WWF

Our planet. Our future. Our Summit

Sustainable Livelihoods Sustainable World

A study of sustainable development in practice from promising initiatives around the world

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Front cover photograph: Main picture: WWF-Canon Jürgen Freund. WWF Nusa Tenggara, Leif Öster, WWF-Canon Meg Gawler.

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Introduction

The World Summit on Sustainable Development (WSSD) presents an important opportunity to re-energise the sustainable development agenda and to stimulate significant progress to ensure the health and sustainability of our planet and the well-being of all its inhabitants.

Since the publication of *Our Common Future* in 1987[1], it has been clear that sustainable development will only be possible (and truly sustainable) if it takes into consideration the ways in which humans interact with ecosystems. This perspective puts additional constraints both on development activities and on conservation actions.

It is clear that the Johannesburg Summit will need to move beyond reaffirming the principles of sustainable development to actually pointing the way forward on how the relationship between poverty, livelihoods and the environment can be tackled in an ever more globalised world. Some critical areas for action include:

- Recognising that maintaining and restoring environmental assets and natural resources is an integral part of a comprehensive sustainable development framework
- Strengthening the access of the rural poor to natural resources and enhancing their capacity to manage those resources sustainably
- Acknowledging and rewarding rural people for their role as stewards of ecosystem functions and services
- Integrating social equity and environmental integrity safeguards into decision-making mechanisms by governments and other stakeholders, including the private sector
- Adopting equitable national, sub-national and international laws and policies, e.g.: land reform to support the poor, empowerment of women and other marginalised groups, and fair trade and investment rules.

The eight case studies in this document show the many links between the sustainable livelihoods and environmental conservation agendas. The case studies emphasise different approaches to conservation that can reconcile both people's needs and conservation objectives.

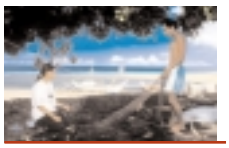
The detrimental effects of some conservation approaches, for example inappropriate protected area management on local people, have been well documented. Many problems arose from the mistaken belief that people can only ever be part of the problem, not part of the solution to conservation needs. Although it would be simplistic to assume that people are intrinsically conservationists, the challenge is to find our place within the entire ecosystem and try to manage resources accordingly.

Clearly for each project profiled in this document, in each biome, in each region, the challenges are different, yet all share the common goal of endeavouring to reconcile in a balanced and fair way conservation, social and economic challenges. Sustainable development requires trade-offs between different interests, needs and stakeholders and the results of those negotiations need to be equitable and sustainable. These eight initiatives offer useful models and lessons learned, which could help others in their efforts to maintain and build prospects for the well-being of people and nature.

[1].World Commission on Environment and Development (1987). *Our Common Future*. Oxford University Press, UK.

The case studies are from:

3 PHILIPPINES



The Sustainability Assessment of Trade-Related Policies in the Philippines Fisheries Sector involves undertaking a multi-stakeholder sustainability assessment of trade in the live reef food fish sector – which has considerable environmental, social and economic impacts – with the aim of reforming trade decision-making processes. This will ensure that their outcomes favour sustainable and equitable development.

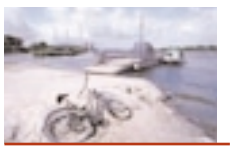
7 BRAZIL

The Southern Bahia Agroecological Movement demonstrates an ecologically and economically viable approach to agriculture, the main cause of forest loss in the region. One of the key tools is the provision of technical assistance, social extension and leadership training for a wide range of organic and agroforestry practices, in an area where conservation strategies have previously been based on the exclusion of the landless rural poor.

11 SOUTH AFRICA

The Wild Coast Spatial Development Initiative aims to promote sustainable tourism through the development of local knowledge-based approaches rather than unsustainable outside investment-driven projects. This collaborative project provides the opportunity for environmental and conservation issues to be fully integrated into government-supported development at the initial planning stages.

15 POLAND



The Study of the Problems of the Włocławek Dam and Reservoir has outlined a series of options to deal with major environmental, social and economic problems faced by an ageing, unstable dam and potential impacts of proposed new infrastructure projects. The study took effects on the ecosystem, national economy and local development obstacles and opportunities into account.

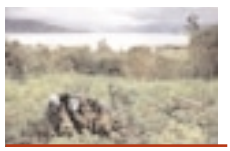
19 INDONESIA

The Nusa Tenggara Integrated Conservation and Development Marine Park Project demonstrates an effective model for multi-agency collaboration in community-based conservation. Particular emphasis has been placed on working with the local government to halt illegal resource use and encourage greater community participation, through training and awareness raising and the promotion of tourism. The case study focuses on coral reefs and other marine ecosystems and their resources.

23 CAMEROON

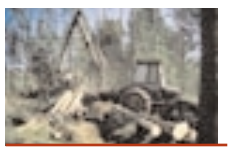
The Jengi Forest Project involves working with a wide range of stakeholders to help empower local communities and facilitate community-based resource management. The case study showcases how a participatory natural resource system works in practice, for instance by using innovative legal means to provide direct access and ownership of natural resources in a protected area. This is a new model for sustainable development in a country that previously did not allow human activities to take place in national parks.

27 COLOMBIA



The Project for Conservation and Sustainable Development with Rural Communities in the Department of Nariño works with local communities to develop sustainable production systems as a means of combating poverty. The proposal for a major infrastructure project, with far-reaching effects on this mountain watershed, became a catalyst for action for local farmers in the arena of citizens' rights and environmental protection, and resulted in the international protection of a vulnerable wetland site.

31 SWEDEN



The Sveaskog Forestry Initiative draws on a partnership between a conservation NGO and Sweden's largest forest company. It has brought about more than just conservation awareness. Developing full ecological landscape plans for all forest sites, and working with the Forest Stewardship Council to promote certification, Sveaskog is linking economic with environmental and social responsibilities to implement sustainable production patterns with full public accountability.

Sustainability Assessment of Trade-Related Policies in the Philippines

PHILIPPINES

The use of a sustainability assessment, integrating considerations of environment and development into trade and investment policies, aims to create a more equitable live reef food fish sector for the protection and sustainable use of the coral reefs

WWF-Canon Jürgen Freund

- Intiating multistakeholder discussion and assessment of a fishery subsector
- Adopting economic, social and environmental sustainability as the baseline for trade policies
- Maximising the positive effects of trade and investment policies through credible information
- Encouraging coral reef conservation and sustainable use of reef fish

The Challenge

Coral reefs are among the largest and oldest living communities of plants and animals on the planet, having evolved some 200 million years ago. Covering less than one percent of the earth's surface, they rival tropical rainforests in the harbouring and provision of biodiversity riches. Nearly a third of all fish species live on coral reefs, and between 70 and 90 per cent of all fish caught by coastal fishers in tropical Asia are reef-dependent at one time in their lives. Coral reefs are, however, under considerable threat. In Southeast Asia, the most vulnerable area, 80 per cent of reefs are potentially threatened by human activity. Much of this damage has been caused by a lack of suitable legal frameworks for controlling access to marine resources, together with a low level of awareness, both within the region and nationally, of the value of marine resources and their fragility. Conservation of coral reefs is therefore a global conservation priority. It is also a priority for the many thousands of local fishing communities reliant on coral reefs for their livelihoods.

The destruction of coral reefs and the livelihoods of reef-dependent communities in Southeast Asia are both directly linked with an increase in the unsustainable nature of the fisheries trade. World trade is now fourteen times the level it was in 1950, due largely to the elimination of trade barriers. According to the FAO, 50 per cent of fish stocks around the world are fully exploited or severely overexploited. Yet the sustainability of fisheries is vital to the millions of people who depend on the industry for their livelihood and are important sources of export products – particularly for developing countries. The use of sustainability assessments of trade agreements, detailed in this case study, provides an important tool for the integration of environment and development issues when reviewing the impact of trade and investment policies.

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Many studies have found that the trade liberalisation policies of the Philippine government are one of the root causes of excessive over-fishing in the country. This is particularly due to the rapid and uncontrolled introduction of foreign capital into the local industry without appropriate policy reform to ensure the long-term sustainability of the industry. The result has been overexploitation of the resource and rampant inefficiency in fishing operations. The race to supply lucrative international markets has led to fishing grounds becoming overcrowded from competing artisanal and commercial fishers.

One particularly lucrative market is reef fish imported live for food (live reef food fish). The total value of international trade in live reef fish exceeds US$1 billion per year. The bulk of the trade is centred on Hong Kong, where the consumption of reef fish plays an important cultural and social role. The Philippines is one of the main sources of live reef food fish.

The University of the Philippines has identified that 98 per cent of Philippine coral reefs, the second largest in the Asian region, are severely threatened by human activities. To obtain live reef fish, some fishers use cyanide to stun fish. Although the cyanide leaves the structure of the reef intact, it kills coral through the inhibition of photosynthesis and calcification and can also be fatal to non-target marine organisms including the smaller reef fish. Cyanide has been used to capture live reef fish in the Philippines since the 1970s. The deleterious effects of cyanide are well documented, but its use, although illegal, continues. The sustainability of certain species destined for the live reef food fish market is also of concern, with species such as the Giant Grouper (*Epinephelus lanceolatus*) and the Humphead Wrasse (*Cheilinus undulatus*) being listed as 'vulnerable' in the IUCN Red List of Threatened Animals. Export of the Humphead Wrasse is prohibited from the Philippines, but smuggling is common.

The Project

As part of WWF's global project on sustainability assessment of trade agreements, WWF-Philippines is undertaking a study on the impact of trade on the country's fisheries sector. The project 'Sustainability Assessment of Trade-Related Policies in the Philippines: Capacity Building at the National Level and Application to the Fisheries Sector' aims to:

- Reform trade decision-making processes to ensure that their outcomes favour sustainable and equitable development, by creating the context for, and catalysing stakeholder-oriented consultation and dialogue
- Strengthen fisheries trade policies examining possible trade-offs between economic, environment and social objectives.

The project is being carried out in close collaboration with the Philippine Council for Sustainable Development (PCSD). Its task is to co-ordinate efforts to attain sustainable development in the Philippines. Although the economic impact of trade reforms has been much studied in the Philippines, no studies have been undertaken to develop sustainable development indicators related to values and lifestyles, socio-economic structures and knowledge. If trade reforms lead to negative impacts on these indicators, trade reforms may not be sustainable. Environmental impact studies usually focus on economy-wide effects of trade reforms on the environment, particularly on pollution. Studies are needed that consider the economic, environmental and social effects of trade policy in an integrated manner and trace the linkages between trade policy changes at the global level and impacts on the ground.

Sustainability assessments are tools that allow for the integration of environmental and developmental considerations into trade and investment policies. By involving both government experts and non-governmental stakeholders, sustainability assessments help determine how to maximise the positive effects and avoid the adverse impacts of trade and investment policies. But sustainability assessments are more than just 'environmental impact assessments' of trade. Sustainability assessments should:

- Shape policies, not just 'assess' them, starting at the earliest stages of policy formulation
- Put sustainability first, as the analytic baseline
- Effectively involve all stakeholders, in governments and in civil society
- Change real outcomes, not just how people talk.

The specific objectives of the project in the Philippines are to:

- Undertake a multistakeholder sustainability assessment (SA) of a fishery subsector; and
- Initiate and develop a process whereby SA becomes institutionalised in the national decision-making process.

Two tools have been identified as suitable for carrying out sustainability assessments in the Philippines: extended benefit-cost analysis (BCA) and multi-criteria analysis (MCA). BCA is a method used to compare costs and benefits of policies or activities. BCA is primarily an assessment of the economic efficiency of a policy. BCA can include monetary valuation of environmental impacts, which could be positive (a benefit) or negative (a cost). These extensions, while presenting challenges in environmental and resource

economics, particularly in valuation, serve to incorporate economic as well as environmental criteria in decision-making. However, social objectives may not be incorporated. MCA is a methodology that relies heavily on participation. The method considers stakeholder preferences, including trade-offs among competing objectives. Central to the process are the identification of an over-all objective including various alternatives, criteria to be used for ranking, and the ranking method. The popularity of MCA lies in cases where there are conflicting objectives, e.g., between development and conservation objectives or between or among economic, social and environmental objectives such as those characterising sustainability assessments of trade policies in the fisheries sector. Examples of criteria used in MCA include economic efficiency, equity impacts, social acceptability, biodiversity, sustainability and environmental impacts.

