

Going, Going, Gum! - Guatemala

Introduction

The Mayan Biosphere Reserve, located in northern Guatemala's largest region, Petén, is the principal intact tropical rainforest in Central America, also containing savannahs and wetlands. Established in 1990 by the Guatemalan government, the 1.7 million hectare (4.2 million acre) reserve was created to conserve natural biodiversity and cultural values and to stop uncontrolled deforestation. Guatemala's natural resources and rich historical wonders are not just for the tourists; for Guatemalans, areas of biological diversity represent unique income generating opportunities.

Uaxactún is an ancient archaeological site in the heart of the Mayan Biosphere Reserve, popular with tourists for its ancient ruins. Uaxactún's 140 mestizo (mixed) and indigenous families primarily subsist on non-timber forest products (NTFPs) such as edible fruits, gum resin and palm leaves. These are renewable resources that can be harvested without killing the trees or destroying the forest. Concessions for the community to extract forest products have been granted for 25 years by the government in an attempt to stop deforestation. This enables the locals of Uaxactún to live off the land while contributing to its preservation.

Sustainable Management

In order to manage and conserve the forest around Uaxactún sustainably the Organización de Manejo y Conservación, or OMYC, was created to represent residents of Uaxactún. It pays a concession fee for extracting forest products from more than 84,000 hectares (207,500 acres) of forest. In return, sustainable management and business plans are produced to supervise the use of the forest. Gaining rights to the area in which they live has provided the community with an opportunity to protect the forest and maintain their current lifestyle.

An 80-year history of forest use with no dependence upon timber enables the community's extractive activities to complement conservation. In order to pay concession rents, OMYC is supported by the local branch of the Wildlife Conservation Society (WCS), a US organisation. The WCS helps the community to improve their ability to manage the forest based on NTFPs, ecotourism and a minimal impact use of timber, as well as to conserve game species upon which they depend.

The concession's management plan clearly establishes where and how resources can be harvested. Areas have been set aside for harvesting traditional renewable resources. The plan allows logging, but community members are limited to a selective harvest of 162 hectares (400 acres) per year within a specified 8,000 hectare (19,280 acre) area of their concession. The management plan also identifies critical habitat, which must remain untouched.

Harvesting Forest Products

The removal of incentives for timber and relocation within the Reserve by the government has allowed more focus to be placed on sustainable extraction rates. Densities of xate, chicle and allspice in this region are relatively high due to low overall species diversity. This higher density helps to increase harvest efficiency, together with the durable and easily transported properties of products such as chicle. Three important non-timber forest products in the region play an important role in the future of the Biosphere Reserve: xate palm fronds, an understory (beneath the forest canopy) jade palm used for greenery in floral arrangements, chicle latex (used in chewing gum) and allspice provide employment for over 7,000 people in Petén and represent an annual income of approximately US\$47 million.

Chicle gum

Chicle gum is the tree latex of the chicozapote, chicle, or sapodilla tree (*Manilkara zapota*). Traditionally, the Mayan Indians of Mexico and Central America chewed the raw chicle latex, but more recently it is used as the elastic ingredient for chewing gum.

The chicle tree is the most abundant in the jungle of Petén. In some places it is possible to find over 30 trees in a single hectare. Chicle harvesters or *chicleros*, collect the latex during the rainy season from July to February because the latex flows more easily. Using a sharp-edged machete or small pocket knife, chicle collectors make zigzag cuts from the base of the tree trunk up to its first branches. The latex drips down these grooves and is collected in a bag attached to the tree at the bottom. Tapping wounds are generally placed at 16-inch (40 cm) intervals, and usually require between two and five years to heal.



A tapped chicle tree

The raw latex is boiled to coagulate it into crude white chicle that is moulded into blocks. This boiling process takes skill to gauge when the chicle is at 33 per cent moisture content and needs to be poured off. Crude chicle comprises resin, gutta, arabin, calcium, sugar, and various soluble salts. The blocks of chicle are shipped to the USA to be used as the base in chewing gum.

Latex is not the only product the chicle tree has to offer. Many harvest its edible fruits, considered one of the best fruits in tropical America. The rough brown fruits are 3-4 inches (7-10 cm) wide with yellowish-brown flesh that is translucent, very sweet, and wholesome.

