supports a range of businesses making handicrafts, selling fish, and running island tours, diving and snorkelling operations. The fisheries sector is associated with processing, canning, drying, fish meal and fish oil production industries, as well as with boat building and maintenance. The wages earned by those working in fisheries and tourism, and the earnings from businesses which are based on biological resources, stimulate consumption and spending across the Atoll.

Conservation of this important biodiversity is obviously a priority, from an economic and development point of view as well as for biological and ecological goals. If managed sustainably, biodiversity will continue to provide these economically valuable services to Baa Atoll. In contrast, if it is degraded, over-exploited or irreversibly converted, such economic benefits will decline and be lost, and will not be available to sustain growth in the future.

What are the ways forward?

This brief has highlighted the critical role of marine and coastal biodiversity in Baa Atoll's economy and livelihoods, and presented estimates of the monetary value of these important goods and services. Although the study has looked in detail only at one location in the Maldives, this situation and these findings would equally apply to other islands and Atolls across the nation. It is clear that biodiversity conservation is therefore a key component of Atoll development strategies. Adequate investment in conservation will be key to future growth and to the wellbeing of Atoll populations.

In the light of these findings, key recommendations include:

- Awareness of the economic importance of biodiversity conservation should be raised in all sectors and among the general public of Baa Atoll.
- An effective system for safeguarding and sustainably managing the biodiversity of Baa Atoll should be established, with strong institutional arrangements and sustainable financing.
- The findings of this study for Baa Atoll, and the work of the AEC project, should be rolled-out across the other Maldivian atolls.

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Financing Biodiversity Conservation in the Maldives

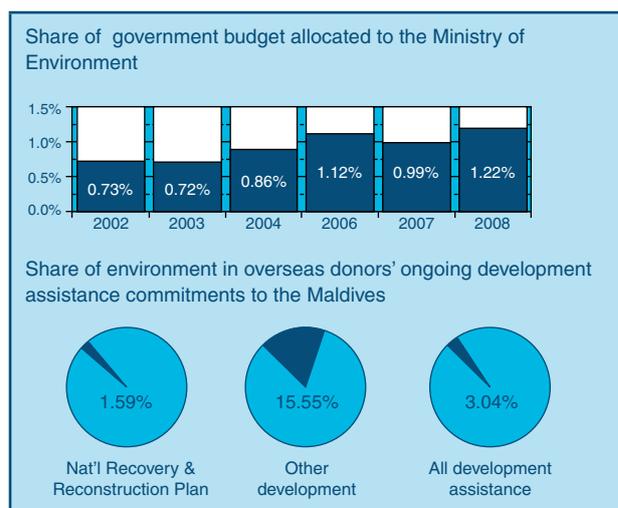


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Covering the costs of marine and coastal biodiversity conservation

Conserving biodiversity is not cost-free: it gives rise to both direct and indirect (opportunity) costs.

Direct costs include expenditures on equipment, infrastructure, salaries and running costs. They are incurred mainly to the government agencies who are responsible for environmental conservation and Protected Area management in the Maldives, such as the Ministry of Housing, Transport and Environment and the Ministry of Fisheries and Agriculture.

Opportunity costs include all the economic activities and possibilities that are diminished or foregone by choosing to put a particular area of land or sea under conservation. They are incurred mainly to the people who use and manage marine and coastal resources in the Maldives: island communities, industries and the private sector.

All of these conservation costs need to be funded or offset in some way. If they are not, marine and coastal biodiversity is unlikely to be conserved. Those responsible for conservation will not be financially willing, or able, to do so. Yet finding sufficient financial resources to fund biodiversity conservation is not an easy matter, especially when there are many other pressing development needs and urgent priorities for spending.