Major Activities

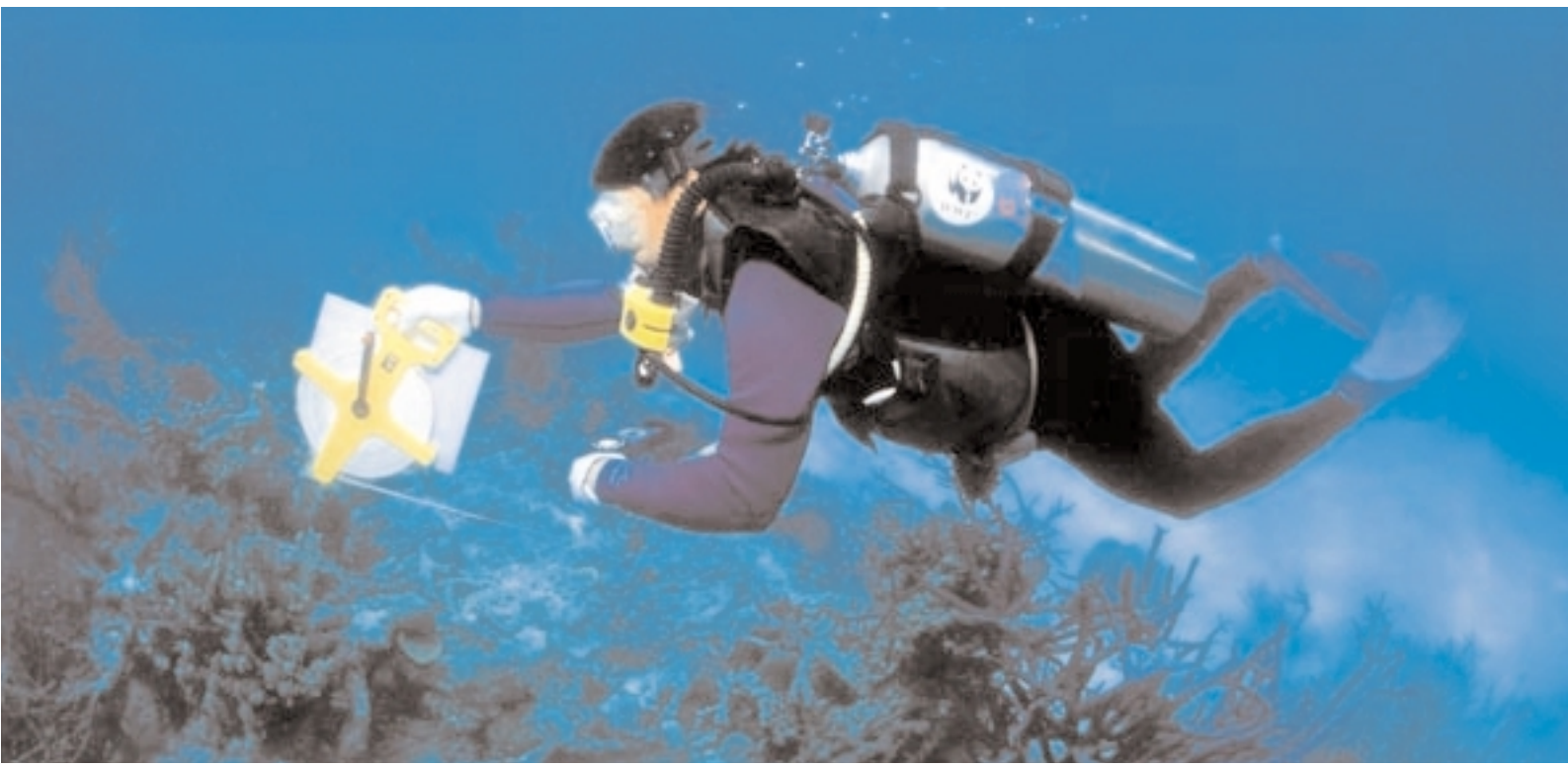
Although the project is only in its initial stages, it has already prompted a multistakeholder discussion, particularly of trade policies – something that had not been carried out in the Philippines before. The Philippine government has clearly indicated its willingness to open up fisheries trade policy discussions with the private sector and, significantly, with NGOs.

The national policy making body, the National Economic Development Authority, enabled the formation of the multistakeholder project technical working group (TWG) by issuing formal invitations to the identified members, from the government, private sector and NGOs, and by chairing the TWG. The Department of Agriculture, the agency responsible for fisheries, is also supporting the sustainability assessment process through its membership and future financial support.

The TWG at its first meeting in January 2002 identified that live reef food fish for export will be one of the first areas to be assessed by the project. The live reef food fish sector has a range of impacts: environmental (on coral reefs), social (on skewed distribution of benefits) and economic (foreign exchange earned). The project objectives are to:

- Develop and implement an appropriate SA methodology involving the integrated assessment of economic, environmental and social and/or developmental impacts of the live reef food fish sector as it relates to fisheries trade policy and other key trade policy changes
- Initiate and develop a process whereby SA becomes institutionalised in the national decision-making process
- Conduct consultation, outreach and advocacy activities aimed at ensuring that fisheries trade in the Philippines is sustainable and that sustainability assessment contributes to improving trade and investment policies in favour of sustainable development.

Field activities for the project are ongoing. These include consultation with industry stakeholders, such as the fishers, traders, exporters and their respective organisations as well as local government units. The field activities include consultation with the stakeholders, to obtain their perceptions and collect socio-economic and demographic information. Ecological data are also being gathered to determine the impacts of the industry on the marine ecosystem. All this information will be processed to determine indicators of the economic, social and ecological impacts of the live reef fish for food fishery. The results will be presented to the project TWG as a basis for discussions of fisheries trade policies.



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Future Prospects

Although there are benefits for the economies of countries like the Philippines from the international fisheries trade, the distribution of gains across different stakeholders is uncertain. As in any economic activity, there are winners and losers, and one of the determinants is access to the resource base. The poor usually bear not only the social costs but also suffer from the environmental impacts associated with trade liberalisation. The benefit of undertaking sustainability assessments of trade policies is that all these issues are taken into account, and policies can be determined accordingly, rather than decisions being made on only one or two of these criteria.

Economic analysis of tariffs in the fisheries sector in the Asia-Pacific has already concluded that the comparative advantage of fish-producing nations in the region is disappearing due to ill-managed fishery resources. Given the high dependence of developing countries like the Philippines on the export of natural resources, the sustainable management of the fisheries thus needs to be prioritised. Reductions in the long-term viability of stocks lead to net losses from trade and ecosystem degradation.

This project should provide the means for developing such sustainable practices, providing benefits for the environment, social well-being and economic success. It is hoped that sustainability assessments will be used across other elements of the fisheries sector, as the multistakeholder process allows for continued activities and evolving practices in the field of assessment of trade policies beyond the duration of the project.

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Partners and Stakeholders:
Fishers, traders, exporters and their respective organisations, local government units, WWF-Philippines, Philippine Council for Sustainable Development (PCSD), National Economic Development Authority, Department of Agriculture, Department of Trade and Industry and Department of Foreign Affairs.

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Project funders: WWF International, UNDP/Philippines, the Philippine Government.

Duration of project:
July 2001 to December 2003

Ecosystem: There is one WWF Global 200 eco-region within the Philippines: the Sulu-Sulawesi Sea, a coral ecosystems that is estimated to harbour nearly 400 species of corals and over 500 species of reef fish.

BRAZIL

Southern Bahia Agroecological Movement

Communities, farmers and women are empowered to make balanced choices in agriculture and other land uses to benefit people, economies and threatened Atlantic forests

WWF-Canon Juan Pratginestós

- Meeting the agriculture needs of landless poor
- Protecting remnant native Atlantic forest
- Recruiting women and farmers as extension agents, local organisers and promoters
- Stimulating production, local processing and marketing of organic products

The challenge

IUCN – the World Conservation Union – has identified agriculture and grazing as the principal cause of forest and biodiversity loss.[2] This threat is particularly hard to address given that food security is such a critical issue and is so tenuous in parts of the world, and that the clearance of forests is a primary means of meeting ever increasing food demands. The problem is exacerbated when clearance takes place in an unplanned and damaging way, or threatens remaining fragments of ecosystems that have already undergone a dramatic reduction as a result of human activities. Today the most destructive clearance generally occurs for the production of a few cash crops – mainly luxury goods like coffee and cocoa – where a global over-capacity already exists; further expansion is causing damage without justification in either social or economic terms.

In the following example, in one of the world's most threatened forest ecosystems, the key challenge for conservation and development groups is to promote sustainable agriculture in a way that maintains the remaining fragments of the once-great Atlantic Forest and provides an economic return for farmers. Approaches to negotiating trade-offs between different land uses – the central issue in virtually all debates about agriculture and forest conservation – could provide valuable lessons to other conservation and development initiatives around the world.

The Una Biological Reserve is one of the few remaining areas of Atlantic forest in Brazil's cocoa region. Only seven per cent of the original 1.3 million square kilometres of Atlantic forest is left, with conversion to agriculture being the main cause of forest loss and degradation. What remains of the forest is threatened by expanding colonisation and development – 70 per cent of Brazil's population lives in this coastal belt.

The 11,400-hectare (ha) reserve was created in 1980, but the government could initially purchase only 5,342 ha. Before any staff could be assigned to protect the area, half of it was invaded and partially cleared by squatters. By 1996, 86 of the 99 squatter families relinquished their claims to

2 *Centres of Plant Diversity: A guide and strategy for their conservation*, published by WWF and IUCN in three volumes between 1994 and 1997, edited by S D Davies *et al.*

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1,550 ha of the reserve and were compensated, effectively expanding the total area of the reserve to 7,081 ha. However, the reserve continues to be threatened by landowners from the surrounding area. Historically, the forest was preserved to shelter future cocoa plantations, since cocoa trees need shade to grow. The collapse of international prices for cocoa and the proliferation of witch's broom disease (a cocoa tree fungus) have reduced the value of the forest, which is now rapidly being cleared.

The project

WWF began researching ways to make the Una Biological Reserve viable as a protected area in 1985. A first step was to consolidate and protect the core reserve, by purchasing land to increase its size and support the survival of the Golden-headed lion tamarin (*Leontopithecus chrysomelas*) and other endemic species. From 1994, studies to understand the socio-economic forces leading to deforestation were undertaken. Land use dynamics in the Reserve's buffer zone were mapped with GIS, indicating areas of remaining forest, recent deforestation and land ownership. WWF and a local NGO, the Instituto Socio-Ambiental do Sul da Bahia, organised a regional seminar on alternatives for sustainable development and forest conservation in the cocoa region.

Based on these studies a project was developed to test and implement alternative land use practices among 35 communities in the reserve's buffer zone. Pilot activities have been developed intensively in three communities (and less intensively in four others), focusing on promoting organic agriculture techniques and local processing and marketing of products to increase both sustainability and income. Through environmental education efforts, the project is engaging local landowners in the protection of the Reserve and the forests surrounding the Reserve. Following this, the ongoing project has focused on strengthening the capacity of local organisations to carry out conservation work in the region.

The Southern Bahia Agroecological Movement was formed as a joint effort between WWF and a local NGO, Jupará, with the aim of achieving both sustainable rural development and conservation of the rainforest.

WWF and Jupará came to the project from very different positions. WWF was primarily concerned with nature conservation, whilst Jupará's background was in the regional land reform movement, firmly rooted in social activism. From a purely nature-oriented perspective, forest protection in land reform settlements is not promising, given the fragmentation of forest remnants and the importance smallholders must place on forest use and conversion. From Jupará's perspective, a conservation strategy based on the exclusion of the land-hungry rural poor in favour of parks or private reserves developed in partnership with huge cocoa estates would only perpetuate the region's historical exploitation and injustice. Jupará was convinced that, given adequate opportunity, rural farmers could manage their lands in a sustainable way and would embrace forest conservation if it were presented as part of an overall land management strategy developed alongside a long-term process of empowerment and grassroots capacity-building.

The project has thus developed economic, social and environmental objectives. The economic viability of the ecological agriculture component depends on adequate marketing and commercial structures, as well as efficient production and utilisation of inputs and processed products. This in turn requires co-operation within and among communities. A key element of the initiative has, therefore, been capacity-building in community organisation and local leadership. In particular, the project has placed special emphasis on empowering women and building environmental awareness. Environmental objectives have been central to all project activities, especially concerning the maintenance of native forest cover. The project aims to protect a minimum of 30 per cent of the forest on each participating farm or settlement, with agroforestry systems making up the remaining 70 per cent of forest area. The overall goal is to conserve an additional 10,000 ha of forest within the buffer zones surrounding the park. Communities and participating families are asked to make a formal commitment to these goals as a prerequisite for the technical support that the project offers. In addition, the project undertakes environmental education to engage farmers to protect the reserve and the forests around it, through extension programmes and collaboration with local ecotourism initiatives.

An important challenge is that the target farmers have few resources (of money or time) to invest in any new approach that cannot offer a sure return. Most of the farmers plant some perennial crops such as coconut, cocoa, guarana and pepper, but their cash needs are met by the production of manioc, which is taken to market weekly and traded for subsistence supplies. Manioc production depends on periodically clearing new areas of forest through burning. The project's agricultural component thus aims to offer alternatives to end this destructive cycle and improve agricultural practice generally. Three elements form the basis for the agroecology promoted in the project:

- Soil conservation and maintenance of organic matter, through mulching crop residues and weed biomass instead of burning organic matter before planting

- Agroforestry systems growing multiple species, which diversify the commercially available products and provide a greater range of crops over the whole growing season. This also maximises soil cover and reduces the risk of pest infestation that is frequently associated with mono-cultural practices
- Elimination of agro-chemicals, thereby reducing costs, promoting long-term sustainability, and allowing farmers to qualify for the marketing advantages offered through organic certification.

