

Sustainable financing for marine protected areas:  
Lessons from Indonesian MPAs  
Case studies: Komodo and Ujung Kulon National Parks

*Authors:*

*Viviana Lujan Gallegos (viviana.lujan.gallegos@falw.vu.nl)*

*Anu Vaahtera (anuliisavaahtera@yahoo.com)*

*Esther Wolfs (estherwolfs@yahoo.com)*

*Supervisor: Prof. Frank Biermann*

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## Introduction

Irregular and inadequate financing for recurrent costs is a generic and almost global problem for protected areas. Sustainable financing for the conservation of protected areas is an economical approach in the search of solutions for this problem.

Our focus is on Indonesian protected areas, most of which are poorly resourced, some receiving no regular budgets at all, and are reliant on supplementary donor financing, which covers only a limited project period. The number of parks and the amount of funding from donors and government budgetary allocations through the late 1980s and 1990s increased until the economic crisis struck in 1997 (Sumardja 2003). The economic crisis precipitated the May 1998 resignation of a Suharto regime that had been in power for over 30 years. The administration of B.J. Habibie presided over a freely contested election and the formulation of new legislation for more popular control of natural resources. These events – dramatic, and on a national scale – have had an impact on the national parks that makes us reconsider the adequacy of current financing mechanisms. Currently, the democratically elected Wahid administration is implementing decentralization and regional autonomy, which started in January 2001 (Haeruman 2001).

In this paper we will analyze the sustainable finance strategy of Marine Protected Areas (MPAs). We will compare two MPAs to identify if they have developed a sustainable financed portfolio of revenue sources. The two MPAs are National Parks in Indonesia, namely Komodo National Park and Ujung Kulon National Park. To perform this analysis we will define sustainable financing of an MPA and its main components will be described.

Our approach analyzes what kind of combination of financing mechanisms contribute to a sustainable finance strategy. For that purpose we will develop a set of indicators to measure the sustainability of a finance strategy of marine protected areas. These indicators will serve as the independent variable in the research. In this sense, we will analyse the financial mechanisms of the Komodo National Park with the hypothesis that it has a sustainable finance strategy. Thus, the combination of financial mechanisms of Komodo National Park, will be treated as the dependent variables. We assume that those dependent variables positively contribute to the fulfilment of our developed indicators. Finally, we will analyse the current financial mechanisms of Ujung Kulon National Park and obtain information about the contribution of those mechanisms to the achievement of a sustainable finance strategy. The hypothesis for Ujung Kulon National Park is that it does not have a sustainable financial strategy. We assume that a sustainable finance strategy of a Marine Protected Area supports sustainable development for that area and its social, economic and ecological surroundings.

The comparison of Komodo National Park and Ujung Kulon National Park is used because they have common features for the purpose of this research. They are both National Parks located in Indonesia and they are Marine Protected Areas. They have the World Heritage Site status and are in the possession of a precious and rich biodiversity (Marine Protected Areas in South East Asia 2005). Komodo National Park has, among other marine life, rich coral reefs, dugongs, sperm whales, blue whales, and turtles and Ujung Kulon National Park has also a diverse marine life, including rich coral reefs, green and hawksbill turtles, and estuarine crocodiles. Both parks strive for the same goal, which is to address threats to marine biodiversity by professionalizing existing tourism services and developing new tourism products (World Heritage 2005).

The paper is divided in five sections. Section one will give a definition of sustainable financing, with a specific focus on MPAs, as well as a description of the main possible financing components, which combined could form a sustainable financing strategy. Section two elaborates on the indicators of sustainable financing. The third section analyses Komodo National Park according to its financial mechanisms and the contribution of those mechanisms to the fulfillment of the indicators. On the fourth section, Ujung Kulon National Park is analyzed in terms of its financial structure and the ways it accomplishes the indicators. Finally, the conclusions and recommendations from the research will be presented and discussed in section five. This last section will also conclude on the sustainability of their financial structure.

# 1 Sustainable financing mechanisms

## 1.1 Definition

The concept of sustainable financing is mostly connected to the management of natural resources. The term is not used in the business field and should not be confused with financing sustainability in either of its forms: investment funds on social responsible enterprises, corporate social responsibility or sustainable banking. The use of the concept of sustainable financing varies from seeking global financial security to collecting user fees in natural parks. Below we try to present different definitions and main characteristics of the concept, to conclude with a definition we propose and which will be used in this paper.

In practice the concept of sustainable financing is being applied to correct the problem of lack of funding for the conservation and management of natural resources. In most countries, natural resources are a public good, which makes them susceptible of the free-rider problem. The free-riding occurs when the conservation of a protected area generates costs which are not covered by the beneficiaries of the ecological services. In this sense, the government, the local communities and the international community are all beneficiaries of the goods from protected areas, but the costs are distributed in an unequal way (Emmerton 2003). This is especially true for Marine Protected Areas, where the control of the access and the collection of fees are more difficult and where the livelihoods of local communities depend on the use of the natural resources, especially fisheries.

To attack the above mentioned problem, sustainable financing mechanisms help conservation managers to meet the cash flow requirements of management operations. This takes into account the varying and diverse financial requirements of management activities to achieve specific objectives. The core elements of sustainable financing are the development of financial management skills, the on-going availability of funds; the diversity of funding sources; and the transparency and accountability in the management of the resources, both financial and natural. (SEACAM 2001, 6)

The objective of sustainable financing is to create a more predictable cash flow. This could be achieved in different ways. The basic is to design diversified income streams, which reduce the reliance of a management authority on a single source of finance, and are a key source of improved sustainability. Increased administrative efficiency – reducing the unit costs of management activities, is also an option. Cost-effective linkage between the income and the activities to address key management challenges and good governance characteristics are of critical importance. Finally, incentives for local institutions to manage activities and budgets in a more cash-sustainable manner could also enhance the revenues. These options are not mutually exclusive and could deliver more sustainable results if combined. (SEACAM 2001, 13)

As our general definition, we understand sustainable financing as a portfolio of diverse and stable financial mechanisms that contribute to the conservation of a protected area, covering the operational and other costs with a combined option of short and long-term revenues. A sustainable financing strategy addresses the problem of the inability of the governments to cope with the necessary funds to protect its natural resources, and should involve all the stakeholders that benefit or suffer from the ecological services of the natural area and its conservation.

## 1.2 Sustainable financing in Marine Protected Areas (MPAs)

Sustainable financing mechanisms serve different purposes for MPAs. They could provide economic incentives, increase the cost effectiveness of management, support compatible enterprise development to provide alternative income to local communities and generate incentives and resources for conservation. They could also generate essential income to cover monitoring and operating costs. (Domeier 2002)

Effective management of MPAs through sustainable financing mechanisms aims at preserving the biodiversity of marine and coastal species. For this purpose it also entails at developing a sense of ownership over the resource and products and livelihood alternatives that support marine conservation. (WCPA)

## 1.3 Finance Mechanisms

MPA goods and services have considerable economic benefits but also costs. An MPA needs to diversify revenues using a range of financial mechanisms and approaches to generate stable, predictable and sustained income for conservation. Relying on one or a few sources of revenue is not sufficient to overcome the effects of fluctuations in income flows. In this paragraph the different finance mechanisms that could be used are described. The focus of marine conservation of MPAs<sup>1</sup> is in this paper on revenue-raising mechanisms, not on money-saving activities or economic incentive mechanisms. The mechanisms are categorized under three levels – international, national and local (United Nations Atlas of the Ocean 2005). Within each level the financing mechanisms are subdivided by their source of revenue.

