



## Introduction to the Demonstration Portfolio

This portfolio contains information about forest landscape restoration projects around the world. It has been compiled by the Global Partnership on Forest Landscape Restoration to illustrate the many ways in which forest landscape restoration can benefit both people and nature.

The Global Partnership on Forest Landscape Restoration is being developed by IUCN-The World Conservation Union, WWF—the conservation organisation and the Forestry Commission of Great Britain, in collaboration with a range of potential partners.

The partnership is a network of governments, organisations, communities and individuals who recognise the importance of forest landscape restoration and want to be part of a coordinated global effort. The partners will learn from one another's experiences and identify, undertake and support forest landscape restoration activities.

## Objectives of the Partnership

This partnership has the potential to achieve clear results by 2005 and serve as a model of how the international forest community can move constructively from dialogue to action by linking policy and practice. It can contribute to building a culture of success.

The project partners feel confident that by 2005 the profile of forest landscape restoration will have been significantly raised in national, regional and international decision-making. By then forest restoration will be underway in new areas, stimulated by an increase in funding and political support, and it will be generating real on-the-ground benefits for people and nature.

Activities will include:

- \_ the exchange of information on where and how forest landscape restoration could be undertaken or reinforced
- \_ an analysis of how forest landscape restoration contributes to the implementation of existing international and regional laws and agreements
- \_ the presentation of case studies, highlighting the lessons learned from field projects
- \_ the organisation of sub-regional or regional workshops and an international workshop on forest landscape restoration
- \_ the development and promotion of a forest landscape restoration investment portfolio.

The partnership does not seek to establish a parallel policy process or duplicate the efforts of others. Rather it weaves a thread through existing activities, projects, processes and institutions in order to encourage and reinforce the positive contributions they are already making to forest landscape restoration.

## The Partners

Each of the facilitating partners of the Global Partnership on Forest Landscape Restoration is actively involved in forest landscape restoration and looks forward to working with other partners to safeguard natural resources and improve the livelihoods of millions of people.

WWF, for example, has set itself a target of 20 forest landscape restoration projects in some of the world's most threatened and degraded forest regions by 2005. WWF is working on restoration projects with a range of partners in several countries, including Malaysia, Madagascar, New Caledonia and Brazil. IUCN is working on projects with governments in the Mediterranean, the Lower Mekong, East Africa and Central America. The Forestry Commission of Great Britain is undertaking restoration projects in collaboration with partners from the non-governmental and private sectors as one of four key objectives of the UK Forest Partnership.



# Introduction to the Demonstration Portfolio

Complementary initiatives led by other partners include the International Tropical Timber Organisation's (ITTO) promotion of forest landscape restoration among ITTO producer countries and testing of restoration guidelines in the field, in collaboration with Intercooperation and IUCN. The Center for International Forestry Research (CIFOR) is reviewing and analysing past and present rehabilitation projects and research in Asia. And the United Nations Environment Programme-World Conservation Monitoring Centre (UNEP-WCMC) has established a Forest Restoration Information Service (FRIS).

The case studies in this demonstration portfolio provide a glimpse of what people, civil society and international organisations, governments and many others are doing to restore forest landscapes. Forest landscape restoration can play a vital role in safeguarding natural resources and improving the livelihoods of millions of people. This information pack shows what can be achieved if the will is there.

## Authors and Contributors

This demonstration portfolio was prepared by Charlie Pye-Smith and Carole Saint-Laurent.

A great many people were involved in the development of this portfolio. In particular, we would like to acknowledge the contributions of Jill Bowling, Mike Dudley, Libby Jones and Stewart Maginnis.

We would also like to thank those individuals who helped to gather and review information for the case studies: Frans Arentz, Edmund Barrow, Guido Broekhoven, Geoffrey Davison, Shambhu Prasad Dangal, Nelda Geninazzi, Graham Gill, Don Gilmour, Stephen Kelleher, Andrew Ingles, William J. Jackson, Virpi Lahtela, Stephanie Mansourian, Gordon Patterson, Margarita Restrepo, Simon Rietbergen, Woulimate Thiaw, Dagmar Timmer, Richard Tipper and Hugh Wilkins.