This is not a rigid technical package but allows for a variety of options and support for farmers who are willing to incorporate organic or agro-ecological practices.

The team of extension workers usually consists of a male agricultural extensionist, and a female social extensionist providing technical assistance to individual farmers who show the greatest interest and commitment. These farmers become 'local multipliers', who test and demonstrate the project's recommendations and spontaneously transfer them to interested neighbours. The process has worked effectively. Participating farmers have been recognised as 'practical agroecologists' and given certificates of proficiency. As the project has matured, 15 farmers have been recruited as additional extension agents, to work as local organisers and promoters in their own communities, and to take on responsibilities for implementing the project regionally.

Project achievements

The project activities have been developed intensively in three communities, and semi-intensively in four others. Measurement of project impacts will be undertaken during the next phase of the project, but site visits have already shown that many farmers are making the transition away from a dependency on burning as the primary means of clearing land. There has also been substantial informal information dissemination, with many neighbours adopting agro-ecological practices even when not actively participating in the project. As a result, soils are becoming more fertile and sites are productive for much longer, both for manioc production and for agro-forestry systems.

The most significant aspect of the project is that these results have been achieved with virtually no material input to the farmers to promote participation. In contrast to many extension programmes that offer free seedlings or credit programmes, this project has confined itself almost entirely to offering technical assistance together with ongoing community development support. This makes its continuation beyond the initial project much more likely.

The project has also promoted interaction among communities through annual regional agroforestry fairs, exchange visits to community development and forestry conservation projects. Meetings, workshops and training events have bought together representatives of different communities.

The project's gender focus and collaboration with the Movement of Women Rural Workers (MMTR) is perhaps its most innovative component. Many of the agroecological practitioners are women, and the women of the Cajueiro community have established a successful agroforestry demonstration site. Women participate fully in project planning and leadership. This is unusual in a machismo society where most female rural workers do not even have birth certificates. The progress made in women's rights through conservation – and conservation through women's rights – has influenced the Brazilian women's movement nationally: the project has put conservation and the importance of forests high on the political agenda of the Rural Women's Movement throughout Brazil.

The differences between WWF and Jupará have caused tension from time to time, but the collaboration has proved to be one of the project's main strengths, as it places conservation and development in its social and historical context, and allows a comprehensive approach to address a range of issues.

Future prospects

The great advantages of the practical, participant-led approach taken by the project are that those who do participate are genuinely committed to agroecology and conservation and no measures are introduced that are beyond the local farmers' financial means. A disadvantage is that, in the short term, the numbers of farmers who can easily become involved are reduced because of a lack of time or supplies.

A critical decision for the next phase of the project is to determine whether or not to shift the project's approach in order to reach a broader audience. A nucleus of committed practitioners exists, but to reach the majority of the region's small farmers the project has to demonstrate more direct economic rewards. A step in this direction was made in 1999 with the establishment of a co-operative, COOPASB – Co-operative of Agroecological Producers of Southern Bahia – to develop market opportunities. Initially this will be through local markets, but eventually the aim is to reach national or even international 'green markets'. The co-op has premises at the wholesale market in Ilheus, the market town, and has designed a trademark, along with packaging and descriptive material illustrating the organic, environmental and social qualities of the products. The process towards organic certification has begun, and partnerships are being developed with chocolate manufacturers in Switzerland and the USA.

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Eventually, COOPASB hopes for increased returns for its producers through the premium on high quality organic produce. Meanwhile, it aims to access existing markets, to improve terms of trade for its own producers, and to cover its operational costs. Participants believe this is feasible because existing margins are high between the different levels of the marketing chain (i.e. between wholesale and retail prices, and between onsite and marketplace prices – mark-ups are often 100 per cent). By both purchasing and marketing members' products and supplying participating communities with market goods, the co-op aims to take advantage of this situation. However, potential obstacles include lack of capital to initiate purchasing, the inability to achieve an adequate economy of scale, and difficulties in resolving issues arising from the different operating costs of members.

In the future, Jupará believes that credit will be necessary to ensure that enough farmers break the dependency on manioc to create a critical mass for the functioning of the co-op. The partners are also seeking to expand their entrepreneurial skills through technical help in small business management.

Ultimately, the future success of the Southern Bahia Agroecological Movement depends on achieving equilibrium between the needs of people, communities, economies and ecosystems. In addition, project participants must continue to understand the connection between forest protection and sustainable economic development for such a connection is what ultimately will ensure the protection of the Atlantic forest.

WWF-Canon Juan Pratginestós

Partners and Stakeholders: Farmers and rural communities in the Una Biological Reserve buffer zone; the women of Cajueiro; the Cooperative of Agroecological Producers from Southern Bahia (COOPASB); WWF-Brazil; Jupará - Assessoria para o Desenvolvimento Agroecológico de Comunidades Rurais; Movement of Women Rural Workers (MMTR); Instituto de Estudos Socio-Ambientais do Sul da Bahia; Brazil's Environment Agency (IBAMA); CEPLAC (Brazilian Cocoa Research Agency); University of Maryland; Fundação Pau-Brasil and Fundação Biodiversitas.

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Project Funders: WWF (funds provided by WWF-Sweden, WWF-US, WWF International, Bull Foundation, CFH Foundation), Conservation International, Ford Foundation, Jersey Wildlife Preservation Trust, Wildlife Preservation Trust International and Wildlife Preservation Trust Canada.

Ecosystem: Una Biological Reserve is situated in the southern part of the state of Bahia, on the south eastern coast of Brazil. Its biodiversity is recognised internationally. It is a Strict Nature Reserve (IUCN Category 1a), and lies within the Discovery Coast Atlantic Forest Reserve World Heritage Site and within the wider Mata Atlantica Biosphere Reserve. It falls within the Brazilian Atlantic Forest ecoregion of WWF's Global 200.

SOUTH AFRICA

The Wild Coast Spatial Development Initiative, Eastern Cape Province

Sustainable tourism based on local knowledge and community participation rehabilitates the economy, revitalises the cultural heritage and protects the biodiversity of this rich and diverse region

Steve Cohen

- Promoting local knowledge-based adventure tourism and ecotourism
- Increasing local income and employment opportunities
- Developing skills and environmental awareness
- Providing policy, institutional, marketing and public relations capacity

The Challenge

Tourism is perhaps now the world's number one industry. But most tourism development is at best neutral towards the environment and many initiatives can be positively harmful, as in the case of the wholesale destruction of the European Mediterranean coastline and consequent threats to monk seals, turtles and coastal fisheries. Increasingly the tourist industry is self-contained, bringing in visitors, keeping them insulated from local communities and siphoning off most of the profits.

Encouraging local communities to benefit from tourism is fine in principle but difficult in practice: untrained and inexperienced people are competing with a large and highly successful global industry. But experience shows that, given the right tools and training, communities can both attract and keep tourist revenue. In the Wild Coast area, conservation and development agencies are working hand in hand to encourage locally controlled ecotourism that will be truly sustainable. In doing so, they provide some valuable lessons for developing countries throughout the world.

The Wild Coast stretches along the coast of South Africa's Eastern Cape Province, from the Mtamvuna River in the north to the Kei River in the south. The 25km-wide, 250km-long coastal strip is characterised by several distinct habitats: open sea, rocky shores, sandy beaches, dunes, grassland, bushveld, forest edge and forested areas. The hilly tableland of the north is cut with deep gorges; rainfall is high and rivers are many. It is one of the least developed areas in southern Africa.

This lack of development has been a double-edged sword. On the one hand the region contains some of the finest undisturbed stretches of coastline and coastal forest on the sub-continent, and the diverse peoples of the Wild Coast, notably the Xhosa and Pondo who have retained their traditional way of life, constitute a rich cultural heritage unique to the region. On the other, the area has high levels of poverty and is in much need of socio-economic rehabilitation.

The Wild Coast has a total population of 1.4 million with an average population growth of about 2.8 per cent per annum. The majority of the population lives in rural villages or dispersed settlements with subsistence farming being the prevailing economic activity. Low farming standards, poor cultivation methods and a lack of effective agricultural extension have resulted in poor yields. Industrial development in the region has been minimal; there are only two major surfaced roads, and industrial activity is limited to the towns of Umtata and Butterworth.

Unemployment in the region is high. It has grown from some 23 per cent in 1991 to 45 per cent in 1995. Two-thirds of economic activity is in service sectors, with comparatively little in production. Although more women than men live permanently in the province, men still own most of the businesses, and patriarchal traditions that treat women as minors and restrict their activities to the home and children limit women's power to contribute to economic development. Moreover, 42 per cent of the population is classified as economically dependent, aged under 15 or over 65.

Along the coast itself, besides tourism, employment opportunities are limited. There is a high illiteracy rate, and adult and technical educational opportunities are virtually absent. Overall, basic facilities and services are inadequate for the region.

To this end, the area has been targeted as part of the National Government's programme of Spatial Development Initiatives (SDIs). SDIs are partnerships with the private sector and communities, which aim to unlock the inherent and under-utilised economic potential of certain areas. They seek to achieve tangible economic and social development in terms of job creation and income generation by establishing a sustainable framework of co-operation between communities, private and public sectors. The Wild Coast SDI is a unique opportunity for environmental and conservation issues to be fully integrated into government-supported development. It is hoped it will be an example for other spatial development initiatives, finding ways in which difficult issues of environment and development can be balanced.

Steve Cohen

The Project

The undoubted appeal of the Wild Coast, scenically and culturally, indicates why it has enjoyed a reputation as a good tourism destination. However, tourism has declined over the past 15 years, due to low levels of investment in the area, political instability and threats to personal safety. With greater stability in the area since 1994, a dramatic increase in tourism is possible with investment in infrastructure and tourism-related development. Infrastructure includes roads, electricity, water provision, housing, health and welfare services, schools and civic buildings, which in turn generate work for local contractors and workers.

The Wild Coast SDI has therefore identified tourism as the priority for the region and programmes are under way to foster local, community-driven economic development, with a major focus on sustainable and responsible tourism. In support of the South African government's plan, the European Union (EU) is funding a four-year programme of community development to balance the external investor-driven development.

The national Department of Environmental Affairs and Tourism (DEAT) is responsible for the implementation of the project. Specific issues being addressed are community business development; resource management and conservation; skill development and environmental awareness; policy and institutional support; marketing, promotion and public relations.

A major objective is to shift development thinking away from an investment-driven premise to a local knowledge-based one. Adventure-based tourism – including backpacking, mountain biking and canoeing – is bringing more visitors to campsites or undeveloped sites. Day visitor trips to the Wild Coast have also become increasingly popular. Proposed tourist facilities thus need to cater to these visitors. Research has shown that there is clear support for local initiatives as well, and not only for large modern hotels surrounded by abject poverty.

Three NGOs are working with DEAT to carry out the programme: Triple Trust Organization, specialising in business and community skills training; WWF-South Africa (WWF-SA), with its expertise in environmental issues; and PondoCROP, with expertise in enterprise development for tourism. The Programme Management Unit (PMU) is responsible for co-ordinating, administering and monitoring activities, and the initiation and supervision of programme-related marketing activities. A community development fund is being established under the PMU to assist small businesses to start up. A Project Steering Committee consisting of representatives of the funders and major stakeholders provides guidance and advice.

The primary objective of the programme is to increase income levels and job opportunities by assisting local communities to participate in responsible tourism development and to improve their participation in existing initiatives. In support of the primary objective, a number of secondary objectives have been identified:

- Improve skill levels of community members to maximise the involvement and employment of local people in tourism and related enterprises
- Improve the business capacity of local community structures and individual community members

- Improve environmental awareness of community members and leaders, business organisations and governmental structures
- Improve the capacity of local, regional and provincial government structures to facilitate community-based tourism development after the funding period ends
- Facilitate the establishment of more cohesive and effective management structures and policies for environmentally important areas to promote sustainable conservation and development
- Address the problems and remove bottlenecks impeding local economic development and the meaningful involvement of previously disadvantaged communities, and share 'lessons learnt' with other regions of the country
- Encourage and support the development of sustainable and responsible tourism and related enterprises. Examples include accommodation facilities, horse and hiking trails, tour guiding, catering, laundry, childcare, transport services, construction and related skills, agriculture, craft, sign-writing, decor, leatherwork, fishing, harvesting of seafood, bakeries, restaurants and taverns, information and craft centres, and non-consumptive fly-fishing. Private-sector partnerships with communities and government are key elements.

The involvement of the environmental and conservation NGO sector, which WWF-SA is co-ordinating, has three objectives:

- To contribute to the sustainable growth and development of the tourism sector, through the conservation of the area's natural resource base
- To strengthen the capacity of individuals, institutions and organisations to manage natural resources in such a way as to maintain the area's natural capital on which the local tourism industry depends
- To develop strong links between resident communities, the private sector and government bodies for joint management of natural resources

Project Achievements

The project has been active for the past two years. The establishment of a fully functional PMU has ensured close co-operation between all partners involved and has added a strong marketing component to improve international and local tourism to the Wild Coast. The NGOs formalised their co-operation in an agreement outlining their interdependence and means of collaboration. Contact has been established and deepened with public institutions and the private sector, in particular the Eastern Cape Development Corporation, Eastern Cape Tourism Board and the Wild Coast Holiday Association.

