



4.2 The New Generation Plantations platform

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Introduction

The World Wide Fund for Nature's (WWF's) Living Forest Report (Taylor 2011) suggests that wood consumption — for pulp and paper, furniture and construction, biomass for energy, and other uses — is likely to triple over the next three decades. Since high-yield plantations use less land to produce fibre and fuel than natural forests, they have the potential to supply a large proportion of this increasing demand. This can help prevent the loss of natural forests and other important ecosystems. This assumes, of course, that plantations are expanded without conversion of natural forests or other ecosystems with high conservation value, such as critical shrubland or grassland.

Well-planned and well-managed plantations can help maintain the most valuable ecosystems while contributing to economic development and employment. Unfortunately, bad plantation practices still exist in some regions. These are rightly criticized by civil society, including WWF. There are also legitimate concerns around issues such as land tenure, labour, water use and intensification.



A LANDSCAPE APPROACH INVOLVES THINKING, PLANNING AND ACTIONS THAT GO BEYOND INDIVIDUAL SITES AND INTERESTS.

The New Generation Plantations (NGP) platform brings together WWF, plantation-related companies and government agencies to co-develop sustainable solutions for plantation management. The conviction is that forest plantations should contribute positively to the welfare of local communities. They should not replace natural forests, other ecosystems of high conservation value, or agricultural land that is important for food security.

The ideal plantation would bring environmental benefits and would improve the lives of people in the landscapes where it is located. It would maintain ecosystem integrity and be developed through effective stakeholder participation.

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The NGP approach is based on transparency, cooperation across sectors, mutual learning and co-construction of solutions to shared problems, and continuous improvement. A range of views can be expressed in a spirit of trust and respect. Sharing knowledge, experience, dialogue and insights allows participants to better understand environmentally sound, socially responsible and economically viable planning and management practices. This will help to avoid the risks and optimize the value of plantations.

NGP aims to identify and promote better practices around environmental issues such as carbon storage and maintenance of water, biodiversity and soils, as well as social issues including land rights, empowering local communities and sharing the benefits of plantations. It also promotes policies, legal controls and financial models to encourage better plantations.

The NGP platform is rooted in the field experience of its participants. Better plantation practices are based on learning from real-world examples, including study tours to key regions, site visits and practical case studies.

Plantations and restoration: the NGP landscape approach

Maintaining ecosystem integrity and avoiding environmental degradation are key elements of the NGP landscape approach. Even the best-managed plantations tend to be industrial-scale monocrops, usually of non-native species, and cannot match the benefits of natural forests. However, the NGP model suggests that plantations can be a part of healthy, productive landscapes, while contributing to poverty reduction and sustainable development.

The landscape — both socio-economic and ecological — is the broader context within which plantation forestry operates. Managing and restoring ecosystem integrity and ecosystem services is a big part of this context, with all the benefits that this brings for the environment, human well-being and the economy.

The environmental problems related to plantation forestry are largely known, and there are well-developed tools to address them. Under the NGP approach, for example, participants' management plans will include measures to prevent the spread of invasive alien plant species, avoid planting in freshwater ecosystems such as wetlands and riparian zones, and protect and enhance areas of high conservation value. With the tools available for assessing, avoiding, mitigating and offsetting environmental impacts, there should be little reason for plantation forestry to cause ecosystem degradation.

In fact, responsible plantations can help restore degraded landscapes and can enhance areas of ecological sensitivity or high conservation value. The following three NGP case studies show how plantations are making a positive contribution to landscapes. In each case, restoration also brings benefits for local people; for example, through employment and business opportunities, enhanced ecosystem services, and preservation of important cultural values.

Case study: Brazil

Veracel Celulose, a joint venture between two private companies, is a pulp mill and tree plantation in the south of Bahia State, Brazil. When its predecessor, Veracruz Florestal, planted its first trees in 1993, less than 7% of the original Atlantic rainforest (*Mata Atlântica*) remained. During the 1960s and '70s, the logging of valuable tree species and subsequent clearing of the land for cattle grazing had rapidly destroyed the area's forests. When Veracel started operations in southern Bahia the landscape was dominated by pastureland converted from the Atlantic rainforest. The land had been so heavily modified and degraded that in many areas the original vegetation could no longer regenerate naturally.

