

RURAL DEVELOPMENT FORESTRY NETWORK

Trees as Out-grower Crops for Forest Industries: Experience from the Philippines and South Africa

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Summary

Arrangements under which small farmers grow wood and fibre crops under contract to a forest industry company can be beneficial to both sides, but need to be carefully designed and implemented if they are to avoid having adverse impacts. This paper reviews the experience of two long-running and generally successful schemes of this nature. The need to understand the type of smallholder situation for which tree out-growing could be appropriate is emphasised. The importance of there being an equitable balance between company and growers, and of developing institutional arrangements to bring this about, is also noted.

Introduction

Forest industries in many parts of the world draw a large part of their wood and fibre raw material from small growers, generally farmers. The potential advantages of such arrangements include the benefit to industry of limiting the need to invest in land, labour and the other costs of managing and harvesting a forest resource, and the benefit to growers of an assured market and access to technical services. At first sight it is therefore surprising that such arrangements have been developed in only a few locations in the developing world, and that these have attracted only limited attention in the development literature.

Industry-small grower linkages in developing countries can take several forms. In some, companies acquire their supplies through trading intermediaries, and do not have a direct relationship with the growers. Others are initiatives of the growers rather than the companies, such as co-operatives to create a collective marketing or even processing channel for their outputs. Others involve companies contracting

to rent land from farmers on which to grow trees, or contracting farmers to grow trees on company or public land. Yet others obtain supplies from nearby farmers who are linked to the company as 'out-growers'.

The present paper is intended to provide a brief review of available information about two of the largest and longest established schemes of the more conventional out-grower form, in which a forest industry will enter into agreements with farmers in the vicinity of the processing plant, under which the farmers will grow trees on their own land for which the company will provide an assured market, and usually a variety of support services. The schemes covered are the Agroforestry Tree Farming programme of the Paper Industries Corporation of the Philippines (PICOP), and three tree out-grower programmes in KwaZulu-Natal province in South Africa.

The focus in the two sections that follow is on reviewing how these schemes originated and have evolved, and on assessing their functioning in terms of their impact on participating farm households. The concluding discussion section examines the circumstances under which such out-grower arrangements can be appropriate, and explores the main issues that can arise for the participating growers.

PICOP Agroforestry Tree Farming Scheme, Philippines

Background

PICOP has a large pulp and paper and timber operation in eastern Mindanao in the Philippines, based on a number of forest concessions on public land operated under 25-year government Timber Licence Agreements (TLA). As supplies of pulpable species in the TLA areas became depleted, the company began to build up plantation resources within its concessions, and also turned to outside suppliers for part of its needs. In selecting its strategy for doing so, one of its considerations was to enable larger numbers of the surrounding population to benefit from its presence, and so strengthen relationships between the company and adjacent communities.

In 1968 it began a programme to encourage nearby farmers to devote part of their land to growing *Albizia falcataria* on eight-year pulpwood rotations. This species was selected on the basis of extensive local trials by the company, as a high yielding, easily grown, coppicing tree with good pulping qualities. PICOP would

provide planting stock and technical advice, and would assure a market for the output at a guaranteed minimum price. To this end the company created a strong extension service, and developed the necessary road infrastructure.

Participation grew slowly until 1974, when a loan facility was made available by the Development Bank of the Philippines (DBP), supported by a World Bank loan. Loans to farmers were intended to cover 75 % of establishment and maintenance costs up to, but excluding, harvesting, with loans to be repaid at harvest. Recipients were free to sell their output to other buyers but had to give PICOP first refusal (Tagudar 1984, Hyman 1983). Though less than a third took out loans, numbers of participating farmers grew rapidly thereafter, to 3,800 in 1980 (Matela 1984) and 4,530 in 1985 (Kato 1996). In 1992 there were 4,200 growers with 26,000 ha under tree crops, which supplied 226,000 m³ of wood to PICOP in that year (Kato 1996).

In 1982 a freak typhoon in the area caused extensive damage to the farmer grown plantations, resulting in a considerable loss of confidence in tree growing as a smallholder activity. After pressure from those affected, additional loans were made available in 1983-84 to help farmers recover from this setback. However, in 1990 the DBP loan facility was terminated, leaving growers to self-finance further expenditures (Kato 1996, Lamug 1995).