## For more information please contact:

**Stewart Maginnis**  
Head  
Forest Conservation Programme  
IUCN-The World Conservation Union  
stewart.maginnis@iucn.org

**Jill Bowling**  
Deputy Director  
Forests for Life  
WWF – the conservation organisation  
jbowling@wwfint.org

**Tim Rollinson**  
Director  
Forestry Group  
Forestry Commission of Great Britain  
tim.rollinson@forestry.gsi.gov.uk

**Carole Saint-Laurent**  
Coordinator, Global Partnership on Forest  
Landscape Restoration  
and Senior Forest Policy Adviser, IUCN  
CarSaintL@bellnet.ca

Or visit the partnership web site within the UNEP-WCMC Forest Restoration Information Service:  
[http://www.unep-wcmc.org/forest/restoration/global\\_partnership](http://www.unep-wcmc.org/forest/restoration/global_partnership)



# Introduction to Forest Landscape Restoration

## Introduction to Forest Landscape Restoration

Forests are important for a great many reasons. Hundreds of millions of people depend on them for everything from food to medicinal plants, building materials to firewood. In many parts of the world, rural communities earn a significant income selling products harvested from the forests. And the timber industry often contributes significantly to the rural economy, generating profits for companies, taxes for governments and wages for local people.

Forests everywhere provide a wide range of environmental services and are believed to harbour more than half of the world's biodiversity. They frequently protect fragile soils from erosion, and play a role in conserving and recycling fresh water. They also soak up large quantities of carbon, one of the main gases contributing to climate change.

Yet despite their significance, forests around the world are disappearing and being degraded at an alarming rate. Every year over 14 million hectares of forest - an area the size of Greece - is destroyed. Agriculture, urban development, mining and plantation forestry are the main causes of forest loss, and destructive logging leads to degradation of even greater areas of forest land.

Around 8 per cent of the world's forests are protected in national parks and nature reserves, and the area of commercially exploited, well-managed forest is steadily increasing. However, protection and good management alone are not enough. Much more needs to be done. That is why WWF-the conservation organization, IUCN-The World Conservation Union and the Forestry Commission of Great Britain are working with others to establish the Global Partnership on Forest Landscape Restoration.

In the tropics there are some 850 million hectares of degraded primary forest, secondary forest and land that used to support forests but has since been severely degraded. This immense resource, equivalent in size to the whole of Brazil, is often ignored by the world's decision makers. There are also significant expanses of degraded forest in temperate and boreal regions. Restoring these areas represents a global opportunity.

## Defining Forest Landscape Restoration

Forest landscape restoration brings people together to identify and put in place a variety of land use practices that will help restore the functions of forests across a whole landscape, such as a water catchment. This approach benefits both communities and the natural world.

Forest landscape restoration seeks to strengthen the relationship between rural development, forestry and other natural resource management and conservation approaches. It shifts the emphasis away from simply maximising tree cover on individual sites to optimising the supply of forest benefits such as clean water, timber production and nature conservation within the broader landscape.

Forest landscape restoration is a collaborative venture. If it is to succeed, it must involve everyone with a stake in the forests, from local farmers to charcoal makers, from game hunters to logging companies. Between them, they must identify the various goods and services that matter most and work out how best to restore them.

At the same time, the conditions that foster successful forest landscape restoration must be put in place. This might involve strengthening the capacity of different institutions to collaborate in support of forest landscape restoration, or it might mean that governments remove incentives that encourage environmentally destructive practices and undermine the ability of the rural poor to make a living.



## Recognising Forest Landscape Restoration

Forest landscape restoration does not necessarily seek to re-establish the pristine forests of the past. A restored forest landscape might consist of areas that are protected for watershed management and nature conservation, linked by regenerated native forests along rivers and streams. The landscape might additionally benefit from the presence of well-managed commercial plantations and the planting of on-farm trees and hedgerows.

Forest landscape restoration could also involve tree planting and regeneration activities that ensure that the trees, and the vegetation below them, supply a range of goods and environmental services: for example, food for human consumption, and a barrier that protects the land from flooding. The restored landscape could also provide opportunities for tourism and recreation..

Another mix of land uses in a restored forest landscape could include plantations managed for timber and firewood, large blocks of natural forest that provide a diversity of environmental services and wildlife habitats, strips of trees along riverbanks to protect water quality, and agro-forestry systems.

This is precisely what is happening in a region of Tanzania that has suffered from years of overgrazing and deforestation. Local people have begun planting and protecting indigenous trees around their farms and re-establishing woodlands. Their main objective is to produce goods such as firewood, construction poles, dry season fodder for their animals and meat harvested from the wild, but the wider environment has also benefited. Soil erosion has been reduced and springs that dried up during the worst years of environmental abuse now have water all year round.

In summary, forest landscape restoration means getting the right blend of approaches, at the right scale, to deliver the forest goods and services that people and societies need.



