**NATURAL RESOURCES SYSTEMS PROGRAMME**

***PROJECT REPORT***[1]

## DFID Project Number

**R7957**

## Report Title

A brief history of agriculture in the transition zone of the Brong Ahafo.
Annex 1 of the Final Technical Report of project R7957.

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Overseas Development Institute.

## Date

2002

## NRSP Production System

Forest Agriculture Interface

[1] This document is an output from projects funded by the UK Department for International Development (DFID) for the benefit of developing countries. The views expressed are not necessarily those of DFID.

# Annex 1: A brief history of agriculture in the transition zone of Brong Ahafo

Agriculture within the transition zone of Brong Ahafo has a long history. The area forms part of the zone of intensification and increasing sedentarism of the late stone age era in West and Central Africa, during the Second Millennium BC, broadly following the contours of the forest-savanna margin (Stahl 1993). This has given rise to what archaeologists term the 'Kintampo culture'. Within the transition zone a number of crops came to prominence in human production systems, which do not thrive under either undisturbed forest or savanna environments. These include the yam species, which essentially are vines which have adapted to several months of dry season. They require sunlight and also need tree supports on which to climb. The oil palm likewise requires moisture associated with tropical forests, but also sunlight, as well as fire which encourages the germination of seeds (Andah; 1993; Maley, 2002). These two species are likely to have come to prominence in the transition zone after long periods of experimentation, protection and selection, gradually leading to domestication. Over many years less bitter and more palatable varieties of yams with larger sizes will have been selected in processes which still continue today. These crops were probably harvested originally from the wild in disturbed sites or less thick woody areas. Agriculture then emerged through the management of the environment using techniques which were eventually to give rise to the methods of farm management now classified as "shifting cultivation" or "slash and burn".

A second agricultural complex developed in the drier grassland areas of the transition zone based on the cultivation of sorghum, millets and pulses, including cowpea and bambara beans. These species were important in supplementing yam, which could not be stored throughout the year.

A third complex developed in riverine and valley bottom areas, using flood retreat techniques and flood-tolerant crops such as *Oryza glaberrima* (African rice).

The cereal and pulse and flood retreat complexes provided important risk management insurance against the vagaries of climate and dry phases. Over the centuries there have been considerable shifts in climate and vegetation within the transition zone and forest zone, seeing retreats and advances of species associated with forest and savanna. The late holocene has been identified by palaeoclimatogists as a significant period of desiccation and forest retreat in which significant intensification of flood production technologies occurred. The late nineteenth and early twentieth century was characterised by a wet phase, which was followed by a dry phase around the 1950s (Nicholson,1981; Maley, 2002; 1996;1993). By managing a wide array of crop species and micro-environments which include species adapted to dry and wet conditions farmers developed forms of risk management and environmental management, which assured them highest long-term returns to their labour.

## 1.1 Phases of agricultural development

The increasing integration of West African into the world economy in the sixteenth and seventeenth centuries led to the introduction of new crops, particularly the new world crops - maize, cocoyams, and cassava - and the Asian plantain. Maize rapidly spread into the transition zone areas, complementing and displacing sorghum and millet species which now became the major crops in the drier savanna areas. Plantain and cocoyams became major moist forest crops. While cassava has

become an important crop in transition and savanna areas, its spread outside the coastal areas has in many cases been a twentieth century phenomenon.

### *1.1.1 Colonial Agricultural Policy*

Export crop productions of industrial staples became important in the early nineteenth century when palm oil became the major export. This was largely produced in the transition zone of south-east Ghana with easy accessibility to the ports. With the development of industrial oil palm plantations in southeast Asia, West African oil palm production became uncompetitive and was replaced by cocoa. By the 1920s the Gold Coast emerged as the major cocoa producer in the world and cocoa rapidly spread throughout the semi-deciduous forest belt. During the wet conditions of the late nineteenth and twentieth centuries its cultivation spread into areas which were not inherently suitable for cocoa cultivation. In the Brong Ahafo district cocoa cultivation spread into the Wenchi district as far north as Nchiraa. However, with drier conditions from the 1950s cocoa production became unviable, and with the opening up of Brong Ahafo as a food producing zone for the urban centres cocoa production declined as farmers converted to food crops.

During the colonial period food crop production was neglected. Agricultural policy mainly focussed on the cocoa sector. Only in the Northern Territories was there any focus on cropping technologies, with the Land Planning Areas which were initiated in the 1940s. These largely focussed on soil and water conservation technologies - terracing, manuring, and bans on bush burning. It was only in the post-war setting of the terminal colonial period that attention began to focus on agricultural development elsewhere. The context was agricultural modernisation and adoption of the new input technologies and mechanised implements - large scale mechanized farms using chemical inputs. The first agricultural modernisation project was the Gonja Agricultural Development project in the Northern Region.

### *1.1.2 Agricultural modernisation, input subsidisation and market liberalisation*

In the independence period governments sought to promote the development of large-scale mechanised state farms. The northern transition area was an important zone of focus for state farms. The open vegetation enabled tractor ploughs to be more easily used than in the forest zone in which the dense root mat rapidly destroyed ploughs. The soils were suitable for cereal cultivation. The low population density of this area enabled large areas of land to be acquired by the state for agriculture without problems of expropriating large numbers of smallholder farmers who would have had difficulty gaining other land.

The Wenchi District became an important focus for state farms. In 1962, state farms were established in Wenchi and Branam on former Ministry of Agriculture experimental farms. At Wenchi, the main crops grown were maize, sorghum and yams with cattle. Between 250-300 acres of maize were cultivated. At Branam, 2000 acres were placed under maize, 700 under cotton, 200 acres under yam, and rice was also cultivated. Oil palms and teak were also planted at Wenchi but these were destroyed by bush fires.

The state farms were mechanised. Fertiliser application was low since the soil was recognised as fertile, the large acreages planted precluded intensive fertiliser application on the budget of the state farmers, and increased application of fertilisers did not prove to be cost intensive. On maize a rate of one bag of NPK per acre was applied and yields were around 5-7 bags per acre. The maize was not cultivated on a commercial basis but to get seed yam for planting. No fertilisation was used on

sorghum and yields of 5 bags an acre were achieved. Mechanised field preparation was central to the state farms but was largely experimental.

At both state farms the land was stumped of its tree cover. At Wenchi, Massey Ferguson tractors were used. At Branam, Russian MTZ tractors and ploughs were used. The MTZ tractors proved to be poorly adapted to the local soils and were so heavy that they often got stuck. They also ploughed so deeply that they turned the undersoil over the top soil. Yams were also farmed under mechanised cultivation with ridges. This proved to be inappropriate and the yields were so bad that the state farms returned to hiring labour to prepare indigenous yam mounds. A major problem for yam cultivation was getting staking materials for the yams, since the tree cover on the state farms had been removed by mechanical land preparation. Labourers were sent to cut staking material from the surrounding bush. Without staking the yams provided very poor yields and insufficient staking material could be provided for large acreages of yams. Thus the area under yam cultivation declined.

Despite the production problems encountered by the state farms, tractor services and subsidised inputs were provided to communities surrounding the state farms, to encourage them to adopt modern agricultural technologies..

