



Valuing Nature:

Assessing Protected Area Benefits

A Quick Guide
FOR PROTECTED AREA PRACTITIONERS

ELEMENTS OF A PROTECTED AREA SYSTEM MASTER PLAN

BACKGROUND

- introduction to the master plan
- linkages to national and regional plans
- process for developing and approving the plan
 - mechanisms for reporting

VISION

- overall vision of the protected area network
 - desired future conditions
- short and long-term goals and objectives
- range of benefits of the protected area system

PLANS TO STRENGTHEN

PROTECTED AREA NETWORK

- representativeness
- connectivity and corridors
- ecological processes
 - restoration
- monitoring progress

PROTECTED AREA MANAGEMENT

- threat abatement
- management effectiveness
- protected area capacity
- distribution of benefits
- monitoring progress

PROTECTED AREA ENABLING ENVIRONMENT

- protected area policies
- sectoral laws and policies
- protected area governance
- existing and future costs
 - monitoring progress

IMPLEMENTATION PLAN

- integration into governmental budgeting and planning
 - a description of key strategies and priorities
- an action plan with steps, responsibilities, timeline, costs

ASSESSMENT RESULTS AND APPENDICES

- gap assessment
- threat assessment
- management effectiveness assessment
 - capacity assessment
 - benefits assessment
 - governance assessment
- sustainable finance assessment
- policy environment assessment



Introduction

ASSESSING PROTECTED AREA BENEFITS

Over the last two years, TNC has been developing and piloting ‘Valuing Nature’ campaigns oriented to assessing protected area benefits. These campaigns aim to identify and communicate social, cultural and economic benefits from the goods and services provided by protected areas. The identification of benefits at national and site levels is done through a careful compilation and analysis of available data from existing research, by carrying out socio-economic valuation studies, and by gathering testimonies through stakeholder interviews. The results are disseminated to target audiences through communication campaigns oriented to mobilize political will, build public support and increase domestic and international funding.

This guide brings together some results and lessons learned from the project, and leads practitioners through a step-by-step process for developing their own *‘Valuing Nature’* campaigns. Although such projects may seem like a lot of work to protected area practitioners already struggling to conserve biodiversity in the areas they are managing, there is an urgent need to explain the crucial role protected areas play – not just in conserving biodiversity but in providing many other benefits that contribute to human well-being. And this need is getting more urgent each day.

The world’s natural resources have been dramatically transformed through human actions. The changes we have made to natural ecosystems have provided us with substantial short-term benefits, but these have often resulted in the wide-scale loss, degradation and unsustainable use of resources. Protected areas are widely recognized as a vital strategy in efforts to conserve what



remains of our natural resources. By valuing and communicating the contribution protected areas also make to human well-being, we can strengthen the case for conservation today and in the future by influencing political will and spurring increased financial investments.

The importance of protected areas has been recognized internationally. Under the Convention on Biological Diversity's (CBD) *Programme of Work on Protected Areas (PoWPA)*, 190 governments have committed to achieving effective protected area systems in their countries by 2012. Governments have also agreed to assess, on an urgent basis, the economic, social and cultural costs, benefits and impacts arising from the establishment and maintenance of protected areas, and to adjust policies as needed.

This quick guide can help national protected area agencies, NGOs, and other interested parties meet several of the PoWPA's targets:

Goal 2.1 Target: *Establish by 2008 mechanisms for the equitable sharing of both costs and benefits arising from the establishment and management of protected areas*

Goal 3.1 Target: *By 2008 review and revise policies as appropriate, including use of social and economic valuation and incentives, to provide a supportive enabling environment for more effective establishment and management of protected areas and protected areas systems*

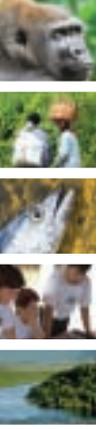
Goal 3.5 Target: *By 2008, public awareness, understanding and appreciation of the importance and benefits of protected areas is significantly increased.*

This guide does not specifically consider the social, cultural and economic costs associated in the development and management of protected areas.



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the challenge: why we need to assess protected area benefits

The UN's Millennium Ecosystem Assessment has concluded that approximately 60 percent of the ecosystem services worldwide are being degraded or used unsustainably (MEA, 2005). The most rapid changes are taking place in developing countries, where most biodiversity exists. Over the past few hundred years, human activity has increased the species extinction rate threefold and between 12 and 52 percent of species within well-studied higher taxa are threatened with extinction (CBD, 2006).

Despite such dramatic statistics, the political will to address conservation remains low in many countries and there is serious under investment in protected areas (see Figure 1 on overseas development aid in 2006 (OECD, 2008).

Although there has been a great commitment to putting land aside for conservation – nearly 120,000 protected areas have been established worldwide covering almost 12 percent of the earth's land surface, and one percent of marine areas – only 25 to 30 percent of these are under active management. Despite the rapid increase in numbers of protected areas, core funding appears to be decreasing (Mansourian and Dudley, 2008). It is estimated that in developing countries alone there is a current funding shortfall of over US\$1 billion (Bruner et al., 2004). A modest projection shows that effective management of an expanded protected areas system in developing countries may require US\$12-13 billion per year over the next decade (Emerton et al., 2006).

ODA for Environmental Protection 2006

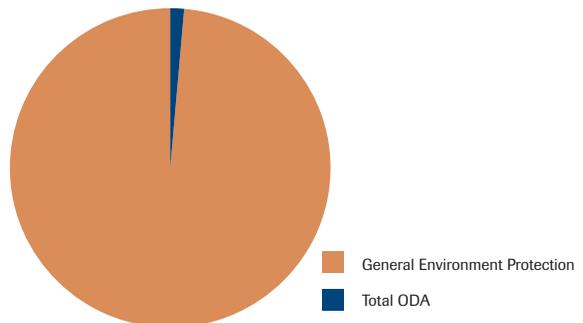


Figure 1: Overseas Development Aid for Biodiversity in 2006

Although funding is decreasing, protected areas are increasingly being expected to deliver social, economic and cultural benefits in addition to conserving biodiversity. Assurances that protected areas will provide such benefits are often crucial for attracting the support needed for their creation, but delivering on these promises is seldom easy. There is concern that local peoples' rights have been ignored in many conservation activities, perhaps most of all in the creation of protected areas such as national parks and wildlife reserves (e.g., Colchester 2003). The costs and inequitable distribution of benefits of protected areas have often been ignored, and there is a depressing list of examples of protected areas established through the forcible relocation of resident communities, and of the subsequent problems facing these people, who are often among society's poorest. It is clear that in the future, protected area establishment and management must by necessity be a more inclusive and thus altogether more complex, time-consuming and expensive procedure.

In these circumstances, examination of the linkages between protected area establishment and management, and issues of poverty in developing countries, has clearly become a practical and ethical necessity. And it is becoming increasingly clear that there is an intrinsic relationship between poverty and ecosystem health – many of the poorest people, particularly in rural areas, depend directly on access to continuing supplies of natural resources for food, materials and medicines. In addition, some 1.3 billion people depend directly on fisheries, forests and agriculture for employment (WRI, 2005). Protected areas also have a role in maintaining these vital natural resources and ecosystem services. This new direction for protected areas is fundamental to their future and is recognized in the Convention on Biological's overall target of achieving by 2010 *“a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on earth”*.

Protected areas are widely recognized as the cornerstone of biodiversity conservation. A study on the effectiveness of parks in protecting tropical biodiversity demonstrated that 97 percent of protected areas assessed were ecologically in far better condition than neighboring land with respect to vegetation clearing, and over 80 percent of the parks suffered less from illegal logging and burning (Bruner et al., 2001).

The development of the PoWPA is acknowledged as the most ambitious global commitment ever made by governments to completing a worldwide protected areas network. Signed in February 2004, this program draws heavily on the experiences of governmental and non-governmental protected area practitioners. It has wide support from the international and conservation community, governments around the world and from donor and funding organizations. Although many challenges remain in implementation, since 2004 some 2,300 terrestrial protected areas have been established as well as 50 marine protected areas, covering a total of 50 million hectares. Clearly many governments are taking their commitments to fulfilling the Programme of Work on Protected Areas seriously.