## Shinyanga, Tanzania

Since 1985, Sukuma agropastoralists in northern Tanzania have restored 250,000 hectares of degraded land.

### The Challenge

Shinyanga region used to be covered with dense acacia scrub and miombo woodland, but by 1985 much of the landscape had been transformed into semi-desert. Forests had been felled as part of a tsetse fly eradication scheme and large blocks of land had been converted to cash crops like cotton and rice. Overgrazing became a serious problem as the area of rangeland declined, and matters were made worse in 1975 when many people were relocated under the government's 'villagization' programme. The programme's aim was to bring rural families closer to social services, but it meant that many had to leave their homes, their farms and - most significantly - their *ngitilis*.

The Sukuma have long relied on these enclosures of acacia-miombo woodlands - *ngitili* means enclosure - to provide them with dry season fodder for their cattle, as well as firewood and other essential products. But by 1985 this traditional system of land management had virtually died out, and a mere 1000 hectares of *ngitilis* remained.

Previous government initiatives designed to tackle land degradation had done little to halt the degradation of Shinyanga's forests. Compulsory destocking and conventional tree planting schemes, relying mostly on exotic species, had failed, so when government field officers launched the Shinyanga Soil Conservation Programme (HASHI) in 1985 they asked the local people for their advice. They suggested that restoring the old *ngitilis* should be a priority.

### The Activities

HASHI's first task was to raise awareness about the importance of restoring degraded landscapes, and this was done using video, theatre, newsletters and other media. Although some farmers remembered how to manage *ngitilis*, many didn't, and the project provided technical training. Farmers were shown which native species to choose for planting and restoration, how to select the right site for their *ngitilis* and how to manage them. Besides advising individual farmers, HASHI worked closely with village governments and environmental committees, as well as with traditional institutions such as the *dagashida*, the community assemblies that lay down customary law and punish those who break it.

It wasn't long before the *ngitilis* were transforming the lives of tens of thousands of people. Look, for example, at what has happened in Wigelekeko, which for years had suffered from shortages of animal fodder, wood products and water during the dry season. In 1986, with help from HASHI, the villagers set aside 160 hectares of severely degraded land as a *ngitili*. Domestic livestock were excluded, and the natural vegetation was given time to recover. Five years later, the area was covered with dense scrub. Carefully controlled collection of firewood, thatching grass, medicinal plants and other forest products began in 1991.

And then the water began to flow. A well that used to be empty in the dry season is now full throughout the year. Convinced that their efforts had increased the water supply, the villagers added another 20 hectares to the *ngitili* in 1997. Each family also contributed financially to the construction of a dam, which was filled with water from the *ngitili*. The villagers were even able to begin fishing, and the dam now provides water for almost 2000 cattle, with a surplus to sell to outsiders.

There are now over 15,000 individual *ngitilis* and 280 communal *ngitilis* covering around 70,000 hectares in 172 villages surveyed by HASHI in Shinyanga region. Assuming a similar pattern of woodland restoration in other villages - there are about 830 villages in the region - HASHI estimates that over 250,000 hectares of once degraded land have been restored.



## The Lessons

Experience in Shinyanga illustrates the importance of working with local people. In the past, the state imposed its own solutions, which often failed. The survival rate of trees planted in state-sponsored communal wood lots, for example, was less than 20 per cent. The government's HASHI project has not only involved local people in the whole process of landscape restoration, it has built on local institutions instead of creating new ones. Villages have been encouraged to pass their own by-laws to protect communal *ngitilis*, and traditional village guards monitor activities in the *ngitilis*. Local involvement has been critical to the success of the project.

There is no doubt that landscape restoration has benefited from the Tanzanian government's push towards decentralisation because it was accompanied by allocation of clear land rights to local communities. The government is actively promoting community involvement in forest management, in part because it recognises the success of projects such as this. Greater security of tenure has engendered a sense of ownership and responsibility among the Sukuma agropastoralists, whose large herds of cattle - there are over 2 million in the region - now co-exist with a healthier environment.

## Contacts

### Edmund Barrow

IUCN Eastern Africa Regional Office

P.O. Box 68200

Nairobi, Kenya

Tel: +254 2 890605

Fax: +254 2 890615

Email: [EGB@iucnearo.org](mailto:EGB@iucnearo.org)

Website: [www.iucn.org/ourwork/earo.htm](http://www.iucn.org/ourwork/earo.htm)



## Sabah, Malaysia

Forest restoration is helping to reconcile development with conservation on the banks of the Kinabatangan River, in Malaysian Borneo.