### *1.1.3 Market liberalisation and crisis of mechanised high input agriculture*

With the adoption of structural adjustment, market liberalisation and removal of agricultural input subsidisation a large number of the state farms and mechanised agricultural projects have collapsed, even in their latest incarnation as private sector companies. Although the Branam State farms became the World Bank sponsored Ghana Livestock Company this company collapsed and has now been taken over as Alhaji Salia Farm. Many other large-scale commercial agricultural enterprises have collapsed in the Wenchi District including Damballa Farms, Dinchini Farm, Wenchi Farm, Akrobi Centronella Farms. A similar fate has also been experienced by other state and non-state agricultural projects, including the Catholic Church sponsored Subinso Agricultural Project, the Ofoman Agricultural Project, the National Reconstruction Corps Project at Kokoago, and the Subinja Irrigation project. A major problem facing all these projects has been generating viable agricultural strategies with the advent of privatised non-subsidised input markets.

The latest wave of medium and large-scale commercial farms are now establishing themselves as tree planting projects, mainly focussing on cashew production, with some teak. A major project is also being established by the government of Ghana, with the support of the World Bank and African Agricultural Bank, to establish a plantation project, with a major focus in the Brong Ahafo region. A national association of tree planters has also come into being.

While the state farms and their various mutations have failed to survive in the Brong Ahafo region, they have had considerable impact on the district, introducing new technologies, and creating a demand for ploughing services and input usage. The stumping of land and adoption of ploughing has also altered the soils in the district, and has created a problem where the destruction of topsoils has made many farmers to be dependent upon inputs. As one worker at the Wenchi State farm narrated “I came here in 1966. When I came most the land around was a forest area, so you could get a good yield without using fertilisers. Most of the farmers were not using the tractor in ploughing because they were not using fertilisers. Tractors came in on a big time around 1972. Now most of the farmers around are using tractors.”

The creation of an infrastructure of agricultural commercialisation and an improved road network to support this infrastructure also led to migration into the transition zone of Brong Ahafo. With the creation of the State Farms many migrants came from the Upper West Region in search of work. While many of these migrants failed to find public sector agricultural work they were able to move into the agricultural sector as farmers. A pattern of farm migration began to establish itself supported by movement of seasonal migrant labourers. Youth from the Upper West Region would move into Brong Ahafo during the yam clearing season (from October onwards) working as daily and contract labour in farm clearance. They would move back northwards with the onset of the clearing season in the Upper West to prepare their farms in April.

This movement of migrant farmers and associated networks of mobile labour into Brong Ahafo, opened up another mode of agricultural intensification based on investments in labour. Two investment patterns thus opened up in Brong Ahafo in the 1970s-1980s:

- Intensification through investment in mechanical land clearance and subsidised inputs;
- Increased production through investment in hired labour, more extensive land clearance and more intensive weeding.

The mechanised-input strategy was more pronounced around areas of state farms and greater concentration of agricultural support services. The use of hired labour became more pronounced in the areas away from the agricultural support services. With removal of subsidised inputs, the main impetus now lies with intensification through hired labour. Many farmers formerly using subsidised inputs find purchase of inputs at market prices to be uneconomic, since the price of their production is undermined by the cost of production of low input farmers investing in labour.

### *1.1.4 Agricultural Research Infrastructure and agricultural information systems*

The postwar developments in agricultural modernisation also led to the creation of a research infrastructure to promote the development and utilisation of new modern varieties and the use of inputs to increase yields per area of land. This is reflected in a number of crop research institutes within the state-supported CSIR (Centres for Scientific and Industrial Research) system or under the Ministry of Agriculture that are involved in adaptive research and the dissemination of improved crops through extension services. This research infrastructure for agricultural modernisation is essentially integrated into the international agricultural research and development centres organised around the CGIAR system. These centres have been organised within a conceptual framework of an international division in agricultural research. Basic research is seen as the province of the major industrial countries in the world. Applied research is carried out by international centres, developing new lines of technology designated as appropriate for farmers in developing countries. The major task of national research services within developing countries is to adapt and package these new designs for farmers within their domains, and work out recommendations which extension services carry to farmers.

As a result of this structure, national agricultural research services are highly dependent upon international centres for technology design, improved genetic resources and recommendation domains. With little funding for independent basic research, most research is concerned with attempting to adapt externally-generated technologies to Ghanaian conditions and institutionalising modern technologies within Ghana. While there have been notable successes in the creation of a national agricultural research technical infrastructure, there have been constraints on the research system. These result in a lack of empirical information on the existing characteristics and dynamics of farming systems.

The formal agricultural knowledge and information system is structured by a framework of modernisation in which the practices of farmers are presupposed to be culturally backward, and farmers are exhorted to adopt new methods. However, much of this rhetoric is drawn from received knowledge in international development rather than from local empirical data and knowledge. Thus, ongoing research into farming systems tends to be structured by the concerns of donors and international research programmes rather than from a more dispassionate investigation of the actual dynamics within farming systems.

Research into farming systems tend to be structured within the larger international research programmes that commission the research, and tends to adopt the rhetoric and ideological positions of the parent programme, such as integrated pest management, low external input agriculture, "cosmovisions" or spiritual worldviews, organic agriculture, soil and water conservation, etc.. There is a notable lack of socio-economic research that examines ways in which farmers are responding to changing ecological, market and policy environments. In recent years participatory approaches have made some headway, including Participatory Rural Appraisal (PRA) approaches. However, this essentially involves farmers making inputs to the programmes of researchers and contributing to their conceptual framework. It does not challenge the perceptions of researchers of the small farmer sector, or lead to new knowledge on endogenous processes of change and adaptation within this sector. Research is predominantly structured by a technocentric focus rooted in systems dynamics, population pressures creating land pressures and the need to adopt new mechanised and chemical input technology or increasingly on new soil restoring technologies such as green manures, agroforestry and soil and water conservation. Little research examines farmers' own innovatory technologies outside of this framework of international research; or the implications of the commodification of labour and emergence of large labour markets based on migrant labour for models of agricultural intensification based on labour-replacing technologies.

### *1.1.5 Environmental policy and information systems*

The conjunction of factors - a dry period, from the 1950s, following a wet cycle in the earlier part of the twentieth century; concerns about global environmental change; and the traditions of colonial crisis narratives about shifting cultivation and unsustainable farming practices - has led in recent years to the proliferation of 'crisis narratives'. These point to poor agricultural practices coupled with population growth resulting in increasing environmental and food security problems. However, these crisis narratives are rarely substantiated by empirical data on farming systems change or knowledge of the processes of change (Leach and Mearns, 1996). They also arise from international pressures to sign environmental treaties, and to implement policies that reflect these treaties.

Without a developed research capacity to undertake complex research into ecological processes and human ecology, nor a stable base of sufficient funding to support this process, received wisdom and ideological conceptions of the small-farmer peasant sector tend to influence policy decisions. These presume a cultural backwardness among small-farmers rooted in colonial conceptions and those of modernisation theory, and the need for small farmers to change their practices and become more receptive to modern technologies and the prescriptions of bureaucrats and other agents of change. While the failures of agricultural modernisation policies of the 1970s and 1980s and the collapse of the commercial food farm sector, should have promoted reflexivity, the recent rhetoric on environment acts as a diversion away from reflection. The policies of cultural modernisation are repeated, now within the environmental spheres. The practices of small farmers are now being seen as harmful to the environment and farmers are being exhorted to change their bad practices to protect the environment.

In contrast with policies of agricultural modernisation, these new environmental policies carry an added moral dimension, relating to the public good and the national heritage. This allows legislation to develop which can criminalize farming practices, such as bush burning. It also allows alternative farming activities such as teak and cashew plantations to be presented as environmentally friendly activities to which donor and state funds can be diverted. These activities become the field of investment of large commercial farmers, who may gain soft loans and grants for environmental projects. Extensive tree plantations may however alienate considerable land from the small-farmer sector and lead to a new appropriation of land, which mirrors the land hoarding strategies of rich farmers who stumped large areas of lands during the 1970s to claim ownership of that land.

