

# TAUNGYA FARMERS OF HAMBANATOTA

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## INTRODUCTION

There has been much debate worldwide concerning the ethics of taungya. Although it is noted as a promising combination of farming and forestry by some (eg Eckholm, 1976), critics consider it to be an exploitation of shifting cultivators for the purpose of reducing costs to the Forest Departments (Foley and Barnard, 1984). Very often labourers are recruited by middlemen who take large shares of the benefits (Seth, 1981); it is only a temporary arrangement and thus may not foster development in any real sense (Arnold, 1984).

In Sri Lanka where Taungya goes under the name of 'Cooperative Reafforestation', there is no such debate and Taungya is considered to be 'Social Forestry' in the best sense of 'social'. It is justified as a means of providing land to people who would otherwise have none. A paper promoting taungya was published in *The Sri Lankan Forester* in 1973: here it was justified both as a means of controlling and legalising shifting cultivation and as a means of increasing national food production, beyond the obvious one of extending forested areas. More recently at district level a number of forest officers have begun to question taungya, particularly with regard to the low level of services available as a result of the continuous uprooting of the farmers. This paper looks at the validity of these different viewpoints using the case of Hambantota District.<sup>1</sup>

## THE HISTORY OF TAUNGYA IN SRI LANKA

Taungya was introduced into Sri Lanka in the 1870s, in both the wet and dry zones where maize and teak were interplanted, but it was initially a complete failure. In the 1890s another attempt was made where local hardwood species such as **halmilla** (*Berrya ammonilla*) and **buruta** (*Chloroxylon swietenia*) were planted, with cash rewards to the farmers after two or three years. Again in the 1950s taungya was employed with teak and eucalyptus in a southern range scheme (Gilbert, 1988).

Since then, policy has changed so taungya is no longer used in virgin forest but to rehabilitate chena lands: areas which have become degraded by shifting cultivation. These lands suffer reduced nutrient availability, thus the growth rate of trees and productivity of crops is somewhat lower than in areas of cleared forest. The current practice of 'cooperative reafforestation' is a scheme in which plots of 5 acres are given out on a three year permit to landless people; they plant this area with trees as

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instructed by the Forest Department and may cultivate their own crops on the same area. For this they receive an incentive payment of 700 rupees per acre in the first year (3500 for the whole plot).<sup>2</sup> If they maintain the plot in subsequent years and plant crops again, they receive payments of 300 and 200 rupees per acre for years two and three. After three years they may move to a new plot and begin again. The tree seedlings are provided gratis, but the trees remain the property of the farmer. The Department may provide barbed wire on credit (sometimes at reduced cost) for plot boundaries. The scheme provides employment in areas where unemployment is high, and per acre planted it is a cheaper means of afforestation than the block forestry direct labour system. It is considered that three years of protection through cultivation are enough to give the trees a good chance of survival thereafter.

## TAUNGYA IN HAMBANTOTA DISTRICT

Hambantota is a district in the Southern Province of Sri Lanka, with an average rainfall of less than 1270 mm per annum in the west falling to an average less than 900 mm at the extreme eastern end. Since 1979 an Integrated Rural Development Project (HIRDEP) has been operating in the district with funds from NORAD (the Norwegian Development Agency). Taungya has been supported in Hambantota since 1979 by the Forest Department; it was only taken up by HIRDEP for funding in 1984 following recommendations of a Forestry Sector Evaluation Mission (HIRDEP, 1982). HIRDEP's aim was to increase participation in forestry and to raise rural incomes, these being the general policies underlying all its development work. The areas forested in this manner have been mainly old **chena** plots on which secondary growth of bushes and shrubs had sprung up. There is an estimated 15,000 acres of such land in the central part of the district, which has a low population density. The Forest Department had had little difficulty finding families ready to take up this scheme in Hambantota and since 1979, 4982 acres have been planted. At present about 50 families are involved ; some have been with the department since the scheme started, others have dropped out and been replaced.