The setting aside of over a tenth of the planet's surface for the protection of natural biological diversity represents an extraordinary global recognition of the importance of nature protection. However, these statistics give a false impression of the strength of the world's protected area network. Many existing protected areas are on land that is of little social, cultural or economic value – ice caps, deserts and mountains, for example – and not in places with the highest ecological importance. Freshwater and marine systems are poorly represented in most protected area networks, as are grassland areas and lowland forests. To achieve a comprehensive, ecologically representative and effectively managed global network of protected areas will require creating new protected areas in places where there are greater human pressures on land and water, and where it will be necessary to show that protected areas offer a suite of benefits that extends well beyond traditional conservation concerns.

The need to demonstrate and communicate how protected areas contribute to human well-being is well recognized among the conservation community. A survey of protected area managers at the 5th World Parks Congress found that 78 percent believed that economic benefits of protected areas were significant to the broader community, and a third identified training relating to sustainable development as an important priority (Hockings et al., 2005).

The rest of this publication aims to guide practitioners and managers on how to assess protected area benefits. This guide is the result of the experience acquired by The Nature Conservancy in implementing pilot projects in several countries, as well as lessons learned from other valuation studies conducted by governmental, conservation and development organizations.



the many benefits and values of protected areas



The environment around us provides many resources that can be used to provide direct gains, subsistence resources, or less tangible benefits such as spiritual peace or mental well-being. Of course most protected areas are primarily managed to conserve biodiversity, but there are many other important values that protected area managers and protected area agencies are increasingly being asked to assess and even quantify.

These benefits can be divided into four categories:

- Providing services to enable people to make a living (e.g., fisheries and forestry, both subsistence and commercial)
- Supporting human life (e.g., potable water and clean air);
- Regulating other important ecosystems (e.g., mangroves that act as a nursery for juvenile fish)
- Having cultural significance and providing opportunities for recreation (e.g., sacred sites and walking trails)

The World Wide Fund for Nature (WWF) has identified a generic list of the range of possible benefits, both tangible and intangible, which can serve as an *aide memoire* when considering the values from protected areas (Dudley and Stolton, 2008). It is a long list – and one of the issues discussed over the next few pages is how to prioritize efforts on those values and benefits which can best influence political will and increase financial investments in conservation.

THE VALUES PROVIDED BY PROTECTED AREAS

- **Biodiversity:** the foremost benefit that protected areas should provide is the conservation of biodiversity, particularly when those areas involve rare, endangered or endemic species, or under-represented habitats, such as grasslands or freshwater areas.

- **Employment:** protected areas can provide major sources of employment for local people as managers, rangers, wildlife biologists, and through providing direct and indirect ecotourism services. Such employment can also sometimes provide additional education opportunities.
- **Food:** protected areas can provide a variety of food including wild food plants, wild game, and fish (either directly or through the contribution to fish stocks by protecting spawning areas). Traditional agricultural systems and associated agro-biodiversity is increasingly being protected in landscape protected areas, and protected areas can be important for the conservation of locally adapted crops and/or agriculture practices. Some protected areas are also important for livestock grazing and fodder collection, where this is an integral part of the conservation management.
- **Water:** natural vegetation in protected areas can help to maintain water quality and in some circumstances also help increase the quantity of water available (i.e., through filtration, groundwater renewal and maintenance of natural flows). Water from protected areas is important for non-commercial use, such as subsistence agriculture, drinking, washing and/or cooking, and for commercial uses including large-scale irrigation, waterways, bottling plants, hydro-electric power or municipal drinking water source.
- **Cultural and spiritual values:** many of the world's oldest protected areas were set aside for their cultural or historical values. They can contain important archaeological sites and historic buildings and protect pilgrimage routes and traditional land use systems. Many, if not most, of the world's protected areas include sacred natural sites or landscapes, such as sacred groves, waterfalls and mountains. Increasingly, protected areas are among the last places on earth where we can experience a sensation of wilderness or other similar iconic values.
- **Health and recreation:** protected areas are increasingly being recognized as important places to promote physical and mental health and also as major recreational resources. Health values can also be derived directly from medicinal resources within protected areas, e.g., medicinal herbs, for local use or for the pharmaceuticals industry.
- **Knowledge:** protected areas can be used to develop knowledge and education through formal and informal dissemination of information and by providing sites for ecological research and monitoring. Many sites also play a vital role in protecting potentially important species, such as crop wild relatives, which may provide important genetic material to combat disease or increase productivity of commercial crops in the future.
- **Climate change mitigation:** although we are still learning about how the global climate is changing, and the responses we can take to avert rapid climate change, it is clear that protected areas can play a role in both sequestering carbon and ameliorating local climate change impacts.
- **Disaster mitigation:** as we destroy natural ecosystem services, the frequency and impact of disasters is increasing. Protected areas can help mitigate these events by, for example, soil stabilization (e.g., preventing avalanches, landslide and erosion); flood prevention (e.g., mitigation in small watersheds, flood plains and wetland protection); and coastal protection (e.g., mangroves, sand dunes or coral reefs as storm and surge barriers).
- **Pollination services:** a value that is often overlooked is insect pollination – if insects fail, so will our crops. Protected areas can therefore play an important role in pollinating nearby crops or in contributing to the production of pollination products such as honey.
- **Materials:** in many protected areas it is legal to harvest a whole range of natural products including timber, fuelwood, coral, shells, resin, rubber, grass, rattan, and minerals, for example. A very large number of communities worldwide depend upon such materials for their subsistence and livelihoods.



the rationale for undertaking a ‘valuing nature’ campaign

In the pages that follow we will be looking in detail at the type of actions that together develop a **‘Valuing Nature’** campaign. But first we will take a quick look at what this sort of project can achieve and the reasons why more and more people involved in managing or supporting protected areas want to make the case for protected areas.

The overall objective of a **‘Valuing Nature’** campaign is the identification, systematization and dissemination of information about the environmental, social and economic benefits provided by protected areas in order to generate political will, create public awareness, and mobilize and increase funding for protected areas.

Specific objectives might include to:

- Show the relation between human well-being, including cultural, spiritual and other social values, and the ecosystem services provided by protected areas;
- Showcase the contribution of protected areas to the national and local economy and to a country’s development process;
- Influence decision makers, the private sector and international donors in order to secure political commitment and increase funding for conservation, especially for protected areas, and to improve laws and regulations;
- Investigate the distribution of costs and benefits of protected areas and highlight policy or management changes that can help balance these costs;
- Raise awareness in order to obtain public support for conservation and for protected areas;
- Mainstream conservation in the development agenda at national, sub-national and local level, in development and land use plans, programs and projects;
- Position protected area issues within society and within the institutional structure of the government ;
- Identify mechanisms and sources for financing conservation and consolidate sustainable financial mechanisms for protected area systems;
- Help develop methods to extract support for the environmental goods and services that the protected area provides, such as payment for environmental services schemes.

In some countries, studies have already been carried out that show the value of protected areas, both in terms of economic and social benefit. A few examples of their findings are given below as inspiration for the kind of case that can and has been made:

- America’s national park system generates at least US\$4 for state and local economies in return for every US\$1 the federal government invests in the parks’ budgets (Hardner and McKenney, 2006).
- Studies in Cambodia estimate that local residents depend on the natural resources of the coastal Ream National Park for subsistence and income to a value of US\$1.2 billion a year (Emerton, 2005).
- Total added value of protected landscapes in the northeast of England has been estimated at US\$446 million per year (Economic Development Consultants, 2005).
- In the Okavango Delta System of Botswana, community organizations generated an estimated US\$800,000 through partnerships with safari operators, sale of hunting quotas, crafts and small-scale

tourism ventures, which has been reinvested in community development projects such as recreational facilities, vehicles, lodges, and campsites (Mbaiwa, 2004).