In 1991 additional funding was secured for a new loan facility, backed by USAID, which was used to launch a new scheme entitled Livelihood Enhancement through Agroforestry (LEAF), also directed at smallholders with title over their land. LEAF has a strong institutional component, encouraging the development of co-operatives and multiple activity livelihoods. Some of the co-operatives have become active in trading wood, buying from growers and selling to PICOP. This reflects the fact that smallholder tree growing has become widespread in the region among farmers outside the PICOP agroforestry scheme, that other wood buyers also now exist in the area, and that PICOP has consequently been diversifying its sources of supply. By 1995, there were 700 tree growers enrolled in LEAF, of whom about a half were apparently also participating in the agroforestry programme. In addition, PICOP has recently begun to offer advice on planting and harvesting to farmers who prefer to grow trees on their own, outside either of the two company-supported programmes (Kato 1996, Lamug 1995).

PICOP has also developed two schemes, under the title of the Modified Social Forestry Program (MSFP), for those occupying land within its concession areas. This is in line with the national Integrated Social Forestry Program, designed to give long term occupants of upland forests security of tenure or use rights. The MSFP provides two forms of tree growing contract. One, started in 1984, for those who can prove that they were already occupying the land between 1975 and 1981, encourages the intercropping of trees with cash and subsistence crops, under 25 year contracts renewable for a further 25 years (Tree Growers Contract (TGC)). The other, from 1989, intended for those who have settled in the concession area more recently, contracts them to plant trees, again inter-cropped with food crops, but requires them in due course to turn the plantation over to PICOP and then leave the area (Plantation Development Contract (PDC)). Under both schemes, in contrast to the agroforestry and LEAF schemes for farmers on private land outside the concession area, the trees are the property of PICOP and cannot be sold elsewhere. The remuneration to the growers is thus essentially payment for the labour they expend on growing trees on land controlled by PICOP. In addition, the company provides assistance to community health, schooling and related services. By 1994 there were 1,774 participants in the TGC scheme (with 1,997 ha planted), and 709 in the PDC scheme (1,810 ha planted) (Lamug 1995).

After more than 25 years of involvement with farmer tree growing, PICOP has thus evolved a number of support activities, reflecting both the growth and diversification of tree farming and wood markets for smallholders and other private farmers in the surrounding area, and also national policy initiatives to improve the position of those settled on upland public forest areas. In the rest of this section the focus is on the largest of the schemes, the long running agroforestry programme working with independent farmers, and with the LEAF programme developed from that. The assessment, which covers the operation of the programmes up to 1995, is based on a number of studies and reports on the scheme at different stages in its life (Kato 1996, Lamug 1995, Tagudar 1984, Hyman 1983, Arnold *et al.* 1979).

Tree out-growing and farmer livelihoods

The initial farmer population in the programme area consisted mainly of smallholders who had settled on land that had been classified as alienable and disposable. Farmers were growing principally subsistence crops. Farm size was large (averaging 11 ha among farmers participating in the tree growing scheme),

and substantial areas were devoted to low input crops, grazing or other extensive uses – or were idle. The original extension programme was designed to encourage farmers to adopt an agroforestry model – comprising a mix of crops, livestock and trees, with the trees occupying the more marginal land. Tree establishment was to be spread over four years, to even out costs and returns.

One reason why only one third of farmers participating by 1981 had taken out a loan was probably that those planting only small areas had no need of a loan, as establishment could be covered by their own labour, and/or they found the assured market provided by PICOP to be sufficient incentive. Another reason was that land was used as collateral, and loans were therefore only available to those with legal title to the land or proof of legal occupancy on alienable and disposable land for at least ten years. Until this was relaxed to include land covered by homestead or free patent leases, and five years of occupancy, this severely restricted the number of potential growers who were eligible. Also, the lending institution originally required a commitment to plant at least 10 ha; which had to be reduced to 5 ha to accommodate many prospective growers. Many farmers also complained that cumbersome and time consuming bureaucratic procedures involved in applying for and securing a loan discouraged them from doing so. Of those who did take out a loan, a 1981 survey found that more than two thirds would have had difficulty in financing the costs of a tree farm of 5 ha without a loan (Tagudar 1984, Hyman 1983).

