
Some Characteristics of Smallholder Irrigation Farmers in Tanzania

Tanzania is a big country covering some 940,000 square kilometers out of which the Irrigation Department has identified about 1 million hectares (ha) to be irrigable (FAO estimated 2.3 million ha in 1982). There are 120 plus ethnic groups living in 20 administrative regions. Some regions and districts are highly heterogeneous while others are homogeneous in terms of ethnic composition. Frictions exist here and there due to the struggles for scarce resources like land and water. These revive ethnic feelings in terms of ownership of such resources.

In general, rural people are grouped into four main categories: smallholder farmers only (everywhere), agro-pastoralist (almost everywhere), pastoralist only (within the Rift Valley) and the agro-fishing communities (along lakes and the Indian Ocean).

Smallholder irrigation farmers are to be found in any of these four main categories because irrigation is practiced in different topographical and agro-ecological zones. There are certain identified similarities among the smallholder irrigation farmers irrespective of their location and ethnic belonging, which we may dare call the "emerging irrigation culture in Tanzania."

The General Characteristics

Ownership of Water

According to existing legislation—Water Utilization (Control & Regulation) Act as amended in 1981, all surface water and underground water (i.e., from rivers, streams and aquifers) which are the sources of irrigation water are owned by the State.

However, distinctions exist as to the status of each of the water sources. Big rivers are considered national and so any abstraction of water from such rivers requires a Water Right from the Principal Water Officer at the Ministry of Water, Energy and Minerals. Medium-size rivers are considered regional and application for Water Right is forwarded to the Regional Water Engineer. Streams are considered to be community-based water sources subject to exploitation by residents around them. About 121 water sources have been declared as national sources.

Smallholder irrigation farmers have traditionally used water as a common property. State laws about water have never guided their activities. Water has been used according to customary laws of each area. Proximity guided the rights to water. So an official Water Right is a mere dream for many smallholder farmers abstracting water for irrigation from big and medium-size rivers.

Ownership of Land

Although all land is owned by the State, the practice for the people is guided by the customary land tenure systems. Until the Villages and Ujamaa Villages Act of 1975 (now rescinded), when villages acquired deemed rights over land within their boundaries, customary landownership was the norm.

Land for irrigated agriculture is common property of the people living around it. This could mean several villages with land rights within the irrigation zone.

However, in some villages, land for irrigation of specific crops like rice is owned by a few people and so plots are rented out to those who need them each farming season. Access to irrigation land is much more restrictive than rain-fed land by gender and age. This customary restriction is mostly pronounced among women and youth in almost all villages in the country. Thus a gender perspective in irrigated agriculture enters here unlike in the rain-fed type where both women and men have equal access rights.

The renting of irrigation plots is quite high in many schemes. This is partly due to the fact that land for irrigation is usually determined by water availability even if its potential could be very high. Also, many people earn an income from irrigated crops (high profitability assured) as opposed to rain-fed crops.

Plot borrowing is also common among relatives and friends. However, because renting is illegal and borrowing is legal, many farmers who rent irrigation plots would normally say that they have borrowed.

In Tanzania land is not saleable. One can only sell developments on land like permanent crops or buildings, but not the land itself. With the changes towards a market economic system, land is going to have a value as per market forces, in particular, urban land and areas with highly profitable crops.

Settlement Patterns

As a result of the socialist rural development program announced in 1969, following the Arusha Declaration of 1967, the entire country was "villagized." In the sparsely populated area new villages were created and people moved into them.

These were seen as development centers for provision of services like education, health, water, etc. Such "villages" were located along main roads and if located further into the interior, they had to be as accessible as possible. In the densely populated areas, traditional villages/localities were merged to form single and enlarged villages. In these areas people did not move at all.

Today, many immigrants have settled in the villages around irrigation schemes. The concentration of migrant populations around irrigation zones has been due to the high demand for hired labor during peak operations. Increased incomes from rice sales have also encouraged many people to migrate to such areas to share the cake. This is usually around rehabilitated smallholder irrigation schemes where improvements in the system and new agronomic packages have changed the traditional yield patterns of crops.

