

***Uganda – “Integrated Forage Legumes in Smallholder cereal crop and livestock farming systems”, National Agricultural Research Organization (NARO)***

---

- **Objectives:** Develop new forage technologies to increase productivity of dairy cattle to improve poor dairy farmers’ food security and income.

- **Context:** The introduction of stall-feeding dairy cattle production system has led to an increase in demand for feed. There is a dearth of feed during dry season, resulting in protein and energy deficiency for animals, thus leading to a decline in milk yield (less 55% in dry season). Part of the explanation relates to farmers’ inaccessibility to appropriate forage technologies. Poor nutritional status of cattle is considered the most challenging constraint to smallholder dairy farmers. The project aimed at providing poor farmers with forage technologies to tackle this problem.

- **Project Summary:** A study, financed by DANIDA and the World Bank, was conducted to evaluate feed technologies for improved animal productivity. Areas with concentration of intensive dairy cattle milk producers were identified to collect data. Based on farmers’ assessment of technology and on-station recommendations, three forage technologies (elephant-grass-legumes (EGL) mixture, maize crop-lablab intercrop (ML) and calliandra leaf hay (CLH)) were selected for on-farm trials. Two different forage diets were tested. Participatory techniques including group meetings, on-farm visits, and informal discussions were used to monitor and assess the performance of the technologies. The feeding trials lasted 12 months.

- **Impacts/Achievements:** The new forage technologies helped bridge the feed gap during the dry season and maximize land utilization, which is particularly interesting in a context of land shortage. Better feeding practices reduce the incidence of animal disease and lower veterinary costs. Farmers have been able to improve food security and maintain a small cash income. Training was provided in milk processing techniques (butter, yoghurt) to further increase income.

- **Main obstacles encountered:** The majority of farmers cited high cost of forage seed, land shortage, high labour and capital demand, and initial slow growth of forage legumes as major obstacles to adoption of forage legume technologies. Shortage of forage legume seed was alleviated by training farmers in small scale seed production techniques, while labour shortage was alleviated by encouraging farmers to work in groups during planting, weeding and harvesting times and introducing manual forage choppers.

- **Scale:** The number of farmers who tested the technology (in 8 districts) reached 4,850. 19,830 farmers visited project activities and participated in farmers meeting. 3,800 dairy farmers have so far adopted stall-feeding system.

- **Private sector involvement:** Milk processors (MADDO, Jesa Farm Dairies, SOCADDIDO and DDA) and milk vendors, as well as school, hospitals, individual farmers, etc. provided a market for the milk produced by farmers. The private sector supplied simple forage choppers to farmer groups.

- **Training:** Training was provided to farmers by Send-a-Cow, Heifer Project International, World Vision and YWCA. Training was provided by DATIC in fodder conservation techniques. Farmers, milk processors and extension agents received training at vocational training institutes in entrepreneurial skills in dairying, value addition and feeding techniques. Farmers also received training in record keeping, forage production and animal management.

- **Date of creation:** 1994

- **Contact person:** Kabirizy Jolly Mary, NARO, [jkabirizi@hotmail.com](mailto:jkabirizi@hotmail.com) or [jkabirizi@naro-ug.org](mailto:jkabirizi@naro-ug.org), +256 77 43 49 37.