In practice, few farmers implemented the recommended agroforestry model. In part this was because the loan terms required them to take out a separate loan for the non-tree component. Also, inflation meant that the sums loaned were soon needed in full for the tree growing. In addition, most farmers cleared and planted the whole area in a single year, finding this to be more efficient than the proposed staggered timing. However, this caused considerable problems for farmers at the harvesting stage, as the contracts with PICOP required them to fell and extract the logs. As the plantation areas involved were frequently too large for growers to handle without hiring help, but harvesting costs had not been covered by the loans, many encountered financial difficulties in doing so. Though PICOP in due course offered assistance at cost, recovering these costs from sale proceeds due to farmers, the inadequacy of the size of the loan continued to cause problems to those participating in the agroforestry scheme. (Loans available under the LEAF scheme do include coverage of harvesting costs.)

The need to try and contain costs, combined with low prices for the wood, particularly after the 1982 typhoon had knocked down volumes far in excess of what PICOP could absorb, led tree growers to shorten rotations from the intended eight years to six years. Many also cut back on maintenance of their stands, neglecting weeding and thinning, relying on natural regeneration rather than replanting, and favouring selective cutting over clear felling.

Though the company complained that some of these changes had detrimental effects on yields, they seemed to have improved the profitability to the grower. A 1983 study (Hyman 1983), that examined the economics of a considerable number of alternative woodlot management scenarios, estimated that the practices adopted by farmers would enable them to earn an acceptable return in a wider range of circumstances than would be possible with the prescribed practices. A 1996 study (Kato 1996) concluded that returns to farmers had improved considerably since 1983, partly due to better prices and partly as a result of farmer success in controlling costs by shifting to natural regeneration methods.

A number of reports comment on the extent to which farmers withdraw from the programme after the first rotation of a tree crop. The 1981 survey of loan-financed participants found that 12 % had decided not to renew and a further 50 % were undecided (Hyman 1983), and a 1984 PICOP report states that ‘many tree farmers had shifted to other crops after harvesting’ (Tagudar 1984). However, of the 26,000 ha under trees in 1992, 17,000 ha were reported to be second and third growth stands, while 9,000 ha were new stands (Kato 1996). If tree farm sizes were of roughly similar size, this would imply that 65 % of tree growers had renewed their participation in the programme at least once.

The shifts in and out of tree growing support evidence from the 1981 survey that a substantial part of the planting in practice was on land that could support other crops, rather than idle ‘marginal’ land. At least part of the land that 45 % of the farmers surveyed had put under trees had previously been used to grow food crops, and part of 31 % of the sites had had non-food crops on them. Coconuts, durian and jackfruit were popular alternative crops (Hyman 1983). It also seems likely that the often substantial one-off payments from sale of plantation output that they received, enabled some farmers to shift into other activities outside of agriculture and forestry.

Some of the withdrawals from the PICOP scheme probably also reflect perceptions that other buyers in the area provide more lucrative outlets for wood crops, and growers' reduced dependence on PICOP as tree growing skills and sources of planting stock have become widely available. Concern among participants that the price paid by PICOP is low has been expressed throughout the programme (Lamug 1995). To deal with this concern the DPB created a third party facility to monitor the prices being offered to the growers it had financed. However, during much of the period, the company has had to operate in conditions that affected its position over prices – i.e. government regulation of newsprint and printing paper prices, the effects of the 1982 typhoon, and more recently financial problems affecting the company as a whole. With growing numbers of those participating in the agro-forestry programme selling to other buyers, PICOP has been reducing its reliance on them and increasing its use of the trading co-operatives created with support from the LEAF programme, and other marketing intermediaries, in order to draw on the larger numbers of tree growers that now operate in this part of Mindanao.

Tree Out-grower Schemes in KwaZulu-Natal, South Africa

Background

Forest industry in South Africa is based almost entirely on planted forests. Increasingly the resource has become concentrated in the holdings of a small number of large companies, notably the Sappi and Mondi companies which have large pulp and paper mills in the north-east of the country. However, a substantial share of the planted area has always been accounted for by small growers, principally farmers. As the companies have increasingly come up against constraints on acquiring, or sometimes retaining, land for forestry, interest in expansion of industrial wood output from the small grower sector has increased.

The bulk of the small grower planted area is accounted for by white commercial farmers. In one industry programme, Sappi's Management Assisted Planting project, farmers and other landowners have been contracted to plant up land in units of not less than 50 ha. Farmers are provided with seedlings free of cost, extension advice, and access to loans at preferential rates, and must sell the harvest to the company.

