

Multi-Agency Partnerships in West Africa: Rice production in Ghana

Country background

Ghana is generally regarded as one of the more successful examples of an economic turnaround in sub-Saharan Africa. From an over-bureaucratic centralised state which led to a currency collapse in the late 1970s, Ghana has become a relative island of political stability and is thus encouraging inward investment.

However, the economy remains over-dependent on two items, cocoa and gold, and recent falls in the world price of these commodities has led to recent exchange-rate problems. The value of the cedi against the US \$ has fallen nearly 100% between early 1999 and June 2000. The other aspect of Ghana that calls for comment in development terms is the imbalance between north and south. Political economic power has always been concentrated in the forest zone, and the north has been left underdeveloped, undermined by a trend for labour migration to the south, especially from the overpopulated and exhausted farmlands of the north-east. The Government of Ghana has taken some steps to remedy this situation in recent years, particularly with transport infrastructure, but reversing years of neglect is a lengthy task, especially because the social structures have now adapted to this fragmentation.

In the 1970s, an era of state intervention, with a government of socialist tendencies, substantial subsidies were given to all types of agriculture, notably to tractors and fertilisers combined with a promotion of maize. At the same time, in common with many other W. African countries, the Government of Ghana conceived rice schemes as a major tool in improving food security and increasing rural incomes. To this end, Asian countries of all political stripes were encouraged to offer their expertise in the production of paddy rice. Ghana achieved the quite difficult feat of having experts from both North and South Korea, Taiwan and China all in the country simultaneously, working on isolated projects in remote areas. One consequence of this is that trying to trace the history of individual varieties or the introduction of particular technologies is extremely complex, partly because of the diversity of projects without any inter-relations between them.

During the 1980s and 1990s, Ghana has been disengaging from this type of intervention under pressure from the IMF and World Bank. All subsidies on agricultural inputs have now been dropped, and many infrastructural elements such as processing mills have been sold to the private sector. This has generally been beneficial for producers of horticultural and tree-crops, but unfortunate in semi-arid regions, where soil fertility is at very low levels and labour to invest in SWC at a premium.

Ghana has relatively high rainfall compared with northern Nigeria and Mali and rice can be grown almost everywhere. Rice schemes are found right on the border with Burkina Faso, as in the case of Tono and down to the sea-coast.

Survey

A survey of rice production systems in Ghana is now under way under the auspices of the University of Development Studies, Tamale. A preliminary survey of the almost unknown systems in Volta Region has been incorporated into this page and as results are produced they will be presented in summary form.

Production methods

Rice production methods in Ghana can be divided into three types:

- a) Valley-bottom rice
- b) Upland
- c) Controlled flooding

Types a) and b) may be regarded as 'traditional' and make use of cultivars of African rice, *O. glaberrima*. Although individual production is on a very small scale it is also extremely widespread, especially in remote areas and there is a specialised market for the so-called 'red rice' produced

thereby. Ghana has mangrove forest in the extreme south-west and it is possible that there is also 'mangrove rice' grown there, although there is presently no information on this topic.

a. Valley-bottom rice

Throughout almost all of the region north of the forest, rice is planted in small quantities in valley-bottoms. Much of this rice is consumed at festivals or sold between households and so never reaches the market. It is virtually ignored in all agricultural statistics, so its contribution to agricultural output remains unquantified.

Case study: Fumbisi Valley

The Fumbisi valley is southeast of Sandema in the region often referred to as 'overseas', i.e. west of the White Volta. Rainfed cultivation of (largely) Asian rice is predominant in this region and its export has recently been facilitated by the construction of a new access road. This year's rice crop had been very successful due to good rains, but with such a good harvest there are insufficient combine harvesters in the valley area to harvest the crops in time. Harvesting was being carried out manually employing local farmers and their wives. Many of the women were paid in rice which they parboiled and cleaned to sell on the market for a higher price. For the majority of the crop the processing is carried out by various middle men leaving a complex hierarchy of prices between the farmgate price and consumer.

The processing of the rice crop was identified as an area where farmers could benefit substantially if a more efficient method were introduced. A number of different rice varieties were identified at Gembilisi which indicate the farmers combine both old and new varieties requiring varying levels of fertiliser and water to spread risk. The seed market unit at the Ministry of Food and Agriculture (MOFA) purchases the majority of the new varieties for seed and older varieties are sold on the market at Sandema.



