



**NAMULONGE AGRICULTURAL
AND
ANIMAL PRODUCTION
RESEARCH INSTITUTE (NAARI)**

MANDATE AND ACTIVITIES

**NATIONAL AGRICULTURAL
RESEARCH ORGANIZATION**

1994

A.G. Odur	Animal Nutritionist	BSc.
S. Mubiru (Mrs)	Agronomist	BSc.MSc.
P. Lusembo	Agronomist	BSc.
J.M. Kabirizi (Mrs)	Agronomist	BSc.
R. Ssebuliba N.	Breeder	BSc.MSc.

Historical Background

Namulonge Agricultural and Animal Production research Institute (NAARI), one of the Institutes under the National Agricultural Research Organisation (NARO), was established as far back as 1949 by the Empire Cotton Growing Corporation of Britain. It was established to solely investigate problems related to cotton production within the countries of the British Empire. It served the Sudan, Kenya, Tanzania, Zambia, Malawi, Swaziland, Nigeria, Uganda and to some extent the Gambia and Yemen.

Uganda was chosen to be the regional centre because it was centrally placed and with the exception of India, Uganda was the largest producer of cotton in the Commonwealth.

The Cotton Research Corporation handed over Namulonge to the Uganda Government in 1972. At that time, a modern fibre spinning test laboratory was also opened by the Lint Marketing Board to test for quality in the Breeder's Material and for the commercial sector.

The Role of Namulonge in Agricultural Development

Development of Improved Cotton Varieties

The most important contribution of Namulonge was always the provision of nucleus seed stocks from the breeding programmes.

Each year new seed would be released for further multiplication and distribution to growers. Distribution would follow a precise path and system known as the "Seed Wave". Through this system new seed of the multiline variety BPA (developed at Namulonge and adapted to Southern and Western Uganda) would be issued from Namulonge, progresses through Kasese in the fourth year and ends in Mbale in the 8th year.

In the 8th year the seed would be presumed to have deteriorated and consequently, in the 9th year would be condemned to the oil millers for crushing.

A similar "wave" would be followed in Northern and Eastern Uganda ending in the West Nile area. This would be based on the variety SATU developed by the sister station, Serere.

The provision of improved cotton lines was complimented by a strong research back up on pest and disease control and on improved crop husbandry practices. The research efforts altogether contributed highly to the production of high quality cotton and played a key role in maintaining cotton as a major foreign exchange earner for Uganda up to 1972.

Routine meteorological Studies

A sound knowledge of weather is vital for modern agriculture. Namulonge used to supervise the collection of weather data from various locations in the country, process and transmit it to the Department of Meteorology. The weather Station at Namulonge has just been rehabilitated and so are most of the weather stations in the country.

Sweet/Solanum Potato Programme

R.O.M. Mwangi	Breeder	BSc.MSc.
C. Ocitti p'Obwoya	Agronomist	BSc.MSc.
B. Bashasha	Economist	BSc.MSc.
G. Turyamureeba	Breeder	BSc.MSc.
F. Alacho Ouma	Agronomist	BSc.MSc.
R.M. Kakuhenzire	Entomologist	BSc.
C.R. Kanzikwera	Agronomist	BSc.
Dr. B. Odongo	Entomologist	BSc.MSc.PhD.

Maize Programme

J.J. Hakiza	Breeder	BSc.MSc.
T.D. Kyetere	Breeder	BSc.MSc.
G. Bigirwa	Pathologist	BSc.MSc.
T. Kalule	Entomologist	BSc.
D.S. Baguma	Agronomist	BSc.

Biological Programme

Dr.J.A. Ogwang	Entomologist	BSc.MSc.PhD.
R. Molo	Entomologist	BSc.MSc.

Livestock Programme

W.K. Ndyababo	Animal Nutritionist	BSc.MSc.
Dr.Kikafunda J.T.	Physiologist	BSc.MSc.PhD.
Dr. Ebong C.	Nutritionist	BSc.MSc.PhD.
F. Mbuza	Veterinarian	BSc.MSc.
G.S. Byenkya	Animal Productionist	BSc.MSc.

