



Introducing the forage chopper to women dairy farmers in Uganda

Technology alone is not enough

Introducing new technologies to improve development is not as simple as it sounds. In Uganda, a zero-grazing programme was initiated to improve the food sovereignty of rural women. By confining animals in a stall within the compound, access to land becomes less of an issue and women can feed them close to home. But women then need to spend energy on growing and processing forage to feed the animals. Introducing a forage chopper was expected to help solve this problem. However, this then set other mechanisms in motion.

Florence Lubwama Kiyimba

Masaka used to be the food basket of Uganda but it is one of the districts that was torn apart by war and epidemics, leading to a total collapse of the food supply. Between 1979 and 1985, the agricultural production force was further reduced by the migration of men and youth to urban centers in search of employment and quality education. In an effort to restore agricultural production in the district, several NGOs have initiated agricultural development programmes targeted at food security and income generation. Because many men were absent, all efforts were geared towards assisting women to generate on-farm income while balancing their many household and care roles. One such intervention was the introduction of exotic or cross-breed cows for zero grazing.



Photo: Makumbi George

All family members can help when using an improved chopper.

Two NGOs that played a significant role in the livestock sector in Masaka district were Send a Cow (SAC) and Heifer Project International (HPI), whose initiatives are run by Masaka Diocesan Development Organisation (MADDO), a Catholic church-based organisation.

Both SAC and MADDO work with farmer groups. Beneficiaries of the zero-grazing project were selected from farmers' group members, targeting vulnerable and needy households in the community, with emphasis on women. They were given heifers, as these can provide a double benefit once having given birth, in the form of a continuing source of milk as well as a calf. Crucial in the intervention is the "pass-on the gift" notion of passing the first calf on to a next beneficiary. The assumed development mechanism of this project is that by putting a resource directly into the women's hands, their household economic position is enhanced. Incomes could be generated by increased milk production from the exotic animals and increased crop production resulting from the use of cow manure to improve soil fertility.

Tedious, time-consuming and dangerous

Traditionally, women play a key role in the care of cattle. Even where men are the owners of large livestock, it is the women who perform most of the household labour devoted to the animals. With the introduction of zero-grazing animals, women's roles within the livestock sector increased, as they were directly targeted for this enterprise.

The zero-grazing livestock production system is labour intensive. Forage processing for the animals requires growing forage just like other seasonal crops, harvesting, transporting it home, chopping it and then feeding it to the animals. These activities have predominantly been carried out by women, often assisted by their children. The high labour demands, coupled with a lack of sufficient land for forage production and forage scarcity for dry season feeding, means that the available forage must be used efficiently. Traditionally, the farmers chop the forage with a *panga* (a machete), cutting it into small pieces that can be easily consumed. This method is tedious, time-consuming, dangerous to the chopper and has a low output. A labour-saving chopping technology was therefore developed by the National Agricultural Research Organisation (NARO) to make this task less arduous: the forage chopper. In 2000, eight forage choppers were distributed to farmers in the project. Other farmers were required to buy the machines but due to their high cost, many opted for alternative technologies such as making local versions of the NARO design with cheaper materials, or re-constructing it and adapting it themselves.

In developing the forage chopper, it was assumed that the technology would save time and labour for the women by reducing chopping drudgery as well as increasing the productivity of their animals through better quality feeds. In this way, women could get more control over their own labour and this would free them for more income-generating activities. A research study examined this assumption and looked at the effectiveness of the forage chopper as a labour-saving technology for the women.

Saving labour for whom?

The forage chopper does in fact ease the chopping activity, making it safer and allowing women to get assistance from their family in processing the forage. However, the introduction of one labour-saving technology does not imply that women have control over their saved labour. In male-headed households, it is frequently observed that women spend more time in the fields, assisting the men. On the other hand, men very rarely assist their wives in tasks related to dairy production. Clearly, decisions about technologies have implications for power and social relationships, and the real effects are sometimes opposite to the effects intended by the designers of the technology. Moreover, taking up new technologies is not a simple process. New technologies are often considered to be threatening and challenging, and must be successfully "domesticated" or "tamed" before they can be incorporated into people's lives.