### 1.3.1 *International level*

The main finance mechanisms at the international level are described below:

- Multilateral development banks. Biodiversity conservation is increasingly benefiting from assistance from multilateral development banks, such as the World Bank and the Asian Development Bank. This funding is typically available only to governments as a loan for the establishment and maintenance of protected areas, often given in support of a national conservation plan. (United Nations Atlas of the Ocean 2005)
- Grants and donations. A major source of funding for marine conservation is grants and donations from bilateral and multilateral donor agencies, foundations, NGOs, private sector companies, and individuals. Donors supply short-term funding which can cover specific conservation needs in protected areas. (Quintela et al. 2004)
  - The international donor agencies include multilateral agencies such as the European Union (EU), United Nations Food and Agricultural Organization (FAO), Global Environment Facility (GEF)<sup>2</sup>, United Nations Development

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<sup>1</sup> In Indonesia, conservation organizations such as the CCIF and TNC are testing the concept in the marine environment. TNC is developing an eco-tourism concession through a joint venture with an Indonesian company, Putri Naga Komodo, which will operate in and around Komodo NATIONAL PARK.

<sup>2</sup> The Global Environment Facility (GEF) was established to address biodiversity loss (where it acts as the funding arm of the CBD) and the degradation of international waters and brings together 166 member governments, leading development institutions, the scientific community,

Programme (UNDP), United Nations Educational, Science and Culture Organization (UNESCO), and the World Bank. Also USAID (United States Agency for International Development) has endowed large conservation trust fund (Indonesian Biodiversity Foundation-KEHATI and FPE). (Spergel and Moye 2004)

- Large NGOs also raise significant funding from individual members through traditional fundraising and special programs<sup>3</sup>. (Spergel and Moye 2004)
- Environmental funds. Environmental funds play an important role in supporting the long-term protection of biodiversity and protected area management. The types of environmental funds that are currently operating typically fall into three, not mutually exclusive categories (Quintela et al. 2004):
  - Endowment fund where the capital is usually invested over a long period of time. The capital itself is never spent.
  - Sinking funds which not only spend the income earned by investing the fund's capital, but also spend part of their capital each year.
  - Revolving funds which rather than having a fixed amount of capital continually receive new revenues from user fees, earmarked taxes (keeping the money in the area) or other sources, and spend these revenues as they are received. In some cases, a small percentage of each year's revenues are put into a reserve fund.
- Debt relief mechanisms. Debt-for-nature swaps have been successful in generating long-term funding for conservation. Debt swaps are a method by which debt owed by a developing country can be renegotiated with creditors to fund nature conservation activities. Debtor countries can negotiate debt swaps with creditor governments (bilateral debt) or with the private sector (commercial debt)<sup>4</sup>. (Quintela et al. 2004)

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and a wide spectrum of private sector and non-governmental organizations. In 1998, 36 nations pledged \$2.75 billion to protect the global environment and promote sustainable development (United Nations Atlas of the Ocean 2005).

<sup>3</sup> IUCN World Commission on Protected Areas (WCPA) Southeast Asian Marine Working Group, the Working Group has appointed a Sustainable Financing Task Force to develop an innovative portfolio of financing mechanisms that support a network of MPAs throughout Southeast Asia.

<sup>4</sup> The debt-for-nature swap is a financial mechanism that has enabled developing countries to spend money on environmental activities which they would otherwise have had to use to repay their foreign debt. Four types of debt relief mechanisms have provided funding for the environment: commercial debt-for-nature swaps, secondary market sales of commercial debt donated by commercial banks to NGOs, bilateral debt reduction programs, and Heavily Indebted Poor Country (HIPC) debt relief. In a commercial debt for-nature swap, a conservation organization purchases debt owed by a debtor country at a discount in the secondary debt market (in some cases, commercial banks have donated debt to conservation organizations). The conservation organization then negotiates with the debtor country government for cancellation of the debt in exchange for payment in local currency or bonds, which is used to implement agreed-upon environmental activities. The debt was sold at a discounted price on the secondary debt market to generate funding for conservation projects. Bilateral debt reduction programs involve cancellation of debt owed by one government to another. The principle is the same: the creditor government agrees to cancel debt, in exchange for the debtor government's agreement to spend an amount of local currency on environmental activities that is equivalent to a portion of the face value of the original debt or to debt service payments (interest and/or principal). (Spergel and Moye 2004)



### 1.3.2 National level

At the national level the government influences the possibility of the diverse finance mechanisms by economic incentives and existing law and regulation. The main national financing sources are the following:

- Government bonds and taxes. Government's power to impose taxes can be used in a variety of ways to raise funds for conservation and to promote conservation activities in general. Besides relying on general tax revenues to fund conservation, some governments have raised revenues for conservation by imposing earmarked taxes or selling interest-bearing government bonds<sup>5</sup> (Quintela et al. 2004). Other taxes and fees are airport passenger fees and cruise ship passenger fees, hotel taxes and fines (Spergel and Moye 2004).
- Real estate tax surcharges. The coast is often much more expensive than land elsewhere and is often owned by wealthy individuals or tourism-related businesses. Consequently, adding even a small fraction of 1 percent to existing real estate taxes has the potential to generate large amounts of money for biodiversity conservation and/or the acquisition of remaining open spaces to protect them from development. (Spergel and Moye 2004)
- Special governmental projects. Governmental agencies can set up special projects that generate money for conservation such as funding of earmarked projects; competitive grants, lotteries, stamps etc. (Spergel and Moye 2004)
- Private sector investments. Business planning, venture capital investments, concession arrangements, private sector management of protected areas and voluntary contributions are examples of private sector investments. Private investments are generally a relatively minor source of funding for parks and conservation. Developing countries generally provide few or no tax incentives for making charitable donations. There exist also for-profit investments providing financial returns for investors while promoting conservation in a designated environmental zone (Green Funds). (Spergel and Moye 2004)
- Fishing industry revenue. Governments can raise revenues to manage fisheries by charging fishing payments, license fees, excise taxes and fines. They can charge levies on the commercial fishing industry and ask for fishing access payments. The protection of biodiversity contributes also to fish populations and fishing industry benefits from this spill-over effect. (Spergel and Moye 2004)

### 1.3.3 Local level

This income is generated at the site level by local business development in order to cover all costs related to the management of conservation activities, and with flexibility to amend them based on impacts and needs. The most common local level revenues come from the following sources:

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<sup>5</sup> These can either be general obligation bonds, which are repaid out of the government's future tax revenues; or special revenue bonds, which will be repaid out of charges and revenues generated by the specific project that is being financed; or bonds that are a hybrid of these two types. U.S. private investors are willing to buy these bonds, which offer lower than current market rates of interest, because the interest earned is exempt from U.S. taxes. (Quintela et al. 2004)

- Community-based initiatives such as hunting concessions and sustainable resource use to generate revenue at the local level. (Quintela et al. 2004; United Nations Atlas of the Oceans 2005)
- Marketing ecosystem services. Deriving funds from ecosystem services toward the conservation of protected areas and biodiversity can be a source of substantial untapped revenue. Innovative examples of creating markets for ecosystem services that provide incentives for conservation are i.e. selling carbon offsets, payments for watershed services and protection against storms and coastal erosion. (Quintela et al. 2004)
- Tourism-based revenues. New approaches of tourism user fees allow greater retained earnings, with fees depending on the type of the visitor (foreigner, local, student, etc.), the type of visitor activity (protected area entry fees, diving fees, fishing license fees, and yachting fees), length of stay, season, revenues from commercial activities of protected area agencies<sup>6</sup> and voluntary donations of tourism operators or tourists (Quintela et al. 2004). Protected area entry fees can generate enough revenue to pay for most of a protected area's operating costs, especially in cases where visitor numbers are high and entry fees are also relatively high. The certification of tourism operators provide an incentive for tourism operators to invest in environmentally sustainable operation since consumers undertaking nature-based tourism often seek out certified or recognized destinations<sup>7</sup> (Spergel and Moye 2004).