However, a large part of the output of private timber growers is marketed through co-operatives, such as the NCT Forestry Co-operative which has 1,300 members. This came into existence in part to counter the weak negotiating position of the private growers with respect to the large processing companies, and to provide their members with more remunerative alternative outlets. Another marketing co-operative, the South African Wattle Growers Union (SAWGU), markets wattle bark and the bark extract. Wattle is an important crop, undemanding to grow, and with multiple uses, and has also been taken up by many black smallholders, who have become members of SAWGU in large numbers in recent years. SAWGU enables members to share in profits from its downstream activities, provides access to low cost insurance for their tree crops, and an extension service to smallholder growers. It has also introduced training in technical aspects of wattle growing, and in development of committees and small businesses. Recently the wattle bark industry has also made available loans for the seed, fertilizer and fencing materials inputs that growers have to buy in.

In addition, several hundred other independent smallholder tree growers have emerged, over the past 20 to 30 years, in what was the homeland region of KwaZulu. This is the region where, starting in the mid-1980s, three tree out-grower schemes for smallholders have been developed by, or on behalf of, Sappi and Mondi. By 1995/96 there were 7,400 growers participating in these schemes. Growers contract to sell their wood to the company, in return for which they receive subsidised inputs, loans (against the collateral of the final harvest) and extension advice. The farmers grow eucalyptus on a cycle of six years on the coast and eight years inland. The average size of farmer plantations is 1.2 ha. The programmes are actively marketed, but participation is voluntary.

The companies have also been encouraging block plantings on communal land in the areas of KwaZulu adjacent to their mills where they already have the farmer out-grower schemes operating. In another development, companies have also been examining various ways of setting up joint ventures with local people that would enable the latter to participate in and benefit from timber growing (Clarke *et al.* 1997).

South Africa, with a long history of plantation forestry, has thus evolved a variety of approaches to providing support to smallholder tree growers producing raw materials for forest industries. Some have their origins in marketing co-operatives

founded by larger commercial growers, which have recently begun to extend their services to smallholders. Others have their origins in industrial initiatives to extend their supply base to include out-grower supplies. In the rest of this section the focus is on the three out-grower schemes that were set up specifically to serve smallholders – Mondi's Khulanathi programme started in 1987, Sappi's 'Project Grow' started in 1983, and a programme run by the Lima Development Foundation under contract to Sappi started in 1984. The assessment draws on a number of reports and studies on these schemes (Clarke *et al.* 1997, Arnold 1995, Cellier 1994, Cairns 1993, Khosa 1993, Friedman 1991, Friedman and Vaughan 1990).¹

Tree out-growing and farmer livelihoods

The schemes operate in coastal and inland areas close to the company mills. Sugar is an important coastal smallholder out-grower crop, and there are a number of other crops that are grown on good agricultural land in the area. Concerns have been raised that tree growing could divert land from staple food production, thereby jeopardising families' food supply situation. To try and avoid this the companies have agreed to target only slope lands unsuited to crop production (though only one scheme offers advice on options other than tree growing). In practice, farmers decide which land will be planted up, and this does include some arable land. However, research studies have found that this does not displace food production to a significant extent. Nevertheless, as shortage of land has been cited as the main reason for not planting trees amongst those who had not joined the programmes, the risk of trees displacing food crops does exist. Availability of labour has also been shown to be a factor, farmers in some surveys citing the high returns to the time required and the ease of management as reasons for growing trees in preference to other land uses, including sugar (Cellier 1994, Cairns 1993).

Competition between trees and grazing has emerged as an issue. Much of this appears to be on land which farmers had previously kept fallow, and which was consequently available to others for grazing, until the farmer exercised his or her right to bring that land under cultivation by planting trees. Friction between tree growers and graziers has been quite widespread. As water availability is a critical constraint for agriculture, there are also concerns that small grower afforestation

¹The assessment is based mainly on a study carried out for the Division of Forest Science & Technology (now the Division of Water, Environment & Forestry Technology), CSIR, South Africa (Arnold, 1995). In addition to the published sources cited, that study draws on information from researchers and managers involved in the programmes described.

might reach a scale that would cause stream flow to drop below what would be needed (Cairns 1993).

