THE PITSAWING GROUPS OF NORTHERN HONDURAS: PROGRESS AND PROBLEMS

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INTRODUCTION

Honduras has one of the fastest deforestation rates in the world: according to USAID (1990) 150,000 ha are cleared annually, a rate of 3%. 1.8 million hectares of broadleaf forest were cleared between 1964 and 1986, almost halving total forest cover. The same source reports that this was often a highly organized process with inducements given to **campesinos** by cattle farmers for forest clearance.

Community based natural forest management is now seen as one of the more promising approaches to combining conservation with development objectives. This is in response to decades of resource degradation resulting from forest management through concessions to logging companies, and ineffectual attempts to prevent access to the forest through legal means and forest guards.

This approach argues that unless communities living in or near the forest can obtain a satisfactory livelihood from it, and thus value the forest as a productive asset superior to alternative uses, the agricultural frontier will continue to encroach into opened-up forest. It also seems reasonable to suppose that protection of the forest against encroachment is more feasible where the users live in or near it.

On the basis of these and other arguments, a plethora of projects have sprung up in Latin America over the last decade. A few of these have been documented, like the forest **ejidos** of south-east Mexico (Richards, 1992) and the Palcazu Project of Peru (Stocks and Hartschorn, 1992). In this paper we look at a project in which the Government of Honduras, assisted by the Canadian International Development Agency (CIDA), is attempting to assist migrant communities using manual pitsawing methods to manage the forest on a sustained yield basis under very difficult physical, institutional and policy conditions.

PHYSICAL AND SOCIAL SETTING

The Broadleaved Forest Development Project (PDBL) is located on the northern coast of Honduras. The project area is dominated by two mountain ranges with peaks up to 2400 m sloping down steeply towards the sea. There are no less than 14 major watersheds in the area, none more vital than the 554 km^2 Cangrejal watershed which emerges just to the east of La Ceiba, in which live half of the estimated 340,000 population of the area. The average rainfall is some 2600 mm, with up to 4000 mm in the higher areas, often accompanied by high winds in the wettest months from October to January, this being a wind convergence anticyclonic zone of the Gulf of Mexico.

The superficial (20 to 60 cm) and highly erodible (when deforested) mountain soils make the coastal urban areas of La Ceiba and Tela very vulnerable to flooding. The area was devastated in 1974 by Hurricane Fifi, and widespread landslips, surface sheet erosion and flooding are annual events, causing waterlogging, infrastructure damage, water unfit for drinking and washing, and loss of homes, livestock and occasionally lives. There seems little doubt that if valued, the costs of deforestation could justify huge sums for forest conservation in this area.

Of the 180,000 ha that compose the Integrated Management Areas[1] (AMIs) of the PDBL, some 50,000 ha can be classified as production forest. Over half of this is on slopes above 30%, with most felling taking place on slopes between 50% and 60%, and even up to 75%, making mechanization virtually impossible.

It is an area of high demographic pressure with a population growth rate of 3.2%. Much of the population has settled in the area over the last 20 years partly induced by government resettlement projects. Pressure on the forests has significantly increased in recent years due to increasing poverty and landlessness, as well as immigration from Nicaragua, El Salvador and Guatemala.

PROJECT EVOLUTION

The origins of the project date back to 1976, when the Honduran Forest Development Corporation (COHDEFOR), in a diagnostic study of the area found some 2000 pitsawyers working without any kind of organization, control or support. They worked in pairs, often under concessionaire middlemen. COHDEFOR organized about half of them into 23 groups, and established a second order marketing cooperative COATLAHL in 1978, managed and staffed by elected representatives of the groups. Limiting itself to the small local market of La Ceiba, this proved unprofitable and most of the groups collapsed.

However at the beginning of the 1980s COHDEFOR again encouraged the formation of pitsawing groups through non-market incentives including credit for tools, halving stumpage fees and allowing their payment after sale. However no land rights were (or had been to 1993) given to the groups. Instead COHDEFOR's policy has been to prohibit timber harvesting by outsiders in the areas assigned to the groups under COATLAHL.