Tolon Kumbungu District: Lowland rice growing area

Tolon-Kumbungu District is some 60 km. west of Tamale and within the orbit of SARI, the Savanna Agricultural Research Institute at Nyankpala. A French-funded project has recently been initiated to increase rice productivity, based on more carefully spaced and fertilised high yielding rice varieties. Mr Asumah, agricultural extension officer for the MOFA is responsible for the Tale area within the Northern Region Lowland Rice Development Project (NRLRDP) which is funded by the French government for five years from 1999-2004. Small scale rainfed rice growing has been established at Tale on 50 one acre plots using new high yielding rice varieties (such as Tox and GR18) and dibbling, where the seed is planted in rows (20cm apart) and fertiliser is placed in between at larger intervals (40cm) to cover the seeds equally. Farmers who apply to be part of the Tale project receive training on the new varieties and preferred planting method. The combination of good rains and improved planting and rice varieties used at Tale has resulted in a very successful first harvest for the farmers on the project. Farmers reported yields in bags averaging between 20-22 per acre although the highest yield was 31 bags for one farmer growing the Tox variety. This compares to an average of between 6-7 bags using local varieties and the broadcasting planting method.

The farmers on the project were selected from local villages and more have applied following its success to farm next year on the extended area of 200 acres. The project arranged for the ploughing to be carried out to provide suitable drainage and the costs of the tractor were paid by the farmers. Similarly, the transport cost which was initially paid by the seed company who have purchased the crops, will be charged back to the farmers. The price this year was between 65-70,000 cedis per bag and the improved yields from previous years will ensure that the farmers are keen to replicate this year's success. Further improvements on the scheme such as ploughing in stubble immediately after harvesting would reduce fertiliser costs. The success of the project is due to a relatively intensive level of training for the farmers through extension officers and project intervention as well as a strong community partnerships. Many of the farmers worked in partnerships and some groups as large as five (5 acres) combined all their labour for a communal crop (134 bags). The project is due to be expanded over the following four years which combined with varying rainfall levels will need to be

monitored in order to assess the longer term sustainability of what is so far a very successful application of new rice growing technologies.

b. Upland

Rainfed upland rice in Ghana is grown mainly in the mountainous areas of Volta Region, between the Volta Lake and the Togolese border. The rice area stretches between Ho and Nkwanta. Rice is regarded as the central staple and the agricultural year revolves around its cultivation. Almost all the 'traditional' rice is *O. glaberrima* although some early varieties of *O. sativa* are also present. Many villages have rice fields that are planted by the priest and the rice harvested and consumed in a series of ceremonies.

In recent times, however, the introduction of new systems of rice cultivation have changed this pattern. Valley-bottom production has been adopted, particularly by women and is now cultivated widely in lowland sites, usually without supplementary irrigation. The rice is sold to buyers coming from further south.

c. Controlled flooding

The Ghana Irrigation Development Authority was established in 1977 and set about creating a number of large-scale rice projects that depended on pumps, dams, elaborate water-channelling and mechanical harvesting, as well as focussing on high-input rice varieties. Many of the irrigation projects established during this period have been criticised for their approach, for failing to introduce new technologies with sufficient understanding of local farming systems to enable a successful transition to an alternative farming method. These schemes have been the subject of several very negative reviews (e.g. Goody 1980; Konings 1981; Shepherd 1981). As elsewhere, seeds, tillage and fertiliser were heavily subsidised and many farmers expanded their holdings to 100+ ha. Associations of wealthy producers were formed and for a time the scheme appeared successful. However, as soon as the subsidies declined, so did the associations and today, few of the farmers are producing any rice at all.

The technical training required by local farmers to improve their rice crop yields through irrigation is relatively intensive. Where farmers have an existing livelihood they have been reluctant to experiment with new and more complicated methods of production. The Bontanga Irrigation Authority near Tamale is one example where farmers were invited from Bawku almost 250km away to farm on the irrigation project because the local Dagomba farmers did not want to adopt the new techniques required by the irrigation authority. This illustrates the problems that large scale irrigation projects have had in introducing new technologies for rice production in Ghana and the approach has therefore needed to change to include greater participation with local farmers to develop the process of change from old production methods to new technologies.