## 1.2 Population and migrations in Brong Ahafo

The population of Brong Ahafo is comparatively low. According to the 2000 Population Census Brong Ahafo has a population density of 46 people per sq. km, rising from 31 people per sq. km in 2000. This is the third lowest population density in Ghana. It compares with, say, 109 in the Eastern Region, and 130 people in Ashanti. Within Brong Ahafo, the greater concentration of population is in the southern forested districts, with the northern transition zones being more sparsely populated[1].

### Table 1.1 Density of population by region in Ghana

| Region | Area (Sq. Km) | Population density in 2000 | Population Density in 1984 |
|---|---|---|---|
| Northern | 70384 | 26 | 17 |
| Upper West | 18476 | 31 | 24 |
| Brong Ahafo | 39557 | 46 | 31 |
| Western | 23921 | 77 | 52 |
| Volta | 20570 | 78 | 59 |
| Upper East | 8842 | 104 | 87 |
| Eastern | 19323 | 109 | 87 |
| Ashanti | 24389 | 131 | 86 |
| Central | 9826 | 161 | 116 |
| Greater Accra | 3245 | 897 | 441 |
| All regions | 238533 | 77 | 52 |

*Source: Ghana Statistical Service (2000) 2000 Population and Housing Census: Provisional results.*

[1]The breakdown of population at the district and settlement level will be available later in 2002.

The population of Brong Ahafo is ethnically diverse, consisting of Bono (Brong Akans), Bandas (Nafaana, Pantara, Ligbi) Mo (or Deg), Nkoran and other groups. There has also been a large influx of migrants from the Upper West and Upper East Regions, originally to the cocoa growing districts in Ahafo from the 1920s and from the 1960s to the northern transition zone for food production. Charcoal burning in the district has been largely organised by migrant Sisala charcoal burners from the Upper West.

### *1.2.1 Land Tenure*

Two distinct tenure regimes are articulated in the Brong Ahafo region, which correspond to the ecology of the area.

In the *high forest areas* a family tenure system is articulated and in the parkland areas a more communal tenure system tends to predominate, particularly in the Mo and Banda areas. Within the high forest areas secondary forest fallows are invested in families and uncleared land is invested in chiefs and their stools. Citizens have rights to clear land within the domain of the chief they come under. Once forest land is cleared it tends to be maintained as family land, in recognition of the considerable labour involved in clearing mature forests in which many large hard-wooded trees are dominant (Wilks, 1977). Once land is brought into cultivation farmers tend to return to cultivate it periodically to prevent it from regenerating into mature forest. Soil recycling tend to be higher under secondary forest than under mature forest and secondary forest species may support richer soils than mature forests (Kellman,1969; Nye and Greenland, 1960). Farmers move in a forward direction clearing new lands until those brought into cultivation earlier have regenerated well or until they meet other people clearing from other directions. Through this process of returning to secondary regenerated land which is easier to clear and possibly has better soil conditions than mature forest, clearly demarcated rights in land were recognised which could be transferred to descendants, resulting in the social creation of family land.

In the *parkland and savanna grassland areas*, a different set of conditions pertain. The woodland areas were not as difficult to clear as mature forests, although the undergrowth of grassy species created more problems than secondary forest shrubs. The thinner organic matter layer of the parkland environments, however, needed to be tilled and organic matter built up to gain good crop yields, leading to the labour intensive mounding techniques which developed. Farm land was also vulnerable to annual dry season bush fires. Under these conditions a store of invested labour in cleared fallow did not exist as in the high forest, and the main labour investment was not in transforming high forest into secondary bush but in tilling the soil. Since regeneration was also influenced by occurrence of bush fires, it made sense to select the best available regenerated land at time of clearing rather than focus on clearing land that had previously being cleared. Thus, in the past, farmers freely moved from area to area within the lands over which their settlement claimed ownership, clearing the most suitable regenerated land for making new yam farms.

In recent years a new set of factors have transformed the tenure system in these areas and this has resulted in the appropriation of land as individual and family land. This includes the following:

- the influx of migrants and build up of population leading to increasing land pressures. While land is still available there is growing competition for the best plots. Migrants require land on which to farm and the influx of migrant labourers allows farmers to extend the areas they cultivate through hire labour. Farmers maintain the plots they have

under cultivation to assure that in future they will not have to travel far away from the settlement to gain land. This is achieved by maintaining a constant occupation of farm land, farming in one area and introducing shorter fallowing cycles. Children stake claim to the plots that their close relatives have established rather than going far to open up new land. Gradually a family tenure system comes into being and it becomes difficult to find choice farming land through clearing uncultivated land.

- With the introduction of mechanised land tilling technology, farmers begin to make considerable investment in the land in the stumping of the tree cover to enable tractors to plough the land. They lay claims to ownership of these plots of land through constant cultivation of the plot and replacement of bush fallowing by permanent cultivation and soil nutrient cycling through application of inorganic fertilisers. Some farmers have also engage in land speculation by stumping large areas beyond their farming requirements.

- Permanent claims to ownership to the land are also established through the creation of tree plantations, such as teak and cashew. Many farmers become interested in these crops because it provides them with a secure means of holding on to the land and a cheap way of claiming permanent rights to land. Tree crops also take land out of the potential fallow recycling system, resulting in increasing experienced land shortage in land fallowing systems and pressures to secure rights in land through shorter fallow systems.

Land continues to be available throughout the parkland zone, but the introduction of mechanised cultivation and tree planting technologies creates pressures on land fallowing systems and leads to a scramble to appropriate individual and family farming plots. The major pressures on the land tenure system result from the implications of the introduction of new technologies rather than from population pressures.

### *1.2.2 Population and land tenure*

The low density of population is reflected in land tenure systems. Unlike in some areas of the Eastern Region where over 50 percent of farm plots are contracted in sharecropping arrangements (Amanor and Kude-Dideretuah, 2001), only 6 percent of farmers in the sample contract land in this way. Only 2 percent of plots (of 816 plots on which data on tenure arrangements were made available) were cultivated on a sharecropping arrangement. Land hiring is also not very prevalent. Sharecropping is largely concentrated in the semi-deciduous forest settlement of Buoku, where 11 percent of all farm plots are cultivated on a sharecropping basis. Sharecropping is insignificant in the other settlements, and is very rare in the northern transition zone settlements. Land leasing is also not very common. Only 6 percent of farmers lease land. Unlike sharecropping, leasing is found in all ecological zones. However, it is mainly concentrated at Subinso, Kokoago and Buoko.

### *1.2.3 Main circuits through which land is acquired*

Within the transition zone of Brong Ahafo the main circuits through which farmers gain access to land include the following:

- *Family land* refers to the land which families claim rights in through constant cultivation. This includes the right to pass on the land to descendants. These rights are established through constantly returning to cultivate the land after fallowing, and by constantly preserving or cultivating trees and crops which indicate that the area is not a wilderness.

- *Rights of spouses*. Women often farm on their husband's land, relinquishing rights to their own family land when they take up residence with their husband. However, in some cases a husband without land may work on land provided by the kin of a wife.

- *Clearance rights over community land*, are the rights of individual citizens to claim rights to land through clearing uncultivated bush which no one else is tending. If the farmer continues to maintain this area under farming practices while reproducing a family, the heirs will have rights to cultivate the land in the future as family land.