After the first few years of taungya in the district, some serious modifications had to be made to the basic model, which have important consequences for management. Farmers were unwilling to remain on their plots for three years, demanding new plots every year; although they said they were prepared to maintain the earlier plots at the same time. This was because the 'first year' reward was much higher, but also because yields of crops are much higher in the first year. The Forest Department felt it had no alternative but to comply with the farmers' request. Thus farmers move every year, but it is evident now that maintenance is hardly done on the earlier plots. Farmers are now paid the second and third year incentives only if they show they are actively cultivating the plots. As a result, survival rates after the first year have been very low in most places due to weed infestation and cattle invasion, which add to the ordinary hazard of drought. No accurate surveys have been made but survival rates are as low as 10% in some areas and not more than 30% overall.

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<sup>2</sup> 35 rupees = US\$1.00 at the time of the surveys. A normal day wage for labour is 60 rupees.

Furthermore, there is growing consciousness both within HIRDEP and the Forest Department that a system of continued migration of farmers is not socially optimal, particularly as the services (water supplies, schools and health facilities) are limited in the areas under taungya. It was decided that to evaluate the policy of taungya a study should be made of the background and economic position of the taungya farmers in Hambantota, about whom very little was known. On this basis, a decision could be made about whether to continue with a modified form of taungya, or to drop the scheme.

## **FIELD STUDIES OF TAUNGYA LIVELIHOOD**

### **Assets and Income Sources**

Most of the farmers interviewed had formerly been **chena** farmers or agricultural labourers. The study showed they were motivated to take up taungya rather than pursuing traditional chena or labouring for several reasons: they gain the security of a three year permit; the areas allocated (5 acres) allow a substantial income to be made, compared to **chena** plots for which only 2 acres are normally issued; and they receive a fixed payment of 700 rupees per acre for their first year which assures at least some cash income should all crops fail. It is easy to see that under these conditions taungya farming is economically attractive compared to traditional **chena** farming or labouring. There is the additional advantage that the farmer once attached to the Forest Department enjoys a certain amount of protection and patronage.

### **Place and Period of Residence and Labour Patterns**

The majority of the taungya farmers live on their plots for only 7 months of the year, returning to their permanent residence during the dry season. The dry period is difficult, with severe shortages of surface water for domestic use and invasion by elephants. A small number of farmers keep one acre themselves, returning just occasionally for harvesting. No families were encountered who had remained more than one season on any one plot.

Sometimes part of the family is left in the permanent home for most of the year, although the head of household may spend most of his time, during the season, on the taungya plot. Women and young children tend to join the taungya site only during peak labour seasons. Some taungya plots are operated by extended families consisting of several brothers/inlaws; others by small nuclear families.

Many of the taungya farmers hire in labour for some operations. Where hired labour is used, it seems to come from nearby villages, and is of two types: farmers with paddy land who because of late arrival of the rains are free at the period when taungyas are cleared (August/September), and members of poorer families without any land of their own. However, several families stated clearly that they manage on family labour and exchange labour alone.

## **Production System**

Planting is done when the rains begin, usually in November/December, and payment of the incentive is made in March if the survival rate is lower. However, the average survival is usually well over 70% in this first period, except in years of extreme drought.

In the first season, the trees are interplanted with a variety of crops. In 1990, green gram (mung bean) generally took at least half of the total plot area if not more; one acre of cowpea in addition was common and one acre of mixed maize, melon, pumpkin and millet. Five out of 15 farmers in Hendilla also grew brinjal (aubergine) and chilli which require a longer growing season.

Only one farmer was encountered who cultivated a plot in its second year after tree planting. Of the others, none had received payment for treatment of their former plots, even though some claimed they had weeded the trees (but not planted their own crops), and some claimed the survival rate of trees had been very high. They universally stated that the incentive for second and third year treatments was far too low to make it worthwhile. Evidently the economic benefit of growing vegetables and legumes on these plots was also too small.