Studies show that tree growing in KwaZulu is but one source of income in the households involved, and that those participating see it as being principally a means of accumulating savings. A substantial proportion of the woodlots are owned and managed by women. Generally they had control of the resulting income, but for some a husband's decision to plant trees had added undesirably to their workload. Generally, though, women were found to be enthusiastic about tree growing. However, profitability has been shown to be highly variable; important factors being distance from the mill and productivity, which can vary considerably between growers.

The evidence available thus indicates that the schemes can provide a useful addition to smallholder incomes, and do not usually divert land or labour from other activities. However, there are a number of features about the functioning of the schemes that have attracted critical comment. These mainly concern the degree of dependence on the companies, and a lack of balance between the growers and the companies in the arrangement.

Growers have no say in the terms of the contract, which is a uniform document drawn up by the company. A substantial proportion of participants surveyed were found not to fully understand what it entailed, with many of them feeling alienated from the process. Many had unrealistic expectations about the income that would accrue, in part due to 'marketing' pressures accompanying the process of information dissemination. Many of the problems between growers and non-growers in a particular locality were also found to stem from insufficient, or incorrect, understanding of what the tree growing programme entailed.

The actual involvement of growers in the tree management operations on their land can also be low. In some cases farmers are effectively leasing their land to the company, which makes all decisions and supervises all operations, which are often carried out by contractors (Clarke *et al.* 1997). This appears to be contributing both to low productivity and poor profitability. The experience of the Lima programme, which only supports farmers who plant and maintain their woodlots themselves, rather than hiring contractors to do so, is that this results in a much higher commitment to and quality of tree crop. Reduced dependence on outside inputs is

also likely to improve the profits that farmers can obtain from tree growing.

With participants contractually obliged to sell to the company, at a price set by the latter, price is also an issue for many. However, the companies find that it is not feasible to enforce the contracts, and in some areas growers are breaking their contracts and selling the timber to other buyers, in part to get better prices, and in part to avoid repaying the loan (Clarke *et al.* 1997).

There is now growing recognition that farmers need to be helped to exercise more control over the process of producing trees on their land. Moves are underway to set up grower associations that would enable producers to deal with the companies on a more even footing, that would provide them with clear and accurate information, and that could function as an independent source of services and support. It has been pointed out that this could usefully draw on relevant experience in SAWGA (e.g. on profit sharing and low cost insurance), and in the larger and better established local sugar out-grower schemes (e.g. on institution building).

Discussion

It would clearly be unrealistic to attempt to draw many general conclusions from such a limited set of experiences. The focus in this section is on information that helps define the circumstances under which tree out-grower arrangements are likely to be appropriate to both industry and growers, and on the main problems that can confront the latter.

The main attractions of tree out-grower schemes have been summarised by one observer as follows:

‘These schemes inject capital into marginal areas and provide farmers with timely and appropriate inputs, professional advice, an assured market and local employment spin-offs. In return the timber companies gain free access to land close to the mills. Responsibility for labour management and certain production risks are delegated to the farmer, the risk of expropriation of land is reduced and the public image of the companies is enhanced.’ (Khosa 1993)

Incentives related to sustainable tree out-growing

The incentives for industry are reasonably clearcut. Out-grower schemes become attractive when they can supply wood at lower cost than the alternatives. As is made clear in the quotation above, decisions about costs can be influenced by indirect factors associated with the holding of land and employment of large labour forces, as well as the direct costs. Thus issues of security of tenure, good neighbour relationships and labour management can be important.

The categorisation of situations under which tree out-growing can be appropriate for smallholders can be more complex. It has been argued (e.g. Arnold and Dewees 1997) that, because of the 'lumpy' nature of revenue from wood crops, they are most appropriate for farm households that have sufficient other income to secure their ongoing needs. Poor households that commit themselves to tree crops as the main, or a major, source of their income are likely to have severe cash flow difficulties in the intervals between tree harvests, with likely recourse to heavy dependence on loans. Thus tree out-growing is more likely to be appropriate for those who can meet their basic income needs from other parts of their farm system, or from off-farm employment, and/or other sources.

Similarly, tree growing is likely to be sounder where growers have access to land which is not needed for food crop production, or for other basic needs. Where trees are adopted in place of other crops, or livestock, there can be a danger that the farm economy becomes more narrowly focussed, and less flexible, and therefore more exposed to risk. Tree out-growing is thus likely to be particularly appropriate for those households where this activity enables them to increase returns to their limited labour resource by making fuller use of idle or underused areas of land. It will also be attractive where prices of tree products, an assured market, and access to technical advice and inputs make tree crops a more stable source of income and/or more profitable than alternative uses of the land.

