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Interim Evaluation of UWADEP

Working paper: background conditions

in

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LIST OF ACRONYMS

ADRA	Adventist Development and Relief Agency
AEA	Agricultural Extension Agent
CLW	Community Livestock Worker
DDA	District Director of Agriculture
EPA	Environmental Protection Agency
FABS	Food and Agriculture Budget Support
FAO	Food and Agriculture Organisation of United Nations
GIDA	Ghana Irrigation Development Authority
IFAD	International Fund for Agricultural Development
LACOSREP	Land Conservation and Smallholder Rehabilitation Project
MOFA	Ministry of Food and Agriculture
NCWD	National Commission for Women and Development
NGO	Non-Governmental Organisation
NORPREP	Northern Region Poverty Reduction Programme
O&M	Operation and Maintenance
PCR	Project Completion Report
PFI	Participating Financial Institution
PSU	Project Support Unit
SARI	Savanna Agricultural Research Institute

1. Introduction

Northern Ghana consists of three regions, Upper East, Upper West and Northern Region, all of which originally comprised the former Northern Territories. Tamale was the administrative centre for this area and many institutions covering Northern Ghana are based here. IFAD has projects in each of the three regions, LACOSREP for Upper East, UWADEP for upper West and NORPREP for Northern Region. By many indicators these three regions are the poorest in Ghana and indeed comparable in poverty to some of the poorest countries in the world, notably Burkina Faso and Mali, by the reckoning of the UNDP. Given the importance of trying to determine the impact on particular development interventions, a working knowledge of the demographic, economic and biophysical background is essential to and evaluation of particular strategies. This working paper describes the current situation in Upper West Region¹.

2. Upper West Region

The Upper West Region is located in the extreme northwest of Ghana, bordering Cote d'Ivoire and Burkina Faso. UWR was created from the former Upper Region, the capital of which was in Bolgatanga, and it has therefore had to build government institutions and infrastructure virtually from scratch. It is divided into five districts as follows (Table 1);

Table 1. Districts of Upper West Region and human population

UWR population	All	Rural	% Rural	Land area	Density
Wa	224066	157422	70.3	5899	38.0
Nadowli	82716	82716	100.0	2742.5	30.2
Sissala	85442	76584	89.6	7115	12.0
Jirapa-Lambussie	96834	83529	86.3	1667.6	58.1
Lawra	87525	75484	86.2	1951.2	44.9
Total	576583	475735	82.5	19375.3	29.8

Source GSS (2002)

Three more districts have been planned following the Census of 2000, but at the time of survey, they were not operational. Basic social, demographic and infrastructural data on Upper West Region are contained in Nornoo et al. (1999), intended to be a baseline survey for UWADEP.

Wa is the only urban centre, and the whole Region is characterised by poor communications networks. No all-weather roads connect the major towns and electricity can be sporadic in District capitals. Mobile phone networks have recently linked Tumu with Wa, but substantial investment will be needed to bring UWR up to the standard of the rest of Ghana. The poor transport networks have important consequences for farmers, since crops needing timely sale, such as tomatoes, are difficult to market, compared with Upper East Region, which has tarmac roads linking it with southern markets.

The typical landscape is gently undulating plains, 200-350 m., cut across by the Black Volta, the only perennial system, which runs North to South across the region. The floodplain soils vary from brown sandy clays to silty clay loams (FAO 1967). Apart from this, the highly weathered soils derived from granites are easily waterlogged and eroded. Geologically, these are characterised as the Upper and Lower Birrimian, the Upper with flat plains cut by granite outcrops, the Lower by outcrops of red laterite just below the subsurface. This patchy geology may well explain why farming systems are so diverse across the region.

¹ The material in this working paper is drawn from documents and discussions held in June 2005 with staff of the UWADEP Project in Wa. I would like to thank the staff of UWADEP and MOFA for their assistance in compiling a wide range of scattered data and in particular, the Project Manager, Mr. Elodi, for long hours out of office seeking elusive reports.

3. Environmental background and ecology

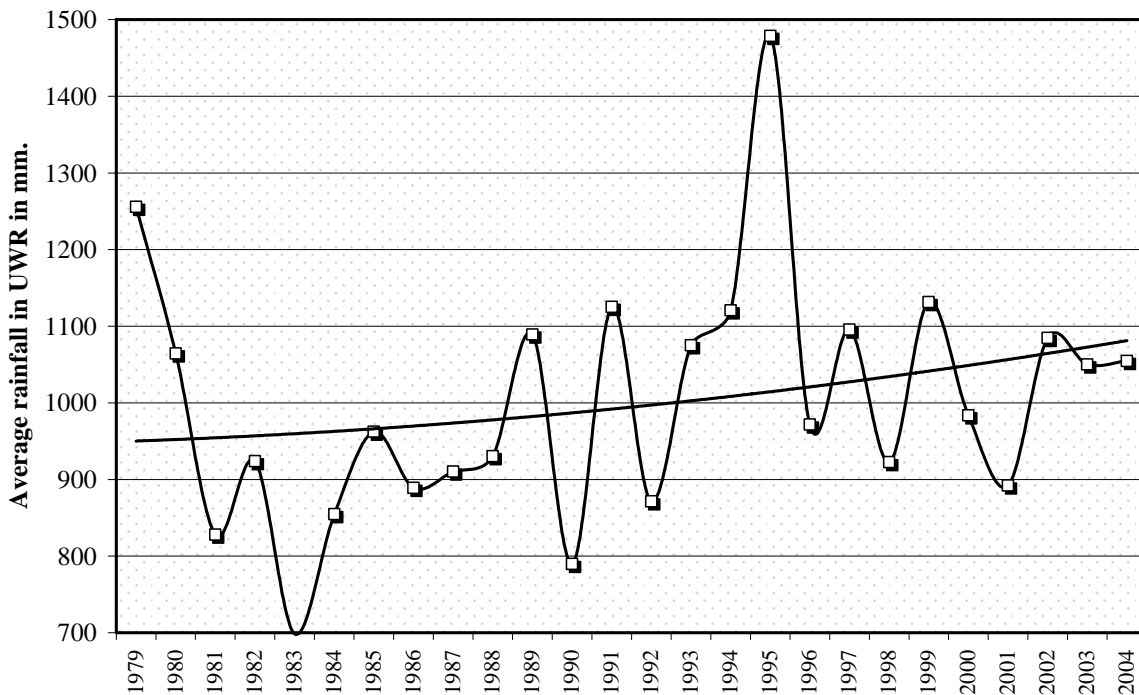
3.1 Vegetation

UWR is typical Guinea savannah, with a high density of typical tree species (Chipp 1922). Broadly speaking, the low population densities have permitted a remarkable conservation of savanna vegetation, quite unlike much of the remainder of Northern Ghana². Typical anthropic species are the locust, *Parkia biglobosa*, and the shea, *Vitellaria paradoxa*, the mahogany, *Khaya senegalensis* and the silk-cotton, *Ceiba pentandra*. Baobabs, *Adansonia digitata*, are very characteristic of former human settlement. Of introduced trees, the neem, *Azadirachta indica*, and the mango, *Mangifera indica*, are common in villages and increasingly common as escapes in uncultivated areas. However, much of the eastern stretches of UWR are covered in dense forest and the northern end of the Mole Game Reserve as well as the Bui Reserve are situated in this region.

3.2 Rainfall and climate

The climatic regime of UWR is semi-arid with annual rainfall some 700-1200 mm with a mean for three stations over 25 years of 989 mm. The rain falls in a seven-month season from April to October. It is widely believed throughout the region, by administrators as much as farmers, that the overall quantity of rain falling is declining and that the distribution is more unfavourable than before. Analysis of rainfall data from three stations (Wa, Tumu and Babile) since 1979 does not suggest this is true. Figure 1 shows the mean annual rainfall, 1979-2004.