In 1982 CIDA experimented with mechanized harvesting, but this proved to be unworkable due to the topography, maintenance difficulties, etc. The CIDA initiative spluttered uncertainly along emphasizing institution building and training until 1988, when a new and more participatory phase of the project was initiated.

INSTITUTIONAL, LEGAL AND POLICY FRAMEWORK

The project is managed by COHDEFOR with technical and financial assistance from CIDA, and supported by formal agreements with the Ministry of Agriculture (SRN) and the National Agrarian (Reform) Institute (INA). Under the 1974 Forestry Law, all forests and their products, even where land was privately owned, belonged to the state, and thus stumpage fees had to be paid. In 1992 this was amended so that trees on private lands were no longer subject to stumpage. However this hardly applied to the broadleaf forest which was considered as `national' land. Thus all legal felling and extraction has to be done through COHDEFOR, which also has exclusive rights to export lumber from which it derives most of its revenue.

INA's policies and the land reform laws (at least until 1989) have facilitated forest conversion for basic grains agriculture and pasture. For example by defending the interests of organized peasant (**campesino**) groups that move into the forest, INA appears to encourage clearance, although ironically this encroachment is officially illegal. In addition, the 1974 Land Reform Bill encouraged large cattle holdings, considered `efficient' at stocking rates of only one to two

[1] Each AMI corresponds to a watershed.

livestock units per hectare. These lands, unlike the forests, are legally protected from `expropriation' by the organized **campesino** groups.

A large proportion of the cattle area is on the alluvial river valley soils, as well as on previously forested land. The almost sacrosanct nature of pasture, as opposed to the relatively free access nature of the forest resource, has forced the **campesinos** onto marginal forest soils. Between 1974 and 1982 the pasture area increased by 90,000 ha, helped by subsidized credit, as the forest cover diminished (USAID, 1990). These policies have resulted in a very inappropriate distribution of land use.

The institutional clash between INA and COHDEFOR caused by the obvious policy and land use conflicts, has severely retarded the progress of the project in seeking greater security of tenure for the pitsawing groups. In 1991, these still did not have any documentation to prove their usufruct rights, granted under COHDEFOR's `Social Forestry System'[2].

COHDEFOR has had a negative image for most observers: with its numerous regulations and restrictions, and high stumpage fees, it is seen as an agency for the control rather than management of the resource. Over 10 years there have been six different COHDEFOR administrations, with obvious staff and policy discontinuities. COHDEFOR also suffers from problems of bureaucracy, has lacked control of harvesting and has been unable to enforce the forest laws (USAID, 1990). However, it should be mentioned that the COHDEFOR staff attached to and directing the PDBL seemed well-motivated and competent according to the author's observations.

CIDA is well aware that the institutional, policy and legal basis for sustainable forest management in Honduras is weak. They have therefore focused much of their energy on institution building, and lobbying for policy and legal changes, most obviously in the area of tenure, and by proposing incentives for protection and reforestation.

FOREST MANAGEMENT AND ADMINISTRATION

In most of the groups, the pitsawyers prefer to work in pairs within a group management plan. However PDBL is keen to develop collective management, as in the Palos de Agua Group (22 members in 1991), which plans and executes forest operations on a group basis, facilitating the granting of credit by PDBL for mules, saws, and a winch.

The forest area of each group is demarcated and an operational inventory carried out with the group. In the case of Toncontin Group (102 members), 2900 ha of production forest have been split into 30 blocks on the basis of a 30 year selective felling cutting cycle. This works out at a hectare per person per annum. The annual allowable cut for Toncontin is limited to trees with diameters above 50 cm.

All operations are manual, mainly because COHDEFOR has been reluctant to permit the use of chainsaws in the broadleaf forest zone. Typically a pair of pitsawyers will take three to four days to prepare a tree for felling. This involves clearing the site and constructing a terrace and sawing

[2] See Utting (1993) for a description and analysis of the `Social Forestry System'.

bench on slopes of up to 70%. Hauling the logs onto these benches with ropes and levers can take weeks rather than days for large awkwardly lying trees, although pairs will often join forces for this operation. PDBL has introduced winches in at least one group where forest operations are undertaken collectively.