### The Challenge

A generation ago, the 560-kilometre Kinabatangan River wound its sinuous way through a vast expanse of dense forest. Almost the only people living here were the Orang Sungai, who hunted and fished on its banks. Since then, 85 per cent of the floodplain has been converted to agriculture, and the population has risen dramatically. In the last 20 years the area devoted to oil palm cultivation has increased tenfold in the State of Sabah, and oil palms now occupy almost 300,000 hectares of once forested land in the Lower Kinabatangan. Inevitably, the wildlife has suffered.

Asian elephant, Sumatran rhinoceros, orangutan and proboscis monkey - rare or extinct throughout most of Borneo - are still found here, as are over 200 species of bird, but their future is uncertain. Agricultural and urban development has fragmented the great corridor of forest that once ran along the river. When elephants move through farms and oil plantations - as they must at times - they are frequently shot at. Fragmentation and development of riverine forests and other habitats - swamp forest, mangroves, oxbow lakes - also threaten many other species.

In fact, the whole ecosystem is changing, with development in the upper reaches of the watershed leading to an increase in the severity of annual floods downstream. This, too, has brought elephants into conflict with villagers and plantation workers when they have been forced onto higher ground. Floods have also made it increasingly difficult for the plantations to grow oil palm along some stretches of the river. This, as it happens, may be a blessing in disguise. Plantation companies, aggrieved by damage to young palms, now see the merits of an ambitious project to restore the forests along the river.

### The Activities

Forest landscape restoration in the Lower Kinabatangan involves the creation of a continuous corridor of forest that will eventually connect coastal mangrove swamps to the rainforest in the uplands. In June 2000, WWF Malaysia, Borneo Eco Tours and various government agencies began the first planting scheme on the banks of the Kinabatangan River, at Tenegang Kecil. Small-scale tree-planting schemes such as this will help to fill the gaps in the forest corridor, and eventually restoration activities will ensure that there is a strip of forest at least 500 metres wide on either side of the river.

But forest restoration is about much more than planting trees. WWF, the project's initiator, is promoting sound ecological practices in oil palm plantations, and encouraging companies to leave forests along the river, instead of planting right up to the water's edge. WWF is also helping to raise awareness among buyers of oil palm products about the impact plantations can have on the environment. Well-informed buyers, it is hoped, will favour products coming from well-managed plantations. Conservationists are also urging local government to introduce legislation that will ban further conversion of natural forest to oil palm plantations.

The project is ambitious in scope, but the portents are good: everyone, from oil palm companies to the tourist industry, from the Orang Sungai fishermen to local villagers, stands to benefit.

Recent studies suggest that oil palm companies could set aside at least 10 per cent of their estates for forest regeneration without suffering appreciable financial losses. The gains for others will be considerable. The Lower Kinabatangan is attracting growing numbers of tourists, many of whom come to see the region's magnificent landscape and wildlife. The tourist industry is a significant employer of local people, and is expected to grow over the coming years - provided that local populations of elephant, orangutan and other



charismatic species survive to attract tourists. Forest restoration will ensure that they do. Restoring the forest will also help to protect the riverbanks from floods, and may improve the quality of local fisheries. Clearly, this will benefit the local people.

## The Lessons

The Lower Kinabatangan Forest restoration project shows what can be achieved when business and non-governmental organisations work together to improve the environment and safeguard the livelihoods of local people. Oil palm companies and conservationists may not seem like natural bedfellows. Indeed, some conservation organisations in Europe have mounted campaigns to convince consumers not to buy palm oil, on the grounds that its production threatens the rainforest.

However, WWF recognises the economic importance of the palm oil industry both to Malaysia, the world's largest producer, and to local people. Much better, it reasons, to work with the companies to foster good practice, rather than rail against them. At the same time, the oil palm industry recognises that it should behave in an environmentally responsible way. Restoring the forests along the Kinabatangan River has become a mutual goal, not just for oil palm companies and conservationists, but for local government, the tourist industry and floodplain fishing families.

## Contacts

**Dr. Geoffrey Davison**  
Borneo Programme Director,  
WWF Malaysia,  
P.O. Box 14393,  
88850 Kota Kinabalu,  
Sabah, Malaysia  
Tel: +006-088-262420  
Fax: +006-088-242531  
E-mail: [gdavison@tm.net.my](mailto:gdavison@tm.net.my)  
Website: [www.wwfmalaysia.org](http://www.wwfmalaysia.org)

**Stephanie Mansourian**  
Manager, Forest Landscape Restoration  
Forests for Life Programme  
WWF International  
1196 Gland  
Switzerland  
Tel: +41223649004  
Fax: +41223640640  
E-mail: [smansourian@wwfint.org](mailto:smansourian@wwfint.org)  
Website: [www.panda.org/forests/restoration](http://www.panda.org/forests/restoration)



## Popenguine, Senegal

Village women in Senegal are restoring the biodiversity of a degraded landscape and at the same time improving their own livelihoods.