- *Use rights* refers to land given by one claiming ownership to the land through inheritance or clearance rights to another farmer for use. This relationship is usually established between people who are friends or have established a relationship based on reciprocal exchange of services or clientage. The conditions on which the land is loaned are usually based on an informal agreement between the land provider and the recipient. This varies from an annual presentation of some token crops at the discretion of the farmer, to a specified amount of crop (such as one bag of maize or groundnuts), or to the provision of some labour. The token presentation of crops reaffirms the ownership of the land, that the cultivator holds the land at the largesse of the owner. The main interest of the owner of the land in releasing the land to a tenant is to consolidate ownership rights over the land, and in preventing the land regenerate to the extent it may be considered uncultivated bush whose ownership may then be contested. Through releasing land to the land hungry to cultivate as a user right, the land owner can consolidate ownership over land areas beyond their immediate labour resources, while cementing social relationships of amity and clientship. The tenant is responsible for defending the land from encroachers by cultivating crops.

- *Rights given by chiefs*. Migrants without rights to clear land within a locality may approach the chief of that locality for land. This involves the prospective farmer making some presentation to the chief, which may include drink and livestock and some payment, and annually providing the chiefs with some token of thanks which may include cash payments and some food crops. In some cases these relationships have been transformed into formal renting of stool lands to migrants.

- *Hiring of land*. With growing scarcity of land and influx of migrants, leasing of land for monetary rents may appear. The land may be hired on an annual basis or for between two to three years, taking into account intercropping systems in which perennials form an important component.

- *Sharecropping* emerges with increasing scarcity of land. Sharecropping tends to predominate over land leasing only in the more sought after semi-deciduous forest lands. In grassland and parkland areas commercial transactions in land are expressed in land leasing arrangements, in which the rent is much lower than the sharecrop equivalent in forest land, although given the risk of cultivation in the northern transition zones, landlords might gain more stable income from monetary rents than share contracts. The most common sharecropping arrangements are the *abunu* system, in which the crops are divided into half shares between landlord and tenant and the *abusa* system in which the landlord takes one third of the crop and the tenant two thirds. The two systems may be intermixed with *abunu* for one crop and *abusa* for another crop grown in mixtures in the same field.

- *Squatting*. Farmers may also gain access to land by squatting on land which has been alienated by government services. This includes government projects and agricultural agencies which have collapsed (such as State Farms and Ghana National Reconstruction Corpse), but also illegal occupation of forest reserves. This tends to suggest some form of land scarcity, or land scarcity of prime land (such as stumped and ploughed state farm land), since the rights to this land are insecure and subject to possible eviction or prosecution (as in forest reserves).

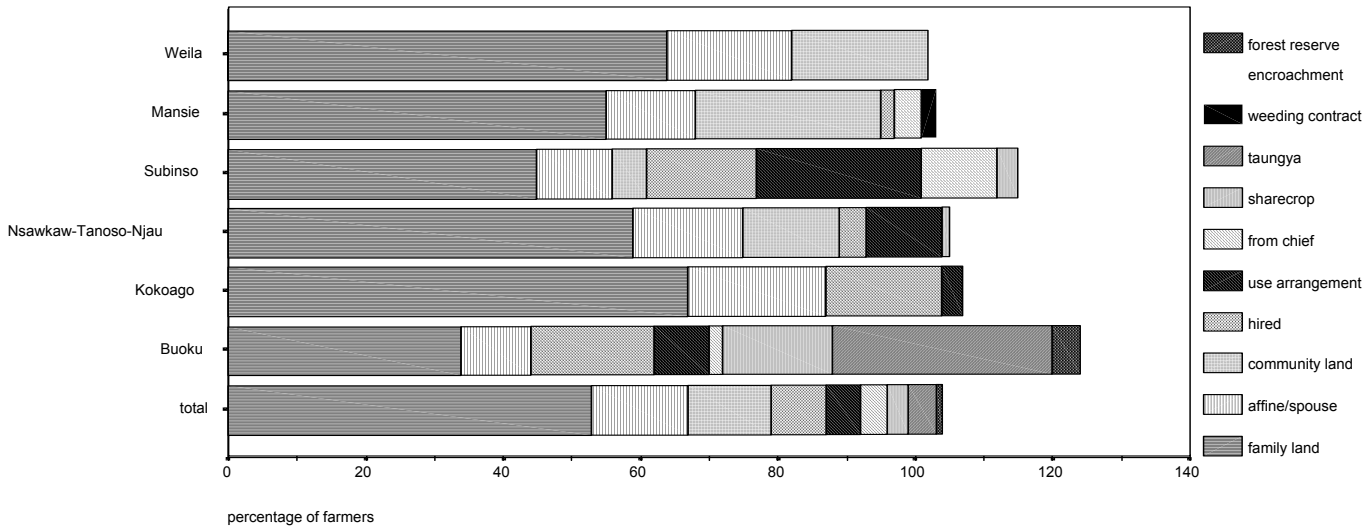



**Figure 1.1 Tenure arrangements in the Brong Ahafo transition zone**

## Table 1.2 Sources of men's and women's land[2]

| | Settlement | | | | | | |
|---|---|---|---|---|---|---|---|
| | Weila | Mansie | Subinso | Nsawkaw-Tanoso-Njau | Kokoago | Buoku | **Total** |
| **Male** | | | | | | | |
| Family | 71.4% | 44.4% | 42.2% | 51.2% | 52.9% | 15.4% | 46.2% |
| Community clearance rights | 28.6% | 48.1% | 6.7% | 16.3% | | | 16.7% |
| Spouse or in-laws | | | 2.2% | 4.7% | 5.9% | 7.7% | 3.2% |
| Use | | | 13.3% | 11.6% | | 3.8% | 6.5% |
| From chief | | | 13.3% | | | 3.8% | 3.8% |
| Hiring | | | 6.7% | 4.7% | 23.5% | 15.4% | 7.0% |
| Sharecropping | | | 2.2% | | | 7.7% | 1.6% |
| Taungya | | | | | | 11.5% | 1.6% |
| forest reserve encroachment | | | | | | 3.8% | .5% |
| Family & use | | | 4.4% | | 5.9% | | 1.6% |
| Family & hiring | | | | 2.3% | 5.9% | | 1.1% |
| hire & use | | | 8.9% | | | | 2.2% |
| Use & sharecrop | | | | | | 3.8% | .5% |
| Weeding contract | | 3.7% | | | | | .5% |
| Community and family | | 3.7% | | 4.7% | | | 1.6% |
| Government agency and family land | | | | 2.3% | 5.9% | | 1.1% |
| Family and purchased[3] | | | | 2.3% | | | .5% |
| Family and taungya | | | | | | 15.4% | 2.2% |
| Taungya & sharecropping | | | | | | 7.7% | 1.1% |
| Community and hire | | | | | | 3.8% | .5% |
| | | | | | | | |
| **Women** | | | | | | | |
| Family | 50.0% | 61.5% | 31.4% | 52.6% | 58.3% | 32.0% | 46.9% |
| Community clearance rights | 4.5% | | 2.9% | 5.3% | | | 2.8% |
| Spouse or in-laws | 40.9% | 26.9% | 20.0% | 24.6% | 33.3% | 12.0% | 24.9% |
| Use | | | 14.3% | 10.5% | | | 6.2% |
| from chief gift | | 7.7% | 8.6% | | | | 2.8% |

[2] This table shows the various circuits through which farmers gain land, since the total land at their disposal may result from using different circuits. Thus land shortage may show up as an absolute shortage of family land resulting in new types of land relationships replacing family land. On the other hand shortage may be reflected as the ability to gain sufficient land through one circuit, leading to individual farmers aggregating their land through different circuits, in which sharecropping may supplement family land with sharecropping. Land scarcity appears only to be significant at Buoku where both men and women access land through a wide variety of circuits and also depend upon gaining sufficient land through accessing multiple sources of land (hiring, family taungya, sharecropping and squatting).