PondoCROP, in close co-operation with the communities, has identified 119 potential tourism or tourism-related enterprises. Out of these opportunities, 10 business plans involving the creation or expansion of 43 enterprises with 300 job opportunities have been prepared and implementation started. Core activities focus on the expansion of the Amadiba Adventures Horse and Hiking Trail southwards to Port St. Johns. Eight pilot trails have already been completed.

The Triple Trust Organization has assessed the training needs in the programme area in co-operation with the other NGOs and identified 287 participants for training courses in specialist and business skills. Of these, 137 participants received training in the preparation of business plans, financial and committee management and certain handicrafts. The youth entrepreneurship development programme has involved 115 schools to date and trained 150 teachers. Training material – in the form of games and other novel ideas – is used as the basis of the school programme.

WWF-SA has arranged in-depth training courses in the development of management plans for 43 nature-based tourism and protected area management trainees. A further three students completed the yearlong course in Natural Resource Management at the Southern African Wildlife College. To date, 42 of these trainees have been employed, thereby ensuring that their new skills and knowledge are deployed locally. Pilot sites for the establishment and operation of multi-use tourism centres have been identified and the first of six co-management agreements between the communities and the state has been initiated.

The second Annual Work Plan was submitted to the DEAT and the EU-Delegation and received technical approval in June 2001.

Steve Cohen

A nodal framework plan was commissioned and now provides guidelines for the overall development in the programme area. Work has also commenced on a draft code for responsible tourism in support of the legislation, which will help to develop the type of tourism appropriate for the Wild Coast. The PMU also organised the programme's participation in Indaba (the national tourism expo) in Durban and started marketing activities in co-operation with the Eastern Cape Tourism Board. The first programme audit has been completed and the Community Project Fund was launched in the second half of 2001.

Future Prospects

The rich biodiversity of the Wild Coast will continue to be the basis of development through tourism and associated activities, provided measures are in place to conserve and rehabilitate the fragile ecosystems that characterise this area. Issues to be addressed include:

- Overlap of traditional and other land-tenure systems
- Low levels of land-use planning skills amongst traditional and elected leadership
- Poorly funded and equipped local and provincial government agencies to regulate natural resource use.

This programme could serve as a case study for other spatial development initiatives, finding ways to resolve difficult issues around development and the environment. Key to its success is the dovetailing of resource management and environmental conservation into sustainable development programmes that bring social and economic improvement. The close association of three NGOs with different strengths provides the basis of delivery. The overarching SDI plan by the government provides the context and the EU funding provides the support and technical assistance. The major thrusts of the remaining two years will be securing the policy and legislative framework for development, engaging the local private sector and building community capacity to manage natural resources.

Steve Cohen

Partners and Stakeholders:
Xhosa and Pondo peoples and communities of the Wild Coast, National Department of Environmental Affairs and Tourism (DEAT), WWF South Africa, PondoCROP: Pondo Community Resource Optimisation Project, Triple Trust Organization

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Duration of project:
July 2000 to June 2004

Project funders:
European Union EPRD

Ecosystem: The vegetation of the north eastern tablelands is of the Coast Belt Forest type, comprising Coastal Forest and Thornveld. The forests (dune forest, swamp forest, coast scarp forest, Pondoland coastal forest and mangrove forest) are the region's most notable feature and are considered unique. The Wild Coast forms part of three ecoregions within the WWF Global 200: the Maputaland-Pondoland Dry Forests, South African Montane Grasslands and Shrublands and the Marine Agulhas Current.

POLAND

The Włocławek Dam on the Vistula River

The World Commission on Dams provided a blueprint for assessing the economic, social and environmental impacts of dams: its first use in Poland measured options for dealing with a failing dam, and offered the opportunity of restoring the natural river flow and local livelihoods

Artur Tabor

- Developing options for a crumbling dam based on community and expert input
- Operationalising World Commission on Dams recommendations
- Recognising the importance of a strong regional legal framework
- Maintaining and building opportunities for local tourism, recreation and sports activities

The Challenge

Large-scale infrastructure projects can play an important role in giving nations or regions a kick-start towards accelerated development. At the same time, the wrong projects, or poorly planned and managed projects, can soak up huge amounts of money, provide little benefit in terms of new resources and cause excessive, possibly irreparable environmental and social damage.

One of the most controversial areas of infrastructure development is that of large dams. The World Commission on Dams (WCD)[3] summarised some of the issues surrounding dams and development: *"The global debate about large dams is at once overwhelmingly complex and fundamentally simple. It is complex because the issues are not confined to the design, construction and operation of dams themselves but embrace the range of social, environmental and political choices on which the human aspiration to development and improved well-being depend. At the heart of the dams debate are issues of equity, governance, justice and power – issues that underlie the many intractable problems faced by humanity".*

The WCD's final report provided some new directions for dealing with these problems. The report recommended a new framework for decision-making about dams based on recognising the rights of, and assessing the risks to, all stakeholders, and recommending that those affected should participate in the planning process and have a share in the projected benefits. Moreover, the report clearly recommends that all options, particularly 'non-dam' options, should be carefully assessed before any decision is made.

[3] The WCD was formed in response to increasing controversy over large dams during the 1990s. The WCD was established following a meeting between the champions and the critics of large dams, sponsored by the World Bank and the World Conservation Union (IUCN), who identified key issues relating to the social, environmental, technical and financial aspects of dams that had to be addressed in reviewing the role of dams and their alternatives in sustainable development.

Artur Tabor

It is acknowledged that many dams have been put in the wrong places and for the wrong reasons. But what should governments do once this has occurred? Typically repairing a dam costs three to five times more than removing the dam[4]. The following case study, which describes a situation that remains unresolved at the time of writing, shows how a combination of environmental and social actors can combine to provide balanced advice to help governments make informed decisions about difficult subjects.

The Vistula is the longest river in Poland; it is the only great river to remain largely intact in Central Europe, rising in the southern mountains and flowing 1047 km north through Krakow and Warsaw to reach the sea at Gdansk. More than half of Poland's land area lies within the River Basin. The river provides a number of services to people in the surrounding catchment and its floodplains absorb floodwaters. It is a species-rich ecosystem and a vital north-south ecological corridor. Its wide range of landscapes makes it an attractive area for tourism, sport and recreation, and the river has immense spiritual, historic and cultural importance.

Only one obstruction exists on the lower and middle stretches of the river: the Włocławek dam. In the 1950s a major plan was initiated for a cascade of dams, intended for navigation and hydro-electric power, situated between Warsaw and the river mouth. Of eight planned dams only the first, at Włocławek, was built in 1970. Besides the main structures of the storage reservoir (dam, weir, sailing gate, power plant and fish pass) there are side dams, flood embankments, canals, drainage ditches and pumping stations for low area protection, as well as a road crossing. The dam's principal function is electric power generation; water release strategies are designed to serve this function and 95 per cent of water flowing into the reservoir is used annually for energy.

Since the 1990s a second dam construction project near Nieszawa has been promoted by some sectors. The main argument for this second dam is the perilous condition of the Włocławek dam and the necessity of preventing its catastrophic collapse. The proposal has seen strong protest from the Ramsar (Convention on Wetlands of International Importance especially as waterfowl habitat) and Berne Conventions (Convention on the Conservation of European Wildlife and Natural Habitats) secretariats, as well as from numerous Polish and international NGOs. The European Commission and Parliament have been closely monitoring the proposal's progress, recognising that the decision-making process and environmental implications of further dam construction are at odds with a number of European Union (EU) directives. The main legal arguments against the project are that it does not comply with the principle of sustainable development enshrined in the Constitution of Poland, and it is not consistent with the EU's Water Framework Directive (2000) or with the Birds Directive (1979). These directives bind Poland, as a pre-accession state to the EU.

[4] River Alliance of Wisconsin & Trout Unlimited (2000); *Dam removal a citizens guide*, USA

The Project

WWF has been working since 1998 with a coalition of Polish NGO's, independent experts, relevant authorities and local communities to develop alternative management schemes for the river and floodplain that are environmentally, socially and economically sustainable. The overall objectives of the Vistula Project are to:

- Alter the political decision on the development of the Vistula river so as to conserve and restore the natural values of the valley
- Raise public awareness of the natural values of the Vistula and increase public participation in developing alternative management solutions, based on experience elsewhere in Poland and Europe
- Facilitate investment in environmentally sustainable development in the Vistula Valley that supports the protection of the natural values of the area and provides benefits to local people
- Establish an 'ecological corridor' of protection and pollution reduction measures as part of the 'sustainable development' of the valley
- Prevent the development of the East-West waterway scheme affecting the Odra, Notec, Vistula, Warta and Bug rivers
- Facilitate integrated water management in the entire Vistula catchment to address problems of reduced water retention, flood management, industrial and domestic pollution and agricultural change.

WWF has been involved in finding solutions for the problems of Włocławek dam and the proposed new dam since 1999. Recognising that the new dam would not solve the problems created by the old one, and following the recommendations of a governmental expert committee, WWF started work in autumn 2000 to research the problems and potential solutions for the crumbling dam. A group of experts co-ordinated by a panel drawn from the University of Warsaw and independent consultants were contracted to:

- Identify all problems and threats created by the existence of the Włocławek Dam
- Identify all technically feasible measures
- Carry out a comprehensive options assessment
- Assess the relative social and environmental impacts
- Conduct the relevant economic analysis.

Community meetings were held in the region to gather information and opinions on issues surrounding the dam and future developments, which were then fed back into the study's conclusions and recommendations.

The report reviewed the existing problems of the Włocławek dam and identified three remedial options (Option 0, which was to leave the dam in its current state is a theoretical option only, since the dangers posed by the dam are so great). Option I considered the construction of the proposed new dam at Nieszawa, together with the necessary supplementary work on the existing dam. Option II was to maintain the existing dam alone but undertake work to guarantee its safety and mitigate adverse environmental impacts. Option III was to decommission the Włocławek Dam and gradually restore the Vistula into a free-flowing river.

Technical and community-based research into the existing dam and reservoir found that there have been negative environmental impacts immediately upstream and downstream of Włocławek. The most drastic impacts have been the disturbance of the natural flow characteristics and hydrological regime of the Vistula and of the mouths of some of its tributaries. The dam has interrupted the transport of sediment by the river, with a resulting increase in fluvial erosion of the channel bed downstream of the dam. Consequently, the dam itself is being undermined and is becoming unstable. The status of the Vistula River as an ecological corridor and bird refuge of international importance has declined. There has been a measurable reduction in biodiversity both in the river and throughout its floodplain, including the loss of many rare and important plant, bird and fish species and the severe or complete obstruction of the migration routes of many fish species, some of which have now become virtually extinct upstream of the dam.

Local communities have not accepted the storage reservoir and blame it for causing increased fish mortality, ice jams, landslides, erosion of hill slopes and water logging of low-lying ground. The area is increasingly vulnerable to sudden flooding, caused by ice-jams upstream of the dam, and from potential breaches of the ageing dam during periods of high rainfall as a result of its minimal flow capacity. Analysis of its socio-economic impacts has also shown that the Włocławek dam has failed to promote development in the region as intended. Comparative study of the communities neighbouring the reservoir reveals that there has been no increase in the economic development of the region, and none of the spatial development plans of the neighbouring municipalities connect their economic development with the reservoir. Furthermore, the planned benefits of the reservoir construction, including an increase in industrial investment in the area of Płock and Włocławek, increased water transport, intensification of irrigated agriculture and tourism development focusing on the reservoir have been unrealised. Instead there has been a slow but steady increase in the perceived value of the semi-natural reaches of the Vistula River, such as the reach upstream of Płock, as attractive place for homes and recreation.

Marta Kaczynska

The Włocławek project cannot be regarded as a success even from a purely economic point of view, and when the costs of environmental losses are included in the equation, the dam is clearly economically inefficient, as the costs of investment, construction and maintenance have outweighed the benefits. The distribution of costs and benefits through society has been unequal. In particular, the energy sector reaps the profits from the sale of electricity generated by the hydroelectric plant but the costs of maintaining the dam and reservoir, providing protection from floods, and all losses from flooding are borne by the taxpayer and local communities.

Project Achievements

Results of the WWF study were presented in December 2001, as *A Study of a Comprehensive Solution to the Problems of the Włocławek Dam and Reservoir – Anticipated Social, Economic and Environmental Effects*, and represent the first study of a major dam within the framework provided by the World Commission on Dams. The comparative assessments based on economic, social and environmental criteria proved that building a new Nieszawa dam downstream would not solve most of the existing problems and could exacerbate some of them. Two other options have to be treated seriously; these are either decommissioning of the old dam or its complex modernisation.

The conclusion of the study was that the gradual decommissioning of the existing Włocławek dam and reduction in the level of the storage reservoir is the most sustainable option for the social, economic and environmental problems associated with the dam. Continued maintenance of the existing Włocławek dam and storage reservoir can only be justified as a means of generating hydroelectric power. However, the vast potential in Poland for energy efficiency, the existing surplus of energy supply over demand, the strong probability of substantial future reductions in

energy prices in free market conditions and the rapid development of renewable energy sources other than hydroelectricity are all strong arguments against the need for hydroelectric schemes altogether.