Words and things

It is common enough to find unofficial varieties of rice and other crops thriving in splendid ignorance of official encouragement. All too often it proves impossible to trace the source of these varieties. While at Tono, we heard from a number of farmers of a rice variety known as 'Alhassan', which was widely used, despite not being recommended by the agronomists. It turned out that this variety originated with an extension officer, a Mr. Alhassan, who had brought the seeds from another scheme, and had spread them among farmers on his own initiative.

Case study: Tono Irrigation Project

The Tono Irrigation Project is situated south-west of Navrongo in the Upper East Region of Ghana. The Tono Dam was constructed between 1975-1985 covering a total catchment area of 3,600 ha and providing a developed area of 2,400 ha for growing irrigated crops. Tono is managed by the Irrigation Company of the Upper Regions (ICOUR) which has an Environment Protection Authority (EPA) to manage areas that cannot be used for crops (approx. 200 ha) for agro-forestry, tree planting and tree nurseries. The developed area lies between the two channels which split from the main canal and a series of smaller weirs are used to control the speed and level of the water and prevent erosion. The developed area is divided into lowland and upland cropping zones and farmers are charged according to the area in which they farm and the crops that they are growing. The agronomists from ICOUR are

responsible for helping the farmers with the new crop varieties and techniques for maximising the yields achieved.

There are nine villages living and farming within the project area and each village has a population of between 3-5,000 people. The charges for the different areas are as follows:

Area	Crop	Charges
Lowland Area	Rice	150,000 Cedis : Annual fee to encourage double cropping.
Upland Area	Tomatoes, Peppers, onions	200,000 Cedis per cropping season.

ICOUR aims to promote efficient farm management to ensure maximisation of the land use and a preventative approach to controlling pests. The use of insecticides is kept to a minimum and biological measures are encouraged together with natural enemies. Problems with birds are tackled by the farmers and their families, often including children, who ward them off from vulnerable crops.

Birds of America

Not all Ghana's schemes to encourage external investment have gone according to plan. In 1997, the president visited the United States with a brief to encourage Afro-Americans to invest in their 'spiritual homeland'. One result of this was that an Afro-American businesswoman came looking for a project to invest in and it was suggested she might like to take over a moribund North Korean rice project. This was agreed with the government and she thereupon ordered hi-tech rice production equipment, whose import was facilitated by government under this programme. However, this agreement was not mentioned to the farmers who had been cultivating rice on the scheme since the Koreans departed. When the helicopters and heavy machinery began to appear, they were understandably dismayed at being turfed off their land at short notice. As a result they began a campaign of sabotage and crop-burning. When last heard of, the scheme had been surrounded by armed guards to prevent the farmers gaining access to their land. The businesswoman has now returned to the United States.

Ghana consumes some 80,000 tonnes of rice per year and currently produces sufficient to satisfy approximately half of this demand. Rice consumption peaks around various festivals including Christmas and Easter. Licences to import rice are given out at these periods of highest demand and imported varieties are widespread. In the South especially there is a social status attached to imported rice which is often noticeably whiter due to the quality of preparation. Cost differentials reflect the social polarisation between those who buy imported rice and those who buy local rice varieties. This has become so entrenched that changes in the cost of imported rice due to currency fluctuations do not necessarily result in more people purchasing local rice when the cost of imported rice increases. Those who prefer imported rice continue to purchase it albeit in smaller quantities.

Part of the problem for rice producers is the very poor quality of local processing. In the Tamale area, where most rice is harvested with combined, the whole stem is cut and is only roughly separated from the grain. The resulting processed rice is dark brown and extremely dirty, having been only sorted in the most schematic way. In the Bolgatanga area, where hand-harvesting is the rule, the panicle is severed directly and much less extraneous matter gets into the processed product. The resulting rice is white and can sometimes be passed as the imported type.

References

- Goody, J.R. 1980. *Rice-burning and the Green Revolution in Northern Ghana*. Journal of Development Studies 16 (2):136-155.
- Konings, Piet 1981. *Capitalist rice farming and peasant communities in Northern Ghana*. Leiden: Afrika Studiecentrum.

Shepherd, A. 1981. Agrarian change in Northern Ghana. In *Public investment, capitalist farming and famine in rural development in Tropical Africa* . Eds. J. Heyer, P. Roberts, and G. Williams. 168-192. London: Macmillan.