- Kenya has in recent years earned over US\$300 million per year from tourism (much of it wildlife oriented) and disburses 25 percent of protected area entrance fees to communities around the parks (McNeely, 2004).
- In Guatemala's Sierra de las Minas, a pioneering payments for ecosystem services (PES) scheme has been set up whereby industrial users of water downstream compensate upland farmers for protecting the watershed (Dudley et al., 2008).
- Watershed protection is one of the commonest motivations for the development of community conserved areas by local communities. For example several dozen villages in the arid state of Rajasthan, India, have restored and conserved forests in watersheds to protect water flow in the River Arvari (Dudley et al., 2008).

Protected areas in Mexico: Rising budgets and increasing appreciation

Protected areas in Mexico are not isolated from the national economy. Their strategic importance to biodiversity conservation and the social programs developed within them are seen as vital components in the goal to achieve sustainable development.

But running a successful protected area system costs money. In the last few years the budget assigned to federal protected areas by the government has increased significantly. This stems largely from the efforts of executive and legislative branches of government and of many protected area practitioners in Mexico to highlight the multiple benefits derived from protected areas, and associating these benefits with the economic and social values they provide (Figure 2).

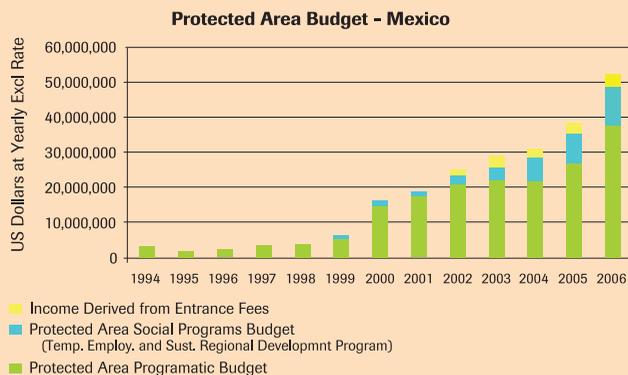


Figure 2: Protected Area Budget in Mexico

The Nature Conservancy has initiated a process for documenting goods and services provided by the country's protected areas including: tourism, carbon sequestration, water provision services, watershed protection, disaster mitigation and fisheries (Pabon-Zamora et al., 2008).

As an example, Mexico is the eighth most important tourist destination in the world, with around 21.4 million tourists arriving in 2006. Preliminary results from The Nature Conservancy's analysis show that federal protected areas currently receive around 14 million national and international visits per

year. Tourist expenditure in these areas amounts to some US\$660 million dollars per year, which is equivalent to 5.5 percent of the international traveler expenditures for the whole country.

Mexico's protected areas also have a global value. Researchers have tried to calculate the economic value of protected areas' role in mitigating global climate change through reduced emissions from deforestation and degradation (REDD). Since previously sequestered carbon has no real value under the Kyoto Protocol, The Nature Conservancy is developing a theoretical value range scenario. A price of US\$5 per ton of CO₂ was assigned as the higher end "potential value" of the scenario, and a US\$372.32 per hectare as the lower end; the latter corresponds to the price the Mexican Environmental Services Program was formerly paying for carbon sequestration. Current estimated theoretical value of REDD derived from Mexican federal and state protected areas adds up to some 2,446 MtCO₂, representing US\$12.2 billion at the higher end of the scenario and US\$5.46 billion at the lower end. To put these numbers into perspective, one could say that Mexican federal and state protected areas store an equivalent of 5.6 years of Mexico's CO₂ emissions (at the 2004 rate).



understanding the **'valuing nature' framework**

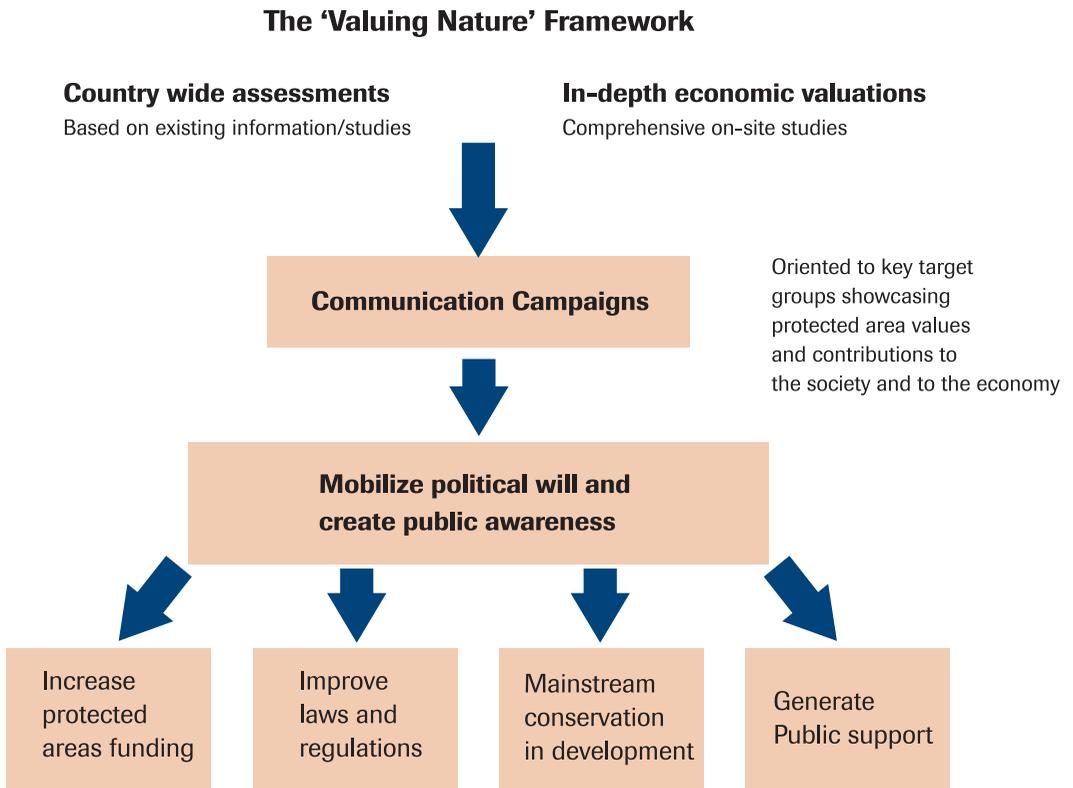


Figure 3: The Valuing Nature Framework

Various organizations have undertaken projects to value ecosystem services. However, only a few have concentrated on protected areas, and most of these focus on specific sites. Even where larger-scale studies on the broader social, cultural and economic impact of protected areas have taken place, policy makers and protected area agencies have rarely been able to put in place the mechanisms necessary to capture even a portion of the value protected areas provide back into protected area financing and management.

The framework (see Figure 3) suggests a process to achieve both these outcomes, by developing:

- **An assessment** through a series of studies that identify and value key benefits, i.e., the goods and services provided by protected areas; and

- A communication strategy aimed at showcasing the results of the study in terms of benefits provided by protected areas to human well-being.

Experience shows that the identification of benefits can take place at two levels: at the national level by conducting national-level assessments, and at the site level through in-depth valuation studies. During the implementation of the pilot projects, most countries opted for both types of assessments.

NATIONAL-LEVEL PROTECTED AREA SYSTEM ASSESSMENTS National-level assessments cover targeted benefits deriving from a country's entire existing and/or expanded system of protected areas. Assessments have looked at a range of issues from income, jobs, livelihoods, water and food security, to aspects of ecotourism, drinking and irrigation water supplies, non-timber forest products, fisheries, and cultural and sacred sites for indigenous communities. Assessments are usually conducted using methodologies that provide the information most relevant to decision making (see Table 1, page 20). The design of such studies should allow for their completion in a relatively short timeframe (e.g., one year or less) and should use methods that are simple to understand and implement, and avoid the collection of new data, unless absolutely necessary.