### The Challenge

Were it not for the efforts of a remarkable group of women, the landscape around Popenguine, a coastal village 45 kilometres south of Dakar, might still be seriously degraded. By the early 1980s it had experienced decades of abuse. The ancient woodlands had been much reduced by excessive harvesting for firewood. Overgrazing had also taken its toll, as had a succession of long droughts. Inevitably, there had been a significant decline in biodiversity: many of the birds and animals that used to breed here, or visit on migration, were no longer to be seen.

In 1996, the Senegalese Government, eager to preserve what had once been an important area for wildlife, created the Popenguine nature reserve. This consisted of around 1000 hectares of hilly land, most of which was covered by degraded woodland. The new reserve also encompassed a rocky coastal fringe, which provided an important habitat for spawning fish, some mangrove swamps and a lagoon that attracted migratory birds. By declaring the area as a nature reserve, the government hoped that biodiversity could be restored - with the help of local communities.

### The Activities

In 1987, 116 women from the village of Popenguine spontaneously decided that they wanted to restore their degraded environment. They set up the Popenguine Women's Group for the Protection of Nature, known by its French acronym RFPPN. Over the next 10 years they planted thousands of trees in the nature reserve. Animals like duiker, striped jackal, mongoose, algalia cat and tamarin monkey - most of which had disappeared - gradually returned to the site, which now supports almost 200 species of birds.

Emboldened by their success in this relatively small area, the women decided to extend their activities, and in 1995 they joined hands with other women in the neighbouring countryside. Eight villages combined to form COPRANAT (a cooperative devoted to the protection of natural resources) and restoration activities were extended to an area of 100 square kilometres. This was known as the Ker Cupaam Community Space, Cupaam being the name of a local spirit that lives on the nearby cliffs. The cooperative now has over 1500 members.

Today RFPPN adopts a multi-pronged approach to improving the environment and raising living standards in the villages. Forestry activities remain important, and nurseries have been established in each village. One of the main trees grown is an indigenous species that produces excellent firewood. The widespread planting of this tree is helping to take pressure off the local forests. The villagers also grow fruit trees and ornamental plants in their nurseries, and these are sold to raise an income. They have also tackled the problem of soil erosion by erecting stone barriers and building small dams that slow down the flow of fresh water and check the movement of soil.

Over recent years the women have become increasingly preoccupied with welfare issues. RFPPN is now involved in the collection and separation of domestic waste and, whenever possible, waste is transformed into compost. In some areas latrines have been constructed. This is all part of the community health care programme. Villagers have also established cereal banks and family vegetable plots, and now that nature is flourishing once again in Popenguine nature reserve, eco-tourism is being encouraged.



## The Lessons

When the women in Popenguine established RFPPN, they were making a courageous move. Many of the men believed that they were straying too far from their traditional roles as wives and mothers. Indeed, they were risking their reputations, and in some cases their marriage, by going out on a limb. It wasn't long, however, before the critics accepted that the activities undertaken by the women were benefiting not just the environment, but the community as a whole.

The women believe that their experiences have proved how important it is for local communities, and especially for women, to get involved in the protection, management and restoration of their own environment. They have seen for themselves that hard work and cooperation - both among themselves, and with the Senegalese Department of National Parks - have helped to improve their standard of living. Sustainable development, according to the women, implies an awareness of the effects of our actions on the future, and on the future of our children and grandchildren. What matters now is sustaining the activities that have helped to transform a degraded environment into a healthy one.

## Contacts

### Woulimata Thiaw

Regroupement des Femmes de Popenguine  
pour la Protection de la Nature (RFPPN)

BP 10

Popenguine, Sénégal

Tél./Fax: +221 956 49 51

Email: [kcupaam@sentoo.sn](mailto:kcupaam@sentoo.sn)

### Paul Ndiaye

Département de Géographie

Faculté des Lettres et Sciences Humaines

Université Cheikh-Anta-Diop

Dakar – Fann, Sénégal

Tél: +221 825 36 49

Fax: +221 825 48 05

Email: [ISE@endadak.gn.apc.org](mailto:ISE@endadak.gn.apc.org)



## Kielder Forest, United Kingdom

The UK's largest man-made forest is being transformed into a resource that is rich in wildlife and recreational opportunities as well as timber.