[3]The purchased land is a building plot purchased in town, subsequently used for farming

| | | | | | | |
|---|---|---|---|---|---|---|
| Hiring | | 3.8% | 5.7% | 1.8% | 12.0% | 4.0% |
| Sharecropping | | | 2.9% | 1.8% | 8.0% | 2.3% |
| Taungya | | | | | 20.0% | 2.8% |
| forest reserve encroachment | | | | | 4.0% | .6% |
| Family & use | | | 2.9% | | 4.0% | 1.1% |
| Family & hiring | | | 5.7% | | | 1.1% |
| Hire & use | | | 2.9% | | | .6% |
| in-laws & hire | | | 2.9% | | | .6% |
| Community and family | 4.5% | | | 3.5% | | 1.7% |
| Family and in-laws | | | | | 8.3% | .6% |
| use & taungya | | | | | 4.0% | .6% |
| Taungya & sharecropping | | | | | 4.0% | .6% |

The main form of access to land for the majority of farmers in the Brong Ahafo transition zone is through the allocation of family land by close kin (see table 1.3 and figure 1.1) Around 50 percent of farmers in all zones gain land through family relations. In the northern transition zone settlements, farmers can also gain access to uncultivated community/stool land. As long as they are citizens of the settlement that claims ownership of the land, they can cultivate any land that is not being utilised by other farmers in cropping-fallowing cycles. Twenty percent of farmers have access to community land. However, community land is more prevalent in the northern settlements, such as Weila, and Mansie (where over 20 percent of farmers have land they acquired by clearing uncultivated bush). Gaining rights to land through clearing of uncultivated bush is also fairly common at Nsawkaw, but less common at Subinso. But this perhaps, reflects the large number of migrants in the survey at Subinso who cannot claim ownership of land through cultivation without first approaching chiefs and making some kind of payment. In the semi-deciduous zone settlements there is little unclaimed and uncultivated land in the bush and few farmers claimed they gained rights to land through clearing uncultivated land.

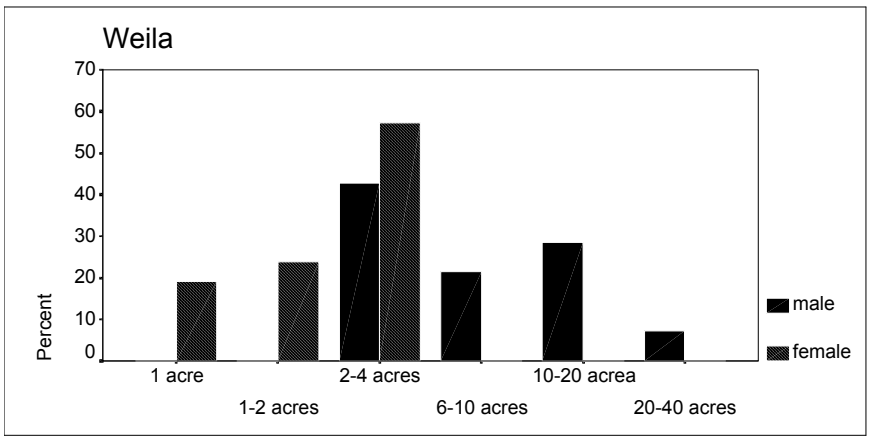
A significant number of women also get land though their spouse or affines (relations of spouse). Fourteen percent of the sample gain land from their affines. However, this varies considerably between settlements. In land abundant Weila, 40 percent of women depend upon their spouses for land while in land scarce Buoku, only 12 percent of women depend upon their spouse for land. More men gain access to family land at Weila than at Buoku, but more women at Buoku gain access to family land. However, the Buoku sample is complicated by the fact that the population largely consists of a variety of migrants who have settled in the area from the 1920s on land they gained from the Wenchi chief. This includes the descendants of migrant cocoa farmers from Ahafo and of northern migrant labourers. In a situation of land scarcity and competition for land among migrants, most young men do not rely on lands acquired by their families, but gain land through hiring, sharecropping, getting forest taungya land[4], and illegally encroaching within the forest reserve. Women may be forced to farm on land acquired by their families, since men get preferential access to hired, sharecropped and taungya land. This is

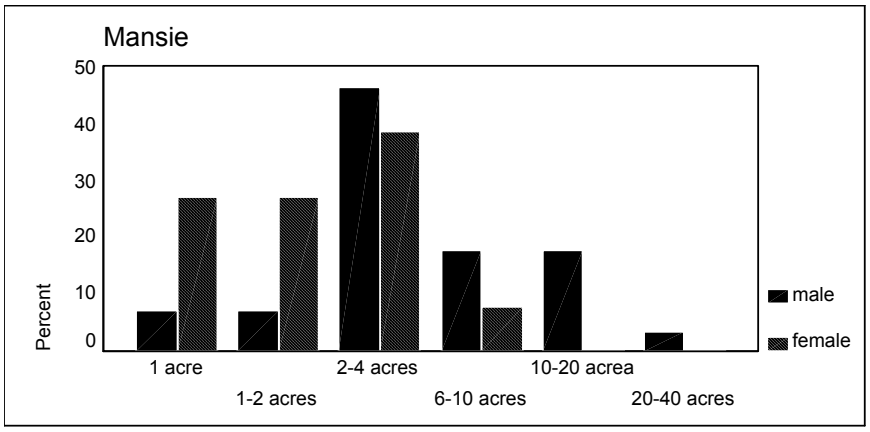
[4]A forest tenure contract in which forestry department release forest reserve land to farmers for a few years (frequently between three to five) in which the farmers undertake to plant and nurture timber tree crops and grow food crops within the plantation.

reflected in the larger acreages that men farm. As in all the other settlements men still farm significantly larger areas than women. At Buoku the average acreage women had under crop was 3.75 acreas (Std 2.737) as compared to 8.75 (Std14.55) for men - but with considerable variation between different types of men (See Figure 1.3)[5]. In land scarce areas, young men may seek to gain access to land through circuits other than the family. This also has implications for the family as a farming unit and suggests the emergence of more individual based farming strategies (Amanor, 2000).

[5]Caution is needed in presenting mean areas cultivated, since this is distorted by a few farmers with much larger lands, and a tendency for some of the rich to exaggerate their wealth and the extent of their farms to reaffirm their importance.

