

A tragedy of the non-commons

Recent developments in the babacu palm based industries in Maranhao, Brazil

In the following article the author, Dr. Peter H. May, analyses how the property rights changes resulting from permanent land use conversion and technological innovations in the processing of the babacu palm fruits have effected small holders in Maranhao, Brazil.

A strong case is made for the need to recognize that the form of control over not only the babacu markets but also the stands themselves contributes both to the situation of these small holders and to the potential for managing babacu stands in the future. Several suggestions for ways of supporting local social movements which are demanding changes in property rights systems are made. These suggestions provide valuable insights into how resources from funding agencies can effectively be channelled to promote greater collaboration among government, researchers, intermediaries and grass roots organizations to improve the situation of the small holders in this area.

Introduction

The aim of rural development has primarily been to alter existing agricultural systems or unexploited natural environments to stimulate output growth. Infrastructure improvements and selective subsidies facilitate producers' access to new frontiers and enable them to reorganize the production process by adopting technical and institutional innovations. An objective assessment of these changes should not only focus on efficiency and sustainability but also on fairness. The issue becomes not just "how much?" and for "how long?" but also "for whom?"

Processes of tropical land use change often deprive indigenous and colonist populations of native plant species from which they derive a wealth of goods (wood, fibres, medicines, rubber, oils and dyes) and unpriced services (e.g. watershed and soil protection, nutrient recycling). In many cases these resources have been managed for generations under common property regimes for sustained yield. Deforestation upsets the delicate balance that upholds these management systems.

Extractive resources in the tropics are not threatened only by land conversion, however. They are also sometimes subject to degradation resulting from over-exploitation by their traditional users, due to expansion in market demand or population growth, at rates beyond their natural capacity to regenerate. Economists have tended to blame resource depletion on an insufficient measure of individual control over resource use exercised through property rights. Privatisation is the usual prescription for resource degradation problems that are assumed to arise from the tendency of individual profit-seekers to exploit open access resources at a level beyond their sustainable equilibrium.

In Amazonia, however, there is no basis for arguing that resource degradation is caused by population pressure on scarce land resources. The problem is that the resources at the disposal of the vast majority tend to be restricted due to a highly skewed distribution of access to property rights. Here, privatisation has led to the concentration of property rights in the hands of a few barring entry to resource use by the majority. This in turn has resulted in pressures on limited remaining resources traditionally managed in common, thus hastening their degradation. This has been defined as a "***tragedy of the non-commons***".

The Babacu palm case

In the Mid-North region of Brazil, composed of portions of the states of Maranhao, Piaui, and Goias, historical patterns of land occupation led to the dominance of the babacu palm in the secondary forest. For many years these palms were managed within low intensity shifting cultivation systems by forest dwellers who made use of the palm's multiple products and revered it as a "tree of life". It's •

leaves furnished their shelter, its husks their fuel; they and their animals derived nourishment from its oil kernel, starchy outer husk and palm heart. By the late 1970s a substantial regional vegetable oil industry had arisen to make use of babacu kernels. This generated annually \$135 million for the regional economy. It is estimated that as many as 420,000 rural households depend on babacu for part of their incomes.

Babacu products are particularly valuable to the subsistence economy because they are obtained in the period between peak labour demands in annual crop production, and are produced primarily by women and children. For these reasons, subsistence farmers protect the palms, retaining them within agricultural fields though they cut other species for burning or fences.

The Babacu palm - a common property resource

In what ways does babacu constitute a common property resource? Land at the Amazon frontier in Maranhao was initially subject to open access. Property rights over palms and other extractive plant resources in the babacu zone were established informally by peasant production groups

who occupied the "free lands" at the frontier. There, shifting cultivators exercise usufruct to (the right to use and benefit from this use) fallow cycle products of the plots from which they harvest annual crops. This gives them an incentive when clearing the plot to retain babacu palms and other useful plant species which provide them with essential goods and services during the subsequent fallow. Under some tenures, each household retains exclusive rights to harvest products from babacu palms in the immediate surroundings of its dwelling. The presence of dense stands of babacu is one criterion for the location of rural settlements and farm sites.

On traditional private estates in the babacu zone, peasants who reside on a given property are granted exclusive usufruct to the babacu palms that grow there, on the condition that they sell extracted kernels through the landowner. Charcoal produced from babacu fruit husks and the numerous other subsistence products derived from the palms are part of the usufruct rights held in common with other residents. Those who are granted these rights are thus motivated to exclude others from trespassing to collect fruits or other goods from the property, hence sustaining resource productivity by reducing predatory exploitation.



