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The background of the cover is a large white puzzle piece shape. Inside and around this shape are various photographs: a young boy with braids and a beaded necklace, a group of children waving, a large blue fish, a young boy holding a blue fish, a tiger's face, a smiling woman in traditional dress, a panda's head, and a lush green forest scene.

Species and People: Linked Futures

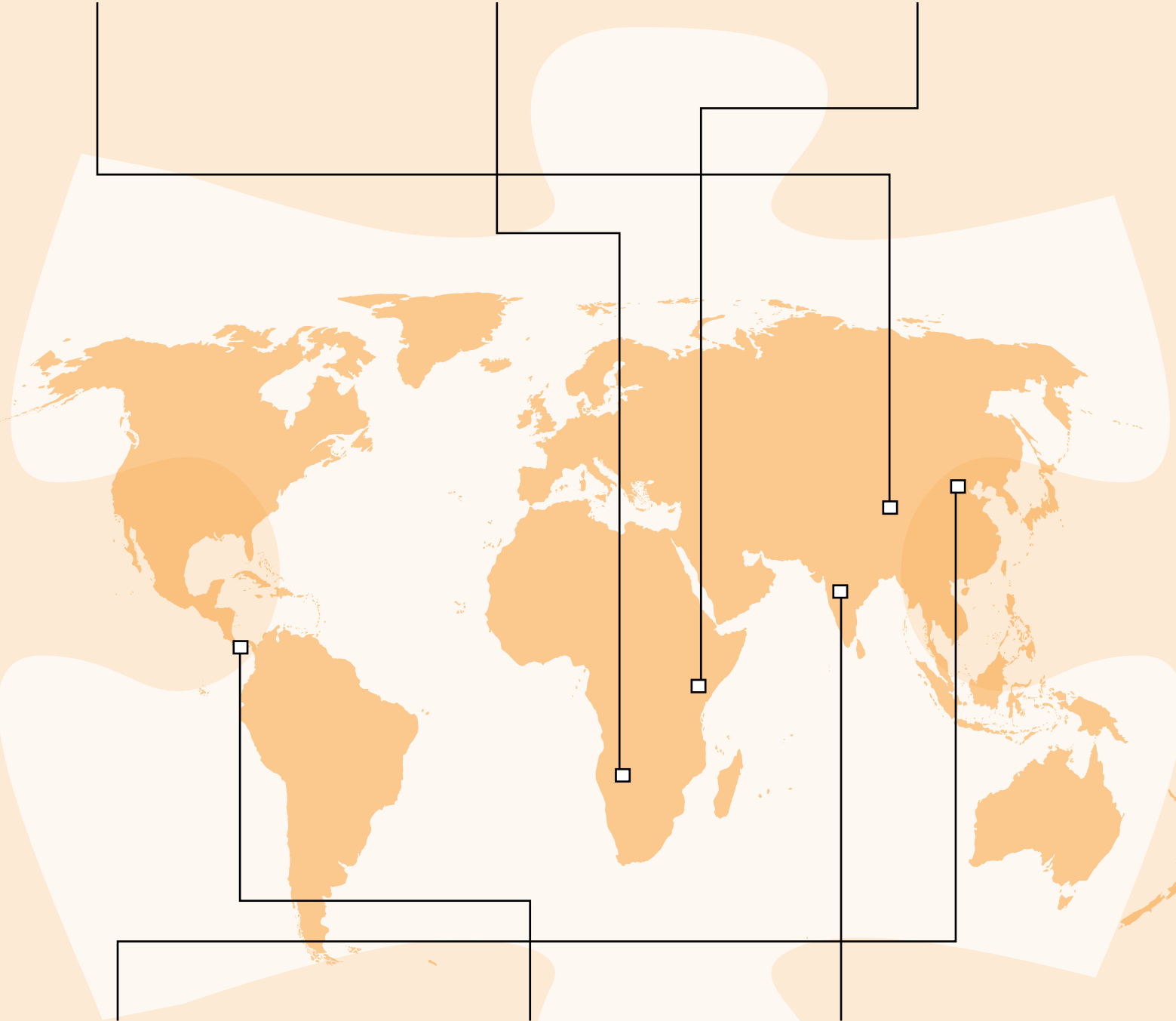
**Summary
of Report:**

***Species
and People:
Linked Futures***

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Dear readers,

It is with great excitement that WWF introduces this summary of key issues and findings from our report “Linked Futures”. The result of original research, “Linked Futures” shows how species conservation programmes can and do reduce poverty, increase participation by women in society, improve governance structures, increase food security and, of course, deliver a sustainable environment for future generations.