**Figure 1.2 Extent of cultivation**



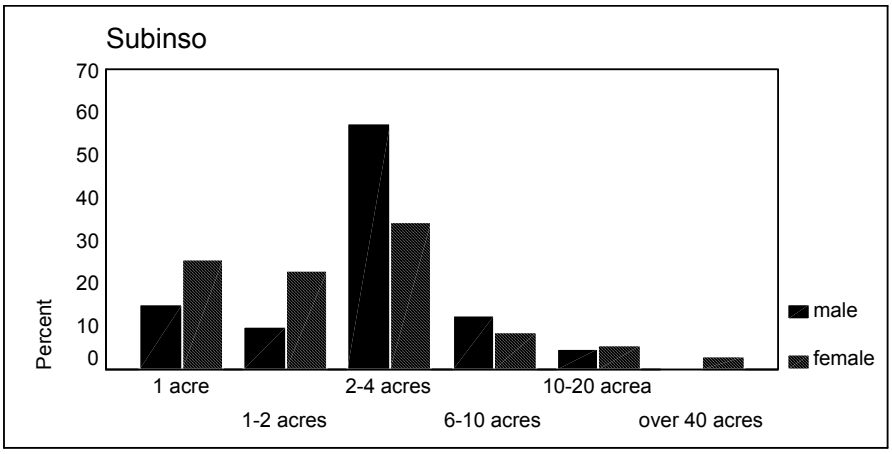
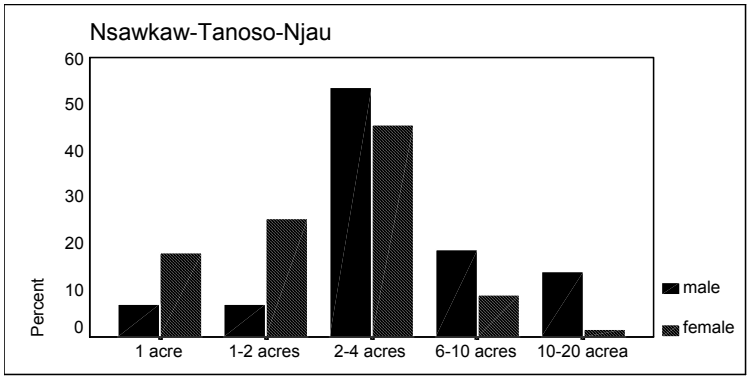
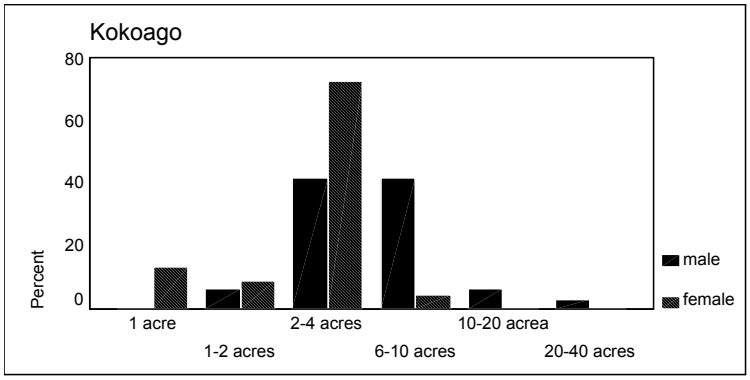
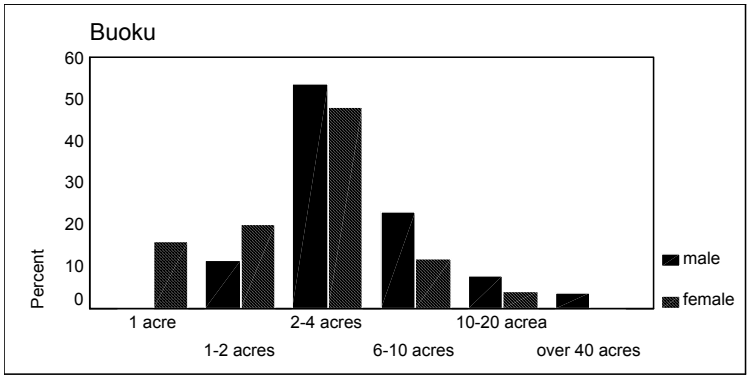



**Figure 1.2 (continued)**



The dependence of women on their spouses for land does not reflect shortage of land but rather, access to labour. In the northern transition zone men historically opened up the land for cultivation, clearing and organising labour to clear their land. Yam was the major crop cultivated. After harvesting their fields they would move onto new land and their wives would take over their farm planting, groundnuts and vegetable intercrops on the land. The major constraint on farming in these areas was not shortage of land, but the labour demands of breaking the soil, clearing the numerous small trees and grassy species, and tilling the soil into mounds. These were difficult tasks for women to organise. It was also difficult for women to get men to clear farms for them in addition to making their own farms. Thus wives focused on taking over the abandoned yam farms of their husbands and on crops which could thrive on soils which had already supported heavy feeding yams. Under these constraints women specialised in groundnut cultivation. This is the pattern which continues to exist at Weila, where groundnuts predominate among women and women farm on their husband's plots. These constraints are not so marked in the dry semi-deciduous areas. Once mature forest has been transformed into secondary forest in which small, fast-growing softwood pioneer species are dominant, the labour demands of bring the soil under cultivation are not daunting. It is easier for women to get their husband's and male relatives to clear land for them or to hire labour, or to carry out their own clearing. Forest soils respond well to minimal till cultivation and do not require the labour intensive mounding and ridging techniques of their parkland counterparts.

With the increasing commodification of agriculture and the influx of migrants, these conditions may be transformed. Increasing integration into markets and growing demands for a variety of food crops transform many previously domestic crops into cash crops. Men may (if prices improve) choose to grow their own groundnut crops or continue to cultivate their old yam fields with groundnuts. Alternatively, they may chose to grow other crops, including long-duration perennials such as cassava (which can provide a standing crop for up to three years). This may lead them to hand on only a portion of their old yam plots to women. With insufficient land from their husbands to meet their own needs, women may search for alternative land. The influx of migrants provides them with new avenues for clearing land and gaining access to their own land and to family land. They can also invest in labour to cultivate a wider range of cash crops, including maize and vegetables. This could result in the pattern more prevalent at Mansie, Nsawkaw, and, to some extent Subinso, where more women have access to family land and are less dependent upon their spouse.

The vagaries of climate may also produce a similar tendency. Increasing risk of crop failure is likely to result in crop diversification. Men might cultivate cassava, pulses, cereals and new root crops and vegetables in addition to yams, and women could also cultivate cassava and cereals, in addition to groundnuts and vegetables. The traditional division of labour, land management practices, and crops would become disrupted as complex long-duration intercropping and mixed cropping strategies are elaborated.

Similar dynamics may operate in the complex interactions between access to land, labour and adaptive crop management at Buoku in the semi-deciduous forest. While women have access to family land, all the women farming on family land grow groundnuts, usually intercropped with cassava. Women may be farming more depleted family lands, which will not support maize, which is the preferred crop of men. Men may seek better lands outside the family to grow maize, and women may adapt their crops to meet the lower fertility of the land. Men may also choose to invest in cash crop production outside of family lands in order to prevent other family members making demands upon them over the access they have got to large areas of family land.

User rights in land become circuits in settlements with large inflows of migrants. Six percent of farmers in the survey were dependent upon user rights alone to get access to land. A further two percent of the sample gained part of the land on which they farmed from a friend, as a user right. User rights are common at both Subinso and Nsawkaw. Fourteen percent of farmers at Subinso were dependent upon user rights to gain access to land and a further 4 percent gained part of their land through negotiating for user rights. At Nsawkaw, 11 percent of farmers gained all their land through user rights. User rights occur to a lesser degree at Buoku, where 2 percent of farmers were dependent upon user rights for farm land and a further 6 percent of farmers gained part of their land through negotiating for user rights. User rights frequently reflect a relationship between a migrant and an indigene. At Subinso, 86 percent of those who gained access to land on a user arrangement were migrants, and at Nsawkaw 64 percent. User rights reflects a situation where land is becoming scarcer but where the commodity price for hiring of land is not very high. With increasing scarcity of land the landowner is anxious to protect their rights in land by ensuring that it is kept in cultivation and that this ownership of the land is not challenged by others. The preferred users are usually migrants, since their lack of rights in land ensures that they are unlikely to challenge the existing ownership claims. User rights are more common in the parkland environments, where cropping systems have tended to be based around annuals, not tree crops.