Staff Disposition

The administration of the Institute falls under the Director assisted by Heads of Research Programmes, an Administrative Officer and various categories of other administrative personnel.

The Institute employs over 100 locally recruited workers to assist in field activities. The current professional and technical staff of NAARI are as below:

Beans Programme

T. Sengooba (Mrs)	Pathologist/Director	BSc.MSc.PhD.
Dr.F. Opio (Mrs)	Pathologist	BSc.MSc.PhD.
Dr.S. Musana (Mrs)	Breeder	BSc.MSc.PhD.
M. Male Kayiwa (Mrs)	Breeder	BSc.MSc.
M. Mugisha (Mrs)	Economist	BSc.MSc.
M.A. Ugen	Agronomist	BSc.MSc.
E. Kikoba	Agronomist	BSc.
C. Niringiye	Agronomist	BSc.
N. Nanyenya	Economist	BSc.
P. Tukamuhabwa	Breeder	BSc.MSc.
G.S. Nankinga	Breeder	BSc.MSc.

Cassava Programme

Dr.Otim Nape G.W.	Pathologist	BSc.MSc.PhD.
Dr.B.W. Khizzah	Breeder	BSc.MSc.PhD.
A. Bua	Economist	BSc.MSc.
S. Ogwal	Entomologist	BSc.MSc.
Y.K. Baguma	Agronomist	BSc.MSc.
C.M. Changa	Pathologist	BSc.MSc.

Large Scale Farming

With the plentiful cultivable land at Namulonge Research Station then, an opportunity was taken to investigate the problems of large scale farming.

Farming systems were devised that followed a high degree of mechanization and intensification of production of both crops and livestock.

Set up of NAARI

The Institute comprises the main station at Namulonge and also served by a research station at Kalegyere and Sub-station at Kigumba, situated in South Western Uganda and Masindi respectively.

NAARI originally had 908 hectares of land, of which 280 hectares were given to Nakyesasa Livestock Experimental Unit and another 187 hectares at Sendusu were allocated for Seed Multiplication. NAARI is situated 27 km North of Kampala City. It is about 1200 m above sea level and is within the tall grassland (coffee/banana) ecological zone, and has a bimodal rainfall.

NAARI has a number of facilities that serve as service units. The soil science laboratory, the library and the farm workshop serve as the central service units. The tissue culture laboratory is mainly handling sweet and solanum potatoes propagation, while the cyanide laboratory handles studies on cyanide in cassava. Other laboratories include maize streak laboratory, the general plant pathology, the virology and entomological IPM laboratories.

Research Programmes and Funding

Before the recent re-organisation under the National Agricultural Research Organization (NARO), Namulonge used to carry out research on the following commodities:

- Soyabeans
- Sunflower
- Maize
- Cassava
- Sweet Potato
- Groundnuts and Simsim
- Agrometeorology
- Agro-forestry
- Cotton
- Rice and Wheat; and
- Livestock.

Following the creation of NARO, NAARI has now the mandate to undertake research on annual crops and livestock production. The research activities fall under the following programmes:

- a Grain Legume (Beans and Soyabeans)
- b Root and Tuber Crops (Cassava, Sweet and Solanum Potatoes)
- c Livestock (Pastures, Ruminants, Poultry and Nutrition)
- d Biological Control (Use of natural enemies for pest control).

The Forestry Research Institute (FORI): in studies on the cypress aphids.

Makerere University: in training and various research topics.

Non-Governmental Organisations and Rural Development Projects: Particularly in on-farm research and technology transfer activities.

Eastern Africa Regional Bean Program: by the International Institute of Tropical Agriculture (CIAT) based in Colombia, South America.

Eastern Africa Root Crops Research Network (EARNET): by International Institute of Tropical Agriculture, (IITA) based in Nigeria.

The Potato Network (PREPACE): by the International Potato Centre based in Peru (CIP).