The Vistula River is considered, in its natural reaches, one of the most attractive tourist destinations in Central Europe. With its diversity of bird and fish species, landscape values, and the architecture of its ancient cities, it offers visitors both natural and cultural attractions. Services to tourism are perceived locally as the major realistic opportunity to reduce unemployment and improve living standards in the villages and towns within the Vistula valley.

On the release of the report in Poland, the Chief Nature Conservator from the Ministry of the Environment welcomed the study as an excellent basis for more detailed analysis. She noted that the Polish economy could not afford Option I (the Nieszawa dam), that modernisation would be comparatively more favourable, but that decommissioning of the Włocławek dam seemed the best option. The Minister of the Environment has announced that the results of the WWF study will be a topic at the National Water Management Board meeting.

Future Prospects

The future of the Włocławek dam and hydroelectric power in Poland remains uncertain. However, the project has shown that, given the right remit, conservation organisations can play a role in supplying the kind of focused research advice that can help make decisions relating to environment and sustainable development.

It is clear that there is increasing national and international pressure being placed on the Polish government to develop a long-term management strategy for the Vistula River and its catchment. Future decisions on schemes that are likely to have adverse and potentially permanent impacts on the ecological functioning of the Vistula and its catchment, such as maintenance and construction of the dams at Włocławek and Nieszawa respectively, should be taken in accordance with this strategy. The WWF study is an important contribution to the development of this strategy and provides a blueprint for other projects that wish to study the impact of dams on the ecological and social integrity of large rivers.

To take this work further, WWF has joined with the Global Water Partnership Poland to open public consultations on integrated river basin management throughout Poland. As a first step, academics, civil engineers and environmental NGOs have launched a Polish translation – the first of its kind – of the Overview Report of the WCD, which will enable a multi-stakeholder dialogue to begin on the future development of water policies in Poland.

Artur Tabor

Partners and Stakeholders:
Coalition of Polish NGOs: such as Polish Society for the Protection of Birds (OTOP), World Conservation Union (IUCN) and Klub Gaja, independent experts, local authorities and communities of the Vistula watershed, University of Warsaw and Global Water Partnership Poland.

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Duration of project: **1999-2002**

Project funders: **WWF-Netherlands, WWF-Switzerland, WWF-Sweden, WWF-UK, WWF Living Waters Programme.**

Ecosystem: **The Vistula valley acts as a north-south ecological corridor of international importance. The Vistula's meanders, oxbows, steep banks and islands – both sandy and covered by riparian forest – provide habitat for 76 percent of the breeding bird species in Poland, including many that are threatened in Europe.**

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Riung Flores 'Seventeen Islands' Marine Tourism Park, East Nusa Tenggara

Collaboration and capacity building in local government and local communities initiates community-based conservation of a marine reserve

INDONESIA

WWF Nusa Tenggara

- Restoring prospects for local sustainable fisheries and tourism
- Initiating coral reef conservation and mangrove restoration in partnership with villagers and others
- Creating a climate of co-operation between communities and local authorities
- Strengthening local government role in protecting against illegal resource use

The Challenge

External threats are, unfortunately, an inevitable factor in protected areas. However, in many cases these are exacerbated by lack of money or capacity in management. Given the problems facing the marine environment, the need to protect and manage resources effectively is particularly vital – both in terms of biodiversity conservation and in maintaining the social and economic well-being of local communities. The challenge for the project detailed here was just this – how to improve management capacity of a protected area and work with the local community to better manage their marine environment. This initiative shows the role that training and awareness raising can play in sustainable development and the importance of co-operation in introducing sustainable development.

The Indonesian region of Nusa Tenggara (Lesser Sundas) is a chain of islands that extends from Lombok to Timor and forms a distinct biogeographic province within Indonesia. Lying within the southern limits of Wallacea, the area comprises in total around 570 islands stretching over a distance of 1,300 kilometres. The five main islands in Nusa Tenggara are Lombok and Sumbawa in the province of West Nusa Tenggara and Flores, Sumba and West Timor in the province of East Nusa Tenggara. Various cultural groups inhabit approximately forty of the islands. Because of the islands' long isolation from the continental mainlands of Asia and Australia and the problems of animal dispersal across sea channels, the islands have served as natural laboratories of evolution and are home to many unique species. Administratively, the area comprises two provinces within which 108 conservation areas have been designated to protect the area's biodiversity. Only a few of them are actively managed by the Department of Conservation of Natural Resources (KSDA).

Flores 'Seventeen Islands' Marine Tourism Park, Riung is located in the north of Flores in the Ngada district. The coastal and marine area around Riung was established as a nature reserve of 11,900 hectares in 1987. Two thousand hectares of the terrestrial reserve have Strict Reserve status, mainly to protect a subspecies of the Komodo Dragon (*Varanus riungnesis*) and its habitat. The other 9,900 hectares have Nature Tourism Park status, which allows economic development and resource use on permission from the district government. There are six coastal villages (4,000 inhabitants, around one thousand families) of which approximately one third depend completely on the marine park for their income. There are over 200 fishermen in the villages; the rest of the community depends on agriculture.

Until the late 1990's, the management of the Riung Park was poor. This was due to the authorities' limited understanding of managing a marine environment and limited capacity, as well as resentment caused as a result of the exclusion of local communities from management issues. The ecological integrity of the Park was also threatened due to overexploitation of marine resources and destructive fishing practices. These practices include dynamite fishing – which involves using a bomb the size of a beer bottle to stun fish so they can be easily collected and which can destroy coral over an area of 3 metres, and using drag nets – very fine-meshed nets dragged over the sea bed that damage sea grass beds and contribute to the depletion of juvenile fish stocks.

The project

WWF Indonesia has been working in Riung since 1997 as part of the larger Nusa Tenggara Integrated Conservation and Development Project, which aims to demonstrate effective models for multi-agency collaboration in community-based conservation. The project works at a regional scale with a great many partners from government, NGO's and community sectors. The overall goal is to ensure the sound and sustainable management of Nusa Tenggara's natural resources by assisting communities to integrate their development needs and aspirations with sound conservation practice.

The project concentrates on six conservation areas on the different islands of Nusa Tenggara and on several regional activities. The six areas are: (i) Mount Mutis strict reserve and Mount Timau protected forest area, West Timor; (ii) Wanggameti National Park, Sumba; (iii) Mount Rinjani ecosystem, Lombok; (iv) Selalu Legini, Sumbawa; (v) Protected forest Tambora, Sumbawa and (vi) 'Seventeen Islands' Marine Tourism Park Riung, Flores. These areas have different habitats, status and forms of management. Together they present examples of the main environmental threats in the Nusa Tenggara region – mining, cattle grazing, encroachment, forest fires, destructive fishing and uncontrolled resource use – and the possibilities for community participation in management vary for each area. The aim is to be able to advise governmental and non-governmental institutions in the planning and management of natural resource use and protected areas with the support and active participation of local communities.

The project highlighted here, 'Seventeen Islands' Marine Tourism Park Riung, Flores, is focused on three main activities:

- Building of government support for marine conservation in the reserve and the other coastal and marine areas of the Ngada district, including protecting the area from outsiders targeting the natural resources
- Rehabilitation of habitats, marine and terrestrial
- Sustainable use of marine resources by coastal communities to develop alternative income opportunities for local communities.

The local government is seen as a crucial player in Flores to protect the area from illegal resource use and support greater community participation in the sustainable management of the area's natural resources. Since 1999, WWF has been working with the government of Ngada district in managing the marine park, with an emphasis on building the capacity of local people and institutions through training and resource management, and on developing restoration initiatives. The incentive for local government involvement is partly economic, as the area is an important tourist destination in the district, and partly social, as local communities depend on the area for their daily livelihood.

Training activities include (a) the provision of internationally recognised diving courses for local police, guides and fishery officials from the KSDA and (b) instruction in marine habitat mapping for KSDA officers and dive guides. The training helps create awareness of both the potential of and the threat to marine

resources, helps develop co-operation between management authorities, community and law enforcement officials to protect the area from destructive fishing practices, and builds capacity for future habitat monitoring, restoration activities and local tourism development.

Restoration projects have concentrated on involving community leaders and forestry department officials in mangrove restoration and working with dive guides and KSDA officers to conserve and restore the coral reef.

The social and economic elements of the Riung project have concentrated on working with a range of local authorities to assess natural resources and initiate co-operation between authorities and communities in taking shared responsibility for managing marine resources and protecting the marine park. A memorandum of understanding has been developed with the Fisheries department on marine habitat mapping and the socio-economic assessment of coastal villages in the Ngada district. Project participants have also lobbied the local police to implement laws to prevent fishermen using dynamite from operating in the area.

Together with the fishing community, the project is implementing a range of sustainable fishing methods. The aim is to work with the fishermen and fishery department on a fishery management plan for the area, which is based on the assumption that the area and its resources will be sustainably managed by local fishermen and local government and will not be used by outsiders.

Tourism is another important source of income for local fishermen. As they mainly fish at night, fishermen have developed a rotating system for boat-hire during the day to share the income from dive tourism. The project is also working with the tourism department to generate revenue for local people through the provision of diving equipment for hire. The department has provided 10 sets of dive equipment and compressors while WWF has contributed masks and fins. A community group manages the equipment with some technical assistance from WWF.

Project achievements

The main achievement of the Riung project has been to develop a climate of co-operation and collaboration between local authorities and communities to take shared responsibility for managing the natural marine resources and protecting the marine park from unwanted use by outsiders. Creating awareness of the opportunities for collaborative management has been an important underlying project activity. The communication of results of collaborative projects carried out by government departments, district leaders and members of the local community has increased awareness of the project and resulted in commitment to further collaborative management projects.

The success of this approach is particularly striking in areas where project initiatives have been taken over or furthered by local partners. In 2001, for example, WWF initiated a pilot project for the rehabilitation of the coral reef by submerging 85 blocks of concrete with attached live corals. Around 200 villagers assisted in the different stages of the project. The project increased awareness and resulted in the head of the district allocating funds from the

WWF Nusa Tenggara

2002 budget of the village development programme for coral reef rehabilitation. Local communities have also initiated mangrove planting activities, with the government and WWF providing technical advice.

Last year several local fishermen who had been involved in using destructive fishing techniques in the area decided to change their methods after being made aware of the impact they were having on the marine habitat. Eight of the ten groups of fishermen who had been using drag nets also decided to change their fishing methods. As a result of increased law enforcement activities, local police caught two local fishermen using dynamite. This, albeit rare, act of law enforcement resulted in a drastic decrease in dynamite fishing in the reserve and the surrounding area.

Future Prospects

Government officials and communities are now regularly co-operating in sustainable activities, restoration projects, patrolling and communication events. As a result WWF has been accepted by government and communities as initiator and facilitator for co-management in the Marine Tourism Park. WWF has also been asked by the head of the district to function as his advisor on marine conservation. For the first time, the Ngada district has allocated significant funds for marine habitat monitoring and marine and coastal habitat rehabilitation activities within the 2002 budget.

The future of the 'Seventeen Islands' Marine Tourism Park Riung project will focus on key issues of sustainable fisheries management, development of the local economy based on sustainable use of conservation areas, promotion of tourism to the park, and the expansion of coastal conservation and fisheries management policies to the Ngada district. It is hoped that this expansion within the Ngada district will serve as an example of how district governments, under new decentralisation policies, can use the sustainable management of marine resources, together with policy development and enforcement, to harmonise local and district economies with coastal and marine conservation. The local community and government will be assisted in developing the local economy, for example, through links with the private sector to develop trade in certified fish, by promoting eco-tourism, by monitoring habitat condition and the sustainable use of resources, and through government and community programme development.

WWF Nusa Tenggara

Partners and Stakeholders:
Fishers and coastal villages in Riung, local guides, government of the Ngada district (including Fisheries Department, Police), Department of Conservation of Natural Resources (KSDA).