Figure 1. Total annual rainfall in UWR, 1979-2004



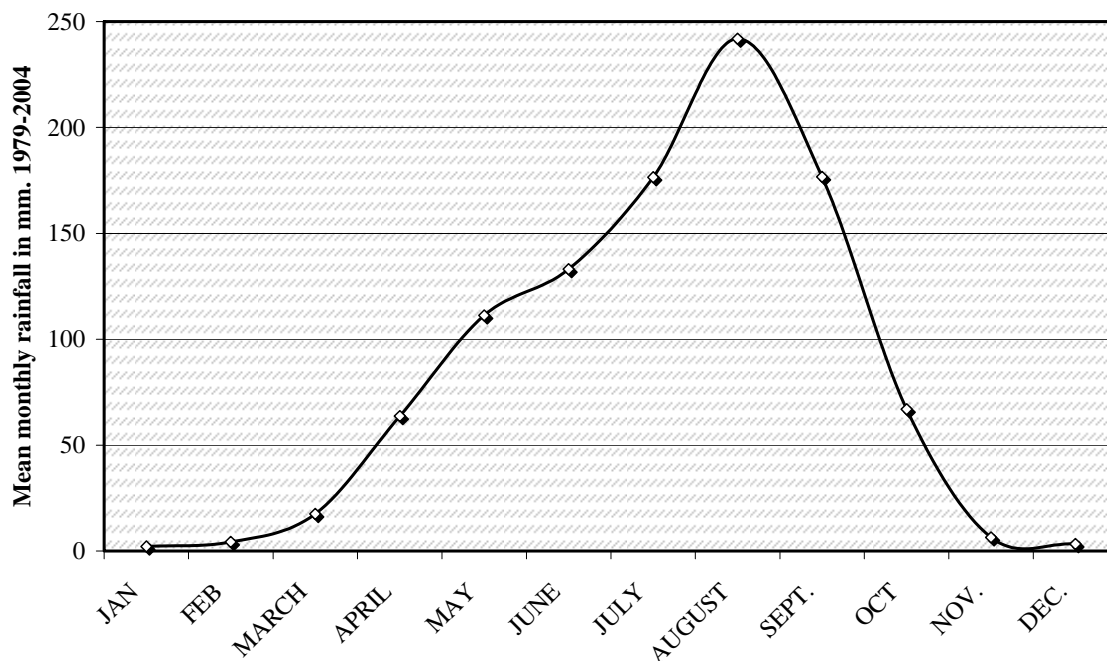
Although the chart emphasises inter-annual variability, the trend is virtually flat, or, if anything, slightly increasing. Similar patterns emerge from longer time-series data and for the two other northern regions of Ghana. Why should the claim about the declining total rainfall be so widely believed? It is likely, in the absence of precise measurements, that farmers judge rainfall by indirect indicators such as vegetation and crop yields. There is no doubt that vegetation is sparser and species adapted to more arid regions are

² Nsiah-Gyabaah (1994) purports to be a summary of the environmental situation in UWR, based largely on Landsat imagery. However, he reports widespread degradation, which is almost the reverse of the situation in Upper West Region.

gradually pushing down into this area while at the same time crop yields are falling. These indirect indicators probably do suggest that the aggregate rainfall is less than before; but empirically this is not the case.

Rainfall can be very patchily distributed and farmers must often plant seeds two or three times before the rains set in reliably. Is the distribution more unreliable than before? Farmers typically claim there is a long gap between the first rain and the establishment of the rains, causing early plantings to die off in some years. This is more difficult to check, but superimposition of intra-annual patterns over the last twenty-five years do not suggest any systematic pattern of change in distribution. Figure 2 shows the pattern of mean monthly rainfall in mm. for Upper West for 1979-2004.

Figure 2. Mean monthly rainfall in mm. for Upper West, 1979-2004

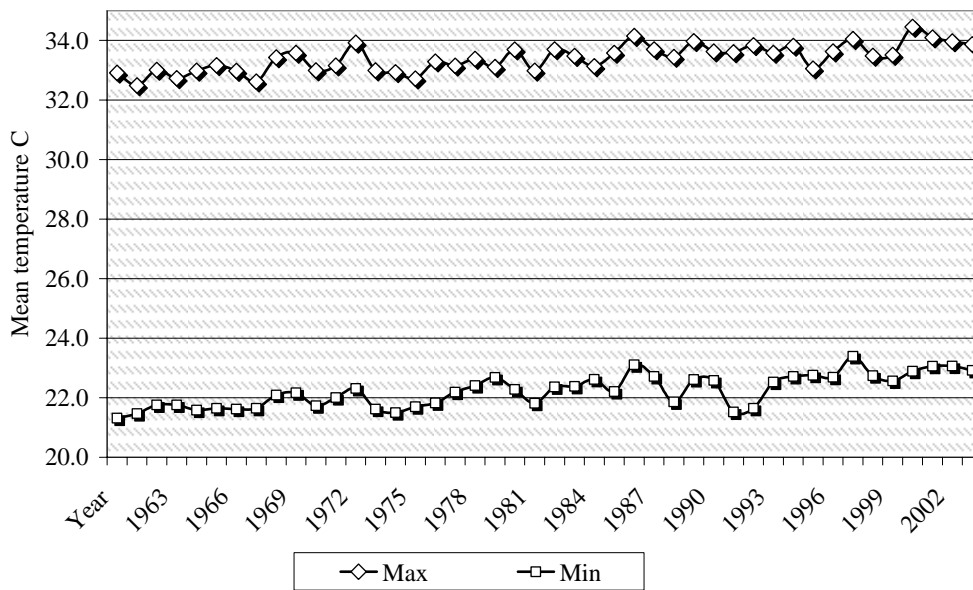


There is nothing very exceptional about these patterns for this latitude in West Africa. It should be remembered that farmers are growing a very different crop repertoire from three decades ago and they are now concerned about reaching the market, which is a new element. Probably the explanation is that taking out trees in many areas for charcoal and new farmland has changed soil infiltration characteristics. Thus more water is lost when the early rains fall, reducing the chances of seedling survival.

Temperatures

Another hypothesis regularly advanced to account for declining crop yields is a rise in temperature. If temperature were indeed rising, evapotranspiration would cause less of the rain to be available for plant growth. To test the hypothesis that temperatures have increased over this period, maxima and minima were plotted over the period 1961-2004. These are shown in Figure 3;

Figure 3. Temperature maxima and minima in UWR, 1961-2004



Temperature is considerably less variable than rainfall, but the data does indicate an approximate rise of 1°C over nearly half a century, considerably less than Western Europe. The hypothesis that climate change is affecting agricultural production in Upper West Region can be provisionally discarded.

4. Demography and human population

4.1 Demography

The most recent census of human population in Ghana was in 2000 (GSS 2002) which gave an overall population for UWR of 576,583. Comparing these figures with previous censuses in 1970 and 1984 gives an annual growth rate of 1.7%. Projecting forward the 2000 figures to 2005 gives a human population of 627,287 and to 2015 to 742,465. Figure 4 gives a schematic sense of this type of increase. Although this rate is not as high as some regions in the humid zone, for a stressed population such as this they represent a greater problem in terms of resource use.