Almost all the taungya farmers had purchased barbed wire on credit from the Forest Department in their first year, the cost of which was deducted from their payments. This barbed wire they then carried on to their new plots in the second year, which left the former plots completely unprotected. Almost all had taken loans from local merchants and money lenders for insecticide and herbicide.

## **Probable Returns to Taungya**

It is difficult to estimate the income derived from the taungya plots, as farmers are reluctant to divulge such information and almost certainly underestimate when they do. Half of the sample taken in 1988 gave their net income as 4-5000 rupees per year, which would seem very low given the size of land they were operating. The remaining half gave estimates of 10-12000 rupees which would appear more likely. This is without the incentive payment from the Forest Department and other income derived from labouring. In the 1988 survey one respondent noted that his previous wage employment of 800 rupees per month was low relative to his taungya income, which gives an indication that taungya incomes must be well over 10,000 rupees per year in practice.

## **Policy Implications**

The taungya system as operating in Hambantota is not working as intended or as a true taungya system because the farmers remain only one season on the plot. As a result the survival rates in year two and three drop to unacceptably low levels and tree cover is not adequately provided in the areas planted.

Moreover the programme would appear to suffer from irreconcilable objectives: reducing the costs of afforestation, and providing security, welfare and higher incomes to **chena** farmers. The farmers have fared rather better economically than they might have done, by persuading the Forest Department to allow them to move yearly but the standard of living is badly affected by the lack of services, particularly water; the result overall of modifications has not been higher direct costs to the department, but lower effective tree cover.

A further matter for thought is, what is the area being forested for? Naturally there are some sensitive areas where permanent protective forest is necessary to safeguard water supplies and slopes, but the majority of the area is only very gently rolling and not immediately liable to erosion. The rapid growth of thorny secondary vegetation limits the loss of soil and protects it from excessive insolation.

**Chena** farming is about the only economic use being made of the land at present. The problem with this system is that farmers are being forced to use shorter and shorter fallow periods owing to land pressure, and this is resulting in lower yields and generally lowered nutrient availability in the soil. Forests already planted (either by taungya or by direct labour methods), although of timber species, are not being utilised economically nor are there any plans for this. It appears that their major purpose may in fact be to keep **chena** farmers off, since farmers are more reluctant to clear obviously planted forest than natural woodland and in any case would not receive permits to do it. There are some very important land use policy and political issues involved here which need serious consideration. There are, however, a number of questions which arise from our findings to which some partial solutions may be offered.

## **How can Survival Rates be Raised**

At the current rate of reward it is clear that no maintenance of the plots in the second year and third year will be carried out by taungya farmers. Given that they themselves hire labour for some activities, it is reasonable to assume that they might do the work if the reward matched the market rate. An alternative method of payment would be on a per seedling survival basis, pro rata. On the whole the per seedling method is more likely to give satisfactory results, although there will be cases of hardship due to drought and difficulties especially if farmers have land of unequal quality. On the other hand the cost is no less than the normal rate paid by the Forest Department for maintenance by the direct labour system. Most claimed that they would stay on the

taungya plots were they given a small home garden for permanent residence although responses to other questions in the survey would appear to contradict this.

### **Are the Taungya Farmers Exploited?**

It would appear from the surveys that the taungya farmers are somewhat better off than their counterparts who practice traditional **chena** farming, partly because their area is large and partly because they have an assured minimum income. There is no difficulty in finding families to join the taungya scheme in Hambantota when the alternative is traditional **chena**. Thus it is difficult in the local context to see them as truly exploited by the Forest Department.

However the level of services is definitely low. Apart from the fact that housing quality is poor as the short period of residence does not justify more than a temporary hut, water is not usually found in the taungya areas. Of course the same may be said for many traditional **chena** farmers, although the increasing tendency in the district is for **chena** farmers to maintain a permanent house in a central village with services and commute to the **chena** plot, possibly sleeping over at the plot in peak seasons. It is not unreasonable that taungya farmers would aspire to this same pattern of life.