Species are essential to human societies as cultural and religious symbols, commodities, food, fibre, and transport. Species also play a vital role in ensuring environmental services such as clean water and fertile soil, and are vital to the lives and well-being of rural communities dependent on them for their survival.

Around the world, billions of dollars are being spent to reduce poverty and promote sustainable economic development – often with inadequate attention to the link between sustainable development and a healthy environment. In many parts of the world, the dynamics which threaten species are also those which contribute to poverty, such as loss of habitat and its riches, unsustainable depletion of the natural resource base, inequitable access to natural resources necessary for life, and a lack of appropriate governance and management mechanisms.

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; and reducing pollution and wasteful consumption.

A species conservation approach that is integrated with human needs is fundamental to the fulfillment of this mission.

The challenge for governments, scientists, industry, nongovernmental organizations and communities is to embrace both the challenges and the opportunities of species conservation and to deliver integrated conservation and development outcomes. The results will improve the status of species and the communities, which, ultimately, are the custodians of their habitats and populations.

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Abbreviations & Acronyms

AWF	African Wildlife Foundation
BINP	Bwindi Impenetrable National Park
BZUC	Buffer Zone Users Committee
CBD	Convention on Biological Diversity
CBNRM	Community Based Natural Resource Management
CCC	Caribbean Conservation Corporation
CFM	Collaborative Forest Management
CFUG	Community Forest User Groups

CSD	Commission on Sustainable Development
DFID	Department for International Development
DRC	Democratic Republic of Congo
DWIDP	Department of Water Induced Disaster Prevention
EC	European Commission
EIA	Environment Impact Assessment
FFI	Flora and Fauna International
GDP	Gross Domestic Product
GEF	Global Environment Fund
GP	Gram Panchayat
Ha	Hectare
HACCC	Human Animal Conflict Conservancy Compensation
HDI	Human Development Index
HPI	Human Poverty Index
HUGO	Human-Gorilla Conflict Resolution Programme
ICDP	Integrated Conservation and Development Programme
ICT	Costa Rican Tourism Board
IDS	Social Development Index
IFC	International Finance Corporation
IGCP	International Gorilla Conservation Programme
INEC	National Institute of Statistics and Census
IRDNC	Integrated Rural Development and Nature Conservation
ITFC	Institute of Tropical Forest Conservation
LDC	Least Developed Countries
LIFE	Living in a Finite Environment
IIED	International Institute for Environment and Development
IUCN	The World Conservation Union
Kgs	Kilograms
Kms	Kilometres
MBIFCT	Mgahinga and Bwindi Impenetrable Forest Conservation Trust
MDG	Millennium Development Goals
MFSC	Ministry of Forests and Soil Conservation
MGNP	Mgahinga Gorilla National Park
MINAE	Ministry of Environment and Energy
MOAC	Ministry of Agriculture and Cooperatives
MOU	Memorandum of Understanding
MUZ	Multiple Use Zones
NACSO	Namibian Association of CBNRM Support Organisations
NBI	Basic Needs Not Satisfied Index
NCDF	Nkuringo Conservation Development Foundation
NCPGPH	National Conservation Programme for the Giant Panda and its Habitat
NEG	Nature Exploration Group
NGO	Non-Governmental Organisation
NTFP	Non-Timber Forest Product
PRA	Participatory Rural Appraisal
PRI	Panchayati Raj Institutions
PRSP	Poverty Reduction Strategy Paper
RCA	Root Causes Analyses
RCNP	Royal Chitwan National Park
SDI	Social Development Index
SNV	Netherlands Development Organization
TAL	Terai Arc Landscape
UGs	User Groups
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
UWA	Uganda Wildlife Authority
VBRC	Vikramshila Biodiversity Research Center
WB	World Bank
WCS	World Conservation Society
WILD	Wildlife Integration for Livelihood Diversification
WRI	World Resources Institute
WWF	Worldwide Fund for Nature



Executive Summary

The habitats of many threatened and endangered species are also home to some of the world's poorest and most vulnerable people. Whether in the Terai lowlands of Nepal, the floodplains of the Caprivi in Namibia, or the Afromontane forests of Uganda, the issues that threaten species are often the same as, or closely related to, some of the root causes of poverty. These include the marginalization of rural communities, weak governance and political instability. Sustainable environmental management that occurs hand-in-hand with development can create a real future for the world's poorest and most vulnerable people, and also halt species extinction. It is the rural poor who live in natural areas and use natural resources for their survival. To truly attain sustainable development, it is these rural people who must be the able to conserve and manage the natural resource base.