In areas where land is abundant, migrants can frequently gain land from chiefs by giving them yearly token payments - "drink money" as well as some crops usually at the time of the harvest festival. These are token fees that do not reflect an economic rent value. As land becomes scarcer and competition for land greater, migrants increasingly have to lease land or pay annual fees to the chiefs who claim ownership of the land. Thus with the movement of migrants from Domaa into the Buoku area in the 1930s and 1940s the Wenchi chief began to organise an administrative system for collecting revenues from the land. An *abusahene* was appointed to collect rents from the farmers, originally a third share (*abusa*) of the cocoa crop. With the coming into power of the Convention People's Party at independence, traditional councils were banned from collecting a third of the crop as rent, and rents were paid as fixed annual payments, which were regulated by the Administrator of Stool Lands. Nowadays, the Wenchi Traditional Council issues annual land permits to farmers which are collected at the time of the annual yam festival. In 2001 the nominal value of this "customary drink" was set at ¢40,000 per farmer (about $6 or the equivalent of a quarter bag of maize), although some farmers with larger farms paid over ¢100,000. Ten percent of the value of these rents is claimed by the Administrator of Stool Lands.

With growing scarcity of land and increasing commercial potential, leasing of land may become an important way for migrants to gain access to land. In the survey 17 percent of migrants gained access to land through land leases as compared to none of the citizens. Land leasing is mainly concentrated in Kokoago and Subinso, in settlements which have had pronounced commercial agricultural sectors. In both settlements, hiring of land tends to be focussed most on maize farms, but at Subinso land is also hired for groundnuts. At Subinso, over 34 percent of hired plots are under maize and maize intercrops and a further 32 percent under groundnuts. At Subinso there is a relationship between hired plots and plots which have been stumped. Sixty percent of hired plots at Subinso are stumped as compared to 12 percent of plots in which cultivators have gained user rights. This relationship is evident in some of the statements of farmers on how they acquired land:

- "I hired the ploughed land and made an appeal for the yam and maize land to be released to me for free"
- "I begged for the yam and cassava land and hired the stumped land for groundnut cultivation".

Land hirers are prepared to pay a premium to obtain stumped land for commercial crop production of groundnuts and maize, instead of seeking to acquire user rights on non-stumped land. Landowners are able to charge a premium for stumped land on account of the labour invested However, cultivators would only pay this premium where they are interested in growing crops which would benefit from the use of the plough. Hiring stumped land for yam cultivation, for instance, would not be rational. A number of other economic and agronomic considerations may also influence the emergence of land hiring arrangements in other sectors. Migrants may chose to hire land close to the town if they fail to gain land from other local farmers on a user-right basis, and if the alternative of seeking land from the chief involves travelling far distances away from the settlement.

At Kokoago the majority of hired plots are under maize cultivation. 18 percent of hired plots are under maize, 18 percent are under maize-cassava intercrops, 6 percent are under yam-cassava-maize intercrops and another 6 percent under other maize intercrops. Other significant crops grown on hired land include cowpea (18 percent), tomato monocrops (12 percent) and cassava monocrops (6 percent). The land is frequently hired for periods of three years to allow for intensive crop rotations. This maximises returns from investments in hired land and labour. Often, maize follows tomatoes and is followed by cowpea. Only 14 percent of hired lands are lands that have been stumped. Sixty-eight percent of stumped lands are under cropping systems with a maize component (36 percent under maize monocrops, 20 percent over cassava- maize intercrops, and 12 percent under other mixtures including maize). But 64 percent of stumped lands are cultivated by families for their own benefit. This indicates a reluctance to release stumped lands for hire.

With greater land shortage in high value forest locations, sharecropping grows in popularity displacing monetary land leases and user rights in land. At Buoku 12 percent of plots are allocated on a sharecrop basis, 11 percent on land leasing, 7 percent as user rights and 2 percent by the chief. Thirty-three percent of farm plots are on family land. At Buoku sharecropping and land leasing are the preserve of migrants. None of the locals sharecrop. However, migrants are also important land owners, 58 percent of family lands are owned by migrants. The incidence of sharecropping and its centrality to the agrarian economy is low compared to some settlements within the Eastern Region where a large proportion of citizens gain access to land through sharecropping (Amanor with Kude Dideretuah 2001). The dominant sharecropping relations are *abusa* (one share to the landlord, two shares to the tenant) which accounts for about 41% of the incidence of sharecropping, variants of *abunu* (a half share of the crop or area under cultivation between landlord and tenant in 41 percent of the incidence of sharecropping), *abusa* for one crop and *abunu* for another, and four shares of which the tenant takes three (*abunain*).

Increased shortage of land is reflected at Buoku by a large number of farmers gaining access to land through taungya and illegally encroaching into the forest reserve. However, underlying this are complex socio-political relations between the Forestry Department and farmers. An artificial land shortage was created among farmers near the forestry boundary when the forest reserve was demarcated and gazetted. Insufficient lands were allocated for fallow management strategies and population growth. Relations of clientage have also been encouraged, with the Forestry Department releasing highly fertile forest land to farmers for cultivation in return for free labour in plantation development, and in order to promote social forestry and community forestry programmes.

### *1.2.4 Migrants' Access to Land*

The relatively low population density of the Brong Ahafo region and the high labour costs of establishing farms based on tilling and mounding techniques, result in relatively low rental values for land and easy access. This is particularly the case in the forest-savanna woodland mosaics, outside of the high potential cocoa lands. The movement of migrant farmers and farm labour into the transition zone of Brong Ahafo has provided a major impetus to opening up the zone, and has provided the hired labour to enable local farmers to expand into commercial food crop cultivation. The value of this labour is higher than the scarcity value of land. Therefore farming communities and chiefs have attempted to attract migrant labour into the area by providing cheap land to migrant farmers who have the capacity to organise and draw in migrant labour networks. Hence user rights in land are a prominent land relationship between local landlords and migrant tenants, and frequently reflect patron-client relations organised around labour services.

In many instances these relationships have served migrant farmers well. However, the prominent role accorded chiefs by the colonial and post-colonial state, as custodians of land, customary relations and tradition, and the lack of checks and balances on them, has enabled chiefs to use the land insecurity of migrant tenants to impose their will over tenants. This has subjected them to forms of service and clientage that are arguably inappropriate to modern notions of democracy, governance and civil society participation.

The downside of these forms of 'customary land administration' was apparent at Atuna, a settlement of migrant Dagaaba farmers from the Upper West Region, on the stool lands of Jensoso. Farmers at this settlement said that before the last general election, the chief came around and demanded that they vote for the NPP party. However, they exercised their democratic right to vote for the National Democratic Congress (NDC). Following the success of the NPP party, the Jensoso chief vowed to eject the migrant farmers from Atuna. Since the election they have been harassed. The chief has issued an edict banning the farmers from selling firewood or making charcoal on their land. The Atuna farmers claim that he has also brought chainsaw operators and charcoal burners to cut down a large number of trees on the land and then blames the farmers for the ensuing degradation of the environment. According to the Jensoso chief, the farmers at Atuna are spoiling the environment and changing the land into a savanna through excessive cutting of trees. Hence he has found it necessary to intervene to protect the environment. The farmers deny this and say that they are not destroying the environment but rather preserving many trees. They argue that although the land originally contained forest and supported cocoa, by the time they came to settle at Atuna, all the original cocoa farmers from Ashanti had gone. The land had been transformed by bushfires into grassland. The new migrants say they have been preserving trees as they farm, as a result of which many small trees are now regenerating on the land. As they farm, the women gather the deadwood from the cleared plots as fuelwood. Small quantities of charcoal are also made during the farm clearing season, and this provides them with an important supplementary income source.