There are also many nonresident farmers in many schemes. These would be those who own plots but live outside the schemes or districts. They may be living in urban areas but have plot claims in the schemes due to different historical relationships with the area. This is a sensitive feature in Tanzania agriculture in that urbanization has been effected by rural-urban migration whereby land claims were never abandoned.

Sizes and Location of Irrigation Schemes

Currently functioning smallholder irrigation schemes vary in sizes, from as small as 10 ha to as large as 3,500 ha. The average size is 150 ha. Some

of these schemes belong to a few family members while the majority of them belongs to villages.

Before the villagization program, many of the schemes were located close to the residential areas. After the villagization program, the distances between schemes and residential areas have increased. In some of these schemes, irrigation plots and residences were only a few meters apart before the villagization program.

In others, irrigation zones are used as common property by many people from very far-off villages. What united them before might have been a Chief and so they farmed in one area for a particular crop during certain seasons (e.g., rice in wetlands before the introduction of canalization methods of irrigation).

These distances have meant walking for many hours to and fro with much less working time in the fields. For the few relatively rich ones (both men and women), it has meant using bicycles. This problem is also compounded by the lack of good access routes.

However, in some mountainous areas, cycling is difficult and so people resort to walking. Traditional footbridges are the common means for crossing rivers to the fields. When they break during floods, it means that the irrigation calendar would be irregular for the whole season.

Methods of Water Abstraction

There are three water abstraction methods used by smallholder irrigation farmers. These are: direct river diversions (gravity—almost 60%), water harvesting (capturing floods from seasonal rivers and embanking—almost 30%) and pumping (10%). The sprinkler and drip methods are mostly used by commercial farmers, private companies and parastatal corporations.

Sizes of Irrigation Plots

Traditionally, the sizes of irrigation plots vary from 0.1 to 0.5 ha. A farmer might have two or three plots of various sizes within the same scheme. The majority of them have only one plot each. Very few schemes have plot sizes above 0.5 ha. The national average of smallholder plots is

0.3 ha. Rehabilitated schemes have standardized sizes of 0.3 ha, 0.5 or 0.7 ha.

The layout and shape of plots and fields in the traditional schemes are irregular. Individual plots are usually not contiguous because fields are not consolidated as in rehabilitated schemes.

Irrigation Organizations

Smallholder schemes have what are known as traditional irrigation organizations. These are found in all schemes under various names like *Uongozi wa Mfereji* (Canal Leadership), *Kamati ya Mfereji* (Canal Committee) or *Wazee wa Mfongo* (Canal Elders). Some of these organizations were registered as cooperative societies.

Since the 1980s, the rehabilitation of traditional schemes and the construction of water harvesting schemes have taken a new direction with regard to farmers' organizations.

New organizations of water users are being established. These include Water Users' Associations (WUAs) or Water Users' Cooperatives (WUCs). This is a result of imitating the successful experiments with such types of organizations in Asian countries.

Credit Schemes

There are no credit arrangements in irrigation schemes. Farmers depend on local moneylenders as sources of credit. This is the case in almost all the schemes.

The government has started to propagate the idea of establishing credit schemes in order to assist smallholder farmers in their irrigation needs. This is part of the introduction of the cost-recovery/cost-sharing mechanisms for all costs whether they are loans or grants from development agencies and banks. Farmers are being educated on the fact that irrigation development is a long-term economic investment and that it has a lasting value.

An irrigation management system is being introduced to ensure that irrigation schemes are managed by the farmers themselves. Farmers are mostly involved in water management and to a lesser extent in scheme management. The approach is towards unifying these roles so that efficiency of schemes is achieved. Through such efficiency achievements, the profitability of irrigated agriculture could be acknowledged by the farmers.

Conclusion

On the basis of the above discussion, it is obvious that there is a great need to transform the smallholder irrigation farmers into technologically viable communities. This could be done through: promotion of animal traction, assemblage of tractors and stationing them in schemes through tractor hire services, promotion of WUAs/WUCs, establishment of rural agricultural banks, institutionalization of equity in land allocation practices whether by gender or individual basis and the construction of intermediate technology for food storage and processing facilities.