The Millennium Development Goals, or MDGs (UN, 2000) are the guiding framework for development assistance and commit the international community to halving poverty by 2015 (see Appendix 1). However, though environmental sustainability is recognized as essential to development (Goal 7), and biodiversity conservation efforts are acknowledged (EC/DFID/IUCN, 2001) for their role in meeting human needs, the reality is that biodiversity conservation and management are still marginalized in development frameworks and funding. This is particularly true for species conservation, which has suffered from the misconception that it has little to do with people and their development priorities. The reality is the converse: species conservation can and does deliver on, *inter alia*, poverty reduction and livelihood improvement. ►

Species conservation programmes are helping to eradicate extreme poverty and hunger (MDG 1)

- All of the six projects selected for this report include major programme components for building local capacity for diversifying farm and off-farm income to reduce human pressures on wildlife and their habitats
- Species conservation projects are working to attain and strengthen local user rights over their natural resources on which their livelihoods depend. In Namibia, the programme is helping to form conservancies (local resource management committees) that provide a legal mandate for wildlife use. Over 7 million hectares of communal land are now managed as communal area conservancies (NACSO, 2004)
- Poor rural communities are benefiting through employment, social empowerment, income generation and access to meat. In Nepal, a tiger conservation programme at the landscape level is supporting the formation of Community Forest User Groups (CFUGs) that allow local people to manage and utilize their forest resources for household use (firewood, non-timber forest products, fodder, etc.) as well as community income through the sale of timber. Wildlife and nature-based tourism have been promoted in Costa Rica, Namibia, Uganda and China. Gross revenue of sea turtle tourism in Tortuguero, Costa Rica, in 2002 alone is estimated at US\$6,714,483 from board, lodging, and transportation services, as well as souvenir sales, national park and guided tour fees (Tröng & Drews, 2004). Elsewhere in Namibia, joint ventures between the conservancies and private sector earned a total of US\$582,332 during 2003 (NACSO, 2004). Rural infrastructure has also been supported, such as small irrigation systems, subsidiary roads and trails in remote areas, health centres, schools, drinking water schemes and micro-hydro projects.

Species conservation programmes are helping to promote gender equality and women's participation in society (MDG 3)

- The species conservation approach, as outlined in these case studies, recognizes women as direct resource users and works to bring them into decision-making bodies such as the Natural Resource Users Committees. For example, the study found that the Forest Protected Area Buffer Zone Users' Committees in Nepal are legally required to have 33 per cent representation of local women and, today, many CFUGs are formed by women members. In Namibia, the CBNRM approach for wildlife conservation has rules to ensure that women have a voice in decision-making processes, can stand for election to committees and benefit from capacity development and training
- Before WWF's intervention in Farida village, India, girls were not permitted to attend school, particularly after completing middle school. As a result of continuous effort from the WWF project, this situation has changed and presently all girls in the village are attending school. In addition, awareness-raising campaigns in the villages have assisted in a much higher involvement of women in the official functions of the village – a role previously held by men alone.

▶ This report, commissioned by WWF and drawing on over 40 years experience in the field of species conservation, uses case studies from around the world to demonstrate that species conservation can, and is, contributing to sustainable development as measured against the achievement of the Millennium Development Goals (MDGs). For governments, international donors and agencies, non-governmental organizations and the private sector, the report provides evidence on the role and contribution of species conservation in delivering on sustainable development and the MDGs, as well as on international commitments to reduce the rate of biodiversity loss.

The case studies include: the conservation of the tiger (Nepal), several mammal species (Namibia), mountain gorillas (Uganda), giant pandas (China), sea turtles (Costa Rica), and river dolphins (India).

Using a well recognized “development methodology” — the “Sustainable Livelihoods” (SL) framework — for analysing the case studies, the report found that the species conservation projects/programmes, implemented by WWF and partners, were delivering achievements toward at least four of the eight MDGs: namely MDGs 1, 3, 7 and 8. In addition, they contributed significantly towards enabling good governance, which is necessary for MDG delivery.

Species conservation programmes are helping to deliver environmental sustainability (MDG 7)

- The research found significant improvements in the management and conservation of natural resources in the countries where the projects are based. Over 18 per cent of Nepal is under-protected area status today. The country has a population of 123 breeding tigers and rhino figures have climbed from 100 in the 1960s to about 460 today. In Tortuguero, Costa Rica, green turtle nesting has reportedly increased by an estimated 417 per cent between 1971 and 2003. And in China, WWF has played a key role with government partners in the establishment of 33 panda reserves that provide protection of over 60 per cent of the country's giant panda populations. In Uganda, through species conservation efforts by WWF and its partners, the world's last remaining mountain gorilla populations are slowly growing. The current recorded population in the two national parks of Bwindi and Mgahinga is around 700
- Mainstreaming sustainable development into country policies and planning is emphasized by MDG 7 and is a key achievement in some of the case studies. For example, WWF and partners have played a major role in Nepal to ensure that the Terai Arc Landscape (TAL) is recognized as a national priority and included in the 10th National Development Plan 2002-2007. Among TAL's primary objectives is the sustainable development of the region. Similarly, the importance and potential of CBNRM as a rural development strategy has been recognized in Namibia and woven into the second Namibian National Development Plan.