It should be mentioned that the possibility to apply the above mentioned financial instruments will depend on the specific characteristics of the MPA. Also, it is not necessary to put in practice all of them to achieve sustainability but it is important to have a diverse portfolio that covers both short and long-term. Nevertheless, having in place different mechanisms does not guarantee the sustainability of the financial strategy, other aspects like legal, social and environmental issues should also need to be taken into consideration. The following section will elaborate on the different indicators that could be used to determine the sustainability of a financial strategy.

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<sup>6</sup> One of the concepts is to lease concessions for the lodges, restaurants, and stores inside protected areas out to private operators. (Spergel and Moye 2004)

<sup>7</sup> Certification tourism operators are among others: Green Globe 21, Blue Flag and World Legacy Awards (heritage tourism categories) . (Spergel and Moye 2004)

## 2 Indicators of sustainable financing

It follows from the previous section, that there are different characteristics of sustainable financing. One of the characteristics is that a portfolio of revenue sources should be built. The combination of those revenue sources should create a stable revenue stream for the MPA. Another characteristic is the way the resources and the biodiversity are managed by an MPA and how the park's management deals with conflicts and reacts on surprises. Therefore, we considered it necessary to develop indicators of sustainable financing, based on the literature of indicators of sustainable development and of the financing of MPAs.

According to Parris and Kates (2003, 13.13) indicators serve the purpose of revealing the progress towards a goal of sustainable development, to advice the public, decision makers, and in our case MPA managers. The importance of indicators for management is that they can be used to identify possible policy responses, select priority actions and evaluate their effectiveness (ibid.). As a result, the following indicators are not given as a set of complete and definite criteria to evaluate sustainable financing, but as a guideline to analyze our case studies only. The developed indicators are from the point of view of MPAs in developing countries with poor communities, and a biodiversity under pressure. We acknowledge that, for example, an MPA or a national park can fulfill all indicators and is still not sustainable financed. The case studies in the following two sections, Komodo National Park and Ujung Kulon National Park, will be analyzed according to these indicators.

### 2.1 Financial

This set of indicators could help to analyze the financial assets of the financing strategy:

- Existence of a state-of-the-art business plan. There is agreement between conservation finance experts that the sustainable financing strategy must be part of a well elaborated business plan (Spergel and Moye 2004; Merkl et al. 2003; Quintela et al. 2004). The idea is that this business plan systematically could evaluate the long-term financial needs for operating MPAs and protecting the marine resources, as well as the possible financing options.
- Development of a portfolio of sources of financing. The MPA should have a broad portfolio of different financing sources. The different sources should cover both short and long-term needs. This would help securing long-term funding for the main operations of the MPA, which is a key issue. (Quintela et al. 2004)
- Accountability. Ideally, the management creates the possibility of a financial independent evaluation of the execution of the funds. (Subijanto 2002)
- Stability of the revenues. The combined revenues should result in little variation from year to year. This means some independency from global and national economic, political and natural conditions. (Spergel and Moye 2004)
- Balance between costs and benefits. The revenues generated are ideally worth the cost of setting up the new financing system and cover the costs of the MPA. (Spergel and Moye 2004; Emmerton 2003)

- Cost sharing among the beneficiaries. It is desired that the beneficiaries of the benefits of the park bear the costs. This is also called the principle of the beneficiary pays. (Haerumans 2001)

## 2.2 Legal

The legal indicators represent the optimal legal framework that allows the financing scheme to take place:

- The existing legal framework may support the finance options. It is good if the legislation of the country where an MPA is located allows the necessary money transfers. If the existing legal framework does not allow this, new financing mechanisms may be created by issuing an administrative or executive order. (Spergel and Moye 2004)
- There is a binding body of regulations for nature protection at an MPA. legally enforceable regulatory instruments help to protect the biodiversity of the MPA. The effectiveness of regulations and their enforcement endorses nature protection and broadens the set of financial options. (Subijanto 2002)

## 2.3 Administrative

The administrative indicators analyze the management of the park resulting from the sustainable financing strategy:

- Reinvestment of the revenues on the MPA. Money generated by different revenue sources of an MPA should preferably be reinvested in that MPA. Best would be to spend it on enforcement, zoning, monitoring and staff training. (Spergel and Moye 2004)
- Effective management of the park is improved. With the financial mechanisms the administration of an MPA and its operations should strive to improve towards a more efficient and cost-effective protection of the MPA (Spergel and Moye 2004). This also means that the activities that take place at such an MPA should be controlled to not surpass the carrying capacity. Monitoring and evaluation would promote adaptive management (Haeruman 2001).
- Role and responsibility of stakeholders in park management. At best, each stakeholder, from donors to managers, to community users of the resources, has a clear role and clear responsibilities in the management of the MPA. They should contribute according to their possibilities to the implementation of the sustainable financing strategy. (Spergel and Moye 2004)

## 2.4 Social

Social indicators measure the acceptance of the financing structure from the local communities as well as the equitable distribution of benefits:

- Support from local communities. It would be optimal if communities perceive the financing structure as a benefit for their development. They should not see it as a threat to their traditions or to their sustainable use of the resources. When use of the resources is done in other than a sustainable way by local communities, alternatives should be given for their development. (Spergel and Moye 2004)
- Portion of revenues assigned to local development. Ideally, funds will be applied equitably, being sensitive to distributional and wealth transfer issues where the conservation needs restrict access to the resources by local communities. If losses occur, there should be adequate compensation and financial benefits for the communities concerned. (Quintela et al. 2004)
- Promote sustainable livelihoods. The financial mechanisms should develop a sense of ownership over the resources or products and promote livelihood alternatives that support marine conservation. It would be advisable to give individuals or groups a clear responsibility for the resources they use. (Spergel and Moye 2004)
- Capacity building of all the participating actors. Education and training for the participating actors in order to participate and benefit from the financial structure can be important, especially for those who have to transform their activities from unsustainable to sustainable resource use. (Quintela et al. 2004)

## 2.5 Political

This set of indicators refers to the political attitude towards the sustainable financing instruments:

- Government support. It is beneficial if government supports the introduction of the new financing mechanisms and that it would be open to innovative ideas of MPA management. (Spergel and Moye 2004)
- Flexibility in the renovation of policies and legislation to adapt to new finance strategies. Where there is need to create new legislation and policies or to reform existing ones, flexibility and adaptability of the government and institutions play an important role. (Quintela et al. 2004)
- Independency from political changes. The stability of the financial mechanisms should strive to the highest possible degree of independency from political instability. (Spergel and Moye. 2004)

## 2.6 Environmental

Environmental indicators are developed to analyze the impact of the sustainable financing strategy on MPAs resources and biodiversity:

- Support the conservation and protection of marine and coastal resources. The new financing mechanisms are developed to give an MPA the ability to fulfill its goal; to protect and conserve its marine and coastal resources. At the same time, the success of the conservation efforts influences the continued revenues from different sources. (Haeruman 2001)

- Promote research for conservation. In the financing strategy ideally there is funding contemplated for research on the MPA for conservation, sustainable use of resources and carrying capacity, among other conservation issues. (Quintela et al. 2004)
- New financing mechanisms do not have negative effects on the environment. The new financing mechanisms, for example tourist fees, should aim for a minimum compromise to the conservation objectives but should not exceed the carrying capacity of the MPA. (Spergel and Moye 2004)

Using the above described indicators we will compare and test the case studies on the following two sections to describe if they have in place a sustainable financing strategy.

