



WORLD FOOD PROGRAMME

WTO and Sustainable Seed Multiplication Programmes in Tanzania

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ABSTRACT *Fellowes A. Mwaïselä looks at the negative impact of trade liberalization and structural adjustment measures on food and seed security in Tanzania. He argues that community-based seed multiplication programmes can be a sustainable strategy to foster adoption of improved seed varieties, improve food security at the household level, empower small farmers and give them access to locally adopted crops at all times.*

KEYWORDS *agriculture; food security; hybridization technologies; improved seeds; rural communities; trade liberalization*

Trade agreements, structural adjustment and food security in Tanzania

The World Trade Organization Agreements (WTO) and namely the Agreement on Agriculture (AoA) have had considerable impact on food security and seed multiplication programmes in Tanzania. The basic components of AoA include: removal of tariffs and non-tariff barriers (market access) and reduction of domestic subsidy. For Tanzania, it is difficult if not impossible to discuss the implications of WTO Agreements in isolation from the Structural Adjustment Programme (SAP), i.e. the economic reform process advocated and monitored by the International Monetary Fund and the World Bank officially started in the country in 1992. The implementations of SAP include: liberalization of trade; reduction or removal of subsidies; price decontrol on agricultural crops, etc.

In Tanzania more than 80 percent of the population live in rural areas and depend on agriculture. Furthermore, 90 percent of the seeds used are those saved by the farmers themselves. And for many years the farmers have been able to survive by maintaining their own local planting materials. But the AoA and TRIPS have paved a way for commercial seed companies, through hybridization technologies, to control the farmers re-planting. The most feared technology is the so-called 'Terminator Technology' which genetically alters seed so that it will not germinate if re-planted a second time. With this technology in place

farmers will not be able to save seed from their harvest to re-plant the following season. Another problem is posed by the fact that – in order to preserve the seeds – farmers have been trained to use agro-chemicals. For example, in 1996 packets of Fernesan D were distributed to the farmers. This chemical is bluish in colour and seeds treated with it could be easily distinguished from the grain saved for food. But in 1997 this chemical was not available. What farmers could get from the same company was Agrosan D. This one is almost colourless and the problem is that seeds treated with it can hardly be distinguished from grain set aside for food.

Trade liberalization as stipulated in the WTO Agreements does not only enhance movement of food from one country to another but also from one place to another within the country. For example, private traders can move maize from the southern highlands of Tanzania, which enjoy favourable climate for maize production, to the semi-arid areas of the country. According to CCT experience, this has in a way contributed to the problem of marketing of sorghum, as maize is made available by the market in areas where climatic conditions were more favourable to sorghum than maize. Because the latter can be more easily processed than sorghum, consumers tend to prefer maize and sorghum seeds produced by local farmer groups can – except in bad years of acute food shortages and unpredictable rain – hardly be sold to grain producers. The difficulty in marketing of sorghum food grain has somewhat contributed to the slow adoption of improved varieties having a higher yield potential than the local varieties. Even worse farmers would plant hybrid maize grain that they acquire through the market in semi-arid areas, leading to more serious food shortages. In general terms, the acute shortage of improved seeds in the country has contributed to worsen the situation in food deficit-prone areas.

Free movement of food commodities is one aspect of trade liberalization in Tanzania. However, the SAP, like WTO, also includes reduction of domestic subsidy. One of the impacts of inadequate funding to the agricultural research sector is the unavailability of a wide range of crop varieties, hence very limited choice for farmers. Although

farmers appreciate the yielding potential of some improved seeds, they also identify a number of shortcomings, e.g. higher susceptibility to bird attacks and storage pests than the indigenous varieties. Unless there is improvement in funding and different varieties can be made available, the farmers' problems are likely to remain unsolved.

Liberalization policies and inadequate domestic support for the agricultural sector and the seed sub-sector are threatening food as well as seed security. The WTO Agreement on Agriculture (AoA) and the TRIPS are not supportive to community based seed multiplication programmes and are deteriorating the food security situation of small farmers' households.

Community-based seed multiplication programmes

Within this framework, in 1995 the Christian Council of Tanzania (CCT) – in collaboration with seven member dioceses – initiated the Sustainable Seed Multiplication Programme (SSMP), a community-based seed production system for producing improved sorghum seeds. All informal sector community-based seed multiplication programmes (CBSMPs) stress the importance of farmers having access to locally adopted crop varieties at all times. Adult farmers as well as children are involved in seed production, and this implies that farming skills and seed production techniques are passed from one generation to another under community-based institutions. The CBSMPs use improved seed varieties which can be re-cycled by farmers. The type of seeds used do not pose any serious threat to the indigenous farming systems. In fact CBSMPs empower and put more responsibility on the community while commercial seed production systems take power and responsibility away from the farmers.