Baskets and mats are made from babacu leaves.



A couple gathering babacu nuts in Maranhao.

In the early 1970's expansion in the road network and generous rural credit terms to large scale investors stimulated land-use changes throughout the region. Agro-industries began to produce sugar, alcohol and cellulose. Raw material production for these industries occupied the lands previously covered with babacu stands.

Other projects aimed at fattening beef cattle on planted pastures. In the period from 1967 to 1984 government subsidies and land concessions were provided for ranches occupying 1.35 million ha. in the babacu zone. This rapid expansion of cattle pastures was fueled by government-built infrastructure, abundant credit, attractive fiscal incentives, cheap land and a general desire to consolidate landholdings with minimum investment.

Pasture expansion in the babacu zone is often accompanied by clearcutting of the palm stands. The need for regular suppression of juvenile palms to reduce competition with pasture grasses leads ranchers to view babacu as a weed that should be eradicated. Besides invasion by juvenile palms people who trespass to gather babacu fruits in ranches are perceived as interfering with pasture management. These people are blamed for starting wildfires, cutting fences, and leaving behind fragments of fruit husks that can cause injury to the hooves of cattle. To rid themselves of such incursions, ranchers are increasingly clearcutting the palm forests.

A technical answer to a political problem

Industrialists within the babacu zone have, as a result of problems in the supply of raw material to babacu oil production, intensified their search for improvements in babacu fruit processing technology hoping to reduce kernel extraction costs and obtain additional sources of revenue from by-products.

Recent industrial innovations promise a more complete utilization of babacu fruit for strategic products such as charcoal, charcoal, and tar as well as traditional oil and feedcake. Modernizing landowners appear to find whole fruit marketing more attractive than the traditional system of kernel resale. This shift has motivated a permanent alteration in methods of babacu production and resource access in recent years. Such changes are compatible with broader changes in rural enterprise organization and land use underway in the babacu zone, but incompatible with peasant agriculture and extractivism.

Studies of the impacts of whole fruit markets point to increasing dependence on babacu for incomes that are being eroded by expulsion from agriculture. Also the reduction in employment needs for whole fruit processing over manual kernel extraction as well as a change of location (kernel extraction was normally carried out in the home when convenient) has led to men now earning more and more of the babacu fruit based income.

However, it is not the innovation in the industry alone that is causing problems of resource access and distribution in the babacu zone. Conversion of land use to pasture and expulsion of peasants from rural properties, occurring in tandem with the innovative industry, imply drastic alterations in rural employment and income distribution. The distributive implications of the transformation in babacu processing, technology are eloquently summarized by rural workers union members:

99 Everybody suggests that babacu impoverishes everyone. Babacu put everyone out on the street, but....it was the livestock projects that were implemented in areas where babacu stands were cut down....How many people have gone hungry because of these palms that have been cut down? How can we say that we're going to modernize whole fruit processing and that this will make the landowner, the great proprietor, preserve babacu stands? How can we say this is going to mean better conditions for the peasant?...It's going to worsen the situation; it means more unemployment, on account of a product that, like it or not, is natural....We have to make belter progress, industrialize, change the systems that have been there so long, but we have to study also some means to employ people, with the goal that..you don't take all this at once from the peasant, because it means another form of mortality another •



Extracting babacu kernels for sale to the regional vegetable oil industry provided this woman with an important source of income.

Photo: Peter May

system of hunger. Let's pay attention to this because I will never concede that all of a sudden with this whole fruit, this is going to give income to the peasant. This income is going to enter into the capitalist's pocket.

This is the problem that I see. Now, your proposition I accept- industrialization is an easier means to do work. I want to see this done and also that we work to help the suffering people that are going to end up without jobs. **99**

(Representatives of the Federation of Agricultural Workers of Maranhao, quoted from round table discussions in FIPES 1982)

The peasants losing out are not in a position to demand compensation, they have no bargaining power. Given the inequitable prior distribution of property rights, landowners are under no pressure to compensate peasants' losses from babacu eradication. Peasants lack the political cohesion of small groups necessary to effectively mount an organized movement that will force a change in the rules of the game.