Species conservation programmes are helping to develop a global partnership for development (MDG 8)

- The species conservation approach as outlined in the case studies meets targets under MDG 8 by working to ensure equitable trading through partnership development and addressing needs of Least Developed Countries (LDCs); for example, Nepal and Uganda. In both countries, the programme has remained operational and continued engaging with local communities through periods of political instability and violence
- In Caprivi, Namibia, successful joint venture negotiations were developed to help local conservancies procure beneficial partnerships with the private sector. The value of the joint venture of the private sector with just one conservancy, the Salambala Conservancy, was US\$34,431 per annum for the period 2000-2004 whereas others earned US\$64,000 per annum. In China, the panda conservation programme has been supporting a successful partnership between three nature reserves: Wanglung, Baihe and Baishuijiang, with local farmers and the supermarket Carrefour to market organic produce such as mushrooms, honey and medicinal plants. This initiative earned US\$ 31,438 in its initial three months of trading.

Species conservation programmes are building on the principles of governance and partnership that support MDG delivery

Building on the principles of good governance and partnerships is recognized as being crucial to achieving the MDGs (IIED, 2004). The main elements of “good governance” are empowerment, accountability and transparency:

- The research found that the species programme is empowering local people and building local capacity. In the process, local people are being trained about the need for transparency and accountability
- Development of negotiation skills has been a key contribution from species conservation programmes. These skills have helped to resolve disputes between

neighbouring villages, and between protected area authorities and locals, and have also led to investments from the private sector. The International Gorilla Conservation Programme (IGCP) in Uganda helped to develop local capacities to successfully negotiate for Multiple Use Zones in the national park that they could have access to, as well as procuring 20 per cent of the park revenue for development work

- Importantly, the study found that in conflict-afflicted zones such as in Nepal, resource governance is perhaps the only model of governance still functional in the area. WWF’s species conservation programme in the TAL is continuing to support the formation and capacity building of local resource user groups that have a legal mandate under the formal government.

Recommendations

This study has demonstrated that species conservation and poverty reduction can be delivered together. The six case studies highlight that the sustainability of the MDGs depends considerably on the successful mainstreaming of biodiversity conservation into national and international development planning. Managing species and the ecosystems in which they live can improve livelihoods and incomes, empower people, and contribute to better governance. From the study, a number of recommendations can be suggested to the development and conservation sectors:

1. Recognize the contribution of the species conservation approach towards improving rural livelihoods and economies and towards achieving the MDGs
2. Appropriately support conservation approaches that emphasize development outputs
3. Ensure species are assessed and valued as a natural asset in the process of setting poverty reduction strategy papers and other similar planning and funding tools
4. Build on the linkages between development and conservation that species conservation programmes have identified and support the implementation of similar projects/programmes
5. Support the scaling up of a wide range of successful initiatives in integrating rural development with conservation
6. Support the work of the species conservation programme to contribute more to rural livelihoods in remote areas
7. Support the funding of endangered and threatened species conservation work as a key part of the development portfolio in areas of high biodiversity value
8. Develop more partnerships between development agencies/NGOs and those environmental NGOs working with communities in areas of high biodiversity value, in order to facilitate strong delivery of MDG 7.

Section II: Case Study Summaries

Natural resource management provides governance structures in a troubled Nepal

The health of Nepal's Terai Arc Landscape is of critical importance for both the human communities and the wildlife that live within it. Sometimes described as the rice bowl of the country, it is home to some of the largest surviving populations of the Royal Bengal Tiger and the Greater One Horned Rhinoceros. The densely populated area is currently under extreme ecological pressure, to the detriment of both wildlife and human populations, especially the rural poor. These pressures are compounded by a high level of political instability, including the long standing Maoist rebellion in the country.

WWF has been involved in wildlife conservation in Nepal since 1967. Root Causes Analyses (RCA) carried out in the Terai Arc Landscape in Nepal identified that rural livelihoods are heavily dependent on forests, which are also the habitats of many of Nepal's wildlife species. The conservation of these forests therefore benefitted not only the wildlife, but also the livelihoods of the rural poor in a significant way. Ensuring that rural communities have access to healthy forests provides them with a sustainable source of fuel, fodder, wild foods, building materials, agricultural and household tools and medicine (Livelihoods Study 2003).

