

# Economic valuation helping to establish sustainable financing of marine parks in the Antilles, Bonaire - NL

## 1. Policy Objective & Theme

- SUSTAINABLE USE OF RESOURCES: Sound use of resources and promotion of less resource intensive processes/products
- SUSTAINABLE ECONOMIC GROWTH: Balancing economic, social, cultural development whilst enhancing environment

## 2. Key Approaches

- Participation
- Ecosystems based approach

## 3. Experiences that can be exchanged

Contingent valuation as an effective means to value ecosystem services and its application in the implementation of measures guaranteeing better management of coastal and marine national parks and financial sustainability of the management operations.

## 4. Overview of the case

Bonaire National Park (BNP) was a paper-park, lacking management and in a serious financial situation before a cost-benefit analysis and contingent valuation was conducted. The analysis showed that if the simple decision to introduce visitor fees were taken, even if it were considered controversial and expedient, the National Park could reach financial self-sufficiency.

## 5. Context and Objectives

### a) Context

Bonaire, a crescent-shaped, oceanic island with an area of 288 km<sup>2</sup>, is located in the Caribbean Sea approximately 100 km north of the coast of Venezuela surrounded by a deep water trench. The coral reefs around Bonaire form a narrow fringing reef, which starts practically at the shoreline and extends to a maximum of 300m offshore. Approximately 55 species of coral can be found on the reefs. Since 1999, twenty years after it was first suggested, the whole area has been protected as part of the Bonaire National Marine Park. It is of international importance being designated as a RAMSAR site. The ecosystems of the Netherlands Antilles, with their coral reefs, humid elfin forests and semi-desert scrublands, not only contain the richest biodiversity in the Kingdom of the Netherlands, but also represent an irreplaceable tourism resource – the most important source of income for the island. It is regarded by the European Union as an Overseas Territory.

The BNP is one of more than 175 protected areas in the insular Caribbean. However, only a very small percentage of these declared protected areas exist in actual fact. Most are paper parks in which no management occurs. The motivation to establish protected areas is often based on the perception that such areas enhance a country's competitiveness in the tourism sector. However, while the political will to establish protected areas may be strong, the will to budget for their management has shown itself to be very weak, in the face of urgent national priorities and continuous fiscal crisis. In recent years there have been increasing calls to transform paper parks into managed protected areas and to establish new protected areas to tap the eco-tourism market and to provide a measure of protection against development pressures, particularly in the coastal zone.

## b) Objectives

To provide sustainable funding structures for the infrastructure of the National Park, its personnel, maintenance, education and public information. Funding for these recurrent annual operating costs has been plagued by instability and deficits, caused by dependency on one-time project subsidies, limited ad hoc financial assistance from local government authorities and fluctuating revenues from tourism. A central issue to the success of the marine protected area is its ability to secure funds for its running costs.

## 6. Implementation of the ICZM Approach (i.e. management, tools, resources)

### a) Management

The Foundation of Dutch Antilles National Parks - STINAPA Bonaire (Stichting Nationale Parken Nederlandse Antillean), a non governmental conservation organisation - is responsible for management.

### b) ICZM tools

After its establishment, BNP suffered serious financial difficulties and, eventually, with no staff or funding, it became a "paper park"; management and control of access was left entirely to dive operators. Increased diver use began to have an adverse impact on the coral reefs with the extent of coral cover decreasing significantly at the most frequent dived sites. In 1990, the Island Government of Bonaire commissioned an evaluation of the situation. It showed that there is likely to be a critical level of 4,000 to 6,000 dives per year above which impact becomes significant. Based on the number of available dive sites, the estimated 'annual carrying capacity' would be 190,000 to 200,000 dives per year, already being exceeded in some places. A cost-benefit analysis derived from the ecosystem services provided by the BMP was also conducted. Since Bonaire was being marketed as a prime tourist resort because of its unique resources, loss of its marine ecosystems would markedly diminish Bonaire's attraction and along with it the associated revenues currently accruing to the private and public sectors. At that time, BNP was worth more than US\$23 million in terms of hotel rooms, restaurants, car hire, local air transport and diving. However, less than 1% of this amount (US\$190,000) came from diving fees. This latter fact was identified as the serious weakness in the overall financial management. This analysis was supplemented by a contingent valuation survey because the concept of introducing a user fee was highly controversial. The results were unexpected with 92% agreeing that a user fee system is reasonable, with 80% saying that they would be willing to pay at least US\$20/diver/year, 48% saying they would be willing to pay at least US\$30/diver/year and 16% saying they would be willing to pay at least US\$50/diver/year. This yielded an average value for Willingness To Pay of US\$27.40 (excluding the 8% who were not willing to pay a fee). As a result, a visitor fee initially set at US\$10 was introduced. These fees were enough to cover the salaries, operating costs and capital depreciation of the BNP. In 2005, the legislation covering Marine Park usage fees was further changed with the inauguration of the Nature Fee. Now, all users of the Bonaire National Marine Park, not solely the divers, pay a user's fee. The other significant changes include:

- The price of Marine Park tags for SCUBA divers changed to US\$25.00 for a yearly pass or US\$10 for a daily pass.
- Swimmers, board sailors, and all other users of the Marine Park are now required to pay US\$10 for a yearly pass.
- Marine Park tags also admit entrance to Washington/Slagbaai National Park.

It was also determined that the tag receipts go directly to STINAPA and are used entirely for the management of Bonaire's National Parks.

## 7. Cost and resources

There is no information available on the costing of the methodology used.

## 8. Effectiveness (i.e. were the foreseen goals/objectives of the work reached?)

Today, the Bonaire Marine Park is considered by many to be one of the world's most successful marine protected areas. It is one of the most sustainable marine parks in the world in financial terms. In 2002-03, 90% of its income was self-generated. This compares to figures of 5%-69% for other marine parks in the area. The results indicate that proper management can yield

both protection and development benefits, although questions of ecosystem carrying capacity and national retention of revenues raise important issues for longer term sustainability.

## 9. Success and Fail factors

The introduction of user fees is one of the Bonaire Marine Park's main achievements. Aided by its protected status, a significant privately operated sector is successfully marketing Bonaire as a tourist destination. However, if protection of the marine ecosystem is not maintained, much of Bonaire's attraction would be lost, and along with it the associated revenues currently accruing both for the private and public sectors. The case of Bonaire illustrates the difficult trade-offs that exist in combining economic and ecological goals. Its marine ecology is rich, protected, but threatened. In late 2005, another long-held ambition became a reality: Several employees of STINAPA, including the Director, the Managers and the Chief Rangers, acquired Police-type ticketing and law enforcement powers.

On the basis of the 1991 recommendations of the Island Government to introduce a fee system, the Dutch Government approved funding and technical assistance for the revitalization of BMP for a period of 3 years: US\$125,000 for operational costs and capital expenditure, US\$28,000 in technical assistance was allocated for the first year, and US\$250,000 was reserved for subsequent years. One condition to the grant was the requirement that the visitor fee be introduced, to eliminate the need for further financial assistance beyond 1993.

## 10. Unforeseen outcomes

The Bonaire Marine Park has played an important role in the establishment of the financial systems underlying marine parks in the Antilles. It explicitly combines analysis of ecological and economic factors and is often regarded in policy discussions on marine funding as the classical example of how to develop a system of payments for environmental services for marine ecosystem systems.

## 11. Prepared by












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## 12. Verified by

It has not been possible to verify this case.

## 13. Sources

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-  BNMP-managementplan-part3and4 (835.03 KB) 
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