### The Challenge

By 1900 forest cover in the United Kingdom had been reduced to around 5 per cent, and it fell further still during the First World War. Eager to establish a strategic reserve of timber in case of future shortages, the government created the Forestry Commission, which over the past 80 years has undertaken a massive reforestation programme. Over one million hectares of bare land was planted with trees between 1925 and the 1980s, and forests now cover 12 per cent of the UK.

There are very few native commercial softwood species in the UK and the land made available to the Commission for afforestation was low-quality agricultural land, ill-suited to broadleaved timber production. Consequently, the Commission favoured non-native softwoods. These were often planted on land that had been treeless for centuries, and the technical challenge was considerable.

The planting of Kielder Forest, in northern England, began in 1926. By 1970, 50,000 hectares of mostly even-aged, single-species plantations carpeted the wet and windswept hill country just to the south of the Scottish borders. Most of the land was devoted to Sitka spruce, a North American conifer. Kielder Forest now yields 1400 tonnes of timber a day on a sustainable basis and provides the UK with 5 per cent of its softwood requirements.

The reforestation programme, in Kielder and elsewhere, was a resounding success in terms of timber production. But not everybody was happy. During the 1970s conservationists began to rail against the regimented monocultures of alien species, frequently planted in unimaginative blocks, often on upland bogs and other valuable wildlife habitats. Furthermore, there was a feeling that many of these forests provided little for a population increasingly hungry for recreational opportunities. The Forestry Commission responded to these pressures, and over the past two decades it has transformed Kielder Forest, and other areas like it, into a multi-purpose forest landscape providing a range of environmental, social and economic benefits.

### The Activities

Kielder Forest is divided into a number of landscape units, ranging in size from 1000 to 10,000 hectares. Each unit is served by a plan that describes the changes that will occur over the next 20 years through felling, planting and other activities. Obviously, the harvesting of timber is always a key consideration, but it is planned in such a way as to fit in with other activities. The restructuring of Kielder Forest is gradually producing a 'patchwork quilt' effect, with stands of trees of varying sizes and ages.

Enhancing biodiversity is a key element in the restructuring process. Native broadleaves such as oak now make up 7 per cent of the forest planting programme, compared to just 1 per cent in the late 1980s. The Forestry Commission is also conserving and restoring raised and blanket bogs, habitats for which the northern UK is famous, as well as establishing ponds and creating corridors to link open ground. Special measures are also being taken to conserve protected species such as the red squirrel, which is endangered in the UK. As Scots pine and Norway spruce provide a secure food supply for the red squirrel, 20 per cent of conifer restocking is now devoted to these species rather than to Sitka spruce, although the latter is commercially a better proposition.

Each year half a million visitors come to walk, cycle, ride horses, relax beside Kielder Water and enjoy the area's scenery and wildlife. Considerable effort has been devoted to making the forest as user friendly as possible. Every year 70,000 people visit the Kielder Castle Visitor Centre, and there are numerous waymarked walks, cycle trails and a horse riding route.



Global Partnership  
on Forest Landscape Restoration:  
Investing in People and Nature

# Kielder Forest, United Kingdom

## The Lessons

By involving representatives of the local community, and local wildlife and recreation experts, in the formulation of forest design plans and other processes, the Commission has helped to "reconnect" people with the forests and the land. Half a century ago state-owned forests were forbidden territory; now many people feel they have a genuine stake in their future. The experience at Kielder shows that with careful planning commercial timber harvesting can co-exist with wildlife conservation and recreation.

Although the planting of vast blocks of Sitka spruce would no longer be considered acceptable today in a small, densely populated country like the UK, the reforestation programme has shown that it is possible to recreate mature forests on impoverished soils. The planting of exotic conifers can now be seen as the pioneer stage of the restoration process.