IN-DEPTH VALUATION STUDIES More in-depth studies target specific protected areas or groups of protected area, e.g., forest or marine protected areas. For practical purposes of timing and costs, just one or two target geographies might be considered. One criterion for the selection of in-depth studies is the existence of previous studies, which provide a valuable secondary data source. This type of study could look in detail at the total flow of benefits, including the different use (e.g., ecotourism, drinking water) and non-use (e.g., aesthetic) values that protected areas provide.





planning the 'valuing nature' campaign



Planning a 'Valuing Nature' campaign should be an interactive process, although the steps may take place in a different order, and some steps could be carried out simultaneously, depending on each situation. The two threads of the framework – the assessments and the associated communication strategy – should be considered throughout the study. Figure 4 sets out the actions required to implement a **'Valuing Nature'** campaign.

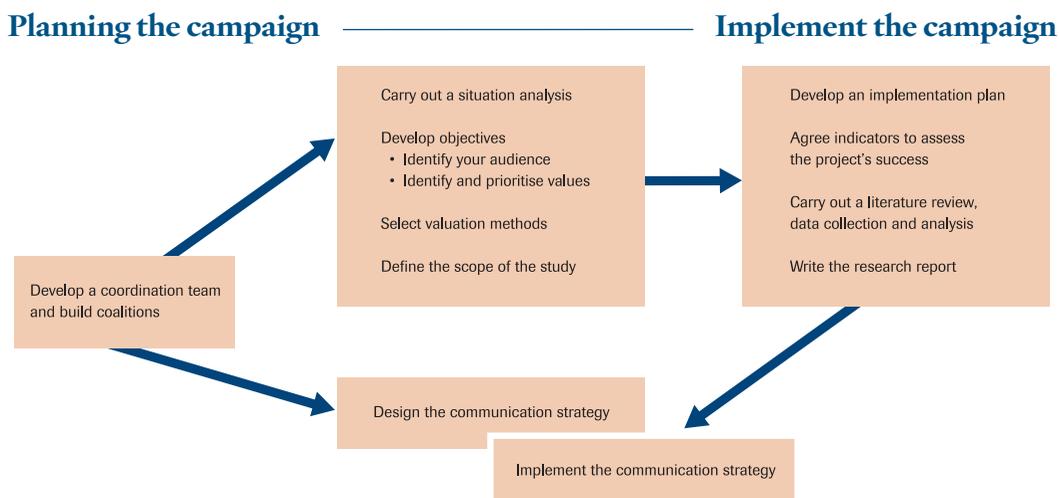


Figure 4: The Valuing Nature process

COORDINATION TEAM AND COALITION BUILDING Valuing the goods and services provided by protected areas requires a multidisciplinary approach and the involvement of different experts at different stages of the project.

Ideally, ‘**Valuing Nature**’ campaigns should rely on existing in-country coalitions working on protected areas (e.g., partnerships formed around the PoWPA). If no coalition is in place, an effort should be made to engage the right people at the beginning of the process, with teams including:

- Leadership by the national government agency responsible for the protected area system.
- Participation by environmental, development and poverty alleviation groups, NGOs and researchers, and institutions with expertise on poverty and conservation linkages. Discussions with experts from different organizations currently working on this cross-cutting issue can have several benefits, including learning from experiences in other geographies, identifying key tools and potential consultants, and attaining advice on conceptual and methodological issues.
- Participation by stakeholders who:
 - Are directly affected* positively or negatively by decisions relating to protected areas (e.g., indigenous peoples organizations, local groups and NGOs).
 - Have the power to influence* decisions made about protected areas (e.g., government departments, local community leaders).
 - Have an interest in the outcome* of the decision (e.g., private sector interests such as ecotourism, local fisheries).
- Specialists responsible for developing the communications strategies.

In this early stage of coalition-building, key topics to be addressed are:

- Composition of the coalition.
- How to coordinate the coalition’s work.
- Target audience(s) and overall political objectives of the project.
- Stakeholder engagement at strategic points in the process.

SITUATION ANALYSIS The campaign should not take place in isolation from the policy context and from the people who will ultimately use the results in decision making. To help shape the case, the situational analysis should first review issues such as need, political environment, practical implementation and community perceptions. The following list of questions can help frame the discussion:

- What is our conservation objective?
- What is the urgency of conducting the assessment? Why is there a need for action now?
- What are the consequences of not acting?
- What will be the impacts on the protected area objectives, and on local communities?
- What is the intended outcome – a change in funding, policy, distribution of benefits, or some other outcome?

The political environment is absolutely critical when you hope to increase funding opportunities or instigate public policy change. Questions to consider include:

- What level of government is best positioned to engage in your objective?
- What is the public level of trust in government?
- How many members of government do you need to influence? Is there a committee or a ministry that can affect change? Who influences individuals from this group?
- Do elections affect the elected official’s willingness to make changes?
- Is the timing of political events critical in launching the communication campaign – how do they coincide with election cycles?



- Have any of the elected or appointed officials already taken a position on issues relevant to the conservation objective (i.e., energy policy, growth and development)?
- How well does the assessment team know the government leaders? Are there officials who are particularly supportive?

To be effective, some practical questions should be asked in order to avoid making recommendations that cannot be implemented, such as:

- How are protected areas funded? If new revenue streams are being suggested are there any legislative issues which could make implementation difficult?
- What are the revenue predictions for the county or local government? Is there a surplus or deficit? What other competing needs could take priority over conservation objectives?
- Is there any local media coverage of issues related to your objectives? What was the tone of that coverage?

Finally, a situation analysis must take into consideration the local communities' support or opposition for the project's objectives. It is important to think about issues such as:

- What is the perception about income in the country? Is the country doing better or worse than neighboring countries?
- What is the perception about growth and development?
- Is there enough land for agriculture or energy production?
- What is the perception about taxes and fees in the country? How does the tax rate or perception of fees compare with neighboring countries?
- What is the relationship of conservation to other public priorities and environmental issues (safe drinking water, economic development, storm damage, sewage treatment, public safety)?
- How do attitudes about conservation and open spaces compare with other priorities like school concerns, transportation and public safety?
- What is the perception of groups and government ministries who do conservation work?

Economic, cultural and social arguments are very important for most societies. Tools like public opinion research can be useful in identifying current perceptions and priorities in relation to the environment. A public opinion survey can inform future research and provide guidance on ways to communicate conservation work that translate into the everyday life of the public. Furthermore, public opinion research can help shape the arguments and messages needed to achieve political leverage.



DEVELOPING OBJECTIVES Once you have carried out the situation analysis you should be in a good position to define the objectives of the campaign. These should be formed as specific statements detailing the desired accomplishments or outcomes. A good objective should be impact-oriented, measurable, time-limited, specific and practical, (e.g., double protected areas budget by 2015 year; create new protected areas to fill urgent ecological gaps in the system by 2012, secure government commitment to protect 30 percent of all terrestrial and marine areas by 2020 year).

The issues you will need to consider when developing the objectives include the audience, the values and benefits to be included in the study, the methods to be used, and the overall scope of the campaign.

IDENTIFYING THE TARGET AUDIENCE In order to identify the objectives of the campaign it is important to know the target audiences and the messages that will resonate with them. Audiences are individuals, leaders, organizations or agencies who can be targeted to help achieve specific objectives. These are the individuals or groups who have the ability to influence the policy or public funding outcomes you aim to achieve. It is critical to consider who will be using the information in the decision-making process. The research must highlight values that are relevant to the specific audience in order to be effective. It is important to note that an audience can sometimes also be a stakeholder. In this case, care should be given to identify any potential bias at the same time as referring to the stakeholder for insights into structuring the final report.

Identifying and prioritizing values

Valuation is not a single activity, and the seemingly simple question 'how valuable is an ecosystem?' can be interpreted in many different ways. It could be interpreted as asking about the value of the current flow of benefits provided by that ecosystem, for example, or about the value of future flows of benefits. It could also be asking about the value of conserving that ecosystem rather than converting it to some other use. These interpretations of the question are often treated as being synonymous, but they are in fact very different questions, and the answer to one will not necessarily be correct as an answer to the other.

