

# **THE CONTRIBUTION OF FARM FORESTRY TO RURAL LIVELIHOODS: A CASE STUDY FROM EASTERN GUJARAT**

by  
*Czech Conroy*

---

## **PHYSICAL, SOCIAL AND ECONOMIC CONDITIONS IN THE SURVEY AREA**

The area selected for this research was the Panchmahals District of Gujarat State, India. The Sadguru Water and Development Foundation has been working in this District since 1976, in the two Talukas of Dahod and Jhalod. Tribals constitute 92% and 85% of the populations respectively in these Talukas, which are among the very poorest of the tribal areas of Gujarat (SWDF, 1989).

Nearly all of the tribal people are cultivators and the overwhelming majority own land. There is very little landlessness. The main crops are maize, paddy, wheat and gram. Most agriculture is rainfed, with irrigation covering only 4-10% of the cultivated land. Much of the area is hilly and only about half of the land is suitable for arable farming. As a result, most farmers are only able to grow one crop a year, and during the rest of the year there is heavy seasonal migration. There is no substantial off-farm employment in the area, and 50-70% of the working age population (women as well as men) migrate to other parts of Gujarat. The main types of work found are as labourers in building construction and road works in the cities of Baroda, Ahmedabad and Surat; and as agricultural labourers, mainly in Kheda District (Cohen, 1990:9).

The area used to be heavily forested. During the last few decades, however, the natural forests have gradually disappeared. Although twenty five per cent of the area is still classified as 'reserved forests', remote sensing has shown that only about three per cent of this land has tree cover. In many so-called forest areas an almost desert-like landscape exists, with not a tree to be seen for miles (Jagawat, 1988:2). Trees are also few and far between on privately owned land.

SWDF initiated a social forestry programme in 1982, encouraging tree planting as an appropriate land use system on private marginal land that was not well-suited to agriculture. Virtually all of the trees planted in 1982 and 1983 were Eucalyptus. Since then SWDF has encouraged participants to plant other species as well, but Eucalyptus remains the favourite species overall, for both men and women. The programme had expanded greatly by 1991, when 3,842 people from 16 villages were expected to plant four million seedlings (SWDF, 1991:13).

## **FUELWOOD**

Before planting Eucalyptus villagers had relied primarily on dung as a fuel, but also on fuelwood collected from outside the village. Some had also bought fuelwood. In addition, agricultural residues were used, and still are, to some extent, but none of the villagers mentioned this as a

---

*Social Forestry Network Paper 12g* (ODI, Regent's College, Regent's Park, London)  
Summer/Winter 1991.

source of fuel. In a survey of women in Shankerpura and three other villages, Grant (1989) found that people (primarily women and children) used to have to spend 6-8 hours every two or three days to collect 20 kg of fuelwood: mainly from forest lands as much as 10 km away.

All villagers in this survey area are now self-sufficient in fuelwood; but nearly all of them still use some dung to light the fire. They also use some dung every day during the crop-growing months to heat their plough blades so that they can sharpen them again. The large amount of dung that is no longer used as fuel is used as fertilizer instead—a positive externality (environmental and agricultural) arising from the social forestry programme.

## **MARKETING**

It is clear that the situation in the two survey villages is markedly different from that found in certain other parts of Gujarat and elsewhere in India. The main reasons for this seem to be as follows.

The fact that Jhalod is only 10-11 km away from the two survey villages, and is frequently visited by villagers, makes it very easy for them to visit one of the wood traders to check prices: whereas small farmers elsewhere may be further away from organized wood markets.

Knowledge of market prices may be a necessary condition for obtaining a good price for trees, but it is not sufficient. If producers have to sell to middlemen they may be obliged to accept prices that are only a fraction of the market price, even if they know what the market price is. Two factors that have forced small farmers in other parts of India to sell to middlemen or retailers have been state regulations, and difficulty in finding buyers.

### **Regulations**

One important difference between the survey area and other Indian states is that no permits are required in Gujarat for the felling or transit of three species of trees: Eucalyptus, Leucaena and Casuarina. Where permits are required small farmers tend to have difficulty in obtaining them, and this is one of the reasons why they sell to middlemen, at a low price, rather than directly to buyers.

In Uttar Pradesh, for example, farmers need to obtain a transit permit from the Forest Department, which in turn requires them to obtain a land ownership certificate from the Revenue Department (Saxena, 1990b:17). Saxena notes that "[f]ew farmers are able to get these certificates", and that they therefore sell the standing crop to a trader who 'deals' with the bureaucracy (ibid).