## Contacts

**Graham Gill,**  
Forest District Manager  
Kielder Forest District, Forest Enterprise  
Eals Burn, Bellingham  
Hexham, Northumberland NE48 2AJ  
United Kingdom  
Tel: + 44 (0) 1434 220242  
Fax: +44 (0) 1434 220756  
Email: [graham.gill@forestry.gsi.gov.uk](mailto:graham.gill@forestry.gsi.gov.uk)

**Gordon Patterson**  
Forestry Commission of Great Britain  
231 Corstorphine Road  
Edinburgh EH12 7AT  
United Kingdom  
Tel: +44 (0) 131 314 6464  
Fax: + 44 (0) 131 334 0442  
Email: [gordon.patterson@forestry.gsi.gov.uk](mailto:gordon.patterson@forestry.gsi.gov.uk)  
Website: [www.forestry.gov.uk](http://www.forestry.gov.uk)



## Middle Hills, Nepal

During the past 20 years farming communities in Nepal's heavily populated Middle Hills have restored large areas of forest.

### The Challenge

By the 1980s it was clear that forest degradation was a major problem in the Middle Hills of Nepal. Much land clearance had happened in previous centuries, leaving many farming families with little choice but to over-exploit the forests. Bereft of trees and shrubs, mountain slopes experienced an increase in landslides.

Rural communities were suffering as a consequence. Forests matter in Nepal, for a whole host of reasons. They provide firewood - 90 per cent of the country's energy needs are still met by burning wood - as well as fodder for livestock, timber for building, game and fruit for human consumption, and a great diversity of medicinal plants. Degraded forests meant that in some areas villagers were forced to spend days searching for forest products far from their homes.

Although talk of an ecological catastrophe in the Himalayas was often exaggerated, it was clear that something needed to be done, and in the early 1980s His Majesty's Government of Nepal, Nepalese foresters, the Australian Agency for International Development and other donor agencies began an intensified effort to involve local communities in forest landscape restoration in the Middle Hills.

### The Activities

As part of this effort, during the 1980s and early 1990s the Nepal-Australia Forestry Project worked with farming communities to establish some 20,000 hectares of plantations in the districts of Sindhu Palchok and Kabhre Palanchok. This had a dramatic impact on village landscapes. For example, in Chaubas there were no forests to speak of in 1978. Now there are some 50 hectares of mature broadleaved forest and 300 hectares of coniferous forest, most planted in the 1980s.

The success of forest restoration owes much to the careful management and conservation of the new plantations by the local communities themselves. The communities were involved from the outset, not just in establishing nurseries and planting the trees, but in determining which species they planted, and where they planted them. While some favoured trees that produce livestock fodder, others opted for trees that provide firewood and fruit. Frequently communities would choose a diversity of species to provide a range of goods and services.

Forest restoration has brought many benefits. In Chaubas it used to take women a full day to collect a load of firewood; now it takes just two hours. By establishing a community sawmill in 1996, forest user groups in Chaubas have exploited their plantation timber to yield real benefits for the community. Besides providing wage labour, funds generated by the sawmill have enabled the community to upgrade the local school from primary to secondary level, and contribute towards teachers' salaries. Children are now much better educated than in the past - thanks, in part, to community forestry.

### The Lessons

The success of forest landscape restoration in Nepal owes much to the government's willingness to provide a legal framework for community-based forest management. Under the 1993 Forest Act, district forest officers working for the Ministry of Forests can hand over areas of national forest to local communities. There are now some 12,000 forest user groups, each made up of people who live in and around the forests. Forest user groups now control around 850,000 hectares of forest and over a million households are involved in managing their own forests.



**Global Partnership  
on Forest Landscape Restoration:  
Investing in People and Nature**

# Middle Hills, Nepal

The success of contemporary community forestry also owes much to the foresight and wise management of previous generations. Indigenous systems of forest management ensured that patches of forest survived, even in some of the most heavily populated parts of the Middle Hills. Furthermore, many farmers took it upon themselves to plant trees on private land in response to the shortage of forest products.

Although forests have increased in both extent and density, it seems that some sectors of society - for example, women and low caste families - may have less access to forest products now than they had in the past. This is because forest user groups are often dominated by local elites. However, the Ministry of Forests, aid agencies and many local communities are aware of this, and forest user groups are now being encouraged to become more democratic and inclusive.

## **Contacts**

**Dr. William J. Jackson**  
IUCN World Headquarters  
Rue Mauverney 28  
CH-1196  
Gland, Switzerland  
Tel: +41 22 999 0001  
Fax: +41 22 999 0002  
Email: [mail@hq.iucn.org](mailto:mail@hq.iucn.org)  
Website : [www.iucn.org](http://www.iucn.org)

**Don Gilmour**  
42 Mindarie Crescent  
Wellington Point  
Queensland 4160, Australia  
Tel: +61 7 3207 5730  
Fax: +61 7 3207 5730  
Email: [gilmour@itxpress.com.au](mailto:gilmour@itxpress.com.au)



## Chiapas, Mexico

Indigenous farmers in Mexico are planting trees to soak up carbon pollution, restore degraded land and gain a new, and unusual, source of income.