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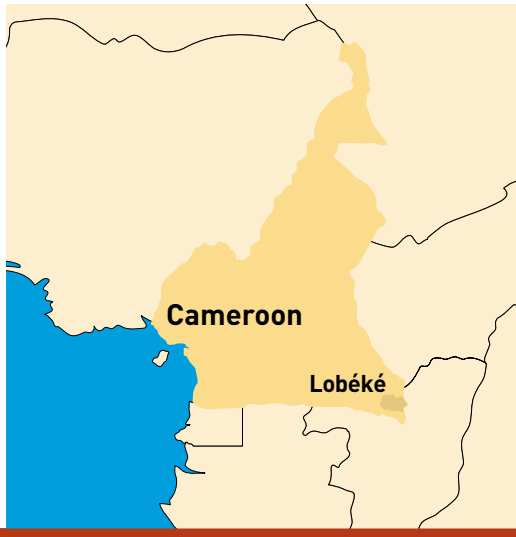
Project funders: **WWF-UK and the UK Department for International Development (DFID)**

Duration of project: **1997-2002**

Ecosystem: **The Flores Marine Tourism Park Riung lies within the Wallacea bioregion, with more than 70 hard coral genera. It has populations of all marine species protected in Indonesia. The region includes 4 of the WWF Global 200 priority marine and coastal ecoregions. The Park lies within the WWF Global 200 ecoregion: Banda-Flores Seas.**

CAMEROON



Jengi Forest Project, Lobéké National Park

Innovative legal and collaborative management arrangements in a protected area resolve conflicts over forest resources and deliver direct benefits to indigenous communities

Nigel Dudley

- Resolving conflicts over territories and resources among indigenous peoples, communities, logging companies, sport hunters and conservationists
- Defining ground rules for equitable resource management based on 'rights for responsibilities'
- Meeting community subsistence and livelihood needs for wild meat protein and other non-timber forest products
- Crafting innovative legal arrangements for direct access to and ownership of resources

The Challenge

Hunting has often been seen as the enemy of conservation, but in many parts of Africa in particular, controlled and responsible trophy hunting may for the foreseeable future be a more solid conservation bet than uncontrolled hunting for wild meat. In much of the Congo Basin, and again in East Africa, the penchant of middle-class Africans for 'bushmeat' – meat obtained from wild game – is causing the rapid destruction of wild species. Several existing protected areas have 'lost' their larger mammals to poachers, who increasingly also take snakes, lizards, small mammals such as pangolin and monkeys, and even small birds. Bushmeat hunting thrives because local people have no alternative ways of making money. In these cases an alliance of hunters and conservationists – to provide regular jobs for local trackers and invest the wildlife with long-term value – provides an opportunity to break the cycle of destruction. At the same time, pressures from the increasing activities of logging companies (both actual logging activities and the infrastructure that is built up around these activities) is further undermining the forests. The following example provides one way in which conservationists, local communities, logging companies and sports hunters can work together to secure a long-term future for wildlife.

Lobéké forest is situated in South East Cameroon. The area includes a significant proportion of primary forest and supports sizeable populations of animals internationally recognised as endangered, such as gorillas and other primates. The conservation importance of the forest was first brought to national and international attention over a decade ago as concern grew about the activities of commercial timber companies. Their presence not only threatened the integrity of the forest, but radically and irrevocably altered the socio-cultural situation of the area by attracting a large immigrant population, who are heavily reliant on forest resources through a variety of unsustainable practices such as commercial bushmeat hunting, ivory exploitation and the selling of primates and birds destined for the international pet trade.

WWF-Canon Fritz Pölking

The forest surrounding Lobéké is an integral part of the lifestyle of two groups of Cameroonian people, the Baka pygmies and the Bagando, who make up about 40 per cent of the area's population. Both rely heavily on the forest for food, medicine, building materials and cultural identity, yet their environment and lifestyle have been severely threatened by the activities of the new immigrants. The Baka communities consist of loose associations of people without any strong traditional leadership. This lack of organisation, coupled with the mobile nature of the Baka, make them vulnerable against influential stakeholder groups, such as logging and professional sport hunting companies operating in the region. The Bagando – whose population is about 8,000 – are mainly agriculturists and traditional hunters.

Following a variety of biological and socio-economic investigations that demonstrated the value of the forest, both to Cameroon and the local communities living on its perimeter, the Government of Cameroon classified Lobéké as a National Park in March 2001. The Park covers more than 200,000 hectares of protected forest with multiple use zones comprising community hunting areas, professional sport hunting zones and logging concessions making up an additional 600,000 hectares.

The Project

WWF has been working in Lobéké since 1995 as part of the large WWF South East or Jengi Forest Project – Jengi meaning spirit of the forest in the Baka language. The project has been working with local communities, the government, various stakeholders and conservation partners to seek lasting practical solutions that address the needs of people and nature conservation.

Every protected area has its own unique conservation objectives, management needs and socio-political circumstances. This project is based on the idea that the many conservation issues to be addressed in the region require a combination of strategies. These include:

- A collaborative management approach between government and stakeholders
- An adaptive approach that tests options in the field, and comprehensive monitoring that provides information on the success or failure of management interventions
- Empowerment of local communities in a participatory system that provides direct access and ownership of some of the resources.

This programme has helped both the government and local communities work in collaboration with other stakeholders to define ground rules for resource management agreements centred on the concept of exchange – 'rights for responsibilities'. The resulting co-operative arrangements are not pre-designed, but are the consequence of discussions and negotiations among various stakeholders.

Such an approach, however, is not without its difficulties. The government oversees all governance-related issues and assumes the role of arbitrator of natural resource management and conservation in Cameroon. The present laws on benefit sharing and ownership are ill-suited to address the problems of the people confronted with influential stakeholders such as logging companies. There is very little protection for the rights of indigenous people and a lack of knowledge among indigenous people of what rights do exist. There is little understanding of the notion of collaborative management, especially with regard to the involvement of local communities.

These problems are being addressed by the project, which has developed a range of initiatives that officially recognise collaborative agreements and ensure their proper functioning. Collaborative conventions provide a legal basis for collaborative management agreements. WWF, with other conservation partners, is developing internal regulations, with full legal backing, for the various community-based resource management structures that are in place through the project's assistance.

Project Achievements

Cameroonian policy on protected area management prevents human activities taking place in National Parks. The gazettement in Lobéké, however, provided the opportunity to redefine and radically change this policy. The process of doing so was highly participatory, with all major stakeholders in the region being consulted. This has resulted in the local communities around the Park being granted access to areas during defined periods to carry

out subsistence activities, such as the seasonal harvesting of non-timber forest products. This integration of indigenous forest people in management was a major innovation in protected areas in the Central African region. A collaborative convention is now under development between the park authorities and local communities to define resource use principles and management arrangements for these areas inside the park.

During the gazettement of the park, the communities also requested recognition of village hunting areas to meet subsistence protein needs. Five community hunting zones covering a total area of about 200,000 hectares were gazetted under direct management of the local communities. Recognition of community hunting zones marks the first step towards real partnership between the government and the communities. It also represents the benefits of ownership rights, as these communities can now by law lease out their hunting territories to sport hunters. Three community-based wildlife management committees have been set up to manage the five community zones. There remains a need to fully address the interests of the Baka pygmies in the scheme, so the project has started working with a purely Baka conservation NGO in order to fully integrate Baka pygmies in the process. The project partners intend to strengthen the management of hunting zones through the development of ecological monitoring systems to assess off-takes, anti-poaching strategies and sensitisation missions in collaboration with the German technical development organisation GTZ. The project also intends to build partnerships with major stakeholders and potential investors in the community hunting areas.

The first convention to be developed and agreed by the project was between professional sport hunters operating around Lobéké and local communities. Local people have been widely used by professional sport hunters as trackers, guides and porters for very little in return. The project thus helped both parties, under the direct supervision of the government, forge a convention whereby at least 60 per cent of game meat killed by sport hunters would return to nearby villages. In the same convention, the sport hunters agreed to recruit and train more locals in various positions other than guides. The local communities in turn were expected to support these companies, especially in anti-poaching campaigns. This initiative also helped resolve some of the conflicts over territories, ownership and financial incentives. The professional sport hunters, under this arrangement, are expected to pay 10 per cent of the taxes paid by clients directly to the communities. Over the last two seasons this has generated more than US$60,000. Most of the income has been used in various developmental activities such as the establishment of community farms, purchase of basic medical materials and drugs for village health posts, and sponsoring of students and pupils in schools. A technical supervisory committee of village representatives, professional hunting outfits, government representatives, WWF and GTZ has been set up to ensure the implementation of the convention.

Similar to the convention with sport hunters, the project has also helped to develop a collaborative convention between logging companies, government and local communities specifically

Nigel Dudley

targeting poaching and the bush meat trade. Under the arrangement, logging companies are expected to collaborate with the government to eradicate poaching in the region, especially within community hunting zones. There have been some good results in joint anti-poaching patrols involving various parties. Logging companies with technical assistance from the project are going to build cold stores to store fish and other meat as part of a meat subsidy package, especially in logging towns. They are also expected to help train young locals in animal husbandry to reduce over dependence on bush meat. At least two logging companies operating around Lobéké have already embarked on this social and economic development scheme.

According to forestry law, 50 per cent of logging proceeds, in the form of various taxes, should be paid to local communities, with 40 per cent of this sum being managed by the municipal councils and 10 per cent going directly to local villages. The total revenue generated by the government from logging companies in South East Cameroon is estimated at 9 million EUR. This revenue could have gone a long way in alleviating some of the social and development problems in the area – but it has not. WWF, in collaboration with GTZ, has therefore been working towards better management of

these funds. Communities have been made aware of the law regarding these contributions, and local community leaders have participated in a seminar on financial management, micro-project development and conflict resolution. One of the main objectives of the next phase of the project is to help influence policy makers to review current benefit-sharing schemes to ensure that a higher percentage of logging proceeds reaches the communities. There is also need for a better structured, less bureaucratic and transparent system of management of the funds.

These initiatives are a major contribution towards empowering local communities in the natural resource management process in the region. This is a new development, and most community leaders have expressed their satisfaction with this on-going legal process. The use of collaborative conventions provides a useful model for other initiatives linking sustainable development and conservation in and around protected areas.

Future Prospects

The present collaborative management approach being developed in Lobéké in particular, and in the Southern forest region of Cameroon in general, is still in its infancy. But given the present project initiative of empowering the people through various aspects of collaborative management, achievements such as direct benefits from resource exploitation, ownership rights and legal status have been accomplished in a short time. There is strong support from the local population for the conservation initiatives in the region, but much remains to be done on institutional aspects related to benefit sharing and indigenous peoples' rights to natural resources.

Reconciling peoples' needs and conservation objectives remains a very challenging task, especially in an environment where there is still a strong centralist approach to natural resource use and management. The much-needed institutional framework has been provided through recent fora such as the Yaoundé summit – a meeting of heads of state throughout the region to discuss forest conservation – and the international Conference on the Central African Moist Forest Ecosystem (CEFDHAC). Such initiatives should help develop approaches to nature conservation that will also resolve problems of poverty and development faced by local communities.

WWF-Canon Meg Gawler

Partners and Stakeholders:
Baka pygmies and the Bagando indigenous forest peoples, communities in and around Lobéké National Park, logging companies and towns, sport hunters, Government of Cameroon through MINEF and all relevant ministries, the Netherlands Development Organization - SNV (Stichting Nederlandse Vrijwilligers), German Technical Cooperation – GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit GmbH) and COVAREF (Committee Villageous d'Amanagement des Resources Forestiere) a committee of local villagers.

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Duration of project: **1997-2005**

Project funders: **WWF-Germany, WWF-Netherlands, GTZ and the Global Environment Facility (GEF)**

Ecosystem: **The dense semi-deciduous forest of Lobéké is characterised by a patchwork of high forest, secondary forest and low-lying swamp interwoven with a mosaic of Maranthaceae forest, monodominant stands and forest clearings. The area supports high densities of forest mammals, such as forest elephants (**Loxodonta africana cyclotis**) and western lowland gorillas (**Gorilla gorilla gorilla**). Lobéké is part of the WWF Global 200 Ecoregion of the Western Congo Basin Moist Forests.**

COLOMBIA

La Cocha, Colombian Andes

Demonstrated community commitment to sustainable production systems and nature reserves leads to increases in income and social services as well as protection of a wetland system against a threatened dam

Edward Parker

- Implementing sustainable production systems for biological and genetic resources, and ecotourism in community nature reserves create livelihoods and double income
- Using national and international legal tools to protect a wetland system and remnant Andean forest against a threatened dam
- Analysing economic and biological information to identify protection options

The Challenge

Conservation projects – even successful ones – can be threatened by sudden new developments, such as the construction of a road or a dam. In some cases, the developments also threaten local livelihoods, and in these situations alliances between local communities and conservation groups can be a powerful force for change or for resistance. While protected areas often get bad press as undermining local peoples' rights, communities can themselves start lobbying for protection if they think it will provide a buffer against damaging development projects. In the following example, communities and conservationists worked together to resist a large dam development and used calls for protection as the best strategy to maintain local livelihood opportunities.

La Cocha Lake, the source of the Guamues River, lies at the heart of the greatest wetland system in the Colombian Andes, in the southwest of Colombia, on the border with Ecuador. The area has been the focus of conservation efforts by local communities for twenty years.

In 1999, however, the area was threatened by a plan to construct a dam on the Guamues River to provide water for the growing city of Pasto. To improve the economic viability of the project it was expanded to encompass a series of three dams, an artificial waterfall and lake and a hydroelectric plant. The benefits were intended to increase tourism and relieve the pressure of urban growth on the agricultural lands around Pasto.

As the Multi-Purpose Guamues Project (PMG in Spanish) began the legal process of obtaining an environmental licence from the Colombian government, fears spread about the impact of the scheme on La Cocha. Promoters estimated that the dams would flood some 200 hectares of paramos, or

WWF-Canon Kevin Schafer

Edward Parker

10 per cent of wetlands. Other analyses carried out in collaboration with the University of Nariño calculated that the real figure would be nearer 900 hectares. The scheme would also remove a large slice of Andean forest and affect the watersheds of several rivers. Even the smallest flood generated by PMG would damage the water regulation capacity of the paramos, and flooding would have a serious impact on the region's bird life.