### 3 Case study: Komodo National Park

Komodo National Park is located in the southeast part of the Indonesian archipelago, between the islands of Sumbawa and Flores. Komodo National Park includes three major islands: Komodo, Rinca and Padar, as well as numerous smaller islands creating a total surface area of 1,817 km<sup>2</sup> (marine and land). The total population currently living in the Park is 3,267 people spread out over four settlements, whilst 16,816 people live in the area immediately surrounding the Park. The majority are fishermen. (Komodo National Park 2005)

Established in 1980, Komodo National Park is declared a World Heritage Site and a Man and Biosphere Reserve by UNESCO in 1986. Komodo is known for the endangered Komodo dragon and contains an important marine reserve with more than 1,000 species of tropical fish, invertebrates and mammals. (World Heritage 2005)

The goal of Komodo National Park is to protect its biodiversity, particularly the Komodo dragon. Specifically for the marine component the objective is to protect the breeding stocks of commercial fishes for replenishment of surrounding fishing grounds (Subijanto 2002). The park has a significant recreational value and receives 20,000-25,000 visitors per year (TNC 2004, 16).

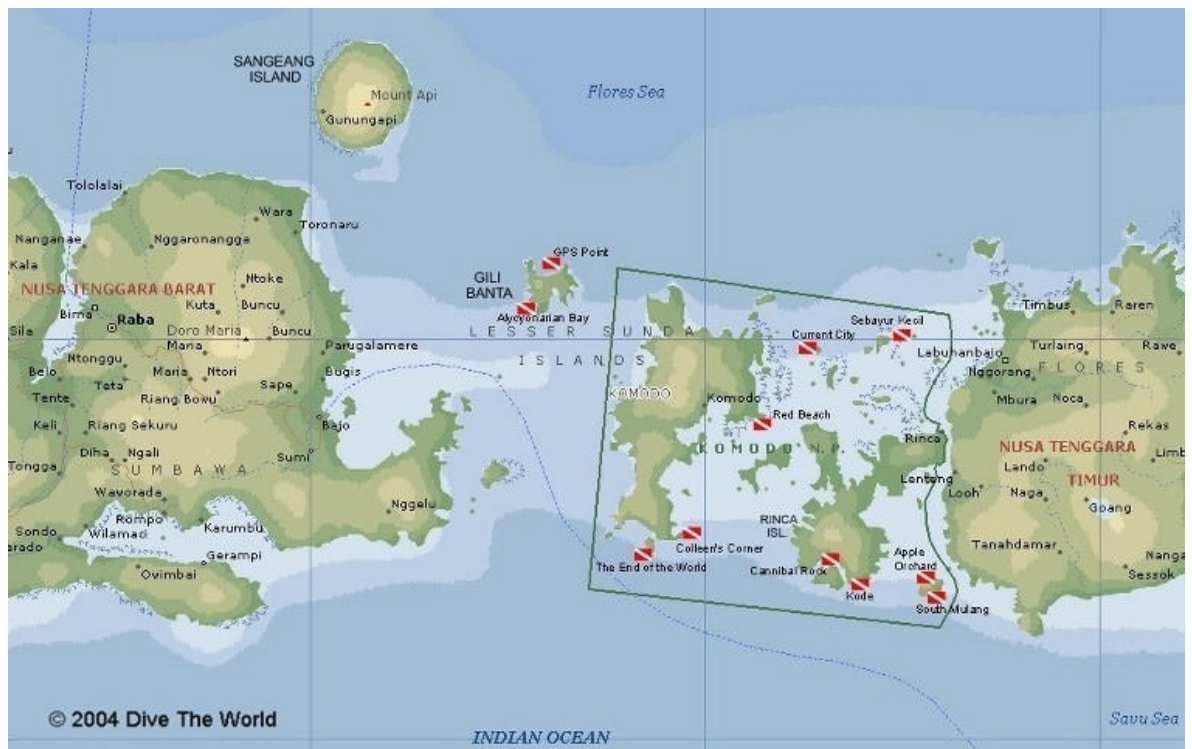


Figure 1: Map of Komodo National Park. (Dive The World 2004)

### 3.1 General information on Indonesian finance structures

The government of Indonesia, supported by the World Bank, has developed an Integrated Conservation and Development Project (ICDP). This project has been applied to a diverse range of initiatives with the common goal of linking biodiversity conservation in protected areas with local social and economic development (Sumardja 2003). The total governmental annual investment in protected areas from 1992 – 1997 had been in the range of US\$22 – 33 million, of which foreign donors were contributing approximately 15 – 20 percent (World Bank 2001). The number of parks and the amount of funding from donors and government budgetary allocations through the late 1980s and 1990s increased until the economic crisis struck in 1997.

The NGOs World Wildlife Fund for Nature (WWF), The Nature Conservancy (TNC)<sup>8</sup>, Conservation International, Birdlife International, Wetland International and Wildlife Conservation Society maintain diverse conservation programs in Indonesia, with a primary focus on terrestrial and marine protected areas (Sumardja 2003). USAID partners with TNC, USAID has a budget for Indonesia, which was in 2000 \$160,314, in 2004 \$122,166, and requested in 2005 \$153,042 of which 12% is for the environment (USAID). WWF Wallacea, Seacology Foundation (community landing dock and reef rehabilitation program) and International Coral Reef Action Network (ICRAN; support for development of sustainable dive tourism), donated grants to develop business plans for Asian MPAs under the auspice of the World Commission on Protected Areas South East Asia Marine working group (Erdmann et al. 2003).

### 3.2 Components of the financial structure of Komodo National Park

In 2000, the overall budget of Komodo National Park was US\$ 67,085 with 96 of staff (Sumardja 2003). According to Merkl et al. (2003) Komodo National Park needs an average endowment of \$32 per hectare (NPV). They estimated that by using the total marine park area, not coral reef area. Traditionally, most of the Komodo trust funds have come from the Government of Indonesia. At the moment Komodo National Park has been selected by the Ministry of Finance to take part in a pilot project of new financing mechanisms (Komodo National Park 2005). This project is also enhanced by the work of TNC which is promoting, together with other actors, the establishment of a collaborative management of the park (TNC 2005). In this apart, the financial mechanisms, as well as the cooperative management program will be explained.

#### 3.2.1 Collaborative management

It is necessary to explain here this initiative because it sets up the platform for the management of most of the financing mechanisms of Komodo National Park. The

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<sup>8</sup> The Nature Conservancy (TNC) is an international non-profit organization dedicated to the preservation of diversity of life on earth. Their mission is “to preserve plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive” (www.nature.org). This NGO has done intensive conservation work in Indonesia and has a specialized centre in the region called The Nature Conservancy’s South East Asia Center for Marine Protected Areas (SEA-CMPA).



Collaborative Management Initiative aims to enhance the role and responsibility of the various stakeholders in the management of the park, gain the support of local communities and ensure the effectiveness and sustainability of the long-term management of Komodo National Park (TNC, 2004). The main parties involved are the Park Authority, the local government, TNC, a Joint Venture between the TNC and an Indonesian Tourism Company, as well as local communities, government agencies and private sector organizations (Subijanto 2002). The Collaborative Management Initiative was formalized through an agreement between the Komodo National Park authority and the joint venture on November 2003 (Mous 2004).

