

We, the Kuna people, are facing an ecological crisis—the potential despoiling of our river systems and the loss of valuable marine resources. An ITTO project is helping address the crisis by introducing community forestry to the region

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THE Kuna people are indigenous to about 365 coral islands in the Caribbean and a coastal strip on the mainland of Panama. The present Kuna Yala Territory, inhabited by some 32 000 Kuna people, stretches about 230 km along the Panamanian coast and inland for 7–15 km and includes the original coral islands. Although fishing remains the predominant source of food and income, natural forests on the mainland are making an increasingly significant contribution to the livelihoods of these communities.

Kuna people consider forests to be their brothers and sisters and the land to be their mother. It is this attitude towards the forest that has allowed them to accumulate wide-ranging experience in the sustainable use of land and forest resources. They apply their knowledge on a daily basis to the management of timber and non-timber products from such species as roble (*Tabebuia rosea* and *T. pentaphylla*), almendro del monte (*Dipteryx panamensis*), cativo (*Prioria copaifera*), jagua (*Genipa americana*), and many other species.

However, as the population grows, agricultural practices are becoming increasingly unsustainable, particularly in the steeper land in the mid and upper catchments of the mainland part of the Territory. These activities have led to soil degradation and sedimentation, pollution of the rivers used by the communities, and a reduction in the fish stocks of the surrounding waters. The trees felled and burnt are wasted, as are the non-timber forest resources, and protection forests are destroyed.

Nevertheless, the Kuna Yala Territory is one of the few regions in Panama where significant tracts of tropical moist forests remain only slightly disturbed by human intervention. These resources, particularly in the Narganá District, are situated within the Kuna Protected Area (INRENARE 1994). Education, training and extension actions in sustainable forest management are needed to ensure the conservation of these forests, which are threatened by the expansion of agriculture.

It was in this context that the Ecological and Management Program for Kuna Yala Wildlands (PEMASKY) of the Kuna Ecological Association (AEK, formerly known as the Kuna Workers Association) with the support of Panama's National Environmental Authority (ANAM, formerly the National Institute for Renewable Natural Resources—INRENARE), and funding from ITTO, signed an agreement in 1998 for implementing ITTO PROJECT PD 1/96 REV. 3 (F). This 5-year project aims to protect and improve the living standards of the Kuna indigenous communities. Its activities are designed to promote community participation in forest production systems that can ensure the rational, integrated and sustainable management and harvesting

of forest products, taking into account community values and patterns of use. The project's specific objectives are to implement natural forest management and harvesting in five communities and to train and achieve the participation of communities, producer groups and PEMASKY personnel in sustainable forest management for the production of timber, non-timber, medicinal and other forest products.

The project is divided into two components—community forest management and community forestry training and extension.

Community forest management

Progress has been made in building awareness among the communities about the sustainable production alternatives offered by natural forests. Three participatory forest management areas (PFMAs) of 500 hectares each have been established, one in an area shared by the Narganá and Akuanusadup communities, and one each in forests belonging to the Tigantiki (Niadup) and Cangandi communities; two other areas are proposed (see map).

Activities in the PFMAs

Since similar operations are being carried out in all PFMAs, this article will focus on the Narganá/Akuanusadup PFMA. This belongs to the Diurdi Agroforestry Cooperative, located in the Protected Wild Area of the Narganá District zoned as 'cultural or traditional land use'. This cooperative has 20 members, all of whom are residents of the Narganá/Akuanusadup community, and the membership of 40 additional residents is pending. Of the PFMA's 500 hectares, 125 hectares have been allocated for forest management. The remaining area is to be set aside for conservation purposes. An agreement was reached between PEMASKY/AEK and the Akuanusadup and Narganá communities, under which the communities agreed to support and participate in the project. Both communities have established a project support committee.

Forest inventories were carried out in the PFMA to assess the overall condition of forest resources in the area. Based on inventory data, field observations and the views of producers, a forest management plan was developed to guide management and utilisation and as an instrument to obtain authorisation from the General Kuna Council and

Inventory results

Table 1: List of species to be harvested, maximum diameter at breast height (dbh) of individuals surveyed, and minimum cutting diameter at breast height (MCD)

Common name	Scientific name	maximum dbh (cm)	MCD (cm)
María	<i>Calophyllum nubicola</i>	54.6	45
Cedro macho	<i>Carapa guianensis</i>	31.8	40
Amarillo	<i>Terminalia</i> sp.	35.9	40
Nispero	<i>Manilkara bidentata</i>	135.0	60
Almendro	<i>Dipteryx panamensis</i>	91.3	60
Hoyito	<i>Eschuweilera</i> sp.	52.0	45
Cacique	<i>Brosimum utile</i>	40.0	40
Rasca	<i>Licania affinis</i>	42.0	40

ANAM for the commencement of harvesting (PEMASKY/AEK 2000a). The inventory was carried out at an intensity of 1.84% in 23 stratified sample plots. All trees over 10 cm diameter at breast height (dbh) were measured; Table 1 summarises the results for commercially important species.