The principal effect of the scheme would be on local communities who have made major efforts to move from unsustainable charcoal production to conservation by establishing private nature reserves covering an area of approximately 3,000 hectares. The dam would affect fifteen of these reserves. La Cocha was also the northern frontier of the ancient Inca Empire, and the site has important cultural values for indigenous groups, who consider it sacred, and use it for purification and fertility.

The Project

WWF Colombia began work in the region around La Cocha in 1997. The project, Conservation and Sustainable Development with Rural Communities in the Department of Nariño, has five main objectives:

- Develop and promote the establishment of sustainable production systems including the conservation and restoration of biological and genetic resources with small farmers in two regions of the Municipality of Pasto, Department of Nariño
- Conserve and manage the remnant forest on private lands in the Upper Watershed of the Guamues River and the community of Portachuelo, and initiate a broader set of activities to address the increasing colonisation and destruction of cloud forests
- Develop and implement a community-based programme of environmental education with members of Asociacion para el Desarollo Campesino (ADC) and associated co-operatives, inhabitants of the region, local rural schools and the youth group 'Herederos del Planeta' (Heirs of the Planet)
- Develop and implement a strategy for ecotourism aimed at regulating the flow of visitors to the private reserves and play a leadership role in the promotion, management and follow-up of tourism activities in the region
- Promote effective participation of the members of ADC in discussions and decisions regarding development policies and legislation affecting their region.

Two years after the launch of this project, the PMG dam proposal was launched. The dam, if built, would have had a potentially devastating effect on the work carried out by the project in the region. This threat became a catalyst for action within the communities that were likely to be affected. Different types of conflicts and threats to the region were identified and articulated, and the local communities around La Cocha began to apply the use of legal tools as well as negotiating skills to address the threat posed by the PMG. One of the first actions was the creation of a citizens' watchdog group, the Committee in Defence of the Lake (Comite para la Defensa de la Laguna).

It soon became clear that a strategic action plan would be necessary to address the PMG effectively and coherently. The plan was developed with support from the University of Nariño, WWF, ADC and ASDES (Advisors in Development, Corporación Asesorías para el Desarrollo), a non-governmental organisation whose mission is to enable and strengthen the autonomy, identity and capacity of local communities and ethnic and cultural groups to use and apply their civil and constitutional rights. The action plan was based on the continued strengthening of capacity in citizens' rights and environmental protection. This involved four strategies:

- Provide a more comprehensive picture of the issues involved in the project
- Enable appropriation of information by the community
- Combine legal tools from domestic and international law for defence of the lake
- Bring stakeholders together.

Three analyses were undertaken to gain a more comprehensive picture of the issues. The National Energy Policy was analysed and alternative solutions were examined to address the stated objectives of the project. The biological importance of the site was analysed, specifically within the context of ecoregions. This analysis emphasised that any environmental impact assessment for this type of project would need to consider not only the environmental impact in the immediate vicinity but also within the ecoregion as a whole. The final analysis reviewed the potential of using different Protected Area Categories, including declaration of the site under the Convention on Wetlands of International Importance (Ramsar), to gain legal protection and a review of the Ministry of the Environment's proposal to create a National Park in the area. Ramsar sites are managed to avoid changes to their 'ecological character'; such areas need not necessarily be formal protected areas, but designation does indicate government commitment to their conservation.

It was vital that local communities should understand the implications of the dam project. To this end, the partners examined all possible environmental and social impacts of the project through a parallel Environmental Impact Assessment, including carrying out additional biological research and using GIS techniques to predict the scope of flooding. They also encouraged a closer look at the assumptions presented by promoters of the project, such as the claim that the project would bring benefits in employment and lower electricity prices.

The PMG scheme would also have impacts on ecosystems and other communities far beyond the inhabitants of La Cocha. Downstream communities along the Putumayo River to the east, and those along the Patia River to the west, had received very little information about the project. Community leaders were contacted, and a workshop was held to bring them together to examine the PMG proposal. Further impacts were foreseen in the Amazon Basin and in the Pacific Basin; a reduction in flow volume to the east could decrease the navigation potential of the Putumayo, while causing loss of soil fertility in the lower Guamues through the disappearance of its seasonal flooding. To the west, an increase in water transfer to the Pacific indicated that there would be increased potential for floods and further disruption of riparian communities.

Project Achievements

The PMG project mobilised local communities to seek and share information and empowerment. This in turn resulted not only in the legal protection of the Guamues River, but also in enabling local farmers to preserve and promote sustainable production systems offering an improved quality of life.

In a long process, WWF Colombia and its partners worked with the Ministry of Environment towards declaring La Cocha a Ramsar Site. This was finally achieved in May 2000. The Decree declaring the Ramsar site contains a clause introducing limitations on any infrastructure or development work intended for the site - an area of 39,000 hectares, encompassing the lake and surrounding mountains, forests and paramos. Until La Cocha was declared a Ramsar site, no laws had been enacted in Colombia regarding limitations on infrastructure projects within these wetlands. It was clear throughout the process that, although La Cocha's biological importance is indisputable, a key element in the Ministry of Environment's willingness to designate it as a Ramsar site was the community's clear commitment to sustainable use. Finally, on 17 December 2001, the Ministry of the Environment declared the PMG project non-viable.

Communities were against the PMG scheme from the beginning, seeing it as a threat to the river and to biodiversity. The project achievements are intimately related to social and political empowerment. The role of the project partners has been to facilitate, support and involve communities in decision-making processes, citizen's rights and participation. Communities acquired knowledge of the project and the possible environmental impacts, which in turn provided them with the tools to assess and respond to the proposals. At the same time the fulfilment of the range of initiatives described in the original project objectives provided on-the-ground evidence of the merit of sustainable use and management. Specific achievements in each of the original project objectives have been diverse. To promote sustainable production systems, emphasis was placed on the maintenance of genetic resources for food consumption, animal feed and biological control. The management of guinea pigs (*Cavia porcelus*), which generate about 23 per cent of the agricultural product in the area, was improved with analysis of nutritional value of fodder crops, diversification of food sources and identification of high nutritional fodder species. Plant species were tested for their value in biological control, with good results from companion planting combined with use of organic fertilisers, adequate water and use of more resistant cultivars. To conserve genetic resources, farmers have made seed-sharing links between communities; some 41 species of potato, 3 species of oca, 5 species of ulloco (both native tubers), 22 species of corn and 45 species of bean have been managed, cultivated and shared among communities. An economic analysis comparing participant farmers with non-participants showed positive benefits from participation.

In La Cocha the average income of participating farmers was double that of charcoal producers, largely as a result of diversification into agriculture, ecotourism and conservation. On these reserves there is greater diversity of crops with 40 per cent of food produced for home consumption. Families also have more stable spending patterns, with fewer peaks and troughs, than those in charcoal production. Diversification of fodder crops, establishment of stable feeding and agrosilvopasture systems have enabled farmers to reduce the extent of areas dedicated exclusively to cattle, while areas in process of restoration have increased (71 per cent in La Cocha). Areas planted and restored for genetic resources and family food consumption have increased and areas of monoculture have decreased from 49 per cent to 2 per cent.

Soil and water management has been improved with the use of vegetation barriers and drainage canals. Soil quality has improved with the building of drainage canals; surveys show an increase in organic matter, increased pH and availability of nutrients and a decrease in density of soil favouring root penetration. Efforts have also been made to reduce water contamination from waste associated principally with animal production. This includes improved animal management, use of manure in composting, establishment of biogas digesters, and improved conditions for guinea pigs including collection of manure for composting and fertiliser. To reduce pressure on existing forest, reforestation and provision of woodlots have provided fuelwood for local families. Nine nurseries have also been established, distributing to date a total of 5,500 trees for planting in reserves.

Future Prospects

It is now widely recognised in the La Cocha area that a management system that involves environmental considerations and ecological criteria also generates an economy with higher income levels and consequent improvements in education, health, food, infrastructure and services. It also creates a more dynamic society, with high levels of self-reliance and local employment alongside greater biodiversity. The participants have adopted the

'minga', or collective work days, as a crucial tool in promoting sustainability and empowerment: members are linked to an organisation that offers services without becoming a burden; the days facilitate individual development, enhance a sense of solidarity amongst community and family members, and provide an opportunity for local leadership to have regional impact.

The long-term sustainability of the project has also been aided by the strong links developed with the 'Herederos del Planeta', who have produced written and broadcast material about the local region and natural resource management. The Herederos are involved in a wide variety of activities such as reforestation, monitoring diversity of species through bird-watching, orchid inventories, soil and genetic resource research, acting as guides for groups from other parts of Colombia visiting La Cocha (which has led to the establishment of groups of 'Herederos' in other parts of Colombia) and giving talks and workshops on reforestation, water management and biodiversity in local schools.

Recognition of ADC at national and international levels has increased, with regular consultation on issues of development and environment. The assassination of Eusberto Jojoa, founder and leader of ADC, was a terrible blow in 2000, but capacity-building and technical support for citizens' rights and responsibilities have continued. This has helped local communities negotiate more effectively with the government to improve educational facilities, to oversee proposed infrastructure initiatives and to increase participation by women in decision-making processes. WWF and ADC now have a central co-ordinating role with the national parks agency in defining a strategy for protection and conservation of the Upper Guamues and Putumayo watershed.

A further project is being developed with ADC that continues to combine objectives of ecosystem integrity with sustainable production patterns by building a culture that respects life in all its forms through integrated natural resource management. The project objectives are:

- A strategic increase in managed and conservation areas, including natural reserves and indigenous territories
- Implementation of farming practices which provide sustainable production while maintaining and improving natural ecosystems
- Increase in the capability of local stakeholders to participate in decision-making concerning regional development policies and legislation.

Finally, the successful protection of a unique ecosystem threatened by a large-scale infrastructure project has provided a blueprint approach to assess and resolve other conflicts that affect the conservation and sustainable use of wetlands and involve a wide range of community sectors.

Edward Parker

Partners and Stakeholders: **Asociacion para el Desarollo Campesino (ADC), Rural communities in the Department of Nariño, regional co-operatives, local rural schools, Herederos del Planeta (Heirs of the Planet) youth group, Comite para la Defensa de la Laguna (Committee in Defence of the Lake) citizens' watchdog group, University of Nariño, Network of Civil Society Private Reserves (CSPRN), Advisors in Development, Corporación Asesorías para el Desarrollo (ASDES).**

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Project funders: **Main project funders are the Swedish International Development Cooperation Agency (SIDA), Ramsar Secretariat, WWF-US and WWF-UK/DFID**

Duration of project: **1997–on-going**

Ecosystem: **Lake Cocha is the source of the Guamues river, which crosses the four lowest paramos in the world. The North Andean paramos, or high-altitude grasslands, are recognised by the WWF Global 200 as being the richest and largest examples of tropical montane grasslands and shrublands in the world, with high levels of endemism at regional and local scales. The volcanic lake and surrounding high Andean peatlands and forest support a diverse range of associated flora and fauna, including the spectacled bear (**Tremarctos ornatus**), almost 50 per cent of South American paramos bird species and endemic plant species of frailejon (**Espeletia cochensis, Espeletia schultesiana**).**

SWEDEN

Sustainability in the Forest Industry

Forestry, with equal environmental, social and economic objectives, provides a route towards sustainable trade and production patterns that does not compromise ecosystems or livelihoods

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- Improving corporate transparency and accountability
- Developing national forestry standards with stakeholders, including long term employment and indigenous rights
- Relying on local knowledge, skill and co-operation between biologists, technical experts and field staff
- Operationalising progressive business ideals and forestry practices

The Challenge

The urgent need to protect the integrity of forest ecosystems was recognised at the Rio Earth Summit by adoption of the Forest Principles [5]. While the loss of forest cover is a fundamental problem worldwide, the loss of forest quality, particularly in developed countries, is also a critical conservation issue. Forest quality has been defined as the biological, social and economic components that together constitute the total significance and value of the forest [6]. This case study follows the integration of progressive business ideals into forestry practices that help preserve and restore forest quality. Partnerships between industry and conservation organisations have proved that methods and standards for forest protection can be agreed on that are workable, effective and publicly accountable and which can help generate sustainable livelihoods.

Sweden is one of the leading exporters of pulp, paper and wood on the world market; the export value of forest products in 1997 was 90 billion SEK (9.8 billion Euros), and 200,000 people were employed in forest-related industries out of a population of 8 million, while a third of all export shipping and a third of all rail freight carries wood products. Although half of Sweden's forests are in family ownership, 37 per cent is owned by forest companies (some 8.6 million hectares), of which five companies own 8.2 million hectares. Sveaskog is the largest single forest owner, with 4 million hectares of forest land; the company is entirely state-owned, with much of its holdings coming from the purchase in December 2001 of AssiDomän.