Figure 4. Human population trends in UWR

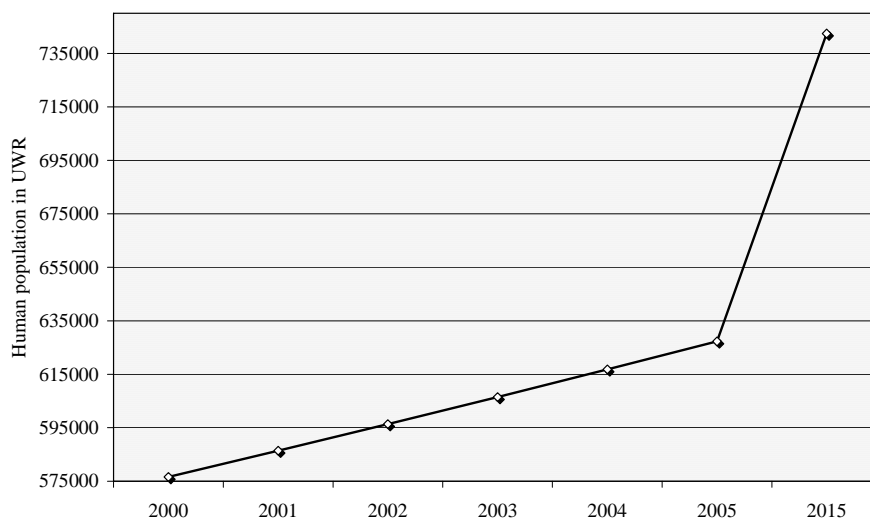
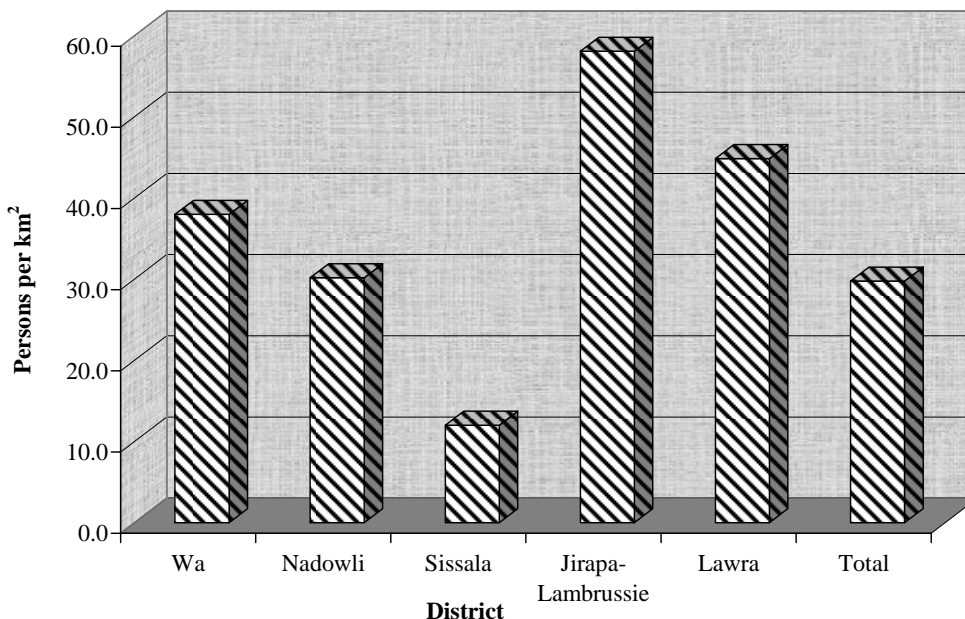


Figure 5 shows the population density by district in UWR, derived from the 2000 census. Although Jirapa-Lambusi is quite high, other districts, such as Sissala have very low population densities.

Figure 5. Population density by district in UWR, 2000



It should be noted that, compared with UER, the highest densities in districts of Upper West correspond to the lowest densities in UER, in Builsa district. Even where pressure on land is marked it is still insignificant compared with the potential realised in parts of UER.

4.2 Language and ethnicity

Upper West Region is highly diverse ethnolinguistically, with at least eight languages spoken in the region surveyed (Cardinal 1925; Rattray (1932); Barker 1984; Kropp-Dakubu 1989). There is no *lingua franca* that serves as an effective medium of intercommunication although a type of Hausa is often used as a market speech in large towns. This diversity presumably reflects the acephalous social structure characteristic of many peoples of the region. Lentz (1998, 2000) has written extensively on changing ethnicity among the Dagaari and neighbouring groups. Other materials can be found in Some (1999), Kunbuor (2002), Dapila (2001), Taabazuing & Siekpe (2001), Alenuma (2002). Table 2 shows the main ethnic groups of UWR.

Table 2. Peoples and Languages of UWR

Usual Name	Autonym
Wale	Wale
Lobi	Lobr
Birifor	Birifor
Dagaaba	LoDagaa, LoWiili
Sissala	Tumuli
Sissala	Pasale
Chakali	Chakali
Fulani	Fulbe

A major change that has taken place since ca. 2000 is the movement of large herds of Fulbe cattle into the region. The Ghana government had previously had a strong policy of excluding cattle herders, to avoid clashes and interbreeding with local shorthorn cattle. However, due to pressure from ECOWAS, they now allow herds into the country, and this has created some friction with local populations. At present, the herders are mainly nomadic and move around, grazing by rivers during the dry season. However, if they

repeat the pattern in neighbouring countries, they will soon want to settle and become agropastoralists requiring land.

Adult literacy remains at very low levels in Upper West. Table 3 shows the literacy rates recorded by the National Census in the year 2000. Overall non-literacy is significantly higher than in UER, though curiously literacy in local vernaculars is very much higher. It also suggests that printed extension materials have a very restricted audience.

Table 3. Literacy rates in UWR in year 2000

Subgroup	No.	%
Total	576583	
Population >15 yrs	326311	56.6
Not literate	246301	75.5
Literate in English	37137	15.1
Literate in Ghanaian language	5532	14.9

Source: GSS (2002)

Education shows similarly low levels, although respondents to the non-beneficiary survey commented on the extension of primary education, suggesting that the figures captured by the national census in 2000 would show a significant increase by 2005. Table 4 and Figure 6 tabulate the educational levels achieved by the population greater than three years of age in 2000.

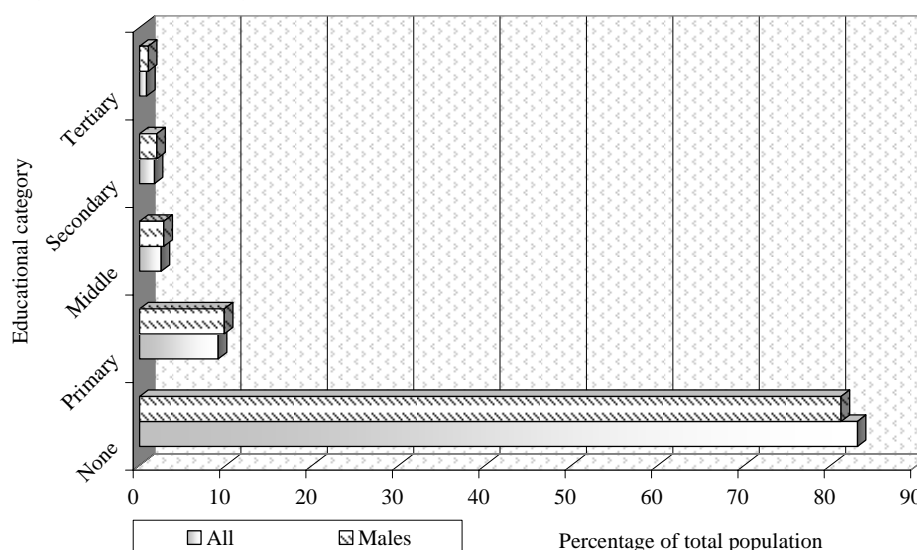
Table 4. Education levels of male and total population in UWR

	All	%	Males	%
None	478992	83.1	224384	81.2
Primary	52291	9.1	27125	9.8
Middle	14485	2.5	7815	2.8
Secondary	9758	1.7	5654	2.0
Tertiary	4662	0.8	2683	1.0
Total pop	576583		276445	

Source: adapted from GSS (2002)

The levels achieved by males are also shown. It is often said that females are strongly disadvantaged by the educational system, but when the percentages of males at different levels are compared with the total population, they are barely statistically significant in most cases, suggesting that the Ghanaian system, at least, does seriously discriminate, even at tertiary level.

Figure 6. Percentage education levels of male and total population in UWR



4.3 Social structures

The underlying social structure in UWR is the extended patrilineal family. Families form part of lineages and these in turn compose clans (Rattray 1932; Eyre-Smith 1933; Manoukian 1952; Goody 1956, 1957, 1962, 1967; Mendonsa 1979a; Evans 1985; Norton 1987; Hawkins 1996, 1997). In the acephalous societies, power resided in the elders and in particular in the earth-priests or *tendaanas* who were the guardians of the land, 'landlords' in Ghanaian parlance. Wa, and the Wale, the people of Wa, constitute something of an exception, since they have had a centralised monarchy since the 19th century (Doughah 1966; Wilks 1989).