WWF approaches conservation in Nepal by working to enable local people to become resource managers, beneficiaries and stewards of the forests in which they live. The legal framework through which this occurs is 'Community Forestry' which gives forest user groups clear cut forest rights and responsibilities that provide them access, use and economic gains from the forests that they manage. It empowers women to participate in management and decision making, and on average a Community Forest User's Group earns USD 4760 annually. Sustainable forest management through Community Forestry is restoring forest corridors that connect protected areas, and are essential for the dispersal and survival of the tiger and other species. In this remote, conflict torn region, resource governance

through local communities is able to provide perhaps the only model of governance functional in the area.

The species conservation programme has demonstrably helped build the human capital of the area through capacity building aimed at diversifying on and off-farm economic activity, strengthening entrepreneurial skills and local ability to sustainably manage natural resources, and providing support structures such as small credit and marketing schemes. Infrastructure developed through the programme includes renovated school buildings, small irrigation schemes, health centres and subsidiary roads as well as micro-hydro schemes, and toilets. The provision of alternative energy sources such as biogas plants and energy saving devices such as fuel wood efficient stoves ensures that communities are less reliant on illegal and exploitative resource extraction, which degrades the environment for both humans and wildlife.

Political conflict has caused setbacks for the programme, but over the longer term, wildlife habitat conservation through community forestry management in Nepal has protected and enhanced the resource base, promoted the sustainable use of resources and empowered and benefited communities. Furthermore, this approach has continued to deliver benefits and services when other government institutions have been incapacitated.



Local resident carrying off grass harvested from Tiger habitat, Terai Arc, Nepal. © WWF-Canon / Tshewang R. Wangchuk

Information taken from 'Species and People: Linked Futures' - A report on the contribution of wildlife conservation to rural livelihoods and the MDG's, O'Gorman, T.T. Lama, WWF.

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A conservation framework for empowerment in Namibia's Caprivi region

Conflict and poverty have long gone hand in hand in Namibia's Caprivi region, one of the poorest in the country. When not divided by secessionist impulses within, it has suffered from too close a proximity to civil war in Angola and civil unrest in Zimbabwe. In recent years, its best hopes of turnaround have been linked to its wildlife resources and the empowerment of its communities through a framework known as Community Based Natural Resource Management (CBNRM).

One legacy of Namibia's colonial past was a deep community suspicion of top down wildlife protection programmes, which denied traditional food and income sources to communities and increased costs from incursions into farmland by the now protected wildlife. The usual result was widespread subversion of programmes, unhappy communities, and continuing degradation of landscape and resources and continuing declines in the populations of species such as the African elephant. Among the great variety of other wildlife found there are impala, duiker, roan, sable antelope, bushpig, francolin, springhare, baboon, lion, leopard, cheetah, wild dog, hippopotamus, hyena and crocodile.

WWF has been involved in developing the CBNRM programme throughout Namibia, and in the Caprivi area supports Namibian NGO Integrated Rural Development and Nature Conservation.

CBNRM, given legislative force in 1996 is incorporated in Namibian development planning. It gives communities conditional ownership of natural resources and the ability to benefit from consumptive and non-consumptive use of wildlife. This opens up sustainable additional revenue sources for communities, including conservation based employment, game hunting, sale of game and game products, sale of craft products and tourism.

A 2003 study found key benefits from the creation of governance structures for the conservancies - the

creation of pools of people with skills in management, organisation and negotiation and the creation of mechanisms for engaging with the private sector. Communities are more linked to their resource base and this helps not only with identifying threats but also opportunities. Capacity is being built through training and appropriate infrastructure that includes offices, craft markets and campsites that give local communities a more direct stake in tourism. The emphasis on participation extends to ensuring that women in particular are involved in conservancy activities and have opportunities to be elected to positions.

The resultant improved wildlife management practices are increasing this resource, and wildlife is returning to areas from which it had disappeared. The more positive attitude to wildlife has meant that conflicts between humans and wildlife are better managed through initiatives such as targeted compensation and "Problem Animal Management" schemes. A number of studies conducted in the area note that it is the poorest people who are most dependent on natural resources and the most likely to suffer from resource depletion or animal depredations. Wildlife provides an important safety net to them and during times of adversity and resource shortage, its use is more commonplace. It provides both food and to a lesser extent income security. CBNRM initiatives are directly addressing the issues of the poorest groups through improving resource security, addressing conflicts and reducing risk by providing more diverse livelihood options.



Himba children, Kunene Province, Namibia.
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Information taken from 'Species and People: Linked Futures' - A report on the contribution of wildlife conservation to rural livelihoods and the MDG's, O'Gorman, T.T. Lama, WWF.