Maps of the PFMA, including a regional location map and a base map of forest harvesting, have been prepared at a scale of 1:50 000.

The project's strategic activities also include the physical demarcation of 100 000 hectares of the forest estate belonging to the Narganá community. This started with the opening of an access road to the watershed divide (the Kuna Yala Territory boundary) and verification from the Ebiton Station (established by the US Inter-American Geodesic Institute) in Cerro Ibedon using a global positioning system. Six control posts were established covering 3 km along the boundaries of the Territory. This activity was carried out with the participation of the local community and is now being extended to the Niadup community to the east.

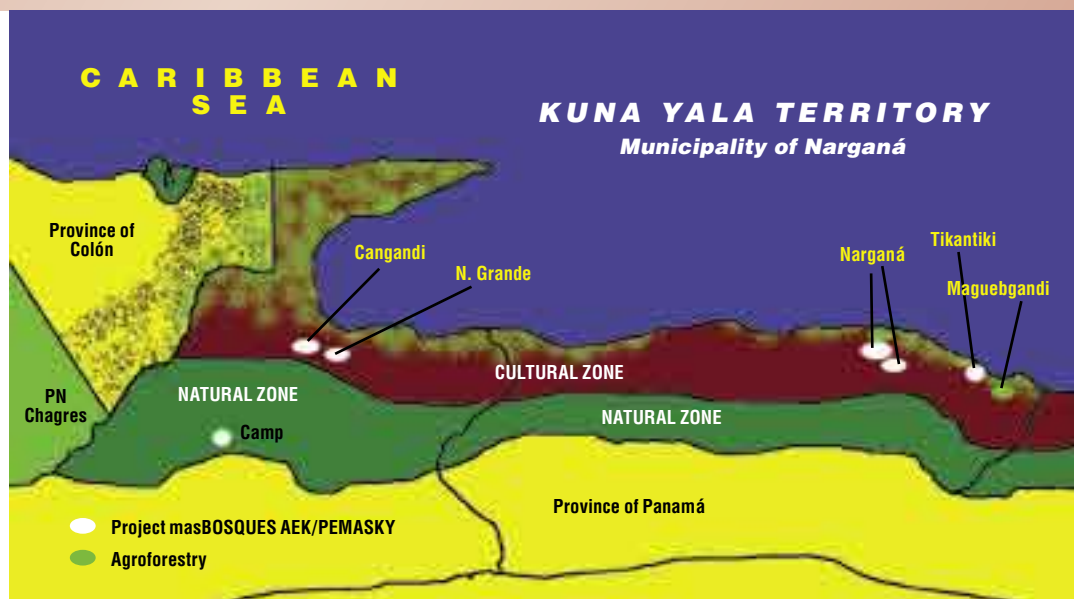
Community forestry training and extension

Ensuring the active participation of communities and/or producers in the project is a difficult task that requires almost daily reinforcement. A community forestry training and extension plan (PEMASKY/AEK 2000b) was formulated for the second project component. A key component of the plan is a series of workshops on participatory forest management held for producer groups, educators, governmental and district authorities, non-governmental organisations and all interested persons from the Narganá and Akuanusadup communities. The workshops are also being extended to other communities such as Niadup, Diguir, Wargandup, Urgandi and Miria Ubigandup, among others.

Special seminars have been held to motivate the participation of women in the project. Puppet shows have been held for children, and many women have participated in 'conservation' tours of the project area and other areas in the Kuna region. An agroforestry demonstration plot has been established to show an alternative to deforestation using a 'hands-on' methodology. A forest and fruit tree nursery has been established for the production of seedlings.

Challenges

An ecological crisis is in the making in the Kuna Yala Territory. Yet changing attitudes to land management is one of the greatest challenges facing the project; the cultural, social and economic barriers to change are many.



A key to achieving more rapid change is the successful operation of the PFMA in the Akuanusadup/Narganá community. If this is seen to provide benefits to the communities it will encourage other communities to participate in the development of PFMA's in their own areas. The signs for this are positive: the Akuanusadup/Narganá PFMA was recently enlarged to 1000 hectares.

A further challenge we are addressing after lengthy discussions with producers is the need to harvest timber more from secondary forests than from primary forests, which also serve important protection functions. Secondary forests at various stages of succession interspersed with traditional agroforestry crops are common in the region; introducing sustainable forest management to these areas would increase their role in both protection and income-generation. The Kuna people recognise, though, that reducing the cut in primary forests will reduce profitability; therefore, ways to increase the payments from outside the communities for the 'global' benefits provided by the forests must be found.

Finally, it is also our challenge to increase the participation of women in the project, as they carry the heaviest burden of responsibility in their households. Moreover, they are largely responsible for educating the young, so their role in changing community attitudes should not be underestimated.

References

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Translated from the Spanish by Claudia Adan.