### The Challenge

This project is helping to tackle two distinct problems. One is local, and affects the lives of tens of thousands of Mayan Indians in Chiapas, in southern Mexico; the other is global, and potentially affects all of us. The former is deforestation; the latter is climate change. *Scolet Te* - "growing trees" in Mayan - pays *campesinos* to plant trees that mop up some of the gases that are causing climate change.

Over the past 20 years, the population of rural Chiapas has grown by 4 per cent a year, due in part to rapid immigration, and this has put tremendous pressure on the region's natural resources. In the highlands forests have suffered from timber extraction, charcoal burning and overgrazing. In the lowlands large areas of tropical forest have been cleared to make way for cattle pasture. Land degradation and a scarcity of forest products are now causing serious hardship for many communities.

The past 20 years also witnessed the 10 warmest years on record. The Intergovernmental Panel on Climate Change has predicted that climate change will lead to a rise in sea levels, shifting weather patterns and an increase in extreme weather events, causing massive traumas for both human populations and nature. The main culprit is carbon dioxide. Most is generated by industrial activities in the developed world, but deforestation, especially in the tropics, is responsible for around a quarter of carbon emissions attributable to human activities.

### The Activities

The *Scolet Te* project, which began in 1996, was one of the first to explore how small farmers could become active members of a global carbon market. Farmers who wish to join the scheme must draw up a management plan, or *Plan Vivo*. The farmers themselves decide what trees to plant, and where, and they agree to make "reasonable efforts" to ensure that the systems they establish will last for 100 years. Native pines are favoured in the uplands and cedars in the lowlands. Frequently farmers plant maize and food crops under the trees until the canopy closes over. Some farmers are now planting avocado, mango and other fruit trees, besides those species that will eventually yield saleable timber.

So far more than 700 individuals in 40 communities have signed up to the scheme and planted over 700 hectares of trees. Currently the trust fund set up as a clearing house for carbon credits is selling carbon at \$12 per tonne, two-thirds of which goes to the farmers. Sales in 2002 amounted to around \$180,000. The main buyer was the Federation Internationale de l'Automobile, which purchased over 13,000 tonnes of carbon credits to offset the emissions spewed into the atmosphere by Formula One racing and the World Rally Championship. In other words, it paid for the planting of a sufficient number of trees to soak up and store the carbon pollution caused by motor racing.

But this is about more than planting trees. *Scolet Te* is helping to restore a degraded environment and improve the quality of life of Mayan villagers. In Yaluma, for example, farmers are planting pines on denuded hillsides. Already, they say, the trees are helping to reduce erosion and improve the soil. None of this would have happened without the project, which provides the necessary finance to buy the seedlings and plant the land. The farmers believe the plantations will eventually provide them a steady supply of saleable timber, as well as fruit, medical plants and modest quantities of fuelwood. Crucially, this should help to take pressure off existing forests and their biodiversity.



## The Lessons

Under the Kyoto Protocol of the United Nations Framework Convention on Climate Change, governments and polluting companies in the developed world can achieve emission reductions by funding certain types of afforestation and reforestation schemes in the developing world. The instrument for this, the Clean Development Mechanism (CDM), has been hugely contentious, not least because many fear that such schemes could lead to the loss of natural forest and benefit large plantation companies rather than small farmers.

However, small-scale projects like Scolel Te show that it is possible to contribute to the implementation of the Kyoto Protocol in a way that delivers environmental benefits, and at the same time improves local livelihoods.

The Plan Vivo system pioneered in Chiapas is currently being tested in southern India and Mozambique. Evidence suggests that active carbon-trading systems can be established on a small scale and function with relatively few resources. The Edinburgh Centre for Carbon Management, joint managers of Scolel Te, believes that the participatory approach has meant that farmers and communities who have signed up to the project have devoted much more effort to planning their activities than was the case with previous state-funded forestry schemes.

## Contacts

**Dr. Richard Tipper**  
The Edinburgh Centre for Carbon Management  
(ECCM)  
Unit 2, Tower Mains Studios  
18 Liberton Brae  
Edinburgh EH16 6AE  
Scotland, United Kingdom  
Phone: +44 (0)131 666 5070  
Facsimile: +44 (0)131 666 5055  
Email: [richard.tipper@eccm.uk.com](mailto:richard.tipper@eccm.uk.com)  
Website: [www.eccm.org](http://www.eccm.org)