Xate palm leaves

Xate (pronounced 'shah-tay') is an ornamental palm leaf collected from three understory palms of the genus *chaemadorea*. It is the most important economic activity in the community because it takes place all year round. The leaves can be harvested sustainably with no harm to the plant if only a few leaves are removed from each palm. Each xate plant produces up to five harvestable leaves over a two to four month period. Xate harvesters or *xateros* walks many miles daily through the forest, removing palm leaves. Once picked, the leaves are sorted into bundles or *manojos* of approximately 45 marketable fronds which contractors carry to processing warehouses.

Xate palm leaves are collected from the forest for export to florists in the USA and Europe. Xate palm is popular in wedding floral arrangements in the USA.

Allspice

Allspice comes from the fruits of a small tree, *Pimenta dioica*, or *pimienta gorda*. Allspice is so-called because it smells like a combination of spices, including cloves, juniper berries, cinnamon and pepper. The pimenta tree is related to the clove tree, and the oil of the two spices has the same principal element, eugenol.

Allspice harvesters or *pimenteros* prune the branches of the trees bearing sufficient fruit, remove the berries, and dry them over an open fire or under the sun. The trees re-grow after pruning and can be harvested again after six or seven years. After a brief drying in a jungle clearing, the berries are sent to a collection point where they are usually boiled to avoid mould. They are then dried further before shipping.

Ripe fruits collected from pimenta species trees growing in tropical South America are then exported to USA, Russia and Europe for use as a culinary and pickling spice, or in the making of essential oils. Whole allspice berries are a staple of mixed pickling spice, and are frequently used in commercial sweet-pickle preparations. Ground allspice is used in such blends as pumpkin pie spice, apple pie spice, seafood seasoning and curry powder, and is present in many sausage and pickled meats or fish products. It is also often used in sweet baked goods, puddings and fruit preparations.

Biodiversity and poverty reduction

The Uaxactún organisation, OMYC, has been effective in addressing poverty reduction through the sustainable use of forest resources. Sustainable forest management has enabled the community to reap the benefits of their knowledge of the forest in which they live. Harvesting these products can be achieved without damaging the forest because they depend on the existence of the intact forest.

The local community uses the forest resources sustainably and, as a result, have made a big impact on preserving and regenerating the environment. Benefits of harvesting xate, chicle and allspice include:

- There is a viable alternative to cutting down the forest and raising cattle or growing corn, which would destroy the land.
- The new management plan has stopped over-exploitation of forest resources.

The livelihoods of the locals have been improved as a result of harvesting and selling forest products. Xate and allspice collection in particular requires little by way of specialised skills, equipment, or investment. The planned management of the reserve has also had a positive impact on poverty reduction:

- Equitable access and benefit sharing to all is now ensured.
- Many family incomes have increased to twice the minimum wage.
- The community has gained entry into the state social security system.
- Women are now actively engaged in OMYC's executive committees, giving them a recognised role in the community.
- Ecotourism is being developed as a source of income for the Uaxactún villagers, who receive 5 per cent of all net earnings from any ecotourists taken to or through Uaxactún.
- Income generated has been invested in community projects such as a women's craft project and the local school.

Uaxactún villagers live without basic services such as running water and electricity, but have taken immense pride in the freedom of their forest lifestyle. Creating alternatives to timber and non-timber product extraction has been important in ensuring long-term sustainability.

The Future

Resource management is being taken very seriously in the community. Key areas of the biosphere not yet surveyed are being monitored, together with plans to build a research station to provide crucial information on all aspects of Uaxactún and the surrounding area. A xate palm reforestation project managed by families is also under way, which will ensure the palm can be harvested in the future.

Along with a recent influx of ecotourism, proceeds from the harvest of xate, chicle and allspice account for most families' income in Uaxactún. Their knowledge of the species and how to harvest them has now been strengthened by the working partnership between OMYC and WCS-Guatemala. This shows how collaboration can be an effective tool for fighting biodiversity loss and poverty. The partnership is developing an integrated vision for resource management in Uaxactún, helping to diversify the local economy and protect the natural resources upon which local people depend.

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The Raintree website contains all the information you need on rainforest products, including a rainforest plant database, information, facts and sustainable products for sale. The website is available in six different languages: English, Spanish, Portuguese, German, Italian, French and Norwegian.

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WRM is an international network of peoples' groups of North and South involved in efforts to defend the world's rainforests. This site has up-to-date information on the latest issues and has many useful links to other organisations.

Websites

www.fao.org/forestry/FOP/FOPW/NWFP/new/nwfp.htm

The FAO's Non-Wood Forest Products (NWFP) website has information on every aspect of NWFP, from activities, publications (some listed below), country information and links to other sites of interest.