With the establishment of the state-systems, chiefs were appointed in parallel with the *tendaanas* creating a system of dual authority (e.g. Mendonsa 1975, 1976; Lentz 1993, 1994, 1998a, 2003). In the acephalous areas, the chiefs were much less able to exercise authority, partly because of the dispersed settlement patterns and because there were no traditions of respecting such individuals. Further north, there are many more landlords, many more shrines and the spiritual authority of any individual is more diffuse (Lentz 2000; Lentz & Sturm 2001; Lentz & Kuba 2002).

Since decentralisation in the 1990s, there has been a corresponding rise in power of the 'Assemblyman' (Lentz 1998b, 2002). The growth of the District Assembly system has meant that every substantial community sends a representative to the District Assemblies. These individuals are elected and are usually English-speakers and so create a link with the larger national infrastructure. Despite the common term, they are sometimes female, especially in communities nearer the road. Assemblymen are often the channel for linking NGOs with villages and have thus become a third pole of power in many communities. In addition to this, there are now 'Youth Associations' an important channel for representing issues relating to the newly educated youth, who are often unemployed and are typical migrants.

4.4 Labour migration and its consequences

The relative wealth of the forest zone in terms of gold-mining, timber and cocoa have created an important magnet for surplus labour in the savannas ever since the 1920s onwards when cheap transport made possible seasonal migration (Davison 1954; Hilton 1961; Hunter 1965; Caldwell 1969). A pattern developed of young males travelling south towards the goldfields and cocoa plantations of the south of Ghana. The usual strategy was to return for the wet season and assist with farm work. Cash wages were attractive as they allowed unmarried men to accumulate capital to buy cattle essential for marriage and, later in the life-cycle, for sacrifice at funerals. Indeed the wealth of southern Ghana was such that labourers also migrated from neighbouring Francophone countries, a drawing off of resources that accounts for the rather aggrieved tone of some of the literature (Dresch 1945; Rouch 1956; Le Moal 1960).

Another aspect of migration, however, was that it took pressure off food and other resources in areas where the human population density was high. There were less mouths to feed in the hungry season and the migrants sent back cash which could be used to buy food. As pressure on the land has increased this element has become of major structural importance in household strategies. Migration remains at high levels in Upper West Region. According to a survey in 2005³, the mean level of migration is 19% of any given household, region-wide, but as much as 45% in the densely populated Jirapa-Lambusi district. This is highly socially disruptive and much regretted by those left behind, who consider that family life is fragmented and social and religious structures are being broken by the behaviour of migrants. One aspect of migration noted by all respondents was the flow of material goods. There are more zinc roofs, bicycles, radios etc. as a result of the flow of young people towards the cities of the south. Nonetheless, a high priority for any development strategy is to stem this flow of labour to other regions.

³ IFAD UWR non-beneficiary survey (Blench 2005)

5. Farming systems

5.1 General

UWR has extremely challenging conditions for farmers, with high temperatures, erratic rainfall and eroded soils making for ever lower crop yields. Reduction or elimination of fallows and an absence of strategies for returning adequate resources to the soil, combined with labour migration that makes typical soil and water conservation strategies difficult to carry out are likely to be the true causes. Farming systems in UWR are described in Hinds (1951), Bening (1967, 1976), Benneh (1972, 1973a,b, 1976), Songsoore (1976, 1978) Mendonsa (1979b, 1980), Tengan (2000).

5.2 Rainfed

The farming system in UWR is based around dwarf millets, cucurbits and pulses which would normally be encountered in lower rainfall zones elsewhere (Coull 1929). Cultigen diversity is low, probably a response to poor soil fertility. The traditional basis of the cropping system throughout UWR is pearl millet (Appa Rao et al. 1985). There are two groups of millet cultivars, a short-season millet harvested in July and a long-season millet, harvested in November or December. The dominance of millet in such a high rainfall area is striking as it is usually associated with subdesertic regions. The early millet is interplanted either with late millet or sorghum in fields close to the compound where fertility is highest. The further fields are planted with sorghum intercropped with pulses, especially cowpeas and groundnuts. Residual crops still grown in this area include Bambara groundnut, Kersting's groundnut and the Frafra potato.

Maize underwent a burst of popularity during the period when fertilisers were available at subsidised rates and then fell in popularity. More recently it has begun to recover and recent statistics show high planting rates. This is a reflection of an expanding urban market in south-central Ghana and the downwards drift of the cedi, making local staples cheaper. Maize produced for cash is very common along the northern edge of Upper West Region, although farmers are at the mercy of unstable government import policies. Rice (*Oryza sativa* not African rice) is planted in swampy lowlands.

The other major staple and cash-crop is the yam. In contrast to UER, yams are widely grown almost throughout the region, except in Lawra where pressure on soil fertility has reduced them to a very minor role. The cultivation system depends on relatively broad stretches of land, and high residual fertility, as well as available labour. Many farmers raise yam-mounds after the cereal harvest, before the soil becomes too dry, generally paying cash for labour. Yams tend to be a male crop, as the labour requirements are very demanding. Yam cultivars are highly diversified, because ideally individual types become ready in sequence, supplying the market throughout the dry season until rainfed crops come back on stream. Yams do respond to fertiliser, but swell up, making their eating qualities less desirable, but selling for higher prices. Yams have the effect of inducing young men to remain in the village, as producing yam is more profitable than going on labour migration and moreover, occupies the farmer throughout the dry season. However, the lack of a role for women has had the paradoxical result that they are now going preferentially on migration.

Photo 1. Yams at Gudayiri



5.3 Irrigated

Early records of agriculture suggest that all types of irrigation or flood-retreat agriculture were virtually unknown in the pre-colonial era. These labour-intensive production systems were probably inappropriate for populations which depended heavily on gathered produce and rainfed swidden agriculture. A factor that would have been a discouragement is the presence of river-blindness (onchocerciasis) along all the major water-courses. This has caused populations to retreat from the most fertile areas and subsequently to return to them once a health equilibrium has been established (Hunter 1966; Patterson 1978).

Photo 2. Riverine gardens near Tumu



However, the pressure on land and the need to produce cash crops for sale has gradually brought about innovative farming techniques. Muslim migrants such as the Zarma and Hausa were the first to practise horticulture in riparian areas. Many of the larger rivers are still not exploited in this way for lack of adequate methods of lifting water⁴. However, many shallow rivers and seasonally flooded land are now given over to dry-season gardening in UWR, often using water lifted by hand (Photo 2).

From the 1950s to the 1960s there was an extensive programme to create 'dugouts', small dams for trapping water for both humans and livestock in the dry season. Typically, gardens can be established along their edges as well in places where seepage allow shallow wells to be dug. Some of these dugouts were later converted to irrigated cropping by the Ghana Government. Later, with World Bank projects such as URADEP and IFAD projects like UWADEP, formers dams and dugouts were rehabilitated to more structured small-scale irrigation.

At smaller dam sites, dry-season cultivation is mainly vegetables, most commonly onions and tomatoes. In the early period, lettuce, pumpkins, cucumbers and watermelon were brought in, but these are now of minor significance. Onion cultivation is particularly popular and represents one of the most important agricultural exports from the region. The storability of onions has made it possible for astute producers to play the markets, a capability enhanced by mobile phones. Producers can establish when prices are favourable in southern markets, rapidly aggregate stocked onions and sell within a couple of days. The situation with tomatoes is much less attractive since the trade is controlled by 'market queens' who use their perishability to force producers to accept low prices. Recently, they have been buying from Burkina Faso to dramatise their situation as monopoly buyers. It seems likely that dry-season cultivators will turn increasingly towards crops that can be stored, dried or find a strong local market, like okra and green leaves. A more surprising development is the widespread cultivation of bananas; they can be grown in the seepage of dugouts and dams, and they have a ready market locally.

Photo 3. Bananas growing at Han



⁴ In neighbouring countries, such as Nigeria, small petrol pumps were introduced by Agricultural Development Projects in the 1980s to lift water to gardens and these are still widely used despite being no longer subsidised. Such pumps are beginning to become available in Ghana.

5.4 Land tenure

The land tenure systems of Northern Ghana have been described by numerous authors (Pogucki 1950; Ollenu 1962; Der 1975; Bening 1976; Benneh 1973a, 1976; Mendonsa 1979a; Abdulai 1986). Inheritance and land tenure are complex and vary from group to group but the low population densities and shifting cultivation systems have meant that all types of ownership are weak compared with UER. Land is usually vested in the village or the lineage and cannot be bought or sold. However, recently incipient urbanisation, especially around Wa, has led to a small market in land. In addition, as land along rivers and with access to irrigation water is perceived as more valuable, a market will also develop in this land.