Source: Pagiola, et al (2004)

Undertaking a comprehensive assessment and valuation of all the services provided by a protected area system is probably unrealistic. But by focusing on a few benefits of some carefully chosen values, a compelling case can be made to your target audiences. For example, 98 percent of the electricity produced in Costa Rica is generated by hydro-electric dams, which suggests that an economic valuation of the benefits of protecting watersheds could have the greatest impact and relevance when communicating the importance of protecting ecosystem services to decision makers.

From an initial list of benefits and services provided by protected areas, the project team should concentrate on those that have a major potential for being successfully communicated to target audiences in order to achieve objectives, influence policies and obtain support for protected areas.



Values can be classified in the following groups, some of which are easier to quantify than others:

- **Direct use values** refer to ecosystem goods and services that we use directly; they can be both consumptive and non-consumptive. Consumptive uses include timber for fuel and construction, harvesting of food products and collection of medicinal products; non-consumptive uses include the enjoyment of recreational and cultural activities that do not require harvesting of products but still involve the direct presence of the people, e.g., tourism. Direct use values are relatively easy to value because their prices are often traceable in markets.
- **Indirect use values** are derived from ecosystem services that provide benefits outside the ecosystem itself. Examples include mangrove forests that may provide storm protection to neighboring villages, water filtration by forests benefiting people far downstream, and carbon sequestration mitigating climate change. Indirect use values are more difficult to value because of the complexity of estimating the level of the service provided in relation to the ecosystem and of clearly identifying beneficiaries.
- **Non-use values** refer to the value that people derive from goods and services independent of any present or future use that people might make of those. Non-use values can be divided into bequest, existence and option values. *Bequest value* refers to benefits from ensuring that certain goods and services will be preserved for future generations (e.g., by trying to reduce the causes of climate change through payment of carbon offset). *Existence value* reflects benefits from simply knowing that a certain good or service exists (e.g., people in Europe 'adopting' endangered species in Africa to help fund conservation). *Option value* arises from uncertainty about the future demand for, or supply of, the value (e.g., people may be willing to pay for preserving biodiversity for genetic materials such as crop wild relatives) and this protection ensures the option of having related services in the future (e.g., access to genes that could be resistant to a virulent crop disease which is reducing harvests). This is essentially an environment insurance premium.



SELECTING VALUATION METHODS In a world where decisions are frequently influenced more by economic considerations than by the intangible values associated with human well-being, identifying economic values for the benefits provided by protected areas may be the best way to communicate the message. However, there will be situations where intangible values, especially those related to cultural and religious issues, might also be very important to identify.

As the awareness of the crisis facing the environment has risen, so has the suite of methods and tools providing guidance on how to undertake assessments. As noted above there are many different ways that values can be categorized, all of which have a range of associated valuation techniques. Table 3 provides a brief summary of the main economic valuation methods available. The column detailing the approach provides an indication of the sort of data that will need to be collected and the column on limitations highlights the difficulties which you may face with data collection.

These methods can be divided into three broad groups:

- **Direct market price methods:** these assess value by studying how much an environmental good is bought or sold for and thus what its value is. It is the most straightforward valuation method, but unfortunately direct markets for environmental goods and services rarely exist.
- **Revealed preference methods:** these assess actual consumer or producer behavior to identify the value of non-marketed goods by studying complementary or surrogate markets. A variety of methods exist including replacement cost, damage cost avoided, net factor income, production function, hedonic pricing and travel cost.
- **Stated preference methods:** these use surveys to ask people to state their preferences in relation to the provision of environmental goods or services, which is then used to estimate the value. Methods include contingent valuation and choice modeling.

Choosing which method to apply will be context specific and will depend on the findings of the situation analysis and on the scope of the project. Sometimes a number of different methods may need to be used in order to estimate the value of different services from a single protected area or protected area network. For example:

- Food, timber, fuel wood etc can usually be valued using market prices
- Water filtration and storage are more likely to be valued by assessing replacement cost, net factor income or production function
- Disaster mitigation can be valued through, for example, river flow control or coastal protection can be valued using methods such as replacement cost, damage cost avoided, production function or net factor income
- Support to fisheries can be assessed through net factor income or production function
- Recreation value assessed through market prices, contingent valuation, travel cost, hedonic pricing or choice modeling
- Visual aesthetics can be valued using contingent valuation, hedonic pricing or choice modelling methods
- Biodiversity value can be calculated through contingent valuation or choice modeling (van Beukering et al, 2007)

More advice on using these different methods can be found in the *Valuing the Environment in Small Islands. An Environmental Economics Toolkit* referenced at the end of this guide.



VALUATION METHOD	APPROACH	APPLICATIONS	EXAMPLES	LIMITATION
Market price	Observe process directly in markets	Goods and services from protected areas that are traded in markets	Timber and fuelwood from forests; water resources	Market process can be distorted, e.g., by subsidies. Protected area services often not traded in markets
Replacement cost	Estimate cost of replacing environmental service with human-made service	Ecosystem services that have human-made equivalent that could be used and provides similar benefits to the environmental services	Costal protection by mangroves, water storage and filtration in forests and wetlands	Over-estimates value if society is not prepared to pay for human-made replacement. Under-estimates value if human-made replacement does not provide all the benefits of the environmental services (i.e., biodiversity benefits)
Damage cost avoided	Estimate damage avoided due to ecosystem service	Ecosystems that provide protection to infrastructure and other assets	Landslide/avalanche protection from forests, wetland protecting against floods	Difficult to relate damage levels to ecosystem services
Net factor income	Revenue from sales of environment-related good minus cost of other inputs	Ecosystems that provide an input in the production of a marketed good	Filtration of water by wetlands, commercial fisheries supported by nursery areas protected by coral reefs	Over-estimates ecosystem values
Production function	Estimate value of ecosystem service as input in production of marketed goods	Ecosystems that provide an input in the production of a marketed good	Commercial fisheries supported by nursery areas protected by coral reefs, materials used in handicraft production	Technically difficult. High data requirements
Hedonic pricing	Estimate influence of environmental characteristics on price of marketed goods	Environmental characteristics that vary across goods	Air quality, scenic beauty, cultural benefits	Technically difficult. High data requirements
Travel cost	Travel costs to access a resource	Sites used for recreational purposes	Protected areas	Limited to recreational benefits; hard to use when trips are to multiple destinations
Contingent valuation	Ask respondents directly the amount of money individuals are willing to pay for a specified service	Any environmental good or service	Species loss, protected areas, air pollution, clean water	Expensive to implement
Choice modeling	Ask respondents their willingness to pay for their preferred environmental goods or services from a set of alternatives with particular attributes	Any environmental good or service	Species loss, protected areas, air pollution, clean water	Expensive to implement. Technically difficult.
Value transfer	Use values estimated at other locations	Any environmental good or service when comparison studies available	Species loss, protected areas, air pollution, clean water	Can be inaccurate, as factors vary even when contexts seem 'similar'; should be used with caution

Source: Adapted from Pagiola et al., (2004) and van Beukering et al., (2007)

Table 1: Valuation methods, application and limitations

DEFINING THE SCOPE There are several important issues to consider when defining the scope of the project, including:

- *Identifying opportunities*: the **‘Valuing Nature’** campaign can offer the most leverage for tangible outcomes if it coincides with an opportunity to increase public awareness or build political will. Carrying out a situation analysis should help identify any suitable opportunities.
- *The timeframe a timetable*: for the study should be developed around any opportunity identified and should realistically reflect the funding available and the complexity of the tasks being planned (see example below). Bear in mind that times for activities can vary significantly depending on the specific situation, and they can also be implemented simultaneously, reducing the overall timeline of the project.

Time to Milestone

Example of timeline for a Nature’s Value project:

- 2 months to develop concept and get agreement with potential partners
- 2 months to get team in place and ready to go
- 6 months for research and fieldwork
- 3 months for write up and review
- 2 months for layout and design
- 2 months for layout and design
- 1 month for launch

- *Geographical areas to be covered*: this could include either the entire system of protected areas, or selected areas within a system, e.g., specific regions, biomes or categories of protected area.
- *Consultation*: it is important to define the type and intensity of the consultation processes and participation of stakeholders. Stakeholder involvement can be sought at strategic points in the process. A stakeholder analysis can help to plan who should be involved and at what stage of the process. You can assess stakeholder influence and the likely impact on the project by using a simple matrix, such as the one shown in Figure 5.