For the zero-grazing project, the forage chopper had been pre-tested with the farmers during the technology development process before it was disseminated further. Nevertheless, after over three years of using the technology, it emerged that the forage chopper needed to be reconstructed to suit the women's needs during the "domestication" process. Whereas the original NARO design worked perfectly well from the designers' point of view, the users found it constraining in design and cost. Women found that it required more time to operate, they needed to adjust the chopper's height to allow their children to help out with the chopping, and the cost was prohibitive for the subsistence



Photo: Makumbi George

Zero-grazing – having the cattle close to home in a confined area – reduces the need for land but increases the workload of women, as it is usually they who perform most of the household labour devoted to animal care. Technology especially suited for women, like an adopted chopper, makes life a lot easier for them.

farmers who made almost no profit from this type of farming. Most women removed all the parts that were constraining the machine's operation and subsequently re-constructed the machine using various types of materials. The alterations made by the users were attempts to adapt the original design so that it would better fit their requirements. With the improved farmers' version of the forage chopper, many farmers started reproducing the technology themselves. Effective forage processing for the animals implies increased production of milk for the family and the community, as well as increased value of the animal.

Don't throw technologies at women

Economic empowerment has been widely identified as a strategic factor in improving women's positions. However, how

technology interacts with gender needs must be well understood because technology could create new needs for the users as well. This study revealed that while putting resources (in this case, first the cow and later the forage chopper) into the hands of women, the introduction of a technology is a dynamic process which sets other mechanisms in motion. It also revealed that no single technology works effectively on its own. Even though women's labour was eased in one activity, it did not mean that their overall labour burden decreased, because they then had to engage in other activities defined by their husbands. Also, although they had been involved in the pre-testing phase, women needed a longer period of time to use the chopper before they knew how to work with it efficiently – they later redefined it to fit better with their needs.

The process of "domesticating" a technology through alterations, as happened with the forage chopper, also applies to the dairy production system as a whole. To make the heifer "work", all sorts of adaptations in the use of material resources, learning new tasks and changes in the division of labour are needed. Agricultural engineers and aid workers should therefore pay attention to the dynamics that emerge from the introduction of a technology, rather than "pushing" more technologies onto women. With more research, the real needs of women can be revealed at the household level. Only then can interventions truly make a difference at the social and political level to optimize women's control over their labour and enable them to achieve true food sovereignty.

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Women farmers on food sovereignty: Bangladesh



My name is Shalballi Morang. Our main problem is always the availability of water and this seems to be getting worse. Rains are late and the water level is getting lower. This is what determines whether we harvest enough rice or not. When we don't, we need to request a loan in order to buy food. Sometimes we sell some of our animals or fish, or I earn money sewing clothes. With that money we go to the market or buy rice from a neighbour.

My husband and I farm 300 decimals (which is slightly more than one hectare) in the village of Dhairpara, in the district of Mymensingh. We are Garo people, so we always share the workload between husband and wife. We are also helped by our three children. We basically grow rice, as do all our neighbours. For a long time, we have been using hybrid seeds, which give higher yields. But these plants need more water and also fertilizer,

so in the end they are more expensive to grow. This is one of the main things we learned from the project we are working with, run by Caritas Bangladesh. In this project, seeds of traditional varieties are collected and made available to us all. Last year we obtained 5 kg of seeds from Mr Matindra Mankhin, one of our neighbours and one of the most active participants in this project. Some of the participants are even running their own breeding programme! Mr Mankhin has now seeds of more than 90 different varieties. Even if yields are slightly lower, we are sure to harvest enough. We complement this with the crops from our kitchen garden and with fish from our pond.

Interview and photo: **Jorge Chavez-Tafur,** editor LEISA Magazine.