The key elements in understanding tenure systems in this region are;

- a) the division between farm and bush
- b) the independence of trees from the land on which they grow

Until the colonial era, the principal method of farming was shifting cultivation; villages moved within a demarcated zone, clearing the woodland, farming for some years and moving on. Allocation of lands in bush farms was through the earth priests, *tendaana*, but the abundance of land was such that competition was almost absent. Trees in the bush were the property of the chief or earth-priest and could only be harvested or cut with their permission.

Farms were divided by classes according to their productivity. Home farms and those in valleys or along rivers farms were the most valuable and could be cultivated continuously, while the bush farm was cultivated with a bush fallow system. Such land is held by the village/lineage and cannot be alienated (Benneh 1973a). Ownership of economic trees on farms has devolved to the individual who develops the land but the ownership of economic trees in the bush has now become a matter of dispute in some areas.

These land tenure systems have been generally maintained up to the present. Although land is bought and sold around Wa, intense pressure on land in rural areas has not led to a monetarisation and individualisation of land rights as has been reported elsewhere in West Africa. Instead it has resulted in a consolidation of lineage holdings and a sharpening of boundaries. This unusual situation seems to reflect the continuing importance of traditional religion and the maintenance of lineage solidarity combined with the realisation that an individualisation of landholdings will rapidly lead to social and economic stratification.

5.5 Land use planning

Land use planning has been largely based on a concept of policing rather than working with communities to manage land and forest resources. Attitudes are changing, both in the NGO sector and in official policy (Alebikeya 1988; anon 1995; Wardell 1996) a trend that has continued with decentralisation.

6. Livestock

Northern Ghana is often characterised in the South as a livestock region, and especially in the drier regions where agriculture is problematic. This stereotype is only partly true, with significant numbers of poorer households only possessing a few goats and chickens. Descriptions of livestock systems can be found in Hall (1999) and Blench (1999b).

The most culturally significant species in Upper West Region is cattle, which represent both a reserve of cash in periods of food shortage and are significant for social transactions such as marriages and funerals. The principal cattle breed herded in Northern Ghana is the West African Shorthorn (WAS) with substantial introgression of zebu genes in some places. These cattle are very hardy and well adapted to a difficult environment. Work-oxen represent a relatively recent innovation, but prior to that all cattle were allowed to roam freely in the dry season (as also goats, sheep and pigs). In the wet season, small ruminants and pigs were tethered or confined. Wet season management of the herds was traditionally left to children, but with

the spread of schools, this task has been handed back to young men or hired herders. The rapid spread of dry-season cultivation has created a conflict with livestock producers. Animals tend to be close to dams rather than 'roaming around' as it is easier to water them. But they then enter gardens more frequently unless these are fenced. As the area behind the dam floods every season, wooden and mud fencing is washed away and has to be rebuilt annually, this represents a major labour cost. The decade since the mid-1990s has seen a very significant rise in cattle-theft, which is locally attributed to the incursions of Fulbe cattle herders during this period (§4.2). Veterinary Department statistics indicate a marked fall in cattle populations during this period.

Livestock keeping represents a major coping strategy in a semi-arid region with uncertain rains. The other livestock species kept in Upper West Region include horses, donkeys, goats, sheep, pigs and poultry of various types. The keeping of pigs is relatively recent, but has been enthusiastically adopted, since there is adequate vegetable refuse and beer lees to nourish them and they find a ready market in the south. There are virtually no intensive production systems in the region and small stock are allowed to forage freely in the dry season and confined in the wet. In the case of minor species, such as rabbits, guinea-pigs and poultry other than chickens these are spread fairly evenly throughout the area and their distribution reflects individual enthusiasm rather than sociocultural differentiation. The decade since 1995 has seen a rapid increase in numbers of donkeys in the region and these are now widely used in both traction and to pull carts. Donkey-carts and ploughs are popular with women, especially in regions with lighter soil.

Photo 4. Typical sheep breeds



Veterinary services were for a long time either free or charged at minimal rates. They were constrained largely by shortages of drugs and difficulties of access. However, since 1998, the Ghana Government has enforced a cost-recovery programme which has been the source of problems for many livestock owners. This has led to dramatic falls in the numbers of animals vaccinated and seems to be responsible for falls in overall livestock holdings. Prices of vaccination are very low, but even so, many households are so poor that they take the risk of losing their animals.

7. Markets, commodity and input prices

7.1 Markets

It seems that there was no very elaborate trading system in precolonial times, and that the present markets all developed in the twentieth century. Goody (1967: 7 ff.) describes the pre-colonial trade with the Mossi territories further north. Cola, oranges and salt were traded north while fish, livestock and staple crops were carried south. Mahn (1980) analyses the dynamics of periodic markets in northern Ghana and describes the changes over time. In more recent times, the development of rugged trucks has meant that many local markets are by-passed as merchants come direct to the farm, to buy already bagged staples, such as maize and yams.

7.2 Agricultural commodities

7.2.1 Crops

Commodity prices in UWR have been regularly monitored since the early 1990s, so it is possible to gain a picture of price patterns over the decade 1995-2004. The prices given here are based on annual means. Commodities for which data are available are maize (Figure 7), millet (Figure 8), guinea-corn (Figure 9), rice (Figure 10), yams (Figure 11) and groundnuts (Figure 12).