The current status of environmental funding in the Maldives

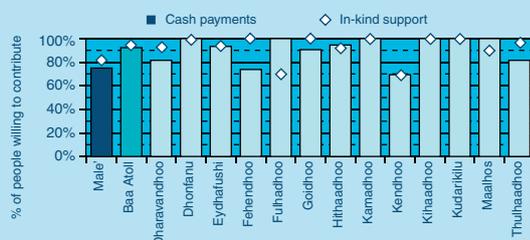
The Government of the Maldives faces a shortage of funding for marine and coastal biodiversity conservation. The AEC study reviewed funding flows to environmental conservation, and found that it has accounted for around 1% or less of total government spending over the last six years. Just 3% of current ongoing donor commitments to the Maldives are used for the environment and natural resources conservation.

Unfortunately, these financial resources are simply not enough. The government agencies responsible for the environment state that they face persistent shortfalls in budgets. They find themselves unable to carry out activities of the types and to the levels which they deem necessary for effective biodiversity conservation and environmental law enforcement. Conservation managers have low budgets, at both the central level and for on-the-ground activities.

In addition to insufficient budget allocations, there also exist a number of other financial constraints to biodiversity conservation in the Maldives. Although biodiversity has an immense value, and generates substantial public revenues, these are mainly collected by other line ministries (such as fisheries, tourism or the treasury). There is very limited retention of revenues by conservation agencies.

Meanwhile, it is also very difficult to cover the opportunity costs of conservation. The industries and island communities who use and manage the biodiversity around them often face a situation where they can generate higher financial returns from damaging or over-exploiting biodiversity than from using it sustainably. When people perceive there to be little personal profit or gain from conservation, it is difficult to ensure that that biodiversity is used and managed sustainably.

Maldivians' willingness to contribute to marine and coastal biodiversity conservation



Both Maldivians and foreign tourists are willing to donate to biodiversity conservation in the Maldives:

- 74% of residents on Male' and 91% on Baa Atoll are willing to donate between Rf 120-130 each year.
 - 84% of residents on Male' and 93% on Baa Atoll are also willing to contribute their time.
 - 85% of foreign tourists visiting Baa Atoll are willing to contribute \$35 to the conservation of Dhigali Haa MPA.
- If the rest of the Maldivian population and foreign tourists were willing to make donations at a similar level, this would generate Rf 234 million a year.

Additional opportunities for raising funds for biodiversity conservation

It is clear that additional financing mechanisms need to be identified that will increase the amount of funding for marine and coastal biodiversity, for all the groups who bear the costs of conserving it.

The AEC project's work has shown that donations from Maldivians and tourists could provide substantial additional

financial resources for conservation. Surveys among Maldivians resident in Male' and Baa Atoll found that they were willing to donate funds to biodiversity conservation, potentially as much as Rf 234 million a year. This is more than two and a half times as much as the government budget currently being allocated to all environmental protection activities in the Maldives

Looking to the future: sustainable financing for biodiversity in the Maldives

There are also other opportunities for raising more funds for biodiversity conservation in the Maldives – including several mechanisms which are commonly used to fund marine conservation in other countries. Where public revenues are already being collected for biodiversity-based activities (for example in the fisheries and tourism sectors), there is a strong case that at least a part of these funds should be shared. Conservation managers should receive payment for the ecosystem services that they provide, which enable and support these economic activities.

In several cases there is also potential for the government to charge for the use of biological resources and ecosystems. This is a popular means of raising funding for marine and coastal conservation in other parts of the world. Most obviously, there is potential to introduce user fees for tourist activities such as diving, snorkelling or sport fishing, which could then be ploughed back into conservation and Protected Area management.

Few attempts have yet been made to solicit contributions directly from the private sector – even though in many cases businesses rely on biodiversity being conserved, or already have active corporate environmental responsibility programmes. A range of opportunities exist for raising funds, such as advertising and corporate sponsorship, cost-sharing and in-kind contributions, and direct payments for goods and services used.