It is also often argued that small farmers require security of land tenure in order to invest in a long gestation tree crop. This is often the case, though security is not necessarily equated with title to the land in all situations. Where land is required as collateral then title can become a necessary condition. However, one service that out-grower schemes can provide is to help potential growers establish or attain title to land – as happened in the PICOP scheme (where extension agents helped farmers to locate alienable and disposable land, and to deal with the necessary bureaucratic

procedures).

Some reviews of tree out-grower schemes have commented critically that they have not reached the very poor (e.g. Kato 1996). However, the requisites for success outlined above are such that they are unlikely to be appropriate for those with very little land or no land at all. Trying forcibly to fit them into such situations could well be counter-productive. (If the objective is to enable the landless, sharecroppers, and others without security of tenure to the land they occupy, to participate in the benefits that can accrue from producing wood cash crops, other forms of arrangement, such as some of the contract schemes that provide land on which participants can grow trees, may be an option – provided these do not compromise their participants' household food security).

Problems that arise in grower-company relationships

The more frequent and substantial problems tend to be associated with the terms of the agreement between company and growers:

1. *Freedom for growers to sell to other buyers.* Some companies require the growers under contract to them to sell only to them, others do not. Clearly there are advantages for the growers in having a choice of buyer. However, this has to be set against the concern of the company to ensure a measure of security of supply. As this aspect of contracts is usually difficult to enforce, it should be in the interests of companies to negotiate arrangements which growers are willing to adhere to without a restrictive contractual obligation. Too rigid a restriction on sale to others can also put growers at risk if the company becomes unable to meet its commitments to buy from them, or unilaterally withdraws from these commitments. Instances have been recorded of companies in Brazil cutting back on out-grower purchases in favour of supplies from their own forests when demand falls, and of a mill operation in India closing down altogether (Roberts and Dubois 1996). Over time, both company and growers are likely to be better served by a spread in tree growing as a farm crop, and emergence of a broader range of outlets, reducing the dependency of both sides just on the out-grower relationship (as appears to be happening in the PICOP case).
2. *Price.* The imbalance between the bargaining powers of company and smallholders is likely to result in at least a perception among the latter that the

prices they are offered are low. Solutions can include setting up and training grower organizations to better represent them in negotiations, existence of an independent third party empowered to investigate and arbitrate price disputes, and extension of grower-company agreements to enable growers to benefit in a share of the off-farm as well as on-farm profits accruing from their tree growing operations. The emergence of competitive local markets for farmer grown wood is also likely to contribute to more satisfactory prices.

3. *Credit.* This has been important in enabling many growers to participate, but is not always needed. Many of those for whom it would have been available have not taken out loans (e.g. on the PICOP scheme), and some successful schemes have no credit facility (e.g. in Brazil). Unless the grower needs to hire labour, tree growing generally requires very little capital. Some of the analysis of the KwaZulu schemes suggests that availability of credit has sometimes resulted in growers using it unnecessarily – e.g. hiring contractors (at the suggestion of the company) to carry out activities which the farm household could have undertaken, so raising their costs and reducing their profits. A more selective and judicious approach to use of credit seems necessary in some schemes. The experience of agricultural out-grower schemes also suggests that it is desirable that the source of loan funding be separate from the source of services to the grower.

4. *Extension and support.* In their concern to control the yields and quality of the output, company extension services can on occasion prescribe operational measures that are too complex, costly or demanding for farmers to implement. This can be counter-productive, leading to a degree of dependence on contractors that can undermine grower profits and commitment to tree growing. More flexibility often needs to be built in. Some schemes also need to pay more attention to ensuring that farmers are getting help in acquiring necessary new skills, and in planning the other, complementary, parts of their farm system – including help, where needed, in accommodating other tree crops in addition to the industrial species needed by the company.

Many of these issues are components of the broader institutional issue of how to achieve a more balanced and equitable relationship between growers and company. It is increasingly recognised that even the best functioning of present schemes would benefit from the existence of grower associations empowered and trained

both to act on their behalf in negotiations with the company, and to provide many of the services that growers now have no choice but to take from the company. In this, there is clearly much that can be learned from the much longer history of out-grower schemes involving agricultural crops.

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