The SSMP is now implemented in 42 villages scattered in the districts of Musoma, Bunda, Kwimba, Shinyanga, Mwanza, Same, Igunga, Masasi, Manyoni and Dodoma. The programme aims to create a sustainable base of improved seed availability at village level, so as to improve food security in these areas which are affected by drought-induced acute food shortages. The key

implementers are the farmers themselves. A maximum of 20 farmers have been selected in each of the Programme villages. Oftentimes the farmers have been involved in a number of trainings on seed production, quality control, storage and marketing, and the farmers groups now work as registered cooperatives or associations. The role of the Christian Council of Tanzania has been that of a facilitator, identifying and recruiting resource people for various trainings, to procure and supply inputs such as foundation seeds, chemical for seed treatment, ploughs and carts.

Mpalanga village case study

Dodoma district is a food deficit area with erratic rains and semi-arid conditions, thus likely to continue experiencing localized food shortages. A rapid assessment carried out by the CCT and the Diocese of Central Tanganyika (DCT) in summer 1999 indicated that Dodoma district was facing about 50 percent shortage in cereal production. In November 1999 a case study was accomplished by DCT, which is facilitating implementation of the programme in Mpalanga village, Dodoma rural district.

While investigating the extent to which Mpalanga farmers produce their own food using seeds multiplied by the cooperative, and to what extent the seeds available to farmers in the village originate from the seed producers' cooperative, the main objectives of the study were to assess:

- the relationship between households' access to food by means of their own production and the seed produced by the farmers' cooperative in the village;
- the relationship between the households' access to seed and the seed multiplied by the farmers' cooperative.

Mpalanga village is located 46 km west of Dodoma municipality. The village receives an average annual rainfall of 450 mm. In what is considered as a normal year, the rain comes from November/December to March/April. The population of the village included 3076 people (671 households) out of which about 900 formed the village workforce, 2279 cattle, 101 donkeys and 1592 sheep

and goats. There is a primary school with 419 pupils enrolled at that time. Other social services such as health and water are seriously inadequate. The villagers repeatedly said that though water was plentiful in the gulleys (*makorongoni*), it was not safe. The improved (i.e. with hand pumps) wells constructed in the village some years back were not working, nor was there a piped water system. Cereal food processing in the village did not seem to be a problem as there were three milling machines in working condition. Consumer goods such as sugar, soap, kerosene, salt and cooking oil were available in three shops at Mpalanga. However, the village did not have a *mnada/gulio* (auction/weekly market). Villagers had to walk 5 km to a village called Nkoma where there was the nearest *gulio*.

Analysis and discussion of findings

Local pearl millet (*uwele*) was the most commonly used food, followed by sorghum. However, CDT officers learnt that among the Wagogo sorghum (*mtama*) sometimes means millet and vice-versa, depending on the context. All people interviewed acknowledged that *Pato* was used by many people for food and cash. *Pato* is an improved sorghum variety that can yield two to three times more than local varieties of the same crop (Mwaisela, 1998). It was not clear whether the villagers used the improved millet varieties of *Okoa* and *Shibe*, as again the two terms *mtama* (sorghum) and *uwele* (millet) were used interchangeably. However, some refrained from growing a millet variety which matured earlier than other millets, and was consequently heavily attacked by birds.

All respondents from the cooperative had been giving free seeds to friends, neighbours and relatives. Sometimes seeds were also exchanged with labour. This happened mostly in 1997–8, when there was drought and excessive rain respectively. The seeds which they offered to friends were not drawn from the seed bank but from individual saving. The average amount which each member provided was 2.5 kg to one individual in one year; therefore, about 100 kg of *Pato* seeds were distributed to about 40 farmers over the two years. Individual members of the cooperative saved some

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seeds for themselves first and then for the cooperative (village) bank. If this rate does not change in this village of 671 households, it would take 16 years for every household to get the seeds. However, this would be an assumption that there are no other channels of seed distribution.