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Mountain Gorilla conservation contributes to local livelihoods around the Bwindi Impenetrable National Park, Uganda

Locals who once opposed gorilla habitat now exert themselves to protect it

In 1991, when Uganda's Bwindi Impenetrable National Park (BINP) was declared to protect endangered mountain gorillas, the community of Mukona Parish protested by setting fire to around 10 sq kms of forest. In 1998, the same villagers walked five hours without any remuneration or incentive to put out a fire that had started accidentally, according to a WWF case study. This change of attitude is reported in a recent socio-economic study that noted that more than 60 per cent of people in most communities bordering protected areas of gorilla habitat felt they benefited from the forests, and could name several forms of benefit.

With the efforts of the International Gorilla Conservation Programme (IGCP) – a collaboration of the WWF, African Wildlife Foundation and Fauna and Flora International working with the Uganda Wildlife Authority – multiple-use zones of the forests have been placed under collaborative forest management schemes. These involve local communities in conservation initiatives and maintain environment-livelihood linkages. Local people can access the forest for medicinal plants, weaving materials and to place bee hives. They benefit from park and tourism-related employment and from tourism-related revenue sharing arrangements with the park authorities.

Training and other opportunities have advanced the organising, negotiating and business skills of communities. The case study notes that the largely illiterate people of the area have formed groups which are able to plan, negotiate and implement a wide range of activities. A community owned campsite employing eleven people earned US\$70,628 in 2004. The campsite has invested its earnings in four schools, a road, a women's group office and equipment for pineapple growing and beekeeping. Another community has secured sole viewing rights to a gorilla family group, and is negotiating with private interests to invest in tourism operations and services.

Diversifying sources of income is a key element of improving livelihoods in poor communities as it reduces their vulnerability. In addition to developing tourism, IGCP has supported enterprises in beekeeping, rearing pigs, sheep and poultry, and operating small shops. Some 200 women have been supported in growing mushrooms which are marketed locally, and to tourist camps. Tourism income and IGCP funding have connected gravity fed water to two schools, a health centre, seven tourist campsites and 315 households.

These programmes and others to address wild animal depredations on farms are critical in reducing or arresting habitat destruction and poaching in protected areas. Degraded areas are showing signs of regeneration and gorilla populations are growing slowly. IGCP's achievements are also highly significant in that both conservation and human welfare goals are being met in the border areas of three countries that have experienced years of political instability, violence and economic crisis.



Mountain gorilla youngster resting on a silverback. Uganda.
© WWF-Canon / Martin Harvey

Information taken from 'Species and People: Linked Futures' - A report on the contribution of wildlife conservation to rural livelihoods and the MDG's, O'Gorman, T.T. Lama, WWF.

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Partnerships help pandas and people

French retail marketing giant Carrefour has a new supplier of branded specialty organic produce in its Chinese stores - a partnership of three nature reserves, local farmers and a private entrepreneur. With earnings of US\$31,438 in the first few months and strong demand for the products, the partnership is showing how former antagonists over conservation issues can benefit as partners in conservation.

When the reserves to protect the mountain habitat of China's Giant Pandas from commercial logging and deforestation were declared in 1998, the bans adversely affected the incomes of local counties and communities in already poor areas. With widespread illegal logging, poaching and other incursions threatening the attainment of conservation goals, it was apparent that local needs and aspirations had to be considered.

WWF, invited to China in 1980, to assist in conserving the panda, has played a critical role in developing programmes that help impoverished communities to find pathways and partners for progress. A case study is now showing that illegal and damaging activities in forest reserves decline when communities gain alternative income streams.

The Minshan Landscape Initiative and the Qinling Panda Focal Project cover some of the largest remnant areas of densely forested land in China and are immensely important as catchment and biodiversity areas with golden monkey, takin, crested ibis, golden eagle, clouded leopard, red panda, giant salamander and golden pheasant, in addition to their Giant Panda populations. For these projects, community participation is the cornerstone for assessing living conditions and exploring alternative income generating schemes. And, capacity building and infrastructure assistance are provided to communities and other key players, such as the reserves. In conservation terms, real gains have been made in reducing degradation in forest fringe areas. Recent surveys in 2002 indicate that Giant Panda numbers are around 1590.

Farm enterprises supported by the projects have included bee and mushroom farming, pig and goat raising, cultivating vegetables and a sought after local variety of edible fern, fruit trees and herbs. Although part of the benefit is in improving community nutrition, considerable effort has gone into linking produce to potential markets, including the landmark Carrefour deal.

Community based tourism and ecotourism ventures are encouraged to provide dual conservation and livelihood objectives. Small scale ecotourism activities hold more of the benefits for increasing domestic tourism within local communities and also provide a useful counterpoint to tourism development that damages the resource it depends on. WWF has been assisting with local means of supplying fuel efficient stoves and biogas plants which have the added benefit of reducing illegal fuel wood collection problems in reserves. It is also supporting the construction of toilet facilities in home stays for tourists leading to improved overall sanitation and hygiene conditions.