Normally a pair will fell and saw four or five trees in the six months or so that the weather permits harvesting to take place. The 10 foot planks and blocks, which weigh up to 150 lb are then transported by mules, or on the shoulders of teenage youth to the group depot, a distance of up to five miles in some cases. It is a great advantage to own mules since transport costs can be very high: in Las Mangas group as much as 60% total extraction costs.

This extraction technology results in high wastage: an average of only some 180 board feet per m^3 (42% conversion efficiency) of roundwood for the softer species like magnolia and mahogany. Felling is above the buttresses, branches are discarded, and trunk edges are not used. The introduction of chain saws could significantly reduce the wastage according to CIDA, but opinions are still very divided about the environmental wisdom of such a move.

The groups under the PDBL project have received an intermediate level certification of `good' forest management from the Rain Forest Alliance Smart Woods Certification Program, in recognition of the non-destructive harvesting methods and participation of local people in rainforest management.

MARKETING AND PROCESSING

In 1990 COATLAHL received 2200 m^3 sawnwood from 13 of the groups (with 410 members) working an area of about 30,000 ha of productive forest. Most of the groups relied mainly on mahogany sales, which in 1990 represented 58% by volume (64% by value) of the sawnwood sales of COATLAHL, followed by **redondo** (*Magnolia yoroconte*) (18%), Spanish cedar (*Cedrela odorata*) (11%) and the secondary (non-traditional) species (13%), which included **marapolan** (*Guaria longifolia*), **sangre** (*Virola koschnyi*), **varillo** (*Simphonia globulifera*), the **San Juans** (*Vochysia guatemalensis, V. guianensis* and V. *ferruginea*), **jigua** (*Persaa* spp.) and laurel (*Cordia alliadora* and *C. megalantha).*

COATLAHL collects the blocks and planks from the groups, paying previously established prices. COATLAHL has adopted a very passive approach to marketing: instead of transporting the blocks or re-sawn boards to the main national market of San Pedro Sula, a distance of less than 100 miles along a reasonable road, merchants and end users have come to the COATLAHL depot in La Ceiba.

In 1991 Toncontin Group received $157 per m^3 of magnolia (its main marketed species) from COATLAHL, in comparison with a sale price of $200 in La Ceiba and $265 in San Pedro Sula. With a freight cost of only $15 per m^3 between the two cities, it was clear that the pitsawyers were not getting their money's worth from COATLAHL.

By the time they are sold, the planks suffer from open air drying and poor stacking practises both in the groups, while they are waiting to be collected (a period often up to a month), and in COATLAHL, leading to `blue stain' fungus, especially in the softer woods, wood weevil and termite problems, and widespread cracking and splitting of all timbers except mahogany and

cedar.

Confidence was very low in 1991, when the timber was stockpiling in the open air because COATLAHL did not have the sales revenue to buy it. Some member groups had decided to market their timber independently, but because they did not have sufficient output to justify buying or hiring a lorry, relied on project transportation. PDBL felt that this was justified at this early stage of development.

COATLAHL was established with the idea of increasing value added through improvement of the hand sawn planks, and further processing. To this end a band saw was installed, but this had hardly been used. PDBL recognizes COATLAHL's administrative and technical shortcomings and now has someone working full time with the organization.

Toncontin Group has now started to supply the UK based Ecological Trading Company (ETC) with timber, including various secondary species. This is clearly an important step towards improving the viability of forest management: instead of receiving only $130 to $140 per m^3 of sawnwood from COATLAHL for secondary species, the Group can hope to receive $400 or more. In spite of the apparently healthy demand for timber at a national level, local prices were depressed due to quality problems and COHDEFOR's inability to control local contraband timber which avoids the country's relatively high stumpage fees.

ECONOMIC CONSIDERATIONS

The average annual cut on the two million ha of broadleaf forest is officially some 40000 m^3 roundwood, of which 25000 m^3 is harvested by pit sawyers, but COHDEFOR estimated that this may be only half the real harvest. Table 1 gives a breakdown, starting from the final selling price, of estimated costs and the net return to the pitsawyers of Toncontin Group.

