

Evolution instead of revolution

Northern Ghana represents a dry-land savanna ecosystems. Traditional low-external-input agriculture is widely practised in a risk-prone environment where the 'Green Revolution' has failed. This article outlines the sociocultural setting of farming in northern Ghana, traces past attempts at

pacified because taboos have been violated. In recent times, however, social sanctions are being eroded as a result of population pressure, 'Western' education and the coming of other religions, particularly Christianity. Some farmers attribute the low rainfall and declining yields to a breakdown of rituals associated with the use of land, rivers and trees.

flocked to the north to take advantage of the 'Green Revolution'. Large expanses were cleared of all trees and planted with rice and maize.

From 1974 onward the Savanna Agricultural Research Institute (SARI) bred high-yielding rice and maize varieties (HYVs). The government's extension package was oriented to external inputs: monocropping of HYVs with chemical fertiliser application. The major task of extension staff was to distribute fertiliser and train farmers in its application. In the 1970s, several development programmes helped extend a similar package, including credit for seed and fertiliser, to smallholders.

In 1981, the Government began a Structural Adjustment Programme. Subsidies on agricultural inputs were removed. Procurement and distribution of inputs was privatised. Fertiliser prices rose sharply, and imports fell from 60,460 mt in 1980 to 12,000 mt by 1993. SARI's research agenda was redirected to 'identifying cropping systems that will ensure high and stable productivity under permanent cultivation without creating undue demand for external inputs' (Diehl 1993).

Agricultural extension in northern Ghana has been dominated by the Transfer-of-Technology approach, promoted through 'Contact Farmers' and 'Training and Visit'. Research and extension fall under different ministries: the former under the Ministry of Science and Technology, the latter under MOFA. To improve communication between the two services, Research-Extension Linkage Committees were set up. Even though the communication was still one-way, efforts were made to cooperate in designing and implementing the activities of the different Farming Systems

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'modernisation', and describes the context in which smallholders, NGLWG and ILEIA conducted joint research.

Sociocultural setting

The characteristic social, economic and domestic unit is the patrilineal joint family. The head of family, usually the oldest patrilineal male descendant, controls family labour and farm produce, and rations it for daily consumption. However, emigration has led to the emergence of female-headed households, especially in the densely populated Upper East Region. Household members are the main source of labour for the family farm, where staple crops are grown. However, adults also have their own plots where they can generate cash income for their personal needs.

The exploitation of nature (including agriculture) is governed by numerous taboos and social sanctions, enforced by traditional religious institutions. Land is communally owned and a land custodian, the *Tindana*, exercises spiritual power and allocates use rights according to custom. He performs the Earth rituals at the beginning and end of the farming season, or when the Earth must be