### **Can Returns to Taungya Farming be Raised in other ways than Increased Incentives?**

It is evident that although some consideration has been made about what species of trees will produce and survive best under taungya conditions, the question of crops has not been tackled at all by the Forest Department or any other body. Farmers choose their own crop mix and receive no extension advice at all. One reason for this is undoubtedly the attitude of the Agricultural Service in Sri Lanka which has been dedicated to rice and high value/ status crops such as seed potatoes and ignores **chena** crops such as mung beans, millet and chillies. There are no national boards to promote these as there are for rice, coconuts, cashews, tea, pepper and cinnamon, and therefore no extension workers, and there are very few research stations working on these crops.

Yet experience in Java (Wiersum, 1982) makes it very clear that using a modern farming approach with high yielding varieties, better land preparation and fertilisers, vast increases in production of agricultural crops can be achieved in a taungya system (in this case the crop concerned was upland rice). For real increases in taungya incomes in Hambantota it would be necessary to do research trials with farmers on tree and crop combinations. Taungya is at present intended to maximise timber production, but in the long run a system which produces less wood and more crops may be preferable. At present for example permanent crops such as banana are not permitted in taungya plots, which are seen as temporary, although presence of crops such as these would encourage more attention to maintenance. An alternative combination might allow larger profits on smaller plots of land and thus increase the employment generation of a given area.

### **Should Taungya Farmers be Offered Permanent Places of Residence?**

It is policy of development in the district to discourage **chena** cultivation because increasing land pressure due to population growth is resulting in shorter and shorter fallow intervals and in rapidly deteriorating soil quality. Instead, the aim is to find settled forms of agriculture which are ecologically sustainable and which offer a basis for private and public investment in housing and services as well as maintaining environmental security. A modified form of taungya was proposed in 1969 by FAO/UNDP in which 30 acres would be cultivated over a 20 year cycle; under such a scheme a farmer might be given a small but permanent homegarden area for his own use, around which land would be earmarked for his taungya plantation. Central services might then be provided to a small group of such farmers. This suggestion was at the time rejected by the Forestry Department but perhaps the professional climate has changed sufficiently for this kind of a proposal to be reconsidered. One difficulty to be overcome is political unwillingness to sanction such large areas for individual families; even the 5 acres currently allocated to taungya is considered large, as **chena** farmers are mostly permitted 2 acres per year.

An important question would be, would farmers accept this and live permanently in this place or would they be drawn still to a permanent home elsewhere? At least some of the farmers in Hendilla have paddy lands which they presumably would not abandon; about half of the remainder in the surveys had small homegardens to which they return in dry season, although these are often shared with lateral members of the family. The others have even less in the way of competing resources. Careful selection of the less well endowed taungya farmers would be necessary; and the final crux would probably be a reliable source of drinking water. If this is assured, there would appear to be a good chance that at least some of the farmers would move permanently to such a new forest settlement.

### **What Alternative Forms of Tree Production should be Considered?**

While a modified rotating form of taungya is under consideration, it may be noted that from the environmental point of view of maintaining soil quality, a permanent agricultural system with a high proportion of trees may be as desirable as plantation of forest. As there is as yet no management plan in the district for economic exploitation of existing forest areas, and as the demand for agricultural land is increasing, and unemployment remains high with no alternative to **chena** farming for the majority, it might be reasonable to question whether state owned forests should in fact be expanded except in such areas as catchments where there is a recognisable conservation requirement. There has been almost no research in Sri Lanka as yet into such dry zone agroforestry systems but experimentation is clearly justifiable at this point to try to develop them. Forest Department initiative in this direction should therefore be supported and coordinated with efforts of other departments; the dry zone deserves and requires a great deal more attention than it is getting at present

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