More than 97% of Veracel's tree plantations are on land that had previously been used for cattle grazing; the remainder was mostly used for growing papaya or was already planted with eucalyptus. Veracel carries out detailed studies before acquiring any properties and has committed not to convert natural forest or protected areas to plantations. When establishing new plantations, the company always studies aerial photographs or satellite images to ensure that no Atlantic rainforest has been felled there since 1994. Veracel determines whether the property in question is being officially evaluated as a future conservation area. The company also applies a number of social conditions: it excludes land claimed by indigenous peoples (there are 17 tribes living within Veracel's area of operation, but only seven reserves have official legal recognition) and areas assigned for land reform.

Veracel owns approximately 210,000 hectares (ha) in the south of Bahia. It has planted close to 92,400 ha with eucalyptus; more than 100,000 ha is set aside for conservation. These areas mainly regenerate naturally, but the most degraded land is restored through the planting of native Atlantic rainforest species. Analyses of satellite and aerial image show that there is more rainforest in the area now than when the first trees were planted in 1993.

Every year Veracel replants approximately 400 ha with native tree species. By the end of 2012, it had restored more than 4,700 ha of Atlantic rainforest. Veracel also works to protect remnants of the natural forest and connect them through forest corridors. These activities are aligned with local priorities and with national conservation initiatives to protect the main rainforest corridors in Brazil. For example, two reserves belonging to the indigenous Pataxó people have been connected to a 6,000-ha remnant of Atlantic rainforest, and animals such as tapirs and peccaries are returning.

Veracel supports income generation by teaching local people how to use native plants and forest resources in a sustainable manner. This takes pressure off the remnants of the native forest, where the local people would otherwise obtain wood. Veracel also sources wood from more than 100 local small-scale growers, who are given support to restore native vegetation on their own land and encouraged to combine trees with other crops and livestock. Such initiatives help communities by building their capacity to run their own ecologically sustainable businesses.

In 2011, 26,000 ha of land earmarked for plantations were occupied by social movements such as the Landless Workers Movement. The company actively engaged with these groups, with mediation by the Bahia state government, to reach a mutually acceptable compromise. Around 10,000 ha of Veracel's land is being purchased by the National Institute for Colonization and Agrarian Reform, and the company will help the settled communities make the best possible use of these areas.

Case study: Uruguay

Around 85% of land in Uruguay is used for agriculture, mostly cattle ranching. Intensive grazing and deforestation has destroyed much of the palm savannah that once covered Uruguay, the south of Brazil and northeast Argentina. Today, only isolated fragments remain. Conserving native tree species such as the majestic yatay palm (*Butia yatay*) is a national priority and is crucial in maintaining biological diversity and ecological integrity.

UPM Forestal Oriental owns around 200,000 ha of former agriculture land in Uruguay. In December 2009, UPM commissioned a local expert to prepare management recommendations for the yatay palm, a protected species endemic to the Uruguay savannah ecoregion. The tree produces fruit that local people use to make jams and drinks; the fruit is also food for numerous mammal, bird and insect species.

The palm trees are threatened by agriculture practices such as grazing, cultivation and use of herbicides. Young palms are eaten by grazing animals, destroyed by weed killers or ploughed up, making it unable to regenerate. UPM's forest plantations allow the plants a chance to grow: herbicide is applied only once per ten-year rotation; the soil is less disturbed; and less grazing is allowed.

UPM's study covered a large area (about 10,000 ha) that had been planted ten years previously, and where palm populations were increasing. The study resulted in a palm conservation programme that aims to help this native tree species and valuable habitat to regenerate. The plantation design includes biological corridors to connect isolated patches of palms. Palm trees are preserved within the conservation areas that make up around one-third of UPM's property. Mature palms are preserved within the plantation areas. With the approval of the Uruguayan government, young palms are transplanted to other areas where possible.