Figure 7. Wholesale maize prices in UWR, 1986-2004

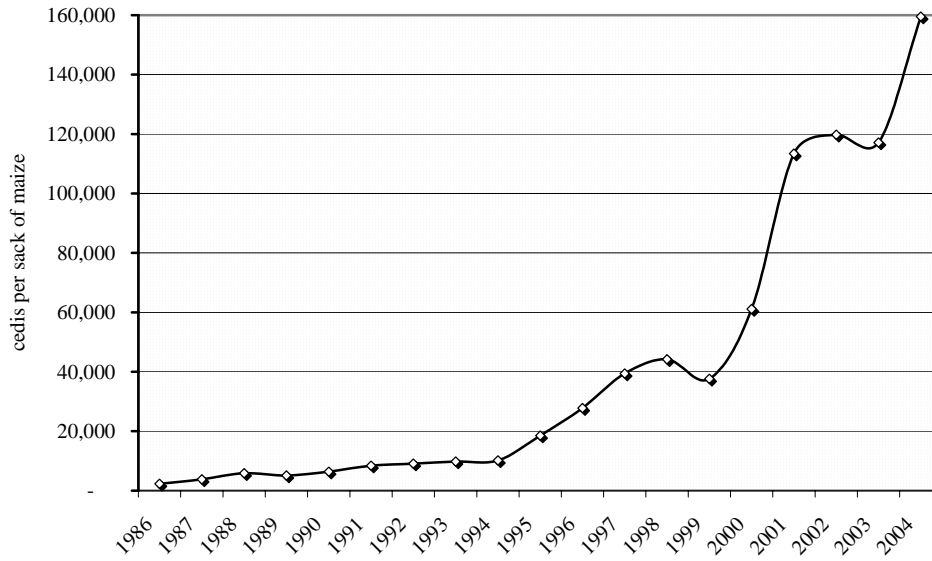


Figure 8. Wholesale millet prices in UWR, 1986-2004

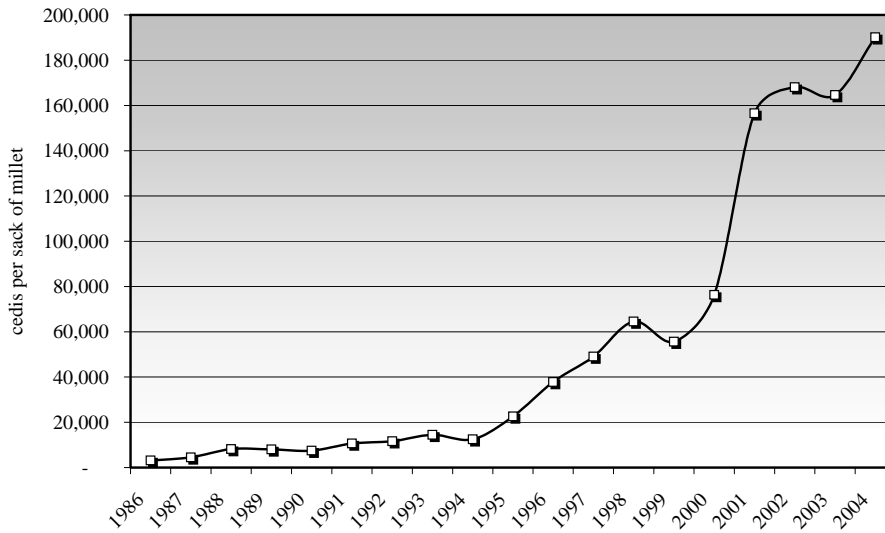


Figure 9. Wholesale guinea-corn prices in UWR, 1986-2004

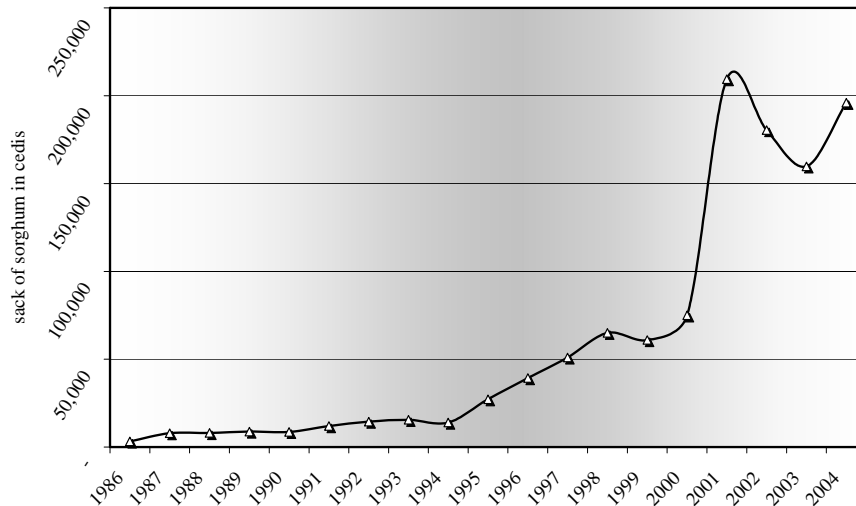


Figure 10. Wholesale rice prices in UWR, 1986-2004

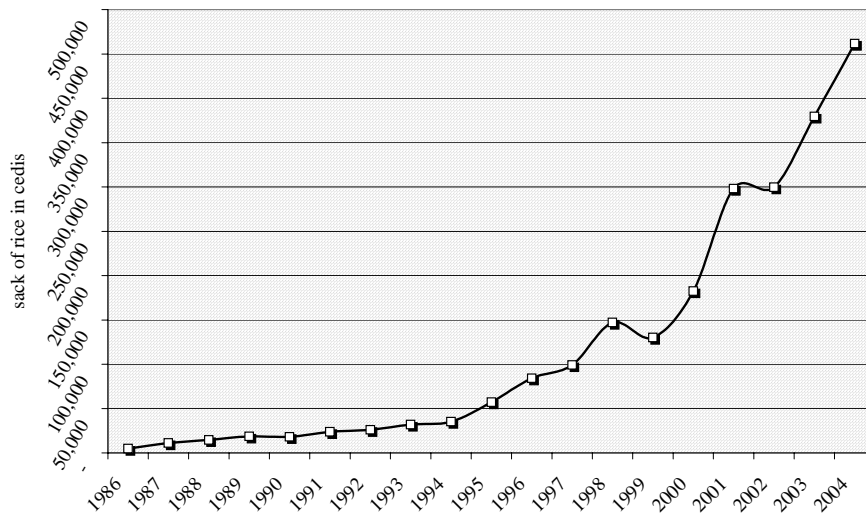


Figure 11. Wholesale yam prices in UWR, 1986-2004

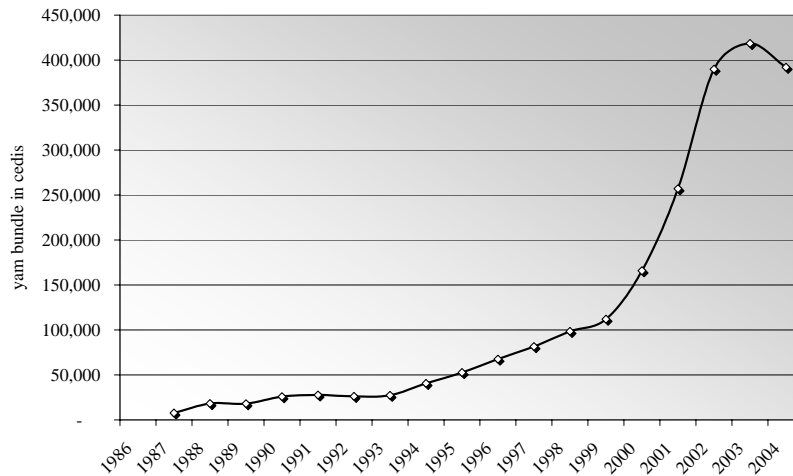
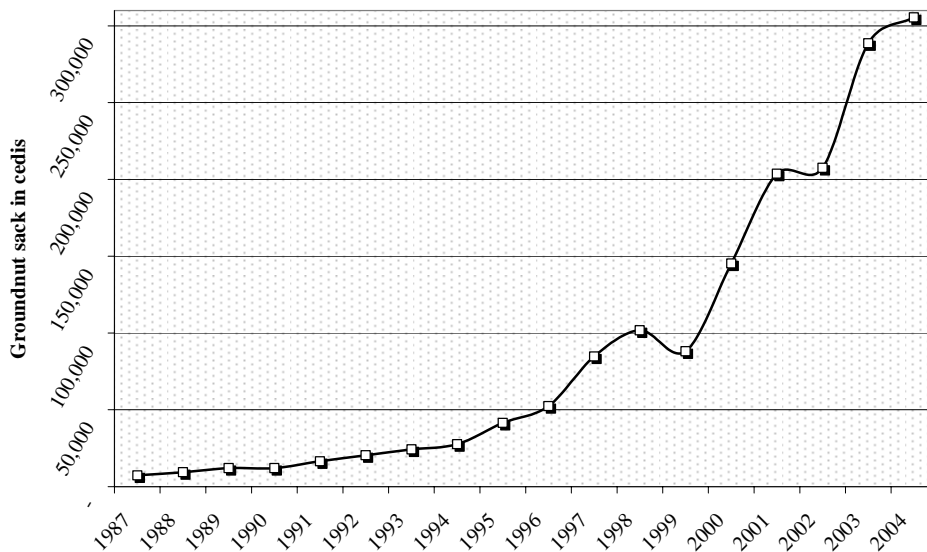


Figure 12. Wholesale groundnut prices in UWR, 1995-2004



The pattern for all these commodities is virtually the same; prices rise slowly until the year 2000, when they rise sharply and keep on climbing thereafter. Curiously, there is no evident explanation for this pattern. Rainfall patterns do not match this, nor was there a sudden fall in the value of the cedi. Fertiliser prices have risen in this period, but neither so sharply or uniformly. Locally, it is common to attribute this rise to increased fuel prices around this period but this would have only been a very temporary effect. Livestock prices show a roughly similar pattern and this must reflect internal demand within the country, as well as significantly greater disposable income on the part of southern consumers.

Farmers in UWR are now firmly connected to the national system and the viability of their farm enterprises is strongly affected by both prices of inputs, communications and transport and government policies on imports. Recent moves by government in Accra to import cheap maize and rice to satisfy the urban constituency, contrary to its own expressed food and agriculture policy, will certainly have a major impact on surplus production of staples in UWR and is likely to further impoverish farmers already on the edge.