A recent study concludes that "The projects in Minshan and Qinling indicate that partnerships between the local people, the forest authorities and the private sector strengthen conservation management while offering opportunities for exploring economic benefits".



Giant panda habitat. Qin Ling Mountains, Shaanxi Province, China.
© WWF-Canon / Michel Gunther

Information taken from 'Species and People: Linked Futures' - A report on the contribution of wildlife conservation to rural livelihoods and the MDG's, O'Gorman, T.T. Lama, WWF.

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Protecting turtles pays for Tortuguero, Costa Rica

Live turtles are worth much more to the small community of Tortuguero, Costa Rica, than turtle meat and eggs ever were. Exploitation of the green, leatherback, loggerhead and hawksbill turtles that nested near the village had been a mainstay of the Tortuguero economy, supplemented at times by logging and the hunting of large cats for pelts. However, increasing protection for the land and marine areas around Tortuguero meant that the area had to develop an emphasis on non-consumptive use of its natural resources. Fortunately, the nesting beach that once provided turtles as an easy harvest for a quick profit, also provided the village with a ready made tourist draw card. With strong community supported conservation measures in place, turtle and tourist numbers have been climbing in tandem. Nesting turtle numbers (all species now listed as Endangered or Critically Endangered), increased 417 per cent between 1971 and 2003, while visitor numbers have grown from 226 in 1980 to 80,319 in 2004. Gross revenue of sea turtle tourism in Tortuguero in 2002 alone was estimated at US\$6,714,483 from board, lodging, and transportation services, as well as souvenir sales, national park and guided tour fees (Troëng & Drews 2004).

Much of the benefit from the increased nature tourism is captured within the community, which plays a significant role in conservation planning and decision-making together with government bodies and the Caribbean Conservation Corporation (CCC), the principal Non Governmental Organisation in the area. The population increased more than threefold since 1985 as people arrived attracted by the economic opportunities. The growth of the human population in Tortuguero has contributed to an improvement in the government services available to Tortuguero residents. A secondary school opened in 1999 and a health service previously open only two days a month in 1990, is now open two days a week. In 1990, there was no garbage collection, public water or sewage system available. A public water system is now available in Tortuguero and a plant for solid waste

treatment has now been constructed. In addition, tourism income has supported the construction of a playground, housing for the teachers, a police station, a sports court, a kindergarten, a daycare center, as well as pipes for the public water system and provided funds to repair and maintain the school and high school buildings.

Using Costa Rica's quite sophisticated development indicators – which add a Social Development Index, a Social Lag Index and a Basic Needs Not Satisfied Index to the more common Human Development Index – Tortuguero is outperforming a similar coastal town where turtle eggs are still harvested, as well as a coastal town where turtles are not utilised in any way. According to Sebastian Troëng, Scientific Director of the Caribbean Conservation Corporation, "It is very clear that of the two realistic development options available to Tortuguero – natural resource extraction or species conservation/tourism – the latter has provided more ample benefits than the first could have done, both to the endangered species and to the local human population." CCC, a WWF partner, focuses on sea turtle research and monitoring in Tortuguero and has been instrumental in actively supporting local development and management initiatives.



Turtle tour, Tortuguero. © WWF

Information taken from 'Species and People: Linked Futures' - A report on the contribution of wildlife conservation to rural livelihoods and the MDG's, O'Gorman, T.T. Lama, WWF.

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Poorest community leaps ahead with help of conservation awareness programme

Farida Village in Uttar Pradesh, India was identified as the most disadvantaged of a number of communities in a stretch of the Ganges River forming significant habitat for the rare, endangered freshwater Ganges River Dolphin. The dolphin has been a species of special concern to WWF since 1997, and Farida village was chosen for a pilot dolphin conservation initiative in 2001. Follow up studies in 2005 quantified changes in wellbeing among villagers that were linked to the dolphin conservation programme.

Education and awareness campaigns were established which were designed to improve the conservation status of the river dolphins, improve the livelihoods of the community of Farida, and influence government policies on conservation. After five years of the project, from 2001-2005, the size of landholdings increased marginally and the number of landless people declined from 24 to 18 percent. There was a large increase in the number of livestock owned by each household, and in other household assets, particularly in television sets and scooters. Less water was being sourced directly from the river and there was a clear shift from chemical to organic fertilisers and pesticides.