Shah (1988) noted a similar situation in West Bengal where "a plethora of rules, regulations, laws and procedural formalities ... [relating to the cutting and selling of trees] have to be completed before a transaction is finalized" (p 14). This stimulates 'rent-seeking' tendencies among traders who seek huge fees for these specialized services.

### **Finding Buyers**

A second factor that has forced farmers elsewhere to sell to middlemen is the difficulty that they

have had in finding buyers to whom they can sell their wood directly. In the survey villages, however, many buyers come directly to the producers during the season.

There are two possible explanations for this difference. One is the fact that there is a large market for Eucalyptus poles within the 'catchment' area (10-20 km) of the villages. The other is that there is a high probability of a buyer being able to find a seller in the two villages.

## **ATTITUDES TOWARD EUCALYPTUS AS A CROP**

In various other parts of India many farmers have been bitterly disappointed with the benefits that they have derived from growing Eucalyptus, and a large proportion have stopped growing it and have reverted to annual crops instead (Haydock-Wilson and Trivedi, 1988:1; Saxena, 1990a:4). No such disillusion with Eucalyptus was found in the survey of farmers in Jhalod: indeed, Eucalyptus remains their favourite species. The reasons for this appear to be the following—

**Firstly**, most farmers in the other areas mentioned above had planted Eucalyptus primarily on good agricultural land where they had previously been growing annual crops. The opportunity cost, therefore, was the profit that they would have otherwise made on standard cropping cycles. Thus, they would only have been satisfied if the profit they made from Eucalyptus was greater than that which they had foregone. Nearly all the farmers working with SWDF, on the other hand, planted their trees on marginal land and on field boundaries. Thus, their opportunity cost was lower, and almost zero in some cases.

**Secondly**, most of the other farmers, especially large farmers, had undertaken farm forestry primarily as an income-generating activity (FAO, 1986; Saxena, 1990a:7; Saxena, 1990b:2-3). In contrast, farmers in the survey villages planted trees as much for direct use as for sale.

**Thirdly**, farmers elsewhere in India had unrealistically high expectations of the prices that they would get for their wood (see, for example, Saxena, 1990b:14). Farmers in the survey villages, it seems, did not have such unrealistic expectations, and hence have not been disappointed. Related to this is the fact that the planting of Eucalyptus in the Panchmahals District as a whole has been far less intense than in certain other parts of India, and hence the local market for poles has not been saturated. Saturation might yet occur, of course, but people interviewed by the author, including an official of the Gujarat Forestry Department, thought this unlikely.

**Fourth**, poor farmers in other parts of India have had difficulty in marketing their wood, whereas those in Shankerpura and Gamdi have not.

**Fifth**, in some areas the growing of Eucalyptus has resulted in technological externalities, such as lower water tables and reductions in yields of annual crops adjacent to Eucalyptus plantations (Saxena, 1990a:16-17; 1990b:14). Such externalities are barely present, if at all, in the survey villages. The water table has risen in the area due to the construction of check dams to capture a greater proportion of rainwater and recharge the groundwater. The reason that yields of annual crops adjacent to eucalypts have not declined may be that any removal of nutrients by the eucalypts has been counterbalanced by increased applications of fertilizer. These increased applications have been made possible largely because Eucalyptus has replaced dung as a rule, enabling farmers to use the dung as fertilizer instead.

## **SUMMARY**

This study has shown that trees play several important roles for the people surveyed. They are used directly for various purposes, primarily for fuelwood, house construction, and making agricultural implements. They are also sold, providing a valuable additional source of income for these poor people, and often used as insurance substitutes.

Nearly all of the people interviewed had also used some of their trees for renovating and extending their existing houses and/or constructing new ones. If they had not had their own wood they estimated that they would have had to spend Rs 17,370 on average to purchase an equivalent amount.

As a result of SWDF's social forestry programme all households have become self-sufficient in fuelwood, which has given rise to two major benefits. First, people (especially women and children) no longer have to spend large amounts of their time collecting fuelwood and dung, often over several kilometres; and second, this has released large amounts of dung for use as a fertilizer so that soil nutrients are maintained.

Finally, nearly all respondents had used their trees to make ploughs, yokes and samars, their main agricultural implements. Although less wood was required for this purpose than for the other two, they regarded this as the most important direct use of their trees.