7.2.2 Livestock prices over time

The market for livestock in UWR is quite different from crops, since animals are required for work and also for sacrificial purposes, especially for funerals. Sheep show strong seasonality as they are bought prior to Muslim festivals. Pigs, chicken and guinea-fowl are the main species bought and sold as a smallholder commercial enterprise. The gradual switch to cost-recovery veterinary services has affected the supply of animals since many herds and flocks have been wiped out by epizootics. Although it seems evident to policy makers that owners should spend a few thousand cedis to protect animals worth considerably more than that, in a cash-poor economy with uncertain food supplies, even those expenditures are hard decisions and many owners seem willing to take risk. Wholesale prices in UWR for livestock are shown in Figure 13 (cattle), Figure 14 (sheep), Figure 15 (goats), Figure 16 (pigs).

Figure 13. Wholesale cattle prices in UWR, 1990-2004

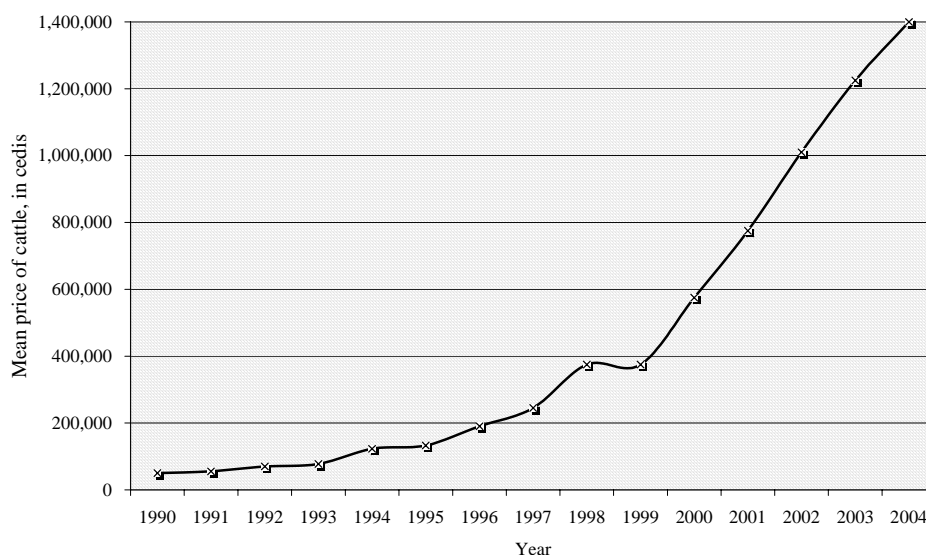


Figure 14. Wholesale sheep prices in UWR, 1992-2004

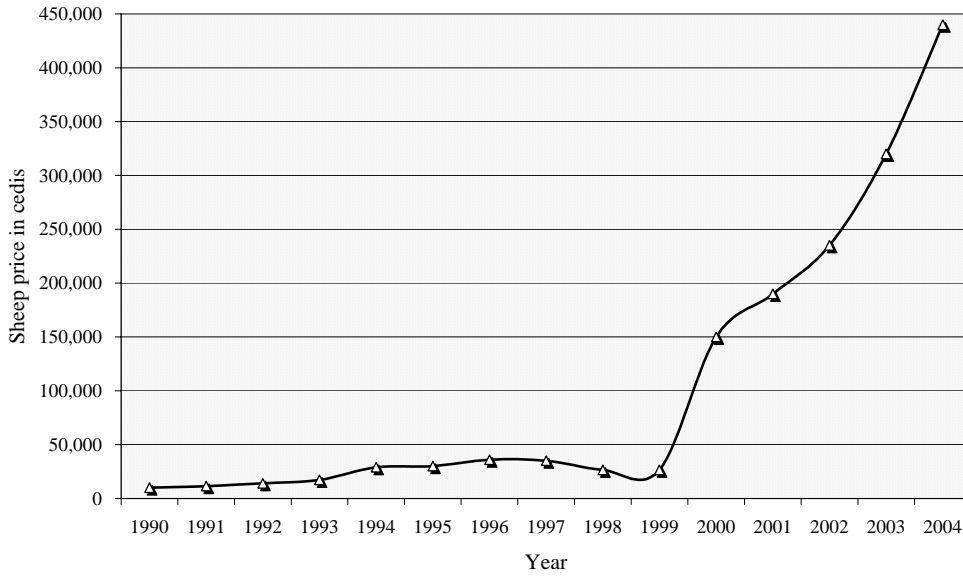


Figure 15. Wholesale goat prices in UWR, 1990-2004

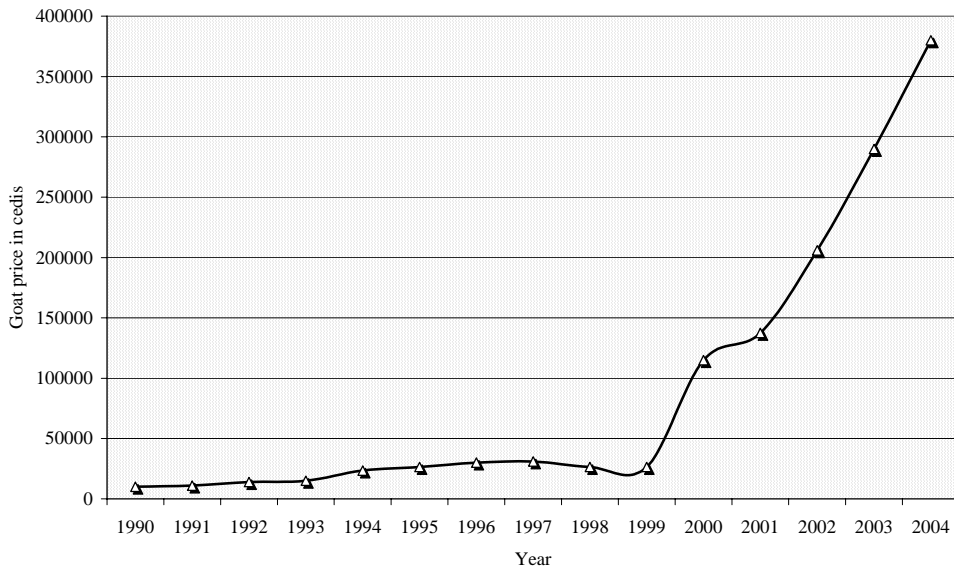
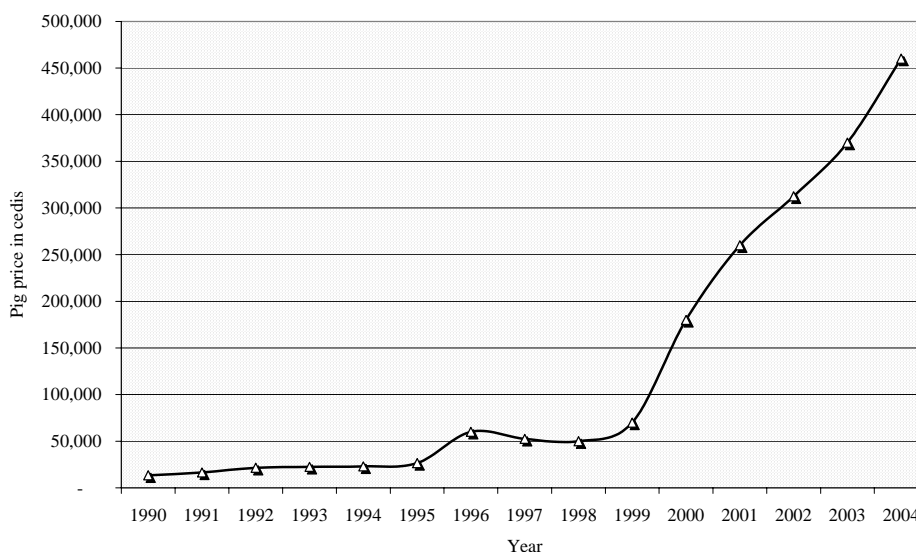


Figure 16. Wholesale pig prices in UWR, 1990-2004



Cattle show a quite different pattern to other livestock species. Prices began rising slowly in 1996 and then continued upwards on a roughly similar gradient. Sheep, goats and pigs all climb in 1995, remain level for several years and then begin a very steep climb in 1999. These price patterns show similarities to crops, and are quite similar to those in Upper East Region.