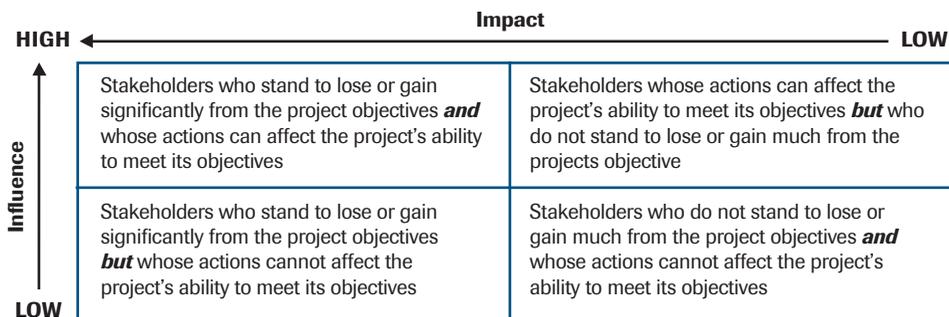


Figure 5: Prioritizing stakeholder consultations

- *Experts*: identify experts needed to support the project (e.g., economists, sociologists, hydrologists, biodiversity specialists, surveyors, administrative staff), bearing in mind the objectives and scope of the project.
- *Budget*: the reality check for many projects comes in reviewing the available budget against the objectives and planned outputs. Detailed budgeting will be needed when developing an implementation plan, but it is important at the planning stage to be aware of the budget that is available, or being sought, when developing the scope of the project.
- *Focus the message*: Review the links between the research and communication aspects of the campaign throughout the planning process. Remember to always think about your audience to help narrow the scope of the research and increase its focus, by asking, for example: What is your message? Who is your message for? What does your audience think now? What would you like them to think? How can you best get your message across?



implementing a **‘valuing nature’ campaign**

After the planning process is complete, it is best to develop a thorough implementation plan to help guide the process, and to develop measures of success to monitor achievements. Major implementation steps will include research and report writing.

The implementation plan

An implementation plan is essential to meet the expected timeline and use the resources available efficiently to achieve the objectives. The plan should be agreed upon by all the parties engaged in the project.

Important elements of the implementation plan include:

- A description of the methodology and tools to be applied during the study to assess the value of the benefits which are being focused on.
- Allocation of budget and associated resources needed for implementing the activities such as:
 - Staffing for administrative support, logistics and data collection (e.g., researchers)
 - Expert support required for specific studies (e.g., hydrologists, anthropologists,)
 - Communication budget (e.g., for publications, media)
- An implementation timeline sufficient to allow the team to synthesize and systematize the data and information gathered during the research phase of the project. This comprehensive analysis should use a multi-disciplinary approach and appropriate methods. Agreeing on these methods and outlining collaboration of in-house staff and consultants should be completed prior to starting the research process.
- Assignment of responsibilities to the different consultants, staff or stakeholders for each activity. Work by external consultants or experts should be clearly described and terms of reference (TOR) developed, including:
 - Purpose of the assignment
 - Project management arrangements including deliverables, timeline and expectations
 - Proposed division of work between in-house staff, experts and consultants
 - Criteria for review of consultants’ performance
 - Process for monitoring the research process and results of the consultants’ work
 - Where the results will be communicated and how acknowledgement will be provided
 - Process for payment, closely associated to deliverable schedule

Changing perceptions of the value of protected areas and their connection to human social and economic well-being is a long-term process that requires a coordinated, consistent and long-term strategy. The implementation plan should therefore also include a discussion of the steps required to continue advancing policy and advocacy goals once the initial project is complete.

Assessing the project's success

Specific output and outcomes measures should be included in the implementation plan in order to measure success. *Outputs* refer to achieving the activities as outlined in the implementation plan (i.e., what did we do and what products and services were produced?) while *outcomes* looks at whether or not the broader objective of project have been achieved.

Output measures could include:

- The number of reports written, journal articles published
- The placement of articles and news reports in the media about the project and importance of protected areas

Outcome measures could include indicators related to:

- Securing political commitments and increased funding for conservation, especially for protected areas, and for improving laws and regulations.
- Encouraging the private sector and international donors to increase the budget for conservation and specifically for protected areas.
- Mainstreaming conservation in the development agenda at national, sub-national and local development level in plans, programs and projects.

OUTCOMES	PERFORMANCE INDICATORS	VERIFICATION	OUTPUTS
Increase public support and awareness	Increase by 50% from X year baseline national and district media coverage on the contribution of protected areas' ecosystem goods and services to human well-being	Coverage in national and district media (newspaper, magazine, TV) on protected area	Communications strategy, document and material for media campaigns Media presentations
Financial commitment from government for protected areas and conservation	15% yearly increase from X year baseline in national and local budgets allocated for protected areas and conservation. Implementation of fisheries and marine protected areas (MPA) studies intended to provide recommendations for sustainable funding for protected areas	Yearly budget from the mentioned national and district governments Implementation of the mentioned fisheries and MPA studies	Reports from government agencies that indicate increase budget for protected areas Study to identify the effectiveness of fisheries subsidy Study on MPA and poverty alleviation
Advance policy and legislation	Approval of the National Action Plan on Protected Areas	Production of National Action Plan lead by Ministry of Forestry	Published National Action Plan on Protected Areas

Table 2: Example of some of the draft monitoring and performance indicators for the 'Valuing Nature' campaign in Indonesia



Literature review, data collection and analysis

One of the first steps in the implementation is a thorough review of existing literature on the assessment and valuation of the key values and benefits you have chosen to concentrate on. During the literature review you should:

- Identify information sources, availability, quality and quantity of data and information
- Conduct an in-depth assessment of peer-reviewed literature and compile information on secondary sources information and data available
- Identify information gaps and needs for further study
- Archive material reviewed

Based on the information gaps and needs identified in the literature review, the project will need to design and apply methods, tools and instruments for additional data collection (e.g., questionnaires, surveys, interviews, testimonies) and research projects.

Once the literature review and results of additional data collection have been developed, the assessment team will need to choose one of the methodologies highlighted in Table 1 to systematize the data and conduct a comprehensive analysis.

REPORT WRITING The final overview report should present the main findings using simple and understandable language appealing to the target audiences. Producing a short policy brief is strongly recommended as those in decision-making positions will not read through an extensive treatise – rarely does a minister or government official have more than five minutes to spare on such issues. This does not diminish the importance of the research conducted, as this research is needed to justify the findings, and provide further information when required.

In brief the final report should be:

- Based on research that is thorough and credible
- Provide clear and convincing arguments for protected areas with the main findings of the analysis using simple and understandable language that appeals to the target audiences.
- Use strong scientific quantitative and qualitative arguments, including the perception of stakeholders on the benefits of protected areas, (e.g., the testimonies of local people)
- Be peer reviewed by a diverse group of specialists including those with controversial or opposite opinions on the subject. Peer review by stakeholders with a keen eye to the receiving audience is critical . The valuation should relate to the country's current socio-political environment, existing development policies, laws and regulations as well as any global commitments such as the PoWPA.

Designing and implementing the communication strategy

The success of the Valuing Nature campaign will to a large extent depend on the effectiveness of the communication strategy and its ability to achieve the desired results. The development of the communication strategy should start early in the project. The strategy should inform the project on the best arguments to pursue or the target groups to focus the study and the communications campaign on. Issues to bear in mind when developing the communications strategy include:

- Set clear goals for communications that relate directly to the campaign objectives (e.g., “achieve the passage of new laws that will strengthen the legal status of protected areas”). Avoid broad generalized goals such as “raise public awareness” which have no measurable outcomes.
- Identify target audiences for communications during the planning stages of the project.
- Plan to develop key messages based on the findings that present a compelling argument for target audience. These messages should be developed to address specific concerns and priorities that were identified for target audiences in the situational analysis.
- Identify the most effective communications channels to reach target audience and deliver key messages; this could include the media, launch events, workshops, print materials or paid advertisements.
- Identify key spokespeople based on relevance to target audience.
- Identify the availability of funds for the communications strategy, and engage stakeholders, interest groups and potential donors for its financing and dissemination.