With an estimated average of 7500 board feet per pair and thus 3750 board feet or 8.82 m^3 per individual pit sawyer, and an equal division between the three species/types in Table 1, net income can be calculated at some $626 per annum. Supposing this required 150 days work, the net return per day can be estimated at about $4. This may appear low but the opportunity cost of labour is also low in Honduras. Agricultural wages, when available, were less than $1.50, and it is doubtful that the average net income from agriculture exceeded $2 per day. These figures disguise a wide range in net income according to the species mix and such factors as distance to the depot and La Ceiba (often much higher than in this example), pit sawing experience, and illness/injury. It should be noted that manual harvesting and pit sawing is hard and dangerous work, and pitsawyers say they would prefer their children to do something else if the opportunity existed.

For the other six months the pitsawyers cultivate annual subsistence crops, and a little coffee or cocoa, but the forest soils quickly lose their productivity, and are easily eroded making farming a hazardous occupation. The importance of improving the agricultural basis is recognized in the project through the agroforestry component. This has met with some success, notably on one taungya project in which maize cultivation was combined with the establishment of a teak plantation.

TABLE 1: BREAKDOWN OF RETURN TO TONCONTIN GROUP PITSAWYERS FROM SALE OF TIMBER TO COATLAHL, 1991

	$ per cubic metre		
	Mahogany	Magnolia	2ndry spp.
COATLAHL sale price La Ceiba	241	200	134
COATLAHL administration/market costs[1]	48	48	48
COATLAHL freight charge to La Ceiba	5	5	5
Loading (labour payment)	3	3	3
Stumpage fee (50% subsidy)	26	18	9
Transport forest to depot	32	32	32
Depreciation on equipment	5	5	5
Interest on capital	4	4	4
Other costs	6	6	6
Total cost	129	121	112
Net income to pitsawyer	112	79	22

[1] Includes individual membership dues paid by individual pitsawyers.

Source: COATLAHL, and individual members of the Toncontin group. Calculation of interest and depreciation by author.

IS IT SUSTAINABLE?

The difficult topography of the forests of northern Honduras provides both a protection and difficulty for viable natural forest management. Normally only manual extraction is possible, minimising damage to the surrounding forest and the vulnerable forest floor. However the physical difficulties also make it inevitable that the most accessible areas are logged first. The costs of extraction will therefore increase over time — it is to be hoped that the real value of timber will increase to compensate this. Inventory data also shows that current extraction levels of species like mahogany and magnolia are not sustainable. The development of the market for secondary species is therefore vital.

Macro-economic issues are also critical to the policy framework within which attempts at sustainable forestry have to operate. Structural adjustment (since 1990), problems of external debt pressure, fiscal deficits, inflation and unemployment have all increased the pressure on Honduras' forest resources.

However the major constraints are perhaps the uncertainty of land and tree tenure, and institutional question marks over the capacity of COHDEFOR to sustain a project of this nature. It is difficult to escape the conclusion that until the pitsawyer groups are given firm land tenure (although possibly still based on usufruct, to avoid the speculative dangers of land privatization), and institutional support[3] less subject to the vagaries of political change, the future looks bleak. This is clearly a very important project, and one that should generate a lot of international support given the very high social costs of forest conversion, but many political hurdles need to be overcome before sustainability is possible.

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REFERENCES

PDBL, (1990), `Componente Política de Desarrollo y Plan de Acción', Tercera Misión del Proyecto de Desarrollo del Bosque Latifoliado, La Ceiba, Honduras.

Richards, E M, (1992), *The Forest Ejidos of South-East Mexico: a Case Study of Participatory Natural Forest Management*, Overseas Development Institute Network Paper 13c, London.

Stocks, A and **Hartschorn, G**, (1992), `The Palcazu Project: Forest Management and Native Yanesha Communities', *Journal of Sustainable Forestry*, 1 (1).

USAID, (1990), `Honduras Natural Resource Policy Inventory', Agricultural Policy Analysis Phase 2, Washington DC, USA.

Utting, P, (1993), *Trees, People and Power*, Earthscan Publications, London.

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[3] The creation of an independent support institution for the forest ejidos of south-east Mexico provides an excellent model (see Richards, 1992).