Last but not least, effective financial planning will play a key role in saving costs and improving the long-term financial sustainability of marine and coastal biodiversity conservation in the Maldives. Programmes are already underway to set in place conservation management plans for key sites in the Maldives, as well as to streamline budgeting and expenditure frameworks in other sectors. Attention to conservation finance should also form a part of these ongoing efforts.

What are the ways forward?

This brief has highlighted the nature of the costs of biodiversity conservation, as well as identifying the potential that exists to raise new finance so as to ensure that they are covered adequately. Given the high value of biodiversity to national and local economies in the Maldives, it is clear that adequate and sustainable funding for the conservation of this important natural asset is absolutely critical to current development and to future economic growth.

In the light of these findings, key recommendations include:

- There are both needs and opportunities to seek new and additional ways of financing biodiversity conservation, including improving existing government budgets and capturing tourists' and Maldivian citizens' willingness to contribute funding.
- The AEC project should use Baa atoll as a pilot to budget the costs of conserving atoll ecosystem biodiversity and to establish a sustainable financing mechanism.
- The sustainable financing mechanism for conserving biodiversity on Baa Atoll should be rolled out across the Maldives.

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Economic Incentives for Biodiversity Conservation in the Maldives



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Making biodiversity conservation financially attractive

One of the perennial problems that hinders biodiversity conservation is the fact that people do not always see it as being in their private interests to conserve biodiversity. The prices and markets that people face as they go about their day-to-day business often fail to reflect the economic value of biodiversity, and the high economic costs of biodiversity degradation and loss. As a result, people do not internalise these values into their private behaviour.

In the Maldives, the industries and island communities who use and manage the biodiversity around them often face a situation where they can generate higher financial returns from damaging or over-exploiting biodiversity than from using it sustainably. In cases such as these, where people perceive there to be little personal economic gain from conservation, it is difficult to ensure that biodiversity is used and managed sustainably. This means that despite the clear long-term costs to the Maldivian economy, economic threats to biodiversity show no signs of abating.

The Maldives has a comprehensive framework of environmental regulations. A host of laws set penalties and fines for bad environmental behaviour. These “command and control” measures are, however, often costly to implement, and difficult to enforce. Without the necessary positive reinforcements or rewards for good environmental behaviour, their effectiveness remains limited.

How economic policies deal with biodiversity

The need to conserve biodiversity, and measures for doing so, have been accorded a high priority and repeated mention in the Maldives’ economic strategies, policies and plans. For example, the current Seventh National Development Plan 2006 – 2010 emphasises the need for sound environmental practices. One of its twelve goals specifically targets environmental conservation and the protection of coral reefs.

The overriding focus of the plan – and the development policies and plans of most “economic” sectors in the Maldives – remains, however, on achieving economic growth and equitable income distribution. Despite a stated commitment to biodiversity conservation, there are not always sufficient economic measures in place to ensure that this is a financially attractive option to industries, businesses and households.



A wide range of economic policy instruments have been developed to promote production, investment and trade in priority sectors of the Maldivian economy. These include setting variable tax rates, import tariffs, quotas, subsidies, price controls and other charges for different types of products and economic activities.

These economic instruments however make little distinction between activities, products and technologies which damage the environment, and those which help to conserve biodiversity. In most cases, there is no particular premium attached to biodiversity conservation – and in the worst cases, there is actually preferential treatment given to activities which run the risk of harming marine and coastal biodiversity.

Gaps in biodiversity economic incentives

A review of existing economic policy incentives and disincentives was carried out by the AEC project, and is summarised in the box below. It found that there is still a lot of room for finding ways to make biodiversity conservation more financially attractive to people.

For the most part, the focus of existing economic and environmental policies and instruments is on imposing penalties and punishments for breaches of the law or for not complying with its regulations. There is much less emphasis on rewarding positively for good environmental behaviour.

There is a well-developed system of financial penalties for environmental degradation ...

