



## The Problem

After natural forest remnants, cocoa farms are the most important source of timber outside the forest reserves in the high forest zone of Southern Ghana. The forest reserves are under great pressure from the timber industry. The off-reserve resource is a vital buffer that allows the Forest Service to make progress towards sustainable forest management on the reserves. There have been important recent policy changes in off-reserve concession arrangements and farmer rights. Under the 1997 Timber Resources Management Act (Act 547), farmers have the right to refuse permission to concessionaires to fell a timber tree. They also have the right to negotiate 'fair compensation' for crop damage. A 'certificate of conveyance' legalising the timber should not be issued if there are outstanding disputes at the time of the 'post-felling inspection'.

However there remain strong disincentives for cocoa farmers to retain timber shade trees, as opposed to non-timber shade trees. Without tenure rights they get no share of the value of the trees. And they have rarely been compensated adequately for the damage to their cocoa by concessionaires. Thus many farmers destroy valuable timber trees early on to avoid the risk of uncompensated damage. The irony is that farmers cite species such as *odum* (*Milicia excelsa*), mahogany (*khaya* spp.) and *sapele* (*Entandophragma cylindricum*) as good shade trees.

## The Research Results

The main findings from an economic study in Diaso District, Central Region, in November 1998 were as follows:

1. It is essential to separate out compensation for damage and positive incentive payments. Within the former, there are two types of compensation:

(a) Compensation for physical damage to cocoa and/or crops by concessionaires. Calculations show that official rates were on the low side. Even more important was the problem of non-payment. According to the forest law, farmers can object (following the *post-felling inspection*)



to the level of compensation offered. This prevents the *certificate of conveyance* from being issued. However few farmers realised this, and many did not know the official compensation rates. According to calculations in this study, if (typically) 30-50 cocoa bushes are damaged, compensation should be in a range of US\$150-250 per timber tree.

(b) Compensation for cocoa yield loss due to loss of the tree's micro-environmental benefits. Research data from the Cocoa Research Institute was inadequate for quantifying the relationship between cocoa yield and tree shade. But a farmer survey indicated that a fair basis for compensation could be a 30% loss of cocoa yield until the shade is replaced by a replacement tree. In a typical tree-felling situation, the cocoa yield loss was estimated to be in the order of \$40-50 per timber tree.

2. This compensation ( $a + b = \$190-300$ ) would theoretically make the farmer indifferent between choosing a timber or non-timber shade tree. Therefore an additional positive incentive payment



is essential. This need not be high since the amount of land, labour and capital sacrificed by the cocoa farmer is not high. What needs compensating is the species identification skills of the farmer. The view of the cocoa farmers was that one third of the 'value' of the timber tree would be fair. However calculations showed this to be excessive in terms of the effect on the returns to the concessionaires.

3. Calculations of concessionaire profit margins showed that miller-concessionaires could comfortably pay cocoa farmers 10% of the stumpage value of the timber trees for 'high' and 'moderate value' species (\$156-208 and \$97-130 respectively ) in addition to compensation for damage and cocoa yield loss.
4. In the case of the lower value species, concessionaire profitability was much lower. This would make it difficult for them to make an incentive payment. But with the new forest fees distribution, the Forest Service is to receive a greatly increased share of forest revenue. For the low value species, there are strong arguments that the Forest Service should pay 10% (\$25-33) of the stumpage value.
5. The Forest Service could also afford to pay the cocoa yield loss payment for all timber species. This could 'sweeten the pill' for the timber industry. It would be equitable in terms of the Forest Service's off-reserve 'management' obligations.

## Recommendations

- Full compensation to cocoa farmers by concessionaires should be vigorously pursued by the Forest Service. The Collaborative Forest Management Unit of the Forest Service should work to ensure farmers know their rights under the 1997 Timber Resources Management Act. Socio-economic surveys, forest reserve planning workshops and District forest development plans have raised awareness in some areas, but Districts need to be encouraged to embark on publicity campaigns using well-designed materials. Ideally farmers should also receive market information on the value of the trees. Strong training and support will be required for field staff to uphold farmer rights.
- An increase in official compensation rates by 25% per cocoa tree damaged or destroyed, thence annual increases linked to the cocoa bean price.
- Compensation should include damage due to skidding and loading; damage due to skidding through other farms should also be compensated.
- For high and medium demand timber tree species, miller concessionaires should pay the cocoa farmer 10% of the stumpage value.
- The Forest Service should pay 10% of the stumpage value of lower demand species, and a 'timber tending toll' in lieu of the loss of cocoa yields for all timber tree species.



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