TNC and the government, via the Directorate General for Forest Conservation and Nature Protection, have concluded in 2000 a 25-year management plan in which eco-tourism is viewed as the best strategy to achieve self-sustainability for the park (Subijanto 2002). This management plan provides the legal framework for the regulation of all activities in the park.

### *3.2.2 Financing mechanisms of Komodo National Park*

The following is a description of the different financial mechanisms of Komodo National Park. They are described following the characterization presented in section one.

#### *3.2.2.1 International level*

To fill the gap of the amount required for the initial inversion in park structure and facilities, a Global Environment Facility (GEF) project, in the form of a grant, was approved in 2001. It will also help to bridge the difference between revenue collected from fees and other funding sources over the next seven years (Quintela et al. 2004; World Bank 2001). At the end of the seven-year GEF grant period, it is expected that the park will be self-financing on an operational budget of US\$2 million per year (Mous 2004). The project is called 'Indonesia: Komodo National Park Collaborative Management Initiative' and has an input from the GEF of US\$ 5.35 million. As co-financers, TNC is contributing with US\$ 4.90 million and the expected park revenue component is of US\$ 6.70 million. In this grant there are different components, including promoting sustainable livelihoods and scoping of alternative livelihoods (World Bank 2001).

The investment from TNC and partners in Komodo National Park was from 1995-2000 US\$ 2,000,000 in ecological and socio-economic studies and Park planning, and for the development of the 25 year management plan, in which priority is on enforcement, awareness, monitoring, alternative livelihood projects, marketing, publicity training and capacity building. The investment for the period of 2000-2005 was US\$ 10,000,000 for park financing, such as eco-tourism development, trust fund and collaborative management, and community enterprise development. The investments for 2005-2010 will be another US\$ 3,000,000 to continue to build local capacity. (Djohani 2003)

Another international source of founding is the 2002 donation from the United Nations Foundation together with United Nations Environment Program (UNEP), the United Nations Education, Science and Cultural Organisation (UNESCO) and RARE Center for Tropical Conservation, to six World Heritage Sites (both Komodo and Ujung Kulon National Parks are included) US\$1 million project linking environmental conservation and tourism. (UNEP 2002)

### 3.2.2.2 *National level*

The Directorate General of Protection and Nature Conservation in Indonesia gave the national park budget priority among many other programs. The financial resources for national parks in Indonesia came in 2000 from the national development budget, the national routine budget and foreign aid (Sumardja 2003). Even though this is a source of financing that is decreasing since the economic crisis in 1997, it has been the basic source of financing for National parks in Indonesia (Komodo National Park 2005).

### 3.2.2.3 *Local level*

A major source of local revenues is entry fees. As of 2004, the entrance fee was collected by the Komodo National Park authority. This revenue is then shared and distributed to government institutions: 40% to government of Manggarai Barat District, 30% to government of Nusa Tenggara Timur Province, 15% to Ministry of Forestry in Jakarta, and 15% to General Revenue Service of the Ministry of Finances. However, the amount of annual budget allocated for the Park is determined by the Ministries of Forestry and Finance apart from the park's revenues shared to central government (Mous 2004). According to TNC, part of their new financing strategy is to increase the revenue from park entrance fees and user fees for selected activities. Other sources of revenues are conservation fees, diving-pass and hiking-pass fees. A big part of these revenues will be used to support park initiatives such as enforcement, zoning, monitoring, and staff training. Part of the project is also to use a portion of the park revenues for local development initiatives (TNC 2005; Djohani 2003).

The 25-year management plan established an Eco-tourism Concession for generating revenues for the park in an environmentally sound, socially responsible and economically viable way. This will be carried out by a joint venture between TNC and an Indonesian tourism company. This joint venture has applied for a 30-year concession to manage the tourism and eventually will cover the cost of park operations (Subijanto 2002). In this sense, the collaborative management agreement can be seen as the governance structure for park management, while the tourism concession represents the financial management. The tourism concession would be responsible for setting and collecting entrance fees, investing in park infrastructure, licensing dive operations and marketing the park (Djohani 2005; Spergel and Moyer 2004). It should be noticed that this is only a tourism concession, not a conservation concession, since the later is not possible under current Indonesian legislation. This means that the joint venture is not going to take over the management of the park. The sharing of other management responsibilities would be settled through separate collaborative management agreements with the park authority (World Bank 2001).

As part of the GEF project, there is also a setting up of a micro-enterprise fund for local family-based business and a community development grant system. It is intended as an incentive to ensure the sustainable use and protection of the resources by the local communities, by promoting sustainable livelihoods (World Bank 2001; Subijanto 2002).

Licensing fees are collected as well. Dive operators have to pay a diving license to be able to take the tourists on diving excursions inside the park boundaries (Haeruman 2001). The scuba diving operators also sponsor the reef patrolling (UNEP 2001). Boat licensing fees are paid for cruise boats, sea safari boats, and local wooden boats (Djohani 2003).

Finally, there are revenues coming from the visitors' center, such as revenues from souvenirs, restaurants and accommodation.

### 3.3 Accomplishment of indicators

Based on the indicators described in section two and the previous description of the financing components of Komodo National Park, we will now analyze if Komodo National Park fulfils the indicators of a sustainable financing strategy.

#### 3.3.1 *Financial*

Having its financing strategy structured, Komodo National Park has strong financial indicators. Even though there is not a business plan as such developed specifically for Komodo National Park, there is a business plan already designed for a Network of MPAs in Southeast Asia including Komodo National Park (Merkl et al. 2003). Komodo National Park has a specific 25-year management plan and a portfolio of diverse sources of financing which covers both short and long-term needs. The long-term goal is to achieve Komodo National Park's self-sustainability from the tourism revenues. This objective would be facilitated by the grant from the GEF (Djohani 2005). The different sources are also arranged in a way that allows accountability. The government, public financial auditors and international organizations like IUCN and UNESCO, will periodically conduct independent evaluations on the tourism concession's performance. The goal of these audits is to ensure compliance with agreements and biodiversity conservation benchmarks (Subijanto 2002). The beneficiary pays principle seems partially achieved since the government gives funding, the international community contributes via the World Bank, tourists pay different kinds of fees, and the local community contributes by complying with regulations and conservation of resources. What is not so well defined is if all the beneficiaries pay the fair amount for what they enjoy and if the cost-bearers are compensated for their losses (Emmertson 2003). The denomination of an MPA as World Heritage under UNESCO's list, appeals to international donors and is a tool to strengthen sustainable financing mechanisms (Quintela et al 2004).

This new financing strategy which compiles wide variety of mechanisms, attempts to make it independent from the central government, since it is more related to the direct users and beneficiaries and contracts are signed to guarantee their permanence in time (Haeruman 2001). On the other hand, it is difficult to have a full degree of stability of revenues. Achieving total independency from economic, political and natural conditions is difficult, because terrorism or natural catastrophes can not be controlled and would affect, for example, tourism generated revenues. It is also difficult to measure if there is a balance between costs and benefits through the whole financing structure. Evaluation of this indicator requires further research and access to financial information that can not be accessed in the time frame and scope of this paper.