- The [Environmental Protection and Preservation Act](#) establishes fines for non-compliance and breaches of the law, as well as enabling the government to claim compensation for activities which potentially or actually cause environmental damage.
- Fisheries sector regulations ban, on environmental grounds, the use of fishing nets in Maldivian waters. The [Fisheries Act](#) also allows the Ministry of Fisheries to temporarily prohibit fishing and to establish special sanctuaries for conservation.
- The [Land Act](#) allows for the allocation of land for environmental protection, but does not differentiate land sales tax rates on environmental grounds.
- The [Tourism Act](#) introduces extensive environmental controls, but contains only limited mention of biodiversity conservation.
- The [Recreational Diving Regulations](#) underline the need for divers to take reasonable care to protect the marine environment. They however make no specific mention of penalties for environmental damage.

... but there are very few positive financial incentives to encourage biodiversity conservation

- Although the Foreign Services Investment Bureau emphasises that priority will be given to [promoting investment](#) which is environmentally-friendly, the investment incentives offered do not differentiate between environmentally-friendly activities and other types of investment.
- There are high [import tariffs](#) for plastic bags and a ban on the import of vehicles over 3 years old – both justified on environmental grounds. In most cases import duties however make no distinction between goods and technologies on environmental grounds, and in some cases prejudice against them. For example the duty on diesel-based and wind-based electricity generation equipment is the same, while a higher tariff is actually imposed on solar panels.
- The categories of goods for which [duty-free entry or duty reductions](#) are allowed focus mainly on those required for the expansion of construction, tourism, fisheries and garment manufacture sectors. They provide no exemptions for environmentally-friendly technologies and products.

Using economic instruments to encourage and reward biodiversity conservation

Clearly there is a need to find ways of making biodiversity conservation more economically attractive to industries, businesses and households in the Maldives, at the same time as ensuring that environmental laws and regulations are enforced. If economic threats to biodiversity are to be overcome, then sufficient financial rewards, as well as penalties, need to be offered.

The Maldives however has a somewhat unusual system of economic policy instruments. There are virtually no private or corporate taxes, and few price controls. Unlike in other countries (where taxes and subsidies tend to form the cornerstone of environmental economic instruments), there is only very limited potential to use fiscal instruments for biodiversity conservation in the Maldives.

The main opportunity lies in reforming existing prices and charges so as to reward environmentally-friendly behaviour and penalise for activities that lead to biodiversity loss or degradation. Fees for the use of biological resources and payments for ecosystem services are examples of market-based instruments which could serve to regulate the demand for biological resources, and encourage users to reduce pressures on particular species, stocks or sites. These instruments also have the potential to act as redistributive mechanisms and to generate funds at the local level and for government.

Import tariffs are a special case of economic instruments which are particularly important in the Maldives. Differentiating duty rates based on environmental criteria, and allowing exemption or relatively lower tariffs on some items, could act to discourage the import and use of products, technologies and equipment that pose a threat to biodiversity, as well as encouraging those which avoid or minimise negative biodiversity impacts.

What are the ways forward?

This brief has explained that while there is a strong economic rationale to conserving biodiversity (to the benefit of society as a whole and according to the broader public interest), the private costs and benefits that people face as they go about their day-to-day economic business do not always encourage conservation. There is therefore a clear need to ensure that there are adequate incentives to make conservation a financially and economically attractive option for the people and industries who impact on the biodiversity and ecosystems of the Maldives.

In the light of these findings, key recommendations include:

- Fiscal control measures for biodiversity conservation should give more emphasis to positive incentives, as opposed to regulations and disincentives (charges and fines).
- Taxes, import tariffs, quotas, price controls and other charges for products and economic activities should be reviewed to ensure that disincentives to biodiversity conservation are removed, and incentives to biodiversity conservation are added.
- The possibility of introducing user-based fees (e.g. a Visitor Payback Scheme) for offsetting environmental (including carbon) costs should be explored. Funds raised should be re-invested directly in biodiversity conservation at local level.

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