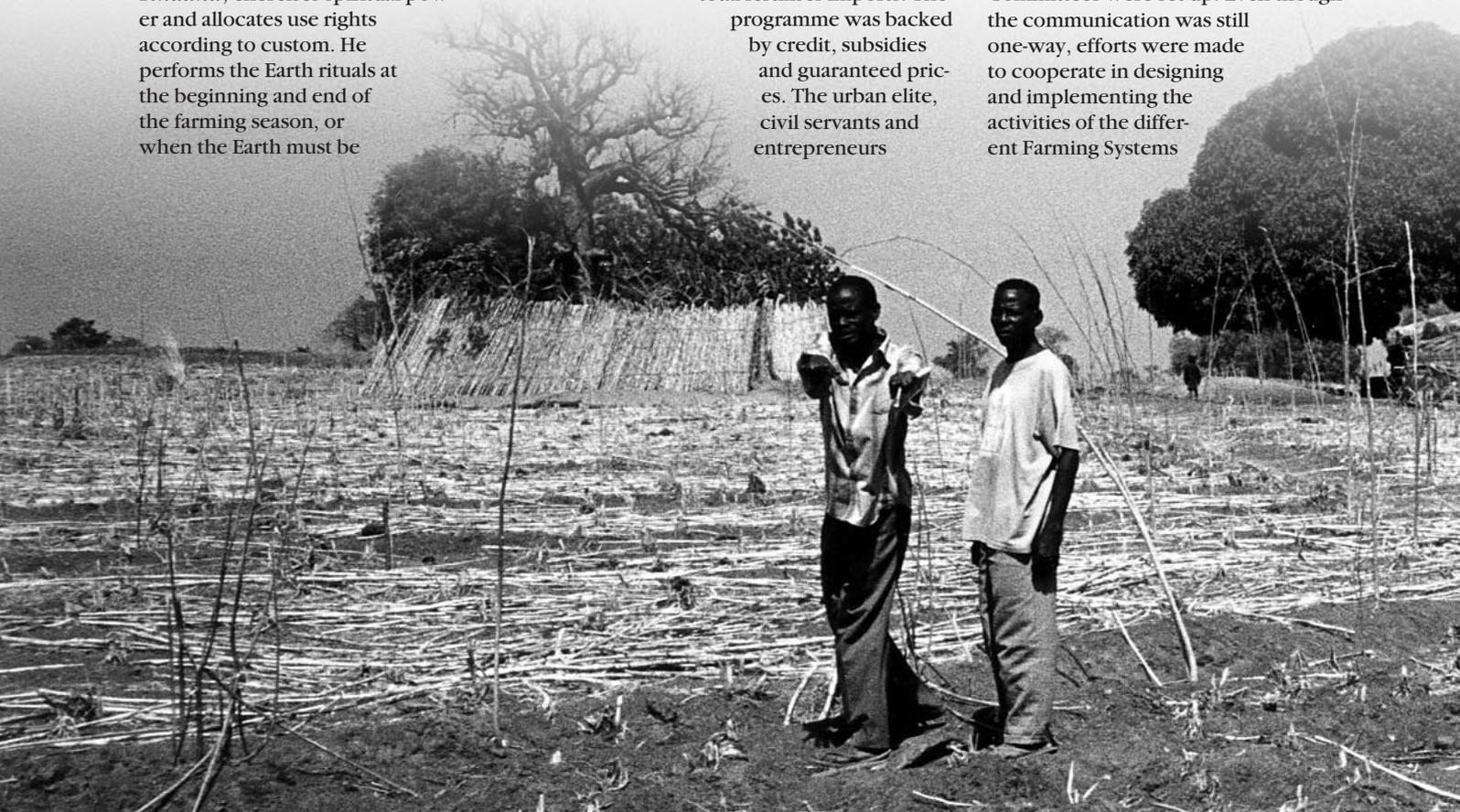
Non-revolution in agriculture

In the first half of this century, the colonial government regarded the Northern Territories as a labour reserve for the army, police, mines and cocoa farms in the south. Little investment was made in the north although there was an attempt to produce cotton, groundnuts and sheanuts for export. Recurrent food shortages forced the government to set up agricultural research and extension stations in the late 1930s and early 1940s.

After Independence was gained in 1960, the Ghanaian government established large state farms, introduced tractors and drafted the able-bodied youth as labour. No support was given to smallholder farming.

The 1970s saw a shift from socialist to capitalist agriculture. Large-scale, mechanised rice and maize production on private farms was promoted. Through multilateral and bilateral projects, huge amounts of fertiliser, herbicides, insecticides and heavy equipment such as tractors, combine harvesters and land-clearing equipment were imported. Northern Ghana consumed

more than 50% of the country's total fertiliser imports. The programme was backed by credit, subsidies and guaranteed prices. The urban elite, civil servants and entrepreneurs



Research (FSR) teams set up by SARI in the 1980s.

NGO reorientation to LEISA

Numerous NGOs are active in agricultural development in northern Ghana. The longest and most widespread effort is that of the church-sponsored agricultural stations. From their establishment in the 1960s and early 1970s, they collaborated with national and international researchers to conduct fertiliser and variety improvement trials. They operated demonstration farms and provided credit so that farmers could adopt 'scientific' farming methods including hiring tractor services and buying fertilisers, HYVs and improved animal breeds. To modernise smallholder agriculture, they worked with contact farmers, relying on the 'trickle-down' effect: results, however, were disappointing.

The stations began to change strategy and sought a path towards low-external-input and sustainable agriculture. They promoted animal traction instead of tractors, the use of compost and farmyard manure instead of chemical fertiliser, and they encouraged farmers to stop burning crop residues in order to maintain soil productivity. A campaign was launched against bush fires.

Smallholder farming prevails

Despite the attempts first to introduce socialist agriculture and then to revolutionise farming into modern businesses, more than 90% of rural people in northern Ghana continue to practise small-scale rainfed farming oriented primarily to subsistence. The smallholders adopted certain cash crops (mainly groundnuts, cotton and cowpea) to meet their needs for purchased goods. They adjusted their farming systems and practices as conditions changed, above all, as population density increased.

Now, relatively fixed cultivation is practised in the more densely populated Upper East and Upper West Regions, while semi-permanent and shifting cultivation is practised in the Northern Region and parts of the Upper West, where land availability is not yet a constraint. The average holding consists of a 'compound farm' around the home and several 'bush farms' a few kilometres away.

Depending on the region, the main staples are millet, sorghum, maize and/or yam. In addition bambara beans, cassava and rice are also grown for home consumption or sale. Intercropping is common, but rice is grown mainly by women as a monocrop in seasonally flooded lowlands. Traditional crop varieties, well adapted to the harsh climate and uncertain rainfall, are generally chosen. In the case

Livestock also play an important part in cultural and religious life. The use of animals for traction is more prominent in the Upper East and parts of Upper West but, even here, fewer than a third of farmers own draft animals.

Current development efforts

The MOFA extension service now emphasises soil conservation measures such as contour farming, ridging across the slope, more efficient fertiliser application, and good land preparation. Researchers at SARI are looking into other agronomic possibilities to improve the land, including cereal-legume rotation and intercropping, agroforestry, cover cropping, alley cropping, and improved fallow. Additional techniques promoted more recently by NGOs and, to a lesser extent, by MOFA

Farming in northern Ghana

of maize and, to some extent, sorghum, 'improved' varieties are grown. These have potentially higher yields and respond better to fertiliser but are less resistant to drought and the dry spell that falls in the middle of the wet season.

Tillage is done mainly with hoe and slasher (slash-and-burn). Tractors are hired for land preparation only and are more common in the Northern Region and parts of Upper West, largely because cotton companies are located there.

Livestock rearing is an integral part of the farming system. Most households keep some animals, mainly poultry, pigs, sheep and goats. Richer households also have cattle, but often hire Fulani pastoralists to herd them. Northern Ghana has a relatively high concentration of livestock: 75% of the country's cattle and 50% of its small ruminants are found here. Livestock range freely during the day. Smallholders use animals to supplement family diet and to generate occasional cash income.

include composting, non-burning of crop residues, integrated pest management, increased crop-livestock integration and animal traction. In the last decade, some NGOs - particularly the ACDEP stations - introduced the idea of developing technologies directly with farmers. It was in this context that farmers, researchers, the extension service, the local university and ACDEP started a concerted effort in action research to develop low-external-input and sustainable agriculture. ■

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References

- Atengdem PB & Dery AB. 1998. **Development and transitions of farming systems in northern Ghana: a historical perspective. Report to ILEIA/NGLWG.**
- Diehl J. 1993. **SARI report**

*Sandema pilot site
in Northern Ghana.*

