Dairy farmers in the Southern Highlands of Tanzania reap big from Brachiaria grasses

The dairy sector in Tanzania has continued to suffer because of low productivity despite increasing numbers of improved animals and availability of large land tracts for grazing. Climate change, coupled with more frequent and prolonged drought, has only made the problem more severe. However, the development of new forage varieties has brought hope to increase productivity of the sector.

Climate-smart dairy systems

The International Center for Tropical Agriculture (CIAT) is leading a research for development project on 'climate-smart dairy systems'. The project is funded by The International Fund for Agricultural Development (IFAD) and implemented through national partnerships with the Tanzania Livestock Research Institute (TALIRI) in Tanzania and Rwanda Agriculture Board (RAB) in Rwanda. It aims to help farmers to increase their production, storage and (year-round) availability of high quality feeds. This will in turn enable farmers become reliable suppliers of milk and engage in commercialization. Climate-smart forage options (grasses, legumes) integrated into mixed production systems are also among the most relevant options to increase resilience and reduce the ecological 'hoofprint' or greenhouse gas emissions of dairy production. Particular attention has been given to climate-robust options increasing productivity while, at the same time, enhancing environmental benefits (soil fertility, greenhouse gas mitigation).

In 3 districts of the ***southern highlands of Tanzania*** (Njombe, Mufindi-Iringa, and Rungwe-Mbeya), improved forages grasses and legumes have been tested in demo plots: *Urochloa* (syn. *Brachiaria*) hybrids cvs. Cayman and Cobra, *Cenchrus purpureus* (syn. *Pennisetum purpureum*, Napier grass) Ouma, Napier ILRI 16835, *Chloris gayana* (Rhodes grass), *Tripsacum andersonii* (Guatemala grass), *Lablab purpureus*, *Stylosanthes guianensis* and *Desmodium intortum* (Greenleaf). In addition, training, seeds and cuttings are provided to farmers so that they can plant the forages in their own farms.

Farmers have already reported benefits from feeding these forages to their animals. High biomass yield, persistence in dry seasons, and significant increase in milk yield are the main observed positive impacts.

David's Brachiaria field in Njombe, Tanzania, with ready hay.

A farmer's experience

David Mshindo, a farmer from Njombe, is one of the beneficiaries. Not only has he established an additional Brachiaria field, but he has also discovered that using a motorized tea pruner works efficiently in cutting the grass, allowing it to dry in the field for hay. This has boosted his cows' milk production, especially in the dry season, and is benefiting his family. His son, a university graduate, has also ventured into yoghurt production at home, packing and distributing to his customers on his motorbike, and thereby contributing to his income.

While depending on rain only to grow these forages, farmers can harvest the Napier and Guatemala grasses more than 6 times a year and the legumes and Brachiaria and Rhodes grass up to 4 times.

Brachiaria grasses had the highest impact on milk yield with an average increase of 1.5-2 liters per milking time and when fed with either of the legumes the yield increased to 2-2.5 liters per milking time. Farmers also noted a reduction in the time it took to search for natural forage, of which 90% become unavailable during the dry period.

From Rhodes to Brachiaria

Interestingly, these improved forages have also become a direct source of income. In the past, it was common for farmers in the southern highlands and elsewhere in the country to make hay from Rhodes grass. But now they have switched to Brachiaria.

David's enclosed hay barn with Brachiaria hay.
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Lameck Mshindo, David's son, is measuring milk in readiness for yoghurt processing.

Farmers are selling a bale of Rhodes grass hay (12-15 kg) at USD 1.4, and a bale of Brachiaria hay (20 kg) at USD 6.9 (May 2019). The introduction of these forages in the southern highlands of Tanzania has motivated more farmers to keep improved breeds of cows with the aim of increasing milk yield. Unlike in other highly populated areas such as Lushoto district in Tanga region, farmers in the southern highlands are growing the forages in plots and not in contours as barriers for controlling erosion but as their core source of animal feed. This is attributed to the fact that farmers still have enough land for growing both forages and food/cash crops. Farmers in Bukoba, Mwanza and Tanga are now motivated to start growing Brachiaria.

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