With the increasing spread of pastures and reduction of land available for agricultural use, poor families have

become more dependent on babacu for their survival. Although the state government in Maranhao has approved a law protecting babacu stands from indiscriminate deforestation, this law, up to now, has never been applied. Small farmers, acting through their rural workers unions, are cited in the law as "official notifiers of infractions related to the cutting of babacu palms", and high fines are to be meted out against infractors. This at least partially confers legitimation of small farmers' property rights over the palms, but it does not furnish them any power to ensure its enforcement. (The law must explicitly give the small farmers the right to use the resources, not just the right to complain about others who misuse it!) In consequence, as occurs with other common property resources in developing nations, babacu palms do not have any effective protection.

What options exist for policy intervention to confront the problems of rural unemployment and reduction in wage and foods supply provoked by the process of resource privatisation in the Brazilian babacu case?

Technological alternatives that envision babacu processing at the farm level rather than in large factories could



A babaçu-banana agroforestry system in Maranhão. Photo: Peter May

reduce transport costs and, under restricted conditions, result in an increase rather than a decline of rural employment. These conditions exist in areas where both the current rate of babacu extraction is low and there is little potential for agro-pastoral development. In other areas, however, either access to resources has already been preempted by privatisation, or current exploitation levels imply that employment impacts of industrialization would be severe. Such circumstances compel institutional and not solely technological solutions, so as to resolve conflicts resulting from restriction in resource access.

It is necessary to consider how to regularize usufruct to extractive resources that remain fenced within others' lands, or under ill-defined public property regimes. One solution would be to propose long-term usufruct contracts between proprietors and peasants, specifying responsibilities for protection and management of resources, and assuring the landowner of a secure return. Another variant of this option described above, is the creation of "extractive reserves". In this approach, public or untitled lands under squatter occupancy that contain significant economically valuable and renewable forest resources are demarcated and placed under long-term stewardship by extractive producers. The extractive reserve concept provides a framework for sustained utilization and protection of forest resources through definition of property rights to the benefit of local producer communities.

The coordination of contractual negotiations between landowners, small farmers, rural workers and the State to establish usufruct to extractive resources - which up to now has been left to highly imperfect markets — requires political definition to avoid the aggravation of the problems presented here.

An action agenda

The moment is ripe for selective intervention to promote institutional modifications and support refinement of common property management practices in use by neotropical forest dwellers. Such actions should be geographically concentrated, and involve support to grassroots and intermediary organizations, government agencies, training and research institutions that agree to collaborate toward common ends. Some of the issues that should be the focus of financial support include:

- 1) Research on the legal and customary definitions of common property management regimes, and assistance to forest dwellers in devising codes specifying rights and responsibilities to resources on which they depend, including rates of exploitation of extractive products, land use practices, human carrying capacity and tenure over flora and fauna.
- 2) Education of forest dwellers to their rights under existing property and labour laws, as well as efforts to define alternative property arrangements within national and local legal frameworks.
- 3) Defence of native peoples and other forest dwellers against pressures that threaten to cause "non-commons" problems, through efforts to legitimate customary property and usufruct rights over extractive resources.
- 4) Analysis of market trends and strategic entry points for a range of forest products, as well as alternative marketing channels, processing options and transport systems to reduce dependence on intermediary chains and increase returns to the producer.
- 5) Long-term support for research on methods to enrich natural and degraded forests, once these are securely under the control of local communities, with species whose products are beneficial to subsistence economies and will have high market value over the predictable future.

Note

Parts of this article have appeared previously in the papers: Local Product Markets for Babassu and Agro-Industrial Change in Maranhao, Brazil, published in New Directions in the Study of Plants and People: Research Contributions from the Institute of Economic Botany, Volume 8, Advances in Economic Botany.; and Common Property Resources in the Neotropics: Theory, Management Progress and an Action Agenda, appearing in K.H. Redford and C. Padoch, Eds., in press, Conservation of Neotropical Forests: Building on Traditional Resource Use, Columbia University Press.

The author of the above paper, Dr. Peter May, is now working with FAO as an officer in the newly established programme in Non-Wood Forests Products. He is interested in having your opinions and in receiving information from you about priorities for NWFP use and development. Please fill out and return the questionnaire on FBSSE that has been sent out with this issue of the newsletter to: Peter H. May, Forestry Officer (NWFP), Forest Products Division, FAO, Via delle Terme di Caracalla, F-821, 00100 Rome, Italy.