7.3 Inputs

The use of farm inputs has been strongly driven by the passing enthusiasms of agricultural development projects. Manure was traditionally used, especially in UWR, to increase the fertility of the fields and is still collected and redistributed throughout much of the region. The first inorganic fertilisers were introduced into the region by the colonial government in the 1950s and gradually became a substitute for maintaining soil fertility by traditional means. Through much of the post-Independence era, fertiliser was heavily subsidised. However, the subsidies were progressively eliminated after 1983, with the consequence that they became too expensive for some farmers. Farmers who work with the cotton companies still receive fertiliser at below market prices, but this is now small minority with the collapse of cotton. Nonetheless, fertiliser and pesticides are more widely used and this probably reflects the growing market for cash crops within the region. For example, yam-growing, a highly profitable business, makes use of fertiliser for the market tubers. Herbicides are hardly known and indeed often not readily available.

8. Human health and well-being

8.1 Nutrition and epidemic disease

The low investment in agricultural labour and hence in soil and water conservation also reflects the poor state of health of many individuals in UWR. The low output from the farming system is responsible for marked seasonal hunger, low bodyweights and systematic malnutrition of all sections of the population (Hunter 1966;). This makes the populations particularly susceptible to the epidemics of cerebro-spinal meningitis that sweep through the region every dry season, often with considerable mortality.

The health status of populations in the three northern regions of Ghana reflects the absence of health services and poor nutrition due to regular 'hungry seasons'. Regular surveys by the Ghana Health and Demographic Survey from the 1990s have made it possible to gauge the situation more accurately than previous anecdotal material. Table 5 shows total and disaggregated under-five mortality for Upper East and Upper West over the decade 1993-2003.

Table 5. Neonatal, post-neonatal, infant, child, and under-five mortality rates* 1993-2003

Region	Neonatal	Post-neonatal	Infant	Child	Under-five
Upper East	22	11	33	48	79
Upper West	62	43	105	115	208

* per '000 births

Source: GHDS (2003)

These rates remain stubbornly high, but despite its production problems, UWR is significantly lower than UWR, which probably reflects the better communications and implantation of more clinics in the 1990s. This is confirmed by corresponding nutritional studies which show much less difference between the two regions. Table 6 shows a comparison of UER and UWR for three anthropometric indices measured in 2003;

Table 6. Nutritional status of children

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Ghana 2003

Region	Height-for-age			Weight-for-height			Weight-for-age			N
	% below -3 SD	% below -2 SD1	Mean Z-score SD	% below -3 SD	% below -2 SD1	Mean Z-score SD	% below -3 SD	% below -2 SD1	Mean Z-score SD	
Upper East	12.1	31.7	(1.3)	2.4	12.9	(0.8)	7.8	32.4	(1.4)	156
Upper West	12.6	34.1	(1.3)	2.6	11.0	(0.3)	6.0	25.9	(1.0)	95

Source: GHDS (2003)

The similarities suggest that lower mortality in UER is a consequence of better access to medical services.

8.2 Chronic disease

Apart from general poor health, populations in UWR are afflicted with chronic debilitating diseases which cause lowered productivity. Most notable are river-blindness (Patterson 1978), guinea-worm, schistosomiasis, malaria and soil-transmitted helminths such as hookworm. Almost all of these are related to infected water sources and regrettably, dams, which increase agricultural production also increase their incidence. Surveys among school-age children show that levels of infestation may be actually increasing, especially hookworm (Dery *et al.* 2004). Of Northern Ghanaian districts surveyed, Lawra District had the highest incidence of multiple worm infestations. NGOs such as ADRA have been active in awareness campaigns to try and change behaviour in relation to water use. Public health, however, is strongly affected by the availability of donor funds and these are lamentably subject to passing fashion.

9. Institutional background

9.1 Government and decentralisation

Government in Ghana was traditionally highly centralised in Accra and bureaucrats throughout the north sourced from the south. During the 1990s, Ghana embarked upon a bold experiment in devolving power to the regions and districts. Both regions and districts have elected assemblies which have some powers in the provision of public services but as yet are unable to raise major taxes. Innovations deemed to be of national relevance, such as forest and wildlife reserves, are beyond their powers; they cannot revise legislation relating to them. However, some of the reforms in progress may change this state of affairs.

In the light of this change, donors are now channelling funds through regional and district assemblies. This has good and bad elements; it increases massively the transaction costs of getting decisions made both in terms of time and because political constituencies have to be satisfied. Assemblymen are, as they say,

'hungry' and anxious to be re-elected, which means they need projects to be sited in their districts. The consequence of this is often the opposite of pro-poor policies; the communities and individuals which shout the loudest get the resources. In addition, local contractors have strong links with the assembly and can lobby for contracts. In the case of infrastructure provision, they may be awarded jobs far beyond their capacity.

Nonetheless, the positive side of this is that local people are taking charge of their future, for better or worse. The bored patricians from the south who used to occupy every government office have been turfed out by individuals who must answer to their own people. Northern educational institutions are gradually turning out graduates able to fill government posts in their own region. The next key step is to make the case for northern development effectively at the level of central government; some of the mismanagement consequent on local political considerations can create a negative image at national level.

9.2 Multilateral and bilateral aid agencies

Northern Ghana has been the site of a series of major initiatives by multi-lateral agencies, starting with a FAO study in 1977, reprised by FAO/IFAD in 1989. In the early 1980s, a 'Northern Region Integrated Project' (NORRIP) was conceived to take an integrated approach to planning and agricultural development (anon. 1983). The World Bank designed an 'Upper Region Agricultural Development Project' (URADEP) to cover both Upper East and Upper West at the time when they constituted a single region. Its successor projects, LACOSREP I and II (appraised 1992 and 1999) and UWADEP (appraised 1995, closed 2004) concentrated on small dams and a raft of other agricultural and livestock interventions with a strong emphasis on gender and capacity building.

The World Bank initiated a National Livestock Services Project (NLSP) in 1993 to improve veterinary care, to finance the construction of communal water holes and introduce the use of improved pastures. During the same period a Forestry Resource Management Project (FRMP) was undertaken, principally in the South. A second phase, the Savannah Natural Resource Management Project (SNRMP) was intended to address savannah forestry issues more directly, but poor management led to its being halted partway through its life. The World Bank has also supported VIP (Village Infrastructure Project) intended to developed demand-led projects and its successor, CBRD (Community-based Resource Development). Bilateral donors have had much less direct input into Northern Ghana, preferring to finance NGOs or to work through budget support to the Accra government.

9.3 NGOs

Upper West Region was for a long time neglected by NGOs. Few had a base in the Region, perhaps because of its inaccessibility. Moreover, they seem to be quite ephemeral; for example, the NGOs mentioned in IFAD (1995) seem to be no longer extant. Suntaa-Nuntaa, a local NGO particular active in agroforestry is one of the longest-serving bodies. Church-based NGOs are important and all the major denominations have some type of operation (Alebikiya 1988, 1993). ADRA, the Adventist Development and Relief Association, is one the largest players, both in Northern Ghana and in adjacent Burkina Faso, focusing on agricultural interventions, sanitation and credit. In UWR, Actionaid is active in feeding programmes but has also begun the construction of small dams. Technoserve, which focuses on appropriate technology has offices in UWR.

10. Conclusions; general trends

By many indicators, Upper West Region is the most disadvantaged region of Ghana. In terms of child mortality, disease incidence, access to health, schooling, roads and communications it remains at the bottom of the table. Apart from UWADEP, it has seen remarkably little donor investment and has been largely neglected by government. The decade since 1995 has begun to change, in part because the creation of a distinct region increased the concentration of educated people, who have been more articulate in voicing their concerns. Surveys show that external trade is expanding, that schools and clinics are making an impact

in rural areas. Despite the poor roads, the export of agricultural produce is becoming more effective as a new generation of farmers appreciates better the potential markets further south. At another level, UWR still has a well-conserved natural environment with fertile soils and substantial tree-cover. It is a long way from the cycle of degradation that characterises UER. A challenge for the future will be to develop productively while maintaining these natural resources. Much will depend on donors and government keeping up the momentum and building on present gains; if the movement towards budget support continues, UWR these trends are likely to reverse.

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