Sweden has more closed forest than any other European nation – 26 million hectares, or 60 per cent of total land area. Swedish forests have been worked for hundreds of years, and less than 5 per cent remains of the original forest cover; natural old growth forests are mostly confined to the submontane

[5] Forest Principles, formally entitled the "Non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests."

[6] IUCN and WWF (1999); *Forest Quality: An Introductory Booklet,* WWF and IUCN, Gland, Switzerland

forest along the Fennoscandian mountain range. Critically threatened habitats include both old-growth spruce and pine forests and swamp forests on richer soils.

During the 1960's and 1970's the Scandinavian forest industry was characterised as large-scale, with the application of generic techniques under uniform management systems with little regard for local or regional biodiversity, microclimate or unique biotopes. Timber harvesting techniques followed a regular cycle of clear felling: site preparation by scarification, replanting, thinning and clear felling again when trees reached a marketable size. Old growth, mixed and swamp forests disappeared, and instead homogeneous ecosystems were created, with monoculture conifers offering suitable habitats to only a few species. Such techniques have an impact on biodiversity at all levels and destroy prospects for future sustainable management and livelihoods.

Swedish law enshrines the Right of Public Access to all land, and forestry practices have been at the centre of public debate in Sweden for many years, from public protests against aerial spraying of chemical herbicides in the 1970s, to mounting pressure from NGOs and consumers in the 1990's for companies to operate in a socially and environmentally responsible manner. Companies cannot afford to ignore consumer pressure. Although the prevailing view in corporate investment was – and is – that the environment represents a liability, and that 'beyond compliance' practices are a lost cost rather than a productive investment, the increasing public interest in ecological consequences of intensive production practices struck a chord in some parts of the forest industry.

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The Project

In 1993, AssiDomän became the first Swedish forestry company to produce an annual environmental report that gave equal weight to ecological and economic values. Combining traditional knowledge of local foresters with the modern disciplines of soil science and ecology, the company assessed the local and regional biodiversity of its holdings together with potential timber value, costs and the ecological effects of site practices. Forestry practices were then adapted to individual site conditions.

Site-adapted forestry required a radical review of established work routines. Management measures needed to be appropriate to the special conditions of each site, using small-scale techniques and relying on skill, local knowledge and co-operation between biologists, technical experts and field staff. Staff members were trained to assess and carry out practical conservation measures in the course of normal silvicultural work.

The economic value of the new practices was assessed, and a broader system of Ecological Landscape Planning (ELP) developed in which environmental assessments and long-term conservation objectives – with a perspective of 100 years or more – became the baseline for methods of harvesting and regeneration planning. Detailed site assessments were carried out for all 3.3 million hectares of AssiDomän land during the 1990s.

Ecological Landscape Plans are made at district level. Rocky outcrops, ravines, landslides, shorelines and islands in wetlands are identified, as well as sensitive areas harbouring Red List species, core areas for biodiversity, rare plants, nesting and mating grounds for endangered birds, copses of old trees and deciduous wood, lairs and burrows. Details of historic or cultural landmarks, buildings, paths and hiking trails are incorporated into the data, and employees maintain contact with local conservation groups for information about sensitive areas.

Regeneration planning always precedes harvesting. Valuable areas with characteristics of natural forest and key biotopes are linked together by a network of "corridors" of undisturbed land, often coinciding with waterways, which allow animals and plants to migrate and spread. Further undisturbed "reinforcement zones" are created around sensitive and core areas for biodiversity, or where ecological value can be improved by promoting hardwoods. Border zones of bushes and small trees are left along waterways as nutrient traps, to reduce risks of soil acidification and leaching of nitrates into water supplies, and swampy areas are left to clean run-off through natural denitrification processes. Shelterwood (usually birch and pine) is left on areas prone to frost-damage and on all peatlands to protect naturally regenerated seedlings from summer frost, dehydration and light shock, and on damp or swampy soils to minimise needs for artificial drainage. These areas are all exempted from harvesting.

In forest areas available for timber, harvesting is by even-age management but without large clear felling. Seed trees are left for natural regeneration; copses of young forest, broad-leaved deciduous trees such as rowan (*Sorbus aucuparia*), sallow (*Salix caprea*) and alder (Alnus spp.), rocky outcrops, wetlands and biologically sensitive areas are left untouched. Clearance is site-sensitive: controlled burning may be used to imitate natural

processes where species are dependent on a regular natural fire dynamic, or logging residue left to enhance the soil nutrient supply, for warming, protection from wind, sun and frost, and as an antidote to soil acidification.

A complete landscape plan for each area includes:
- A description of the landscape and its natural potential
- A summary of land use history
- A report on the present state of the forest
- An inventory of nature conservation values
- Ecological analyses
- Aims of conservation within the landscape
- Plans of measures to be taken.

Project Achievements

The creation of a full Ecological Landscape Plan for forest holdings provides an essential basis for extending sustainable forestry practices into a wider sphere.

For AssiDomän, the plans were a key step in achieving certification of all its holdings according to Forest Stewardship Council (FSC) standards. The FSC is an independent body setting standards for well-managed forestry worldwide and awarding accreditation to independent certifiers. The use of its name and logo on product labels makes use of market mechanisms to allow consumers to buy products that come from forests managed in environmentally appropriate, socially beneficial and economically viable ways.

The principles devised by the FSC to assess sound forest management include environmental, social and economic criteria and form the basis for independent national standards. In 1998 Sweden, through stakeholder discussions (which included WWF and AssiDomän), developed the first national FSC standard in the world. The standards address a broad range of issues relevant to forest management in Sweden. Components that contribute to the maintenance of ecosystem integrity include protection for key habitats and old-growth forests; protection of mountain forests from further fragmentation; and modified management and restoration of deciduous forest types; at least 5 per cent of certified land within commercial holdings must be exempt from management. Social components address working conditions, long-term employment and training, and indigenous rights such as traditional reindeer grazing on forest land.

In addition to a continual dialogue about responsible forest management, WWF and AssiDomän developed a partnership to encourage responsible forestry among all forest stakeholders. Together, both organisations sought to promote a dialogue between Europe's environmentally responsible buyers, create consumer awareness and to broaden the market for certified products.

The strategic choice made by AssiDomän to work with environmental NGOs and to pioneer responsible forestry was originally perceived by many to come at a cost: exempting forests from cutting would reduce profits in the short term. However, site-adapted forestry was shown to compensate these losses in the longer term with lower costs, increased environmental benefits and better prospects for continuing employment and earnings.

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Clear-cutting extracts the immediate wealth resource that the forest offers, but entails high follow-on costs of site preparation including drainage, scarification and replanting; if regeneration is poor, site preparation and replanting have to be repeated. In comparison, site-adapted forestry utilises the natural characteristics of the site, leaving intact waterlogged areas and their protective forest zones to reduce the need for artificial drainage, and retaining seed-trees to allow natural regeneration with a higher quality of timber. Although the immediate cost of shelterwood felling is higher than that of clear felling, overall costs over five years from harvesting to regeneration can be halved. All large forest companies in Sweden now incorporate landscape planning procedures that allow for site-adapted techniques, and all have at least some land certified.

In December 2001 AssiDomän, a publicly quoted company, was purchased by the wholly state-owned Sveaskog, now the single largest forest owner in Sweden. Publicly, the forest industry was perceived as leading the sector towards responsible management systems. The government buy-in to the industry reflects the

growing importance of public accountability in forest management. It is perceived as an opportunity for the recognition of more protected areas, reserves, and land set aside for recreational use. But it is also considered essential that the company should retain all three of its objectives – preserving biodiversity, maintaining a sustainable production capacity, and achieving high and sustainable economic returns.

Future Prospects

Companies have recognised that by incorporating high standards of environmental management, businesses benefit from lower costs and higher profits, with more efficient use of resources and a reduced impact on the environment – that is, 'eco-efficiency.' They can gain market share, quality improvements and premium prices through product differentiation; they enhance their reputation in an increasingly brand-conscious world; and they create better relationships with regulators and local communities.

Sveaskog has recently published its Ecological Landscape Planning data on the Web, and is actively requesting responses from the public (http://www.sveaskog.se/skogsbruk). Launched in March 2002, the aim is to maintain an ongoing dialogue between all interested parties – local residents, special interest groups, and government authorities – about the forestry practices of the future. The website allows users to click on an area to retrieve information. Each district is mapped with information on forest holdings, watersheds, key conservation sites, reserves and planning areas. For all districts, users are asked to email the local officer with comments and ideas. Although there are no statistics yet on uptake, and it will be some time before the site can provide data for all the company's forest holdings, the site could provide a useful blueprint for other forestry companies as a way to provide transparency of operation and full public accountability.

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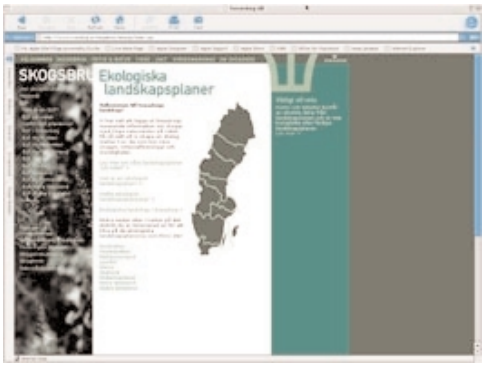

Project partners: **Participants in national standard setting process including scientists, forest owner's associations, unions, Sámi organisations, forest companies and environmental NGOs, biologists, technical experts, field staff, WWF-Sweden, WWF International, AssiDomän and Sveaskog**

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Duration of partnership: **1998-2002**

Project funders: **WWF International and AssiDomän**

Ecosystem: **Swedish forests are an extension of the Fennoscandian western taiga featuring rugged terrain, mountains deeply gorged by glaciers, numerous rivers, rolling meadows, birch spruce and pine forests, extensive wetlands and heath lands. Such diverse habitats support a variety of flora and fauna for the latitude.**

Conclusions

A changing political landscape, including growing recognition of the importance of civil society and private sector involvement in sustainable development decision-making and implementation, is giving rise to renewed interest in new models of governance. These are providing frameworks for the more effective integration of human and societal well-being and ecosystem needs at the field and policy levels and for the negotiation of trade-offs among these objectives.

Equity

Central to these approaches is the principle of equity. Concerns with equity, particularly as it regards distribution of the benefits and costs of economic development and environmental deterioration among people, countries or generations, have always been an important part of the sustainable development challenge. Achieving balance and fairness is a critical part of all of the case studies.

The lessons which can be learned from attempts to match conservation and development concerns are simple to list in theory and difficult to apply in practice. Past experience has shown that meeting these twin challenges will take much more than goodwill and a few year's worth of donor contributions.

The case studies presented in this report reveal a number of recurring themes or lessons, which help to indicate a more positive way forward. These include the following:

Local stewardship

The role of the rural poor as stewards of ecosystem services and functions must be recognised, coupled with policies that reward them for this role. In the case studies from Cameroon, Colombia and Brazil, different approaches to this common theme are taken, including direct access to resources in Cameroon, safeguarding of community conservation efforts in Colombia, and recruiting of women and farmers as extension agents, local organisers and project promoters in Brazil.

Shared responsibility

The concept of partnerships – groups with different priorities coming together to work out ways forward that will be acceptable to all – also flows through the case studies. Partnerships can contribute to levelling unequal power relationships between different actors by recognising that each one brings something different but of value to the table. Such arrangements do not, however, come cost free, and need time, effort and an all important level of trust and commitment between the partners in order to function effectively, for example in Sweden, Indonesia and Cameroon.

Access to information

Involving local communities in the decisions that affect their lives is crucial. The first step towards informed debate and decision-making is information, yet this is the precise resource that many communities are lacking. In several of the case studies, particularly those relating to Sweden, Poland, the Philippines and Colombia, we see that providing people with the information to make decisions helps to achieve a balanced outcome.

Local knowledge

It is almost facile to say that local knowledge should be respected and be seen as a critical foundation for action on sustainable development, yet this probably does not occur in practice as a rule. There is often the temptation to rely on readily available outside advice and influence. The case studies highlight the importance of local knowledge, for example, in South Africa where it is forming the basis for a sustainable tourism undertaking, and in Sweden, where local knowledge helped give shape to national forestry standards.

Underlying causes

It is also obvious that, however successful the project and however well partners work together, they can only be successful in the long term if underlying causes are addressed and an appropriate enabling environment is put in place. As such, even the most remote communities are being propelled into international policy debates – particularly in respect of global trade and investment policies. In the examples from the Philippines and Brazil, innovative steps are being taken to address and counteract the global trade patterns that continue to impose pressure on local natural resources.

Scaling up

Both conservation and development organisations are undergoing a period of “scaling up” their operations; recognising the limitations of site-based approaches and increasingly moving towards projects that operate at the level of the landscape or the ecoregion. Working at these levels necessitates taking a wider social, economic and environmental view. The case studies in Poland and Colombia provide good illustrations of scaling up to a more appropriate and effective management “unit” – in these cases watersheds.

The material and geographical designations in this report do not imply the expression of any opinion whatsoever on the part of WWF concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries.

To aid comparison, sums of money are given in US$ or Euros (EUR). One US$ was worth approximately 1.14 EUR as the time of going to press.

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WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption

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