## 1.3 Natural resource tenure

Access to natural resources other than the soil is controlled by chiefs, in whom the 'allodial rights' are vested. Starting from the colonial period, a legal framework for customary land tenure has been created in which farmers only have usufructary rights. In the early colonial phase, this was interpreted to mean that chiefs had rights to a portion of revenues generated by the exploitation of natural resources such as timber and gold production, as well as the right to make bye-laws defining the

exploitation of resources, and rights to alienate land for the creation of forest reserves. With the development of an export timber industry and the concession system, starting in the 1940s, this has been interpreted to mean that chiefs have rights to all natural resources as well as control over the issue of permits and concessions for exploitation. Thus, the exploitation of natural resources preserved by farmers on their own land has effectively been criminalized, particularly when a permit or concession has been allocated to another party. The 1962 Concessions Act vested all trees in Ghana in the office of the President to administer on behalf of chiefs. This has given the Forestry Department the power to control the use of all trees on reserves and farmland. The timber industry has the right to exploit timber produced on farmland without making any payments to the farmer. Royalties are only paid to the chiefs in whose domain the timber was felled and to the local district authorities.

The access of farmers to fallow and farmland trees for livelihood purposes has gradually been eroded. At one time, there was a clear demarcation between timber species which local producers had rights to utilise for the domestic market ('odum' and 'wawa') and those produced for the export trade by concessionaires (mainly redwoods, mahogany and cedar). However, with a growing focus on export-led growth, increasing scarcity of timber, and diversification of exports, the domestic timber species have been monopolised by timber concessionaires producing for export. The majority of export timber now originates from off-reserve concessions on farmlands. The ban on chainsawn lumber criminalizes the small-scale timber sector and puts the production of timber for the domestic market in the hands of concessionaires and sawmills. This ban has been implemented without creating the necessary mechanisms to ensure that domestic supplies of timber can be met by the sawmills. As a result, chainsawn timber still dominates the domestic market. It is now produced illegally, mostly by well-organised urban businessmen who can evade custom checkpoints and make all the necessary payments en route to the main urban markets.

Chainsaws are not only used for processing lumber but also play an important part in several forest products, such as mortars, canoe carving, other wood-carving crafts, fuelwood, etc. The wording of the legislation governing the ban on charcoal production is sufficiently vague to also effect these other sectors, where producers encounter problems of getting legal access to trees, getting access to chainsaw operators to process trees or logs, and being able to transport their products easily along major transport routes without being reprimanded by police and custom officials.

As a result of these problems, natural resource livelihood options in the Brong Ahafo region have increasingly focussed on charcoal production, which depends on utilising trees other than the main timber species. However, production within this sector is also affected by the struggles of district authorities to gain control over the resource, as well as by an environmental lobby which blames charcoal producers for serious land degradation, even desertification.

In the early 1990s, the promotion of NTFPs formed a central part of the DFID (ODA) Collaborative Forest Management Programme in the Forestry Department. However, the problems inherent in the framework of natural resource tenure were not addressed by this project, which focussed on rights to domestic usage of small quantities of NTFPs from forest reserves and farmland, and not utilisation for livelihoods, and on the production of a narrow range of NTFPs in community nurseries.

## 1.4 Supplementary livelihoods

Around 50 percent of the sample farmers had supplementary off-farm incomes, including 46 percent of men and 56 percent of women. The main off-farm incomes for men come from natural resources (eg. charcoal, crafts), artisan activities, and petty trading. For women the main off-farm incomes consist of petty trading and preparation of cooked food. Migrant Dagaaba women also brew sorghum beer (*pito*), and this leads to increased demand for sorghum in the agricultural economy. Petty-trading and preparation of cooked foods are more important in market towns, such as Subinso or Nsawkaw. The main artisan activity carried out by men is tailoring. This accounts for 5 percent of male off-farm incomes. Others include bicycle repair, masonry, blacksmithing, aluminium pot manufacture, and radio repair.

For women the main artisan activity is dressmaking. While many male off-farm incomes are dependent upon natural resource exploitation, outside the production of charcoal, very few farmers have developed other viable source of income. Women's access to natural resource exploitation is extremely limited, and virtually confined to charcoal production and selling. Widespread participation in charcoal production is limited to a handful of settlements in which the techniques of charcoal production exist, and where the necessary infrastructure to support a viable trade has been created (eg. Weila and Mansie). At Nsawkaw, charcoal is largely produced by specialised migrant charcoal burners.

This lack of development of crafts based on natural resource utilisation is mirrored by a marked lack of development support from externally funded government and donor projects for natural resource development. It is also reflected in a hostile policy environment, which creates a framework for natural resources tenure that excludes farmers, legislation that criminalizes their utilisation of tree resources, and environmental policies which view off-farm incomes based on natural resources as a cause of environmental degradation. This lack of development of a popular craft-based natural resource sector, is in marked contrast to the importance of forest resources in national export trade, and reflects the appropriation of forest resources for export trade and the influence of industrial concession-holders, at the expense of small rural producers.

### Table 1.3 Main off-farm incomes

| Percentage of farmers engaged in off-farm activities | Weila | Mansie | Subinso | Nsawkaw-Tanoso-Njau | Kokoago | Buoku | Total |
|---|---|---|---|---|---|---|---|
| **Men** | | | | | | | |
| Off-farm incomes | 43 | 50 | 51 | 48 | 39 | 46 | 46 |
| Natural resource exploitation | 18 | 43 | 11 | 10 | 6 | 4 | 15 |
| charcoal | 11 | 39 | 4 | 5 | . | . | 9 |
| Hunting | 3.5 | 4 | . | . | . | 4 | 1.5 |
| Herbalist | . | . | 2 | 5 | . | . | 1.5 |
| Carpenter | . | . | . | . | 3 | . | 0.5 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Pestle-carving | . | . | 2 | . | . | . | 0.5 |
| Mortar-carving | 3.5 | . | . | . | . | . | 0.5 |
| Hoe-handle making | . | . | 2 | . | . | . | 0.5 |
| Palm-wine tapping | . | . | | . | 0.3 | . | 0.5 |
| Petty-trading | 11 | 4 | 9 | 5 | 10 | 12 | 8 |
| Artisan | 10 | . | 20 | 16 | 16 | . | 11 |
| Casual labourer | . | , | , | 7 | . | . | 1.5 |
| **Women** | | | | | | | |
| Off-farm incomes | 54 | 57 | 80 | 40 | 59 | 56 | 56 |
| Natural resource exploitation | . | 12 | 3 | 2 | . | . | 3 |
| Charcoal | . | 12 | 3 | 2 | . | . | 3 |
| Petty trading | 41 | 19 | 37 | 19 | 32 | 32 | 31 |
| Prepared food | 14 | 15 | 23 | 7 | 23 | 8 | 14 |
| Pito brewing | . | 4 | 11 | 2 | . | 8 | 4 |