Seven out of 12 of the interviewed farmers indicated that they have used *Pato* seeds which they obtained without paying any price in terms of money. The exact size of land which was planted with *Pato* could not be established, but from the discussion it seemed to be something close to one acre and the average yield was 4.5 bags. From the study's findings, nine bags of cereal food would suffice the requirement of a household from one harvest to the next. Thus 4.5 bags harvested from a farm portion planted with *Pato* would meet 50 percent of the cereal food requirement. The situation was different from the cooperative members whose average harvest was 6.8 bags in a good year and 4.6 in a bad year. Thus *Pato* (from one acre) would make more than 70 percent of a cooperative member's cereal food requirement in a good year and 51 percent in a bad year.

The extent to which the cooperative has contributed to improving availability of seeds at the village level is indicated in Table 1.

However, apart from the seed which was given to other farmers by individual members of the cooperative, a bigger portion of the multiplied seed went outside the village through the Seed Bank. For example, in 1998 the multiplied seeds were bought by NPA, on behalf of WFP, to be distributed in Kondoa district. In 1999, CCT bought (through DCT) 1000 kg of seeds for Meatu district (the specific amount from Mpalanga was not established). Also, FAO collected and bought seeds through DCT from the cooperative, although it was not clear where FAO/DCT intended to distribute the seeds. The collected seeds were being packed in bags

weighing 5 kg when full. However, whereas the cooperative's focus was on seed demand from outside the village and relief agencies, Mpalanga farmers also expressed quite a strong demand for cooperative seeds, based on the fact that they were good in quality and different from other seeds. Moreover, it was interesting to learn that even the local seeds were not available without cash or labour payment.

Conclusions and recommendations

From the findings of the study it can be agreed that the seeds multiplied by the cooperative have not been reaching the farmers in the village in the quantity which meet their needs. The improved seed *Pato* which was introduced in the village by the SSMP in 1996 will continue to be maintained by the cooperative and/or cooperative members. During the discussion, the cooperative members indicated that, normally, each of them would save 5 kg for his/her household food production. This means a total of 100 kg is saved by the 20 members and 20 hectares would be planted. Furthermore, the cooperative members stated that they have saved 105 kg for planting their 65 acres seed farm in 1999/2000.

Sorghum *Pato* forms a significant portion of households' food as well as seed stock. The seed producers as well as the relief and development agencies supporting the cooperative seem to assume that the farmers in the village cannot buy the seed while they would be able and willing to do so. Therefore, while the cooperative is trying to go commercial by focusing on the market outside the village, it could also comfortably capture the market in the village especially at this time when the cooperative is not in a position yet to reach seed markets beyond the division and without the

Table 1.

Year	Foundation seed received in kgs	Year	Common seed produced in kgs
1996/7	325	1997	500
1997/8	700	1998	5900
1998/9	100	1999	11,700

support of CCT/DCT, FAO/DCT, Norwegian People's Aid (NPA)/WFP.

Seed producers recommended that they should be assisted in packing the seeds in 2 kg packages. The packages should also be labelled. It is their opinion that in order to sell the seeds it is necessary to add the value explained. The members of the cooperative also indicated that weeding was the most difficult part of their job as seed producers. They therefore requested to be assisted in getting a grant for purchase of oxen-drawn weeding implements.

Farmers requested that the price of crops should be increased and, preferably, prices should be announced before farmers start preparing their farms so that they can plan production.

The seed producers cooperative should announce seed price as soon as the seeds are ready for selling. They complained that there was no 'formal' communication between the cooperative and the farmers in the village regarding seed availability and marketing. The local leaders recommended that seed producers cooperatives should be supported with a grant to purchase ox-plough, agrochemicals and ox-carts.

CCT highlighted a need for coordination among

the organizations involved in providing various services, such as NPA/WFP, CCT/ICRISAT, CCT/DCT, FAO/DCT, the District Council, Ministry of Agriculture and Regional Agriculture and Livestock Development Officer. Also as several seed producers are now emerging in Dodoma – some of them with an unknown source of foundation/certified seed – CCT would suggest that the regional authorities should register all those who have recognized qualifications for seed production such as the cooperative in Mpalanga and Hombolo seed farm. The farm can also be a source of certified seed for the seed producers in remote villages who in turn would multiply them for the farmers surrounding them. There is also a need to think about the environment, for example the plastic bags used by FAO/DCT to pack the seeds will end up being an environmental problem in the villages where the seeds will be distributed. As the problem of plastic waste is now visible in many places, including the rural areas, it is recommended that paper bags should be used instead of plastic bags. Last but not least there is a need for improved dissemination of seed from the cooperative to farmers in the village.

Reference

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