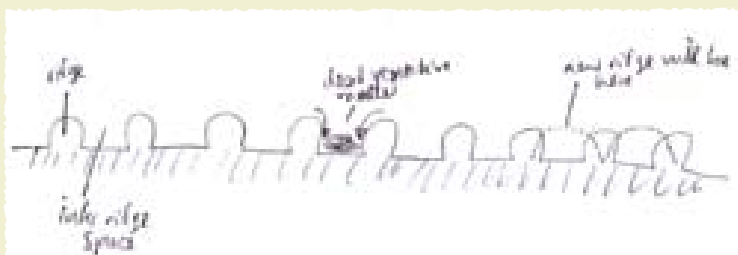


Traditional soil maintenance stands firm

Smallholder maize farmers in Ileje, Tanzania, became the focus of attention of an international soil fertility improvement project. The project recommended a new way of cultivation that included moving from ridges to flat beds, and extended loans for external inputs. Although yields had improved, farmers preferred to go back to their traditional system once the project had ended. This Field Note looks into the reasons behind this decision.

Malamba Clement Mwangosi

Persistent food insecurity in the southern region of Mbeya, Tanzania, was one of the main reasons it attracted an international agricultural improvement programme. Such areas have regularly experienced food shortages due to poor crop yields. Poor yields have also contributed to poor living standards. One of the districts of this region is Ileje. This district lies at an average altitude of 1300 m above sea level, and can be divided into two major agro-ecological zones: the lowlands and the highlands. The latter has a higher rate of rainfall, which favours crops like rice, maize, and finger millet. Farmers in both zones raise livestock, though the lowlands are more suitable. In the course of a few years, changes were seen in Ileje's lowlands.



Traditional ridge cultivation system

The main crop grown for food is maize, but this has always been in short supply due to poor harvests. Maize is traditionally cultivated using ridges. This type of cultivation is an age-old practice used by the local population. It involves collecting all vegetative matter into a line and then burying it so as to stimulate bacterial decomposition. Thus, a ridge is made, where the maize seeds are sown. Subsequent cultivation entails collecting vegetative matter into the space between the ridges and then burying it to become a new ridge. The buried vegetative matter undergoes decomposition, which adds fertility to the soil. It is a form of composting known by farmers and villagers as *kilimo cha matuta*.

Local farmers claim that it is easier to get a good harvest if the ridges are used in the traditional way, instead of sowing the seeds in a flat cultivation system (known as *sesa*), because of the organic matter which is added to the soil. In *sesa* systems, all crop residues are usually burnt during land preparation, which means losing organic material. Another advantage mentioned by proponents of ridge cultivation is related to the easy

waterlogging qualities of soils in this area. Ridge cultivation offers a way out as plants that are raised up, do not get stunted.

However, the ridge system needs some improvements in light of proven agronomic principles. Extension staff are currently advising farmers to consider a recommended inter-ridge space, as well as modification in the size of the ridges.

Project intervention

In the 1990s, the Ministry of Agriculture, in collaboration with an international donor programme, launched a project in Ileje and other parts of the country. The aim was to increase the maize yield by using recommended inputs and agronomic practices. The strategy was to select some villages, form groups, and then give them loans in terms of farm inputs – seeds, fertilizers and agrochemicals. The farmers were to repay the loans after harvesting. The project was run under a district co-ordinator who worked closely with field extension officers during the whole project lifespan. However, the project advocated maize production using flat cultivation, so farmers who took part in the project had to adhere to this production approach.

Training sessions were conducted weekly by the extension staff. Though the project was open to all, it was mainly the men who were involved (principally because taking a loan is generally considered to be “male business”). The project expected other villagers to adopt the practices followed in Ileje after seeing the results in the farmers' fields. These were to serve as demonstration sites so that others could observe and adopt practices.

Positive results?

After the project phased out, maize yields had increased in farmers' households that had participated in the project, especially when compared to the yields obtained by non-participants. As a result, food security in those households, as well as incomes from sales, improved considerably.

Nevertheless, soon after the project finished, farmers in Ileje abandoned the flat cultivation technique and returned to the traditional style of ridge making. Their reasoning was simple: they were not able to buy the farm inputs promoted by the project and required for flat cultivation. Repaying the loans proved to be difficult. Some farmers failed to honour their dues, and were forced to migrate for fear of legal action. This was also partly because the increase in yields led to a fall in crop prices. All farmers felt that by going back to ridge cultivation, they stood a better chance of harvesting enough maize. Since then, flat cultivation has virtually disappeared in this area.

In light of the above, the government has recently been running training programmes in the use of animal-drawn ridge ploughs. This aims to build on what the people have and know, and is therefore expected to have better results in the long run.

Malamba Clement Mwangosi, Ministry of Livestock Development / Ileje Farmers' Network, Box 175, Ileje, Mbeya, Tanzania.
E-mail: mcmwangosi@yahoo.com