#### 3.3.2 *Legal*

There are several key regulations which determine the management and protection of Komodo National Park, mainly *the Act on Conservation of Biological Resources and their*

*Ecosystems, the Fisheries Law, the Government Regulation concerning Natural Resources Tourism in the Use Zone of National Parks, Community Forest Parks and Natural Resources Parks and Government Regulation on Conservation Areas.* The most recent regulations are *the Park Zoning* issued by the Ministry of Forestry in 2001 and *the District Manggarai Regulation No. 11* of 2001. The latter is a local law that regulates the use of fishing gear in the District of Manggarai and inside the Komodo National Park, specifically banning all fishing gears which are potentially destructive. A joint enforcement team is in place since 1996, already showing in 1997 positive results of a 90% reduction of reef blasting (Subijanto 2002). The 25-year management plan is also a source for further park regulations.

The existing legal framework also allows the finance options. The national-level legislation (specifically, UU 20/1997, PP 59/1998, and PP 73/1999) stipulates that all Indonesian National Parks must charge a standardized entrance fee. As of 1998, these fees were set at Rupees 20,000 per visit for foreign guests and Rupees 2,500 per visit for Indonesian guests. The massive government decentralization process, which begun in Indonesia in 1999, provided an opportunity to explore new options for retaining these and other user fees at the local level (Erdmann et al. 2003). This decentralization process allows innovative financing pilot projects to take place. Additionally, the tourism concession is allowed by law as long as it includes an Indonesian shareholder, which is the JPU (Subijanto 2002).

### 3.3.3 *Administrative*

With the establishment of the joint venture, there is an agreement to reinvest any profits and revenues generated from tourism and licensed activities in the park. This prevents the money from going to the central government and spreading on other uses. The money granted from the GEF goes directly to the collaborative management initiative (World Bank 2001). This also contributes to a more effective management of the Komodo National Park, especially with the collaborative management initiative. The approach is towards an adaptive management according to the use and threats of the resources (Djohani 2005) and this will also enable the park to respond to the inevitably changing political environment (World Bank 2002). Regarding the role and responsibility of the different stakeholders, the GEF grant gives special attention to this issue (World Bank 2001). Nevertheless, it is not clear how these responsibilities would be assigned.

### 3.3.4 *Social*

Based on the different stated reactions from the communities towards the proposed activities like training on tourism, participation in alternative livelihood projects and concern towards the improvement of the protection of the park to attract more tourists (Subijanto 2002), is possible to assume that the majority of the community supports the financial mechanisms. Nevertheless, there is also some resistance to the fact that the TNC as a foreign NGO becomes so involved in the management of the park. The community support is also enforced by the collaborative management initiative, since part of the revenues will serve to train local people as tour and dive guides and other services. There is also space for them to generate income by designing and selling handicrafts (TNC 2005). In this sense, there is also space for the promotion of sustainable livelihoods. Currently there are two projects to involve

the local communities on mariculture (aquaculture in the sea) and seaweed culture<sup>9</sup>. In addition to this, villagers have expressed their interest to become Park staff and to receive training and assistance for the development business tourism skills or handicraft, for example (Subijanto 2002). According to the UNEP Regional Office for Asia and the Pacific, Komodo National Park assisted by the Ministry of Forestry have innovative training programs for residents and park staff (UNEP 2002). Training and assistance, among others, are also going to take place under the collaborative management and the tourism concession as part of the capacity building component (World Bank 2001).

### *3.3.5 Political*

The government is undergoing a decentralization process, which allows the new financial and management mechanisms to take place (TNC 2005). Under this development, conservation responsibilities will rely more on local authorities and would require more collaboration with the local governments (World Bank 2001). It could also be said that the economic crisis has led to an adaptation process where the government is open to experiment with new management approaches and new financial mechanisms. This gives an opportunity to plan for the future, even though there are still some legal and political reforms to be done. (Subijanto 2002) Nevertheless, it is almost impossible to have a financial structure that is totally independent of political changes, since tourism revenues are affected by instability and government contribution relies on its economic situation (World Bank 2001).

### *3.3.6 Environmental*

The main objective from the collaborative management, the joint venture, the tourism concession and the GEF grant is to protect and preserve the natural resources and biodiversity of the park (TNC 2005; Subijanto 2002; Djohani 2005; World Bank 2002). Another main target is to decline the destructive fishing practices and poaching incidents. As part of the tourism concession, revenues would also be channeled to research and development of sustainable methods of marine resource use and carrying capacity. This is also related to the possible effects of the new financing mechanisms on the environment. Studies on carrying capacity as well as environmental impact assessments have been carried out and some are still planned, to be sure that the increment of infrastructure and visitors would not affect the conservation and protection objectives. This holds as well for productive activities that are carried out as part of the promotion of sustainable livelihoods. (Subijanto 2002; World Bank 2001)

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<sup>9</sup> USAID also support pilot seaweed cultivation projects involving 8 communities in and around Komodo National Park. (USAID 2005)



#### 4.1 Components of the financial structure of Ujung Kulon National Park

The goal of Ujung Kulon National Park is to build a stronger conservation constituency to protect the park from future threats i.e. by planning and understanding the tourism market (UNESCO). In 2000, the overall budget of Ujung Kulon National Park was US\$ 92,000 and the park had 109 employees (Sumardja 2003, 6). Merkl et al. (2003) have calculated that the Ujung Kulon National Park would need an endowment fund of \$ 79 per hectare to become a sustainable financed National Park. See the section of the case study Komodo National Park for the general information of the Indonesian financing components.

##### 4.1.1 *International level*

The international community is active in Ujung Kulon National Park. WWF is a close partner to the park and its commitment to protect the remaining 50-60 Javan Rhinos has concurrently increased park funding and capacity. WWF is using the World Heritage status to increase the enthusiasm of donors to help fund their projects in Ujung Kulon National Park. (UNESCO-WHC)

Ujung Kulon National Park benefits from the already mentioned UNEP funding for the six World Heritage sites (UNEP 2002). The park gets financial aid also from UNDP under the Global Environmental Facility program and the World Bank (The Jakarta Post 2003). UNESCO is also funding the Ujung Kulon National Park by enhancing site management capacity for using tourism to support conservation; increasing local awareness and support for site conservation; linking tourism marketing strategies with site and community needs; and promoting the sharing of experience between sites (UNF 2000).

Additional to this, some international organizations are also active in the park, i.e. International Rhino Foundation, the Asian Rhino Specialist Group and the Rhino Partnership Foundation, WWF Indonesia (The Jakarta Post 2003), the Swedish International Development Cooperation Agency and WWF Sweden (see WWF). The American Association of Zoo Keepers "Bowling For Rhinos" fund-raiser has raised \$180,000 since 1996 to Ujung Kulon National Park entirely through volunteer efforts. These funds were used to purchase equipment (Pearthree 2002).

##### 4.1.2 *National level*

In general, the funding for Ujung Kulon National Park comes from central government's budget and there is little difference in park funding from this source in the few years either side of World Heritage designation (UNESCO-WHC). See for more information in the Komodo National Park financing mechanisms.

##### 4.1.3 *Local level*

A concept of community-based eco-tourism has been set up for the park (Rachmat Hariyadi). Tours are organized and executed by trained staff from local communities around

the National Park. This provides additional income for local people, making it possible for them to avoid extracting natural resources from Ujung Kulon's forests to make a living (WWF). The entrance fee to the park is Rupees 2,000 per person and the money is divided among the park management, the provincial government and the central government. It is also possible to get a tour package or hire a tour guide (Pandaya 2000).

In the local level the park is enhancing community based initiatives. E.g. WWF-IP has recently launched a program to stabilize land use and improve living conditions in four villages by developing conservation-based alternative income sources such as village home stays, marketing of wood carvings, improved agro forestry methods (Wells et al. 1999), *emping* (Indonesian delicacy) production and batik painting (WWF).