A number of different tools can be used to communicate and leverage the final report. Activities should be based on those most likely to reach audiences critical for achieving the outcomes identified in the planning stages of the study. Table 3 illustrates how different communications tools can be used depending on the audience and their interests in the project.





AUDIENCE	INTEREST IN PROTECTED AREAS	USE OF THE VALUATION STUDY	COMMUNICATION TOOLS
Local community	Extractive use, recreational use, harvesting, derived economic benefit (e.g., tourism)	Increase in knowledge about the value of protected area. Demonstrate need for sustainable use of natural resources	Local outreach – e.g., community education campaign, community meetings, local news story, local radio
Politicians and national policy makers	Possibly very low interest. Lack of awareness of uses and services provided and associated economic benefits	Increase awareness of the economic use of the ecosystem. Describe national and local economic benefits associated with protecting ecosystems and potential costs if ecosystem degrades	Presentation, maps, policy brief, poll results, individual meetings, short film, story placement in high profile media.
Local NGOs / International NGOs	Conservation. Poverty reduction. Social and economic development	Provides all parties with the same data on which to come to a consensus about the economic benefits of protected areas.	Policy brief and full report, presentation, side event at regional or international conservation meeting.
Multilateral and bilateral donors	Possibly low, focused on development agenda	Increase in awareness of the link between protected areas, poverty reduction and social and economic development	Policy brief, presentations at high level international meetings, individual meetings, international high profile media.

Table 3: Communication methods suited to different audiences

The content of the different communications tools outlined in Table 3 will depend to a certain extent on the audience and objectives. In order to disseminate the findings in Venezuela, for example (see case study), the assessment team developed a short presentation with the purpose of briefly discussing with decision makers the objectives and scope of the campaign. The team used the following strategies in developing this presentation:

- *Predominance of visual images:* to illustrate the main ideas by means of visual impacts.
- *Content of the message:* technical arguments with figures documenting the benefits of the protected areas.
- *Information sources:* wherever possible, use official sources from the government.

In Peru (see case study), a major media campaign has been developed with a series of newspaper and magazine articles to ensure that the results of the study reached audiences across the country.

In a study focused specifically on marine protected areas and poverty reduction in the Pacific Island a short video was developed (see <http://www.nature.org/initiatives/protectedareas/howwework/art23185.html>) to illustrate the findings of the project.

case study: the contribution of protected areas to the economy of peru

INTRODUCTION Peru is a mega-biodiverse country with a rapidly expanding protected areas system. In the last 20 years, the area protected by the National System of Natural Protected Areas (SINANPE) has increased dramatically, from 4.4 million hectares in 20 protected areas in the 1980s to more than 18 million hectares in 2007. This progress in terms of geographic coverage and biological representation has not been matched by an increase in personnel or technological and financial resources needed for the management of a bigger and more complex system. Peru thus faces a challenge common to many countries that are attempting to develop a more comprehensive, effectively managed and ecologically representative national system of protected areas – how to ensure that resources keep pace with the growth of protected areas.

THE QUEST FOR SUSTAINABLE FUNDING Sustainable financing is one of the major challenges currently facing protected areas in Peru. Most of the country's protected areas receive economic resources from external donors, i.e., bilateral and multilateral assistance, international NGOs and philanthropic institutions. Between 2002 and 2005, sources of funding were, on average, 73 percent from donations, 17 percent from resources directly obtained (e.g., entrance fees) and 10 percent from the Peruvian Government. There was therefore a very high dependency on external sources of funding.

As external funding became scarcer and funding allocations dropped, this imbalance in funding sources was brought into sharp focus. In 2005, the SINANPE budget was US\$18 million, while the optimum requirements for proper management were estimated as being around US\$38 million (GPAN, 2006). In order to narrow this funding gap, SINANPE developed a financial plan recommending a better understanding of the values of goods and services provided by protected areas. The overall aim of this plan was to position the protected area system within Peru's national agenda, increase public awareness and generate political will and funding.

Based on this recommendation, the Protected Areas Agency at the Instituto Nacional de Recursos Naturales (INRENA) carried out a national level study to showcase the different benefits provided by protected areas to the national economy. The study demonstrated that the current and potential benefits of Peru's protected areas contribute over US\$1 billion per year to the national economy.

UNDERTAKING THE PROJECT The project's objectives were to:

- Better position natural protected areas on the political agenda and integrate them into plans for national development
- Review the prospects for finding new financial resources for protected areas
- Look specifically at the contribution of protected areas to the development of sustainable tourism
- Review options regarding payment for environmental services schemes
- Develop alliances with the private sector
- Run joint projects with local and regional governments.

This was an ambitious project - eight key values were chosen as the focus of activities. There was very little primary information available in the country on the values, and thus the data collection stage of the project took about two years, followed by a further year to analyze the results and write up the findings.



VALUE	INDICATOR
1. Human water consumption	National market prices
2. Hydro energy production	National market prices of energy transmission
3. Irrigation	National market prices of agricultural products
4. Tourism collection	National market Prices
5. Tourism economy effect	Average expenditure of tourist and national tourism studies
6. Non-timber forest products	International market prices
7. Erosion protection	Avoid cost
8. Carbon storage	Carbon international price

Table 4: Values identified for the Peru study

During the process, all of the results were verified by experts, including the analysis of data, and their relation with the protected area. It was also necessary to work with a geographer to map the results for simple and effective communication, and to assist with the analysis of international data.

RESULTS: VALUING CONSERVATION IN PERU Data were collected and reviewed for all the values identified in Table 4. Three examples of the findings are given here (Leon and Chang, 2008; Pabon-Zamora et al. 2008). Tourism is a major industry in Peru. The study found that for every dollar invested in tourism in protected areas, the return was US\$46. In 2005, protected areas registered over 350,000 visits. This activity generated a multiplier effect yielding US\$146 million for the national economy and US\$1.7 million for the protected area agency in entrance fees. It was calculated that with the projected growth in visits to protected areas, accompanied by an adequate investment in the sector, an additional income of some US\$800,000 per year could be generated in entrance fees.

Around 2.7 million people in Peru use water originating from 16 protected areas (with an approximate value of US\$81 million), and 60 percent of the hydro-electricity produced in the country comes from rivers in protected areas (with an approximate value of US\$320 million). The 16 million hectares of tropical forests in Peru's protected areas store around 3.9 billion tons of carbon. Although an average of 150,000 hectares is deforested in Peru annually, around 36 million tons of carbon is not released to the atmosphere every year from avoided deforestation in protected areas. The value of this service was calculated to be equivalent to US\$127 million per year at a price of US\$3.5 dollars per ton.

COMMUNICATING THE RESULTS Identifying and quantifying the values and benefits of a protected area system is the first step – the second is to use these results to influence a change in attitude to protected areas and to mobilize political will, build public support and increase funding for protected areas. But these changes are unlikely to happen overnight. In Peru the first step in the communication strategy was to place a series of articles about the wider benefits of protected areas in the national media. The results of the research have also been written up internationally in publications by the CBD and World Commission on Protected Areas. These strategies, along with others aimed at delivering the overall objectives of the project, will continue until more resources are allocated for the effective management of SINANPE, the benefits of which will clearly be advantageous to the Peruvian society and economy as a whole.