The Natural Resources Research Institute (NRI) of the United Kingdom in various studies on crop pests.

The Maize Programme participates in regional research training activities with both CIMMYT and IITA.

also works on the cypress aphid in collaboration with Forestry Research Institute. The program has received support from GTZ and USAID.

Livestock

The livestock program is focusing on issues of animal nutrition including: feed resources, pasture agronomy, pasture management and pasture seed production. This program has in the past received some assistance from International Livestock Centre for Africa.

Collaborative Activities

NAARI collaborates with other sister Institutions, Organisations and bodies at National, Regional and International levels in various research activities. The collaborators include:

Kawanda Agricultural Research Institute (KARI): in research on soils, post harvest losses, nematology etc.

Serere Agricultural and Animal Production research Institute (SAARI): in research on cotton and animal production.

The Livestock Research Institute (LIRI): in areas where animal health and breeding need to be addressed together.

The Fisheries Research Institute (FIRI): in investigations on water hyacinth.

Most of the crop research activities in the above programmes are geared towards:

- a. Breeding and screening existing domestic and introduced sources of crop genotypes for adaptation to the local environment, increased yield, improved qualities, resistance to pests and diseases, and other traits such as nutritional value, palatability, acceptability by farmers and processors and suitability in the farming systems.
- b. Developing crop production packages that will maximize on productivity and environmental sustainability.
- c. Producing integrated and ecologically sustainable pest and disease management befitting the farmers situation.
- d. Developing technology transfer systems that will enhance the availability and utilization of the Institute recommendations by the farmers.

The livestock program aims at improving animal production through nutrition and husbandry practices.

The Government of Uganda supports this Institute through a recurrent and a development budget but in addition through the World bank supported Agricultural Research and Training Project (ARTP) project. Additional financial support is required and some of this is provided as indicated under the major programs of NAARI listed below:

Bean

The Bean programme collaborates with CIAT and is a member of the Eastern Africa Bean Research Network. Major research activities include variety improvement resistance to diseases and pests including: common bacterial blight, bean common mosaic virus aschochyta blight and the bean brushids. Other studies embrace IPM work on a range of pests and diseases, soil management, socio-economic studies and post harvest losses. This project is supported by United States Agency for International development (USAID) and Canadian International Development Agency (CIDA) through the regional network and also by the USAID local mission.

Cassava

The cassava program collaborates with IITA and is a member of East African Root Crops Research Network (EARNET). The program's work focuses on producing high yielding varieties with resistance to the African Cassava Mosaic; producing IPM packages for African Cassava Mosaic Disease (ACMD) and for other diseases and pests; reducing cyanide levels in recommended varieties; improving production packages, increasing shelf life of fresh cassava and developing rural and commercial processing packages. The program also engages in the general technology transfer and in socio-economic studies on cassava. The cassava program is being assisted by Gatsby Charitable Foundation for the technology transfer. The core research has been funded by the International Development Research Centre (IDRC) of Canada.

Sweet and Solanum Potato

The sweet and the solanum potato programs collaborate with CIP and are members of the PREPACE network. The research is geared towards production of high yielding and good quality potatoes with resistance to the major diseases which are caused mainly by viruses. The sweet potato weevil and the potato tuber moth are the main pests being addressed. Improved production packages are being worked on for both crops. A multidisciplinary approach is being used to enhance production of the solanum potatoes in the lower altitude areas of Uganda. Sweet potato research has received support from GTZ and both these programs have been supported through CIP and by USAID local missions.

Maize

The maize research focuses on producing both composite and hybrid varieties which are high yielding and resistant to major diseases like maize streak and blight; integrated management practices for major pests like the stock borers, storage pests and weeds. Maize has been supported by the USAID local mission and by CIDA through CIMMYT.

Biological control

The Biological control program specializes in the use of natural enemies to control major crop pests and diseases. The present research activities focus on control of water hyacinth by using water beetles and control of cassava mealybugs and cassava green mite by use of natural enemies. This program