## 4.2 Accomplishment of indicators

Based on the indicators described in section two and the previous description of the financing components of Ujung Kulon National Park, we will now analyze the way Ujung Kulon National Park fulfils the indicators of a sustainable financing strategy.

### 4.2.1 Financial

It was difficult to find structured information about the financial mechanisms of Ujung Kulon National Park. The information we have has been collected from several sources. Although there is no business plan for the park itself, there is a business plan designed for a Network of MPAs in Southeast Indonesia where Ujung Kulon National Park is part of (Merkel et al, 2003). Ujung Kulon National Park also has a management plan which was established in 2000 with a time frame of 20 years. The aim is to include local communities in planning and management of the park. The management plan is the main source of all further processes concerning the Ujung Kulon National Park management (Putro 2001).

The funds channeled into the park have increased but this is largely due to the World Heritage/UNF/UN Environment Programme/Rare projects implemented there (UNESCO-WHC). Ujung Kulon National Park seems to have no focused portfolio of the financing sources but there are diversified efforts of financing mechanisms. Because there is no clear structure of a finance strategy, the financial performance of the park seems not to be accountable. Despite of the variety of financing mechanisms, they do not seem to generate a stable revenue stream.

In Ujung Kulon National Park the principle beneficiary pays is partly achieved – government and international organisations give funding, tourists pay an entrance fee and the local community contributes to the conservation by alternative income sources.

### 4.2.2 Legal

The same national laws of Indonesia that apply for Komodo National Park also apply for Ujung Kulon National Park. The law of the standardized entrance fee (Erdmann et al. 2003) just does not seem to be implemented in Ujung Kulon National Park. According to the information sources, the park is charging only Rupees 2,000 – no matter whether a foreigner



or not – for entering the park (Pandaya 2000). The laws and the regulations concerning the park are enforced by the park authorities. There are five marine patrol units to protect marine territory and to prevent illegal entrance to the park. Since the initial implementation in 2002, the coastal patrol has been able to prevent and apprehend several violators, including cyanide and bomb fishermen. The presence of five units of Ujung Kulon coastal patrol has also shown impacts on recovery and re-colonization of coral reefs in certain areas within Ujung Kulon marine territories. However this operation is working on a very slender budget and now requires additional financial support to operate fully (UNESCO-WHC).

#### *4.2.3 Administrative*

As mentioned before, there is a participatory management plan for Ujung Kulon National Park (Putro 2001). Assisted by Indonesia's Forestry Department and local NGOs, the site demonstrates participatory planning approaches, innovative training programs for residents and park staff, partnerships with the tourism industry, awareness-raising campaigns for local communities, and financing mechanisms for ongoing site conservation costs (UNEP/ROAP 2002). The idea is to build up the support from local communities to the conservation of the park and promote sustainable livelihoods by promoting community based initiatives (see WWF) and community-based eco-tourism (Rachmat Hariyadi).

The management of the park needs improvements. Many stakeholders such as local government, National park authority, and NGOs like WWF have tried in many ways to suppress the negative interaction between people and the park. Household economy and welfare are identified as the major cause for the negative interaction. Therefore, there should be a clear role and responsibility of stakeholders in park management. Providing sustainable income generating activities is considered as a means for suppressing the negative interaction. It may actually shift negative interaction to positive interaction that benefits both nature (preservation of biodiversity) and the people (Rachmat Hariyadi). To improve the management, staff exchange with the Komodo National Park was initiated. The purpose of this staff exchange was to share lessons learned on park patrolling and enforcement (TNC 2004).

#### *4.2.4 Social*

Social indicators measure involvement of the local communities in the conservation and protection of the park biodiversity and its resources and thereby their acceptance of the financing structure as well as the equitable distribution of benefits. Community based activities in Ujung Kulon National Park seek to design a strategy to physically defend the area, stabilize land use, generate wealth, and transfer it directly to the local people. The work follows the informal and formal structures of the villages and in the future will expand to include fishermen, whose role is presently not emphasized. Currently these operations are already turning a small profit, and with the vision of becoming a sustainable and profitable economic activity, there is need for more financial support. (WWF)

The local community is in many ways participating in the conservation of the Ujung Kulon National Park. Community participation includes community involvement in the marine patrol units. Local people are also involved in managing and preserving the traditional utilization

zone. Community is also involved in coral farming and transplantation activities. Local people will eventually be involved in the rehabilitation of nearby coral reef in return of the economic benefit of coral farming. (Awriya Ibrahim 2003)

It is also necessary to contribute to the capacity building of all the participating actors. Local people, and often even local government, lack knowledge and understanding of World Heritage status. In addition to this they did not perceive any direct benefit of obtaining the status. To improve this situation a program of conservation education campaign was initiated by UNESCO-WHC and an NGO. The aim is to build a stronger conservation constituency in support of the park and its efforts to promote conservation. In addition, this will help to protect the park against the threats of unsustainable resource use, population expansion, uncontrolled tourism and other forms of unregulated development. The park's World Heritage values are also communicated to residents, visitors and the public through leaflets, booklets, pictures, posters at the information center, and through the extension activities especially aimed at elementary schools. (UNESCO-WHC)

#### *4.2.5 Political*

What was already said about the political indicators in the previous section applies also for Ujung Kulon National Park. A noticeable effect of World Heritage status is the adding of weight or influence to political decision-making, which in turn reduces the threat to the site from being used for extractive purposes or being reduced in size. Local and central government have supported every policy that came from the management authority to help the protection and conservation in the park, because they know the importance of the park being a World Heritage Site. (UNESCO-WHC)

#### *4.2.6 Environmental*

There are many challenges for the park management, e.g. pollution. The top source of domestic, agricultural and industrial pollution in Indonesia is Java. The population of eastern Indonesia is estimated to be 35 million. Java and Bali also produce ~70% of the national food supply largely through agriculture. Phosphate and nitrate from agriculture and sediments from logging and conversion of salt marshes and mangroves to rice paddies also flow into the marine estuaries. Land reclamation and other coastal development activities also contribute to poor water quality (Uychiaoco et al.). Other management problems include agricultural encroachment<sup>10</sup>, illegal logging and firewood collection from the heavily populated areas to the east. The threat of rhino poaching remains serious. Other management problems include illegal commercial fishing within park boundaries, collection of algae for agar production, and

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<sup>10</sup> One of the major threats is encroachment. Most of the local villagers are farmers and fishermen, approximately 30% of the farmers do not own land for farming. Therefore, they work as labourers for the landowners. Furthermore, most farming lands in the buffer zone rely on the rainfall, as they do not have irrigation system to support their farms. In a long dry season, farming becomes somewhat unreliable to support people's economy. Because of (unsustainable agriculture) these difficulties, many people encroach the park and extract natural resources to fulfil their daily needs, or to earn cash by selling it to others. These activities pose threat for the National Park, as the extraction is conducted inside the park boundary, thus jeopardizing the existence of biodiversity, and the species within the park. (Rachmat Hariyadi)

predation of turtle eggs from nesting beaches by monitor lizards and wild boar. In addition, Selamat Datang Bay and its coral reefs have undergone siltation due to deforestation activities on Gunung Honje. Oil pollution from passing tankers remains also a potential threat (UNEP 1991).

During 1994 and 1995, the World Heritage Fund provided assistance to Ujung Kulon National Park for improvements in the eastern part of the Park and for water development projects in the buffer zone. The government has also sought the cooperation of UNESCO and IUCN to improve monitoring systems to further protect the World Heritage Sites (UN).