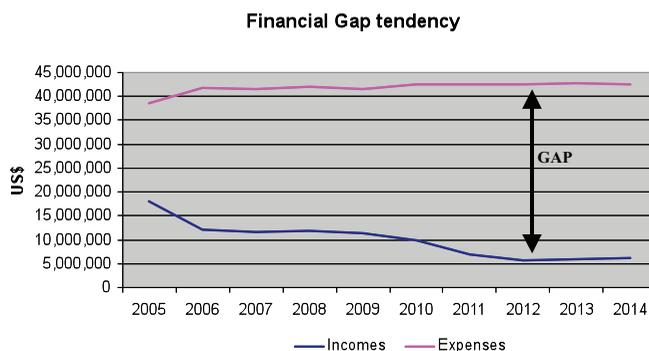


Figure 6: The gap between actual funding and required funding to effectively maintain Peru's network of protected areas

case study: benefits of protected areas to the well-being of venezuelans



DEVELOPING THE STUDY Venezuela’s protected areas cover 17.6 million hectares, or around 19 percent of the territory. Most of these areas, as in other countries in Latin America, are inhabited by rural communities and indigenous groups.

Following an institutional and technical dialogue with INPARQUES (National Institute of Parks in Venezuela), The Nature Conservancy supported the development of a study on the benefits of protected areas to the well-being of Venezuelans.

The goal of the project was to target specific audiences to showcase the values of protected areas and their contribution to the society and the economy of Venezuela in order to mobilize political will and funding. The main indicators of success were the political positioning of protected areas within the government, the increase in budget for protected areas and an improvement in the legislation which promotes and favors conservation and protected areas. The campaign concept was that: *“People need parks and parks need people”* and the objectives were:

- To recognize and support INPARQUES in the management of national parks in Venezuela;
- To promote activities that favor sustainable development and protect the natural and cultural heritage of national parks in Venezuela;
- To inform and promote conservation at communal councils;
- To be pioneers of a development model that promotes sustainability and economic independence, within the framework of “environmental health” as a national priority.

PROJECT PLANNING The first step was coordination with decision makers in the national government. From this it was clear that civil servants and government institutions were not familiar with issues related to protected areas, and interest in the initiative was initially relatively low. The team decided that developing surveys and/or interviews with these groups would not be a suitable instrument for understanding the



perceptions and visions of governmental actors to protected areas and their contribution to human well-being. Instead, a workshop was held in September 2007 for representatives of the government, the academic sector and conservation organizations. The workshop developed recommendations on the content of the technical document and on the approach and tactics to be considered when designing the communications strategy.

PROJECT OUTPUTS The project in Venezuela is still ongoing, but there are already several outputs, including:

- A technical document that systematizes the contributions of protected areas to well-being based on case studies from specific sectors, including tourism, water, food security and cultural heritage.
- Guidelines for the implementation of a communication and awareness strategy (see below), focusing on two key public target groups: public sector managers and communities.
- A presentation which can be used by environmental authorities to sensitize decision makers within the government on the importance of protected areas by making clear the linkages between human well-being and ecosystem services.

Tangible Benefits of Protected Areas in Venezuela

Some of the results of the project are already being used as a “call for action” for protected areas. For example, the study illustrated the social and economic value of water generated within protected area watersheds, thus providing arguments for the Ministry of the Environment of Venezuela to consider a proposal for the creation of a water fund as established in the national law (*Ley de Aguas*, 2007). This fund could direct financial resources to the protected areas in a watershed, thus supporting the financial sustainability of these areas.

THE FACTS

- Venezuela has a potential for generating hydroelectricity- equivalent to the production of 2.5 million barrels of oil per day (Venezuela currently produces 3.2 million barrels of oil per day).
- The Caroni River watershed encloses the highest electricity generation potential, estimated to be 24.9 thousand MWatts. Around 86 percent of the watershed is in nine protected areas.
- Around a third of the water captured by The Guri Dam comes from Parque Nacional Canaima, which increases the lifespan of the dam from 50 to 60 years due to the reduction in sedimentation.
- The water generated in 18 national parks serves around 19 million people or 83 percent of the country’s urban population. However, this amount could be reduced to 10 to 30 percent in the next 20 years due to the current rates of deforestation and erosion.
- Water from protected areas also benefits smaller settlements, such as those receiving water from Parque Nacional Sierra Nevada. The park is home to some 80,000 inhabitants
- Around 20 percent of land under irrigation receives water originating from protected areas (Pabon-Zamora et al. 2008).

COMMUNICATION STRATEGY In January 2008, a second workshop, this time of protected area professionals, was held to identify opportunities, strengths and threats to be addressed in the implementation of the communication strategy. The communication strategy and materials subsequently developed objectives of ensuring that the information generated by the study could be understood and assimilated by the general public and by decision makers. The strategy has been structured around some key issues:

- **Who is the target audience?** The primary target audience identified were decision makers from the productive sectors and the organizations in charge of assigning financial resources, since they were the main agents of change in relation to the objectives of the campaign.

- **What do we want our audience to think and what do we want them do?** The assessment team hoped that decision makers, whose work was not on environmental issues, would realize that national parks are strategic areas for sustainable development instead of believing that national parks are unproductive territories.
- **How to develop persuasive concepts?** The team hoped that decision makers would realize the links between conservation and other government sectors and realize that most sectors depend directly or indirectly on natural resources management, in particular through the effective conservation of protected areas. Positive conservation actions by these decision makers should increase their prestige, respect, authority and acceptance. Decision makers should be seen as the agents of conservation, and the guardians of the national heritage as well as promoters of sustainable development.
- **How to reach the target audience in an effective way?** In order to achieve success it was very important to get the endorsement and leadership of INPARQUES. In addition to their direct participation in the project they could also facilitate access to other government agencies.

Once government organizations take a lead in the project, a pamphlet or brochure can be produced, calling for targeted actions from decision makers. The second phase of the communication strategy will reach a wider audience (i.e., the general public at national and local levels) in order to consolidate the message and create awareness among the people of Venezuela of the benefits of preserving protected areas for human well-being.





references and resources

RESOURCES

DEVELOPING CONSERVATION PROJECTS

The Conservation Measure Partnership's *Open Standards for the Practice of Conservation* identifies best practice when developing and undertaking a set of actions aimed at achieving defined goals and objectives.

The Open standards can be downloaded at:

conservationmeasures.org/CMP/Site_Docs/CMP_Open_Standards_Version_2.0.pdf

DEVELOPING COMMUNICATION STRATEGIES

Spitfire Strategies provides communications solutions to promote positive social change.

Their website includes a set of experience-based tools for non-profit communications professionals.

Available at: www.spitfirestrategies.com

STAKEHOLDER ANALYSIS

Carrying out a stakeholder analysis can help you decide who is key to the successful implementation of the project, how stakeholders will be involved in the process and at what stage. Stakeholder analysis methods have been developed by social scientists and used by conservation organizations worldwide.

For more information see:

www.iucn.org/themes/eval/documents2/situation_analysis/approach_and_method.pdf

assets.panda.org/downloads/1_1_stakeholder_analysis_11_01_05.pdf

LITERATURE ON ECONOMIC VALUATION

The most comprehensive database is the Environmental Valuation Reference Inventory (which is free to residents of Australia, Canada, France, the United Kingdom and the United States)

It is available at: www.evri.ec.gc.ca

The newly developed Ecosystem Services Database is due to be populated with material over the coming years. *It can be found at:* esd.uvm.edu

Several web sites contain repositories of information including assessment of biodiversity values.

For example: www.conservationfinance.org, www.biodiversityeconomics.org, ecosystemmarketplace.com

LITERATURE ON CULTURAL AND SPIRITUAL VALUES

The IUCN-WCPA Task Force on Cultural and Spiritual Values of Protected Areas is a good place to find information on intangible values.

See: www.fsd.nl/csvpa

TOOLS

The Nature Valuation and Financing Network aims to stimulate the development and exchange of practical tools and best practice for the valuation of ecosystem goods and services. The web site includes a section on valuation methods and guidelines.

See: topshare.wur.nl/naturevaluation

The Earth Conservation Toolbox is a multi-organizational initiative building an open-access database of tools and methodologies to help field programmes, governments and others implement the ecosystem approach and includes many tools relevant to developing Valuing Nature campaigns.

See: www.earthtoolbox.net

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