As well as using their trees directly in various ways, people have been able to sell them, thereby obtaining a significant new source of income—a mean income of Rs 6,085 per household. This income is spent on a wide range of things, both consumption (eg food and clothes) and investment (eg bullocks, jewellery), and has enabled households to increase their assets and improve their standard of living.

This study has also shown that the absence of an insurance market, combined with imperfections in the credit market, has forced people to rely primarily on the sale and mortgaging of assets as their insurance substitutes. Various options are used, but the sale of trees was the one cited most frequently. When respondents were asked to rank loans and assets as options for coping with contingencies, the sale of trees was the only option mentioned by all of them, and they all gave it as either their first or second choice. On the basis of both of these criteria, it is clear that trees have become their most important option for dealing with contingencies.

This is quite a remarkable change, given that the farmers only started planing trees on a large scale in 1982 and 1983. Partly because of the trees and partly because of other improvements to their standard of living, the less favoured insurance substitutes, such as land sales and seasonal migration, appear to have largely ceased.

## **POLICY IMPLICATIONS**

The marketing situation, in which the small farmers interviewed are selling their trees directly to buyers, at reasonable prices, is different from that found anywhere else in India, as far as the author is aware. The usual situation is one of the producers selling to intermediaries at a fraction

of the market price.

There can be little doubt that one important factor in the survey area is the absence of state regulations on the cutting and transit of Eucalyptus trees, which has helped to avoid the kind of exploitative, rent-seeking behaviour by middlemen that occurs in other Indian states. This finding supports the case (see, for example, Chambers et al, 1989:195; Saxena, 1990a:34) for the rescinding of such regulations in other states.

Eucalyptus is the most widely used tree, and is still the tribals' favourite species overall. It does not seem to have given rise to the negative environmental and agricultural externalities that have been experienced elsewhere; nor has there been a collapse in the markets for its products. These findings show that Eucalyptus can be a very beneficial species for poor farmers in certain circumstances. It would be unfortunate, therefore, if government agencies in India sought to discourage its use indiscriminately on the basis of ill-founded generalisations about its harmful effects.

## REFERENCES

- Cohen, A**, (1990), 'Baseline Survey of Three Villages: Rajudia, Kheda, Sabli, Panchmahals District, Gujarat'.
- FAO**, (1986), 'Case Studies of Farm Forestry and Wasteland Development in Gujarat, India', FAO.
- Grant, N**, (1989), 'A Study of the Impact of the Sadguru Water and Development Foundation's Social Forestry Programme on Women'.
- Haydock-Wilson, P**, and **Trivedi, D**, (1988) *Eucalyptus — the five year wonder*, VIKSAT.
- Jagawat, H**, (1988), 'A Story of Massive Forestry Programme by the Entire Village Community on their Own Land in the Village of Shankerpura, Gujarat, India, and Its Impact', Sadguru Water and Development Foundation.
- Saxena, N C**, (1990a), *Farm Forestry in North-West India*, Ford Foundation.
- Saxena, N C**, (1990b) *Trees on Farm Lands in North-West India: Field Data from Six Villages*, Social Forestry Network Paper 11d, ODI.
- Shah, T**, (1988) *Gains from Social Forestry: Lessons from West Bengal*, IDS Discussion Paper 243.
- SWDF**, (1989) Five year perspective plan of the Sadguru Water and Development Foundation (for integrated watershed development), 1990 to 1994.
- SWDF**, (1991) Annual Report for the Year Ending 31st March 1991.

## Acknowledgments

I would like to thank Mr and Mrs **Jagawat**, of the Sadguru Water and Development Foundation for their support and for sharing their extensive knowledge of the local people with me. I would also like to thank **Beena Jagdishchandra Shukla** for being such a good interpreter, **Ajay Kumar Pandey** for briefing me on forestry aspects, and the rest of the SWDF staff for making me feel welcome, **Dalpatbhai Noorjibhai Damor** for the information he supplied and **Savsingbhai Mitiyabhai Damor** for organizing most of the interviews.

I would also like to thank **Robert Chambers**, **Melissa Leach**, **Simon Rietbergen** and **N C Saxena** for their valuable comments on the report, **Gill Shepherd** for her advice, and **Richard Palmer-Jones** who supervised the dissertation on which the report is based.

Finally, this study would not have been possible without a Travel and Study Award from the **Aga Khan Foundation**, to whom I am extremely grateful.