The main objectives of the participatory management approach are to promote the conservation and the sustainability of the Ujung Kulon National Park (Putro 2001). There are activities which support the conservation and protection of marine and coastal resources. Monitoring of coral reefs, reef fishes and sea weed is done in several locations in the park. Sustainable use of resources is promoted, such as the use of sea weed in traditional utilization zone (south coast), sea weed farming and the use of artificial reef. Also studies and research are done for conservation purposes. Current studies focus on turtle nesting, heart cockle and soft coral farming which searches for possible rehabilitation methods as well as marketing potentials of soft corals (Awriya Ibrahim 2003).

## 5 Conclusions and recommendations

### 5.1 Komodo National Park

From the information gathered it seems that Komodo National Park has a sustainable financing strategy and the park has the potential to receive from diverse sources its revenues and to create a stable financing stream. One could question the self-generating capacity of Komodo National Park where a large part of the revenues should be generated by the visitors, which are not present since many disasters have taken place – SARS epidemic in 2003, the tsunami in 2004 and the political instability, such as bombs on Bali and Jakarta. Despite of this, Komodo National Park is well on its way. The park is pilot in a collaborative management project and receives thereby very structured attention. The GEF and TNC are donating large sums of money to achieve financial independency of Komodo National Park. The development of eco-tourism by concessions and the promoting of sustainable livelihoods of the nearby communities should all contribute to this goal. There is a clear management plan, so accountability should be possible in the future, although responsibilities are not clear. And most beneficiaries participate in the conservation and protection of the biodiversity and resources of the park. Indonesia has several key regulations for conservation of national park and is showing more flexibility towards earmarking revenues. The enforcement of the regulations in Komodo National Park is operational and shows positive results. The involvement of the community by training, education, employment and provision of sustainable livelihoods makes them aware of the preciousness and value of the national park.

The difficulties can lie in the political stability. Although a park such as Komodo National Park lobbies a great deal at the different governmental levels and will probably anticipate on the decentralization process of the power to the local governments, in a developing country is difficult to be sure of the final consequences of these processes. But the goal of Komodo National Park is clear and is focused on the conservation and protection of its biodiversity and resources. And the park has created a wide range of conditions, such as research to assess the carrying capacity and sustainable methods to meet its objectives.

### 5.2 Ujung Kulon National Park

On the other hand, the information found about Ujung Kulon leads us to the conclusion that it does not have a sustainable financing strategy. Ujung Kulon National Park receives donations and help from parties such as WWF and World Bank, but it is not clear exactly what kind of contributions the different parties have and how those contributions are coordinated. The self-generating revenue capacity is low, because the amount of visitors and entry fees asked cannot cover any serious operational costs. A good point is the involvement of the local communities in the activities for the park, including generating some income from the tourism industry. Ujung Kulon National Park has a management plan and is part of the business plan for a network of MPAs. This will hopefully help the park to generate a more structural approach. Then a more adjusted portfolio of revenue sources can be build up and a clear accountability procedure can be developed.

The enforcement of the regulations in Ujung Kulon National Park is operational and is showing some minor positive results. Unfortunately the capacity of the current enforcement

force is not enough to protect the total area. The entry fees are not earmarked and therefore can not be used to create, for example, a bigger and better enforcement force. The management plan has a focus on the training of residents and staff in partnership with the tourism industry and the plan contains the building of support of local communities by community based initiatives and community based eco-tourism. There are no clear responsibilities defined. Nevertheless, the involvement of the local communities in participating in the conservation and protection of the biodiversity and the natural resources of the park is taking place. The awareness of the importance of the national park as a World Heritage Site plays a major role and is a starting point for future revenues. The goal of Ujung Kulon National Park is to build a stronger conservation constituency to protect the park from future threats, which will be rather hard because Ujung Kulon National Park has a lot of pollution problems from the domestic, agricultural and industrial activities on Java.

### 5.3 Recommendations for the Ujung Kulon National Park

Ujung Kulon National Park has taken the first steps towards sustainability. But after having gone into the details of its management and finance structure, we can conclude that there is need for many improvements. Here we try to outline some recommendations how to improve the sustainability of Ujung Kulon National Park.

Being a National Park of Indonesia, the Ujung Kulon National Park receives budgets from the national government, which should generate some revenues if the government could use the debt-relief swap system. Indonesia has big debts, which has a major impact on its economy. Regulated by the national legislation, Ujung Kulon National Park can profit from the decentralization process currently taking place. The denomination of the park as a World Heritage Site should appeal to international donors and be a tool to strengthen sustainable financing mechanisms of the Ujung Kulon National Park (Quintela et al. 2004). Ujung Kulon National Park can use this to leverage existing donations and revenues.

To become more sustainable Ujung Kulon National Park should first achieve some stability of the revenues collected. The entrance fee to the park should be raised at least to the level required by law. Also other fees should be collected, i.e. licensing fees from the scuba diving operators. The revenues should be earmarked so that they remain in the use of the park and not disappear into central government. Eco-tourism should be further promoted, however, in a way that the increase of tourism takes place under controlled circumstances. This can be reached by organising training in marketing and by expanding the scale and diversity of tourism related operations. Applying for a tourism concession to some big Indonesian tourism operator can positively contribute to this, as can be extracted from the Komodo experience.

Whereas pollution and encroachment remain the biggest threats to the park, international community, especially development aid, should also focus on the community activities outside the park. This includes improving the infrastructure of the coastal areas (e.g. waste water treatment) and agriculture by developing an irrigation system to prevent the encroachment. Also the passing oil tankers pose a threat to the nature and therefore they should be charged with a special tanker fees.

For biodiversity and conservation purposes it would be essential to create a conservation trust fund. To be really effective, i.e. patrolling in the area requires more resources. Local community should be furthermore encouraged to participate in the conservation of the park.

More alternatives for sustainable livelihood (e.g. seaweed aquaculture) should be developed and the local fishermen should be included in greater extent.

#### 5.4 Final remarks

Sustainable financing is a new approach to solve the problem of scarce resources. Komodo National Park has already developed a significant amount of different financing mechanisms to reach self-sustainability. The park has developed a stable economic strategy based on well managed funds and a diversity of revenue generating mechanisms. Ujung Kulon National Park has taken a big step towards a more sustainable future after being nominated a World Heritage Site. It is expected that in consequence this the park will attract more donators and parties willing to cooperate. Ujung Kulon National Park is still far from being self-sustainable and needs to create more and effective mechanisms to be able to create conditions for both nature and the humans to survive. For both parks, government instability could pose a threat, which should be addressed by the design and implementation of the diverse portfolio of financing mechanisms.

Being a relative young issue, sustainable financing has developed in a progressive way which can be seen in the steps already taken at Komodo National Park. Nevertheless, other issues like the need to create a network of MPAs to address the problem of inequity between the different parks should also be considered.

At the national scale, governments need to recognize and accept that conservation and national development are inextricably linked. They should bear the ultimate responsibility of managing protected areas since they are national assets and provide benefits to the nation as a whole. They need both to remove and redirect funding for perverse subsidies to increase the financial flows to environmentally sustainable activities in general and to protected areas in particular. Policy considerations should include provisions that make it easier for protected areas to generate more funding necessary for them and government leaders would require further knowledge of the functioning of the stock market and investments. Luckily, governments are increasingly cooperating with NGOs, the private sector and local communities to finance protected areas. They must also create favorable conditions for such partnerships to emerge and flourish, without compromising their ultimate responsibility to safeguard their countries' protected areas. (Quintela et al. 2004)

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