As well as helping to preserve and restore the integrity of the palm savannah ecosystem, palm tree conservation can create economic opportunities for local people. Possible business developments include selling palm seedlings for landscaping, and commercializing the traditional liqueur made from the fruits of the yatay palm.



Case study: South Africa

Water is one of South Africa's scarcest natural resources. The country's wetlands are hugely important for the environment and people, including around six million South Africans who do not have access to safe drinking water. More than half of South Africa's wetlands have been significantly damaged by agriculture and other development initiatives, including commercial forestry plantations.

NGP participant Mondi has taken the lead in mapping, protecting and rehabilitating wetlands such as Lake St. Lucia in iSimangaliso Wetland Park, the country's last remaining coastal wilderness and a World Heritage Site. Mondi took over the extensive pine plantations on the western shores of the lake in 2004, when South Africa privatized its state forests. To manage them, it formed SiyaQhubeka Forests (SQF), in partnership with black economic empowerment organizations, the government and local communities.

Some poorly sited plantations were having a negative impact on the lake and its wildlife by reducing freshwater flows. Water levels were too low and salinity levels too high, especially in the dry season.

Mondi-SQF worked with the government, environmental NGOs and the park authority to determine which areas were suitable for commercial plantations, and which should be returned to their natural state. They mapped out a 120-km "eco-boundary" to divide wetland areas and other important ecosystem components from the dry mineral soils best suited to plantations, where negative impacts would be minimal.

As a result, 9,000 ha of plantations with significant potential conservation value were transferred to the iSimangaliso Wetland Park. The trees were removed, and the land was restored to wetlands and savannah. A further 14,200 ha of SQF's land — including plantations and areas of natural forest and wetlands — was later incorporated into the park.

Today, both SQF and the park are thriving. Regular freshwater flows into Lake St. Lucia have been secured, and the rehabilitated wetlands and grasslands already support a wide range of biodiversity. As well as benefiting Lake St. Lucia's many birds and freshwater species, the project has extended the habitat of the park's large animals, including elephants, rhinoceros, giraffes and cheetahs. Herds of buffalo, zebras and antelopes graze in the firebreaks and corridors between the trees. The plantations also provide an important buffer, protecting the wilderness area from encroaching development.

Mondi works in close partnership with local communities through SQF, and has transferred some of its plantation land to community ownership as part of a pioneering model of land restitution.

Conclusions

A landscape approach provides the concept and tools for planning and managing a range of land uses and balancing social, environmental and economic objectives. It involves thinking, planning and actions that go beyond individual sites and interests to the broader context, where people share and shape the socio-economic, governance and ecological components of their land. Landscapes can incorporate not just physical or ecological boundaries (often a catchment or sub-catchment), but also social, governance and economic elements.

There are often multiple drivers of ecosystem change in the areas where plantations operate, often with social causes. These can seriously undermine ecosystem functioning. Plantation expansion in degraded landscapes — if well managed — can help to rehabilitate forest areas and ecosystem functioning. This will benefit the socio-ecological landscape.

The NGP landscape approach constructs effective partnerships between the forest sector and society. This is a big challenge, since there have undeniably been conflicts in the past. But there is the potential to use the process to improve local governance and create mutually beneficial partnerships with government, communities, NGOs and other land users.

Sustainability is a journey, not a fixed destination. NGP is an evolving process of self-discovery and collaborative, practical learning. It is based on transparency, cooperation across sectors, mutual learning and co-construction of solutions to shared problems. NGP participants lead by example in disclosing information about their current plantation practices. They also show what steps they are taking to put their commitments into practice and share first-hand experiences about effective plantation management methods. Through regular study tours, participants have visited all NGP's projects, including those mentioned here, taking the lessons learned in these landscapes back to their own communities.

Reference

Taylor, R. (ed.). 2011. *Living Forest Report*. Gland: World Wide Fund for Nature.