The key benefit of the dolphin programme, however, was in making Farida's villagers aware of programmes and benefits provided by the Indian government for village level organisations. A more confident village is assessing its own governance, demanding better governance from others and claiming its entitlements both generally and for its conservation work. Partly as a result of this dynamic, the villagers link WWF's conservation awareness programmes with village infrastructure improvements to roads, lanes, drainage, water supply and sanitation and electricity and communications.

The villagers have also become more aware of their environment and the effects of their actions. They take less fish overall and have mostly ceased fishing

in designated dolphin habitat. They are taking part in riverbank re-vegetation and are monitoring the pollution of upstream industry and considering how to bring their collective voice to bear on the issue. Fuel wood use was down with villages accounting for their changed behaviour on the basis that fuelwood collection caused erosion problems. Less water was being sourced directly from the river, and there was a clear shift from chemical to organic fertilisers and pesticides.

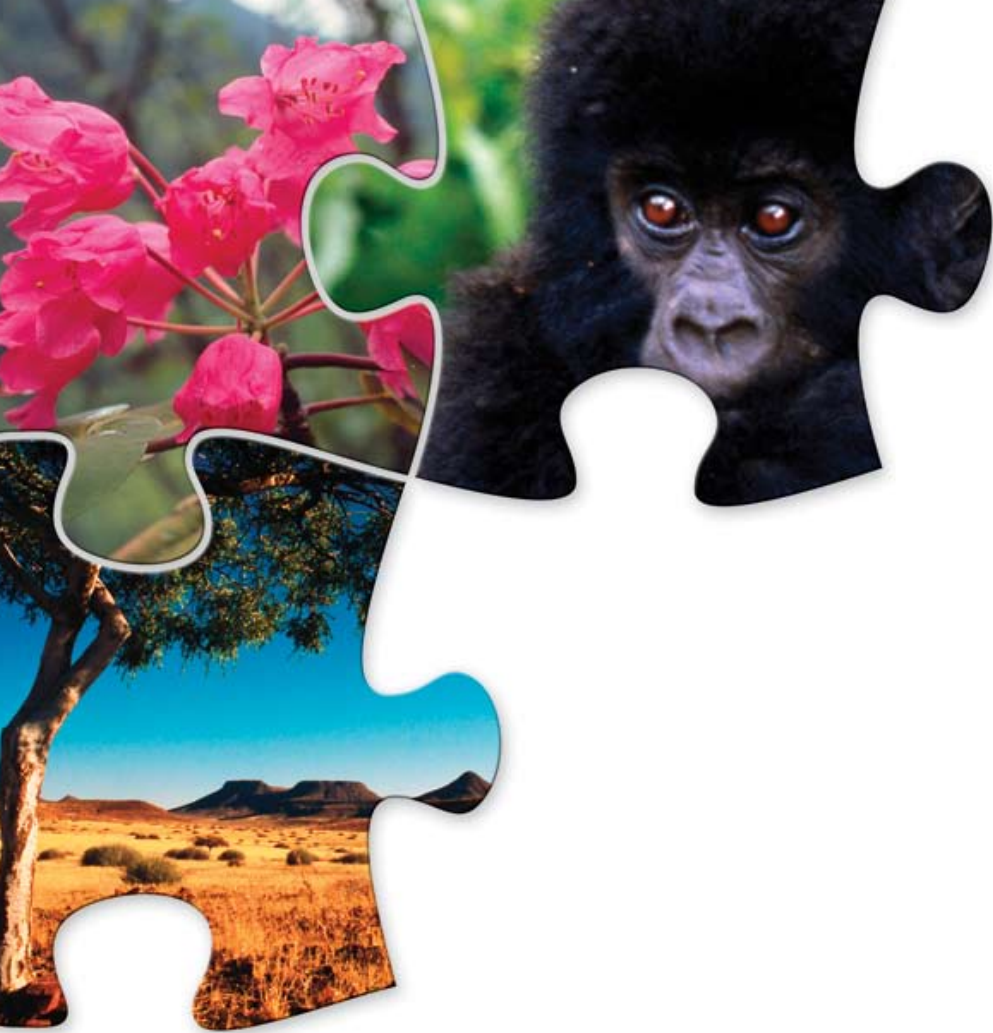
The positive results of the WWF programme also contrasted with previous government programmes which had failed to achieve results in villages like Farida. Although some new issues have arisen – for example, borrowing needs to be diverted from private moneylenders to banks and co-operative credit schemes – “the work conducted in Farida demonstrates systematic links between the conservation initiatives and delivery of millennium development goals, particularly in achieving environmental sustainability and eradicating extreme poverty and hunger.”



Local village leaders meet with WWF project staff in the village of Farida, Uttar Pradesh, India. © WWF-Canon / Brian Thomson

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WWF is one of the world's largest and most experienced independent conservation organizations, with almost 5 million supporters and a global network active in more than 100 countries.

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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