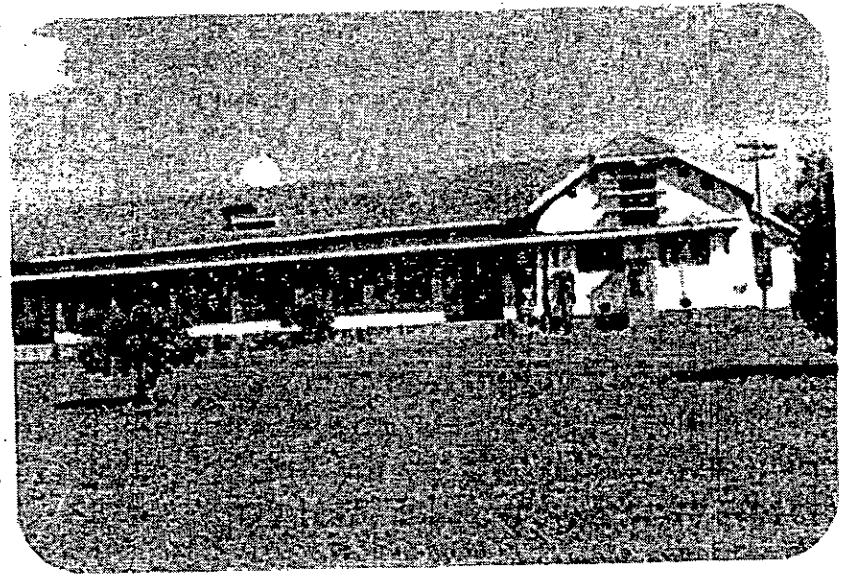
The National Semi – Arid Resources Research Institute (NASARRI) Serere



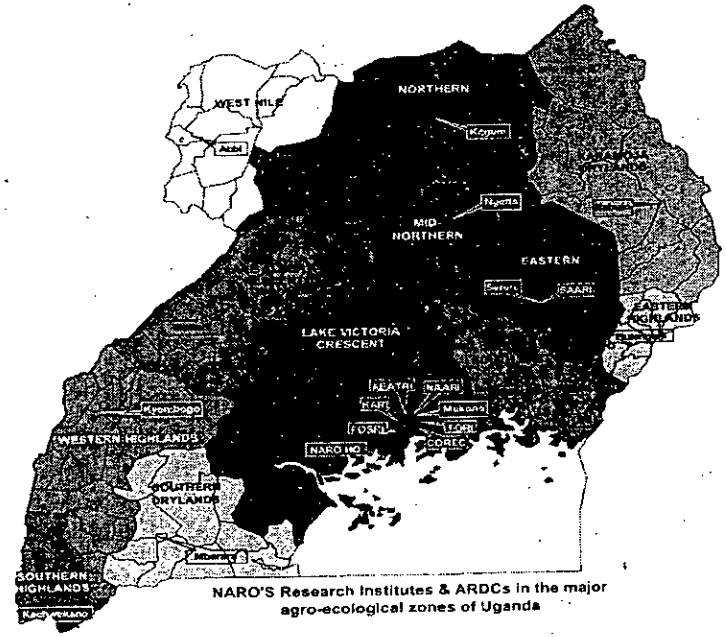
NARO

November 2006

The National Semi – Arid Resources Research Institute (Serere) of the National Agricultural Research Organisation (NARO). It is located in the Eastern Agro-ecological zone, in Soroti District. It is 21 km south of Soroti town.

Mandate.

NASARRI's mandate is to undertake research in crops and livestock production for semi-arid production systems in the areas of seed research and production management, livestock improvement, together with pasture and range management. The mandate area covers five (5) agro – ecological zones comprising of the Eastern Savannah, Karamoja Dry lands, Mid – Northern, Northern and West Nile (see map).



NASARRI's Vision.

A Market Leader in Generation and Dissemination of Appropriate Technologies for sustainable agricultural development.

NASARRI's Mission.

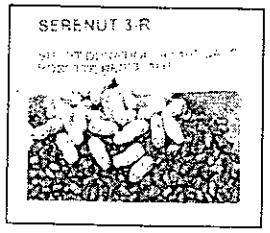
To generate, package and disseminate appropriate agricultural production technologies and information for improved and sustained integrated crop, livestock and natural resource management in partnership with other stakeholders.

The NASARRI Research Programmes.

Research by NASARI is currently focusing on the development of high yielding and quality crop varieties and their management options on pests, diseases and soil fertility, provide breeder and foundation seed for commercialization of agriculture with identified market opportunities.

Oil crops:

Groundnuts:



There are short duration varieties, resistant to rosette, preferred seed colour and confectionary qualities with oil content up to 48%. Igola 1, Serenut 1R, Serenut 2, Serenut 3R, Serenut 4T.

Simsim;



There are Sesim I and Sesim II both are white seeded varieties, mature with 110 days and yields from 500 – 900 kg/ha. They have oil content of 42 – 45%.

Sunflower.



There is sunfola open pollinated variety and hybrid 7351. Both mature in 105 – 110 days and yields up to 1800 kg/ha, with hybrid reaching 3500 kg/ha. They have oil content over 46%. They can milled for oil as well as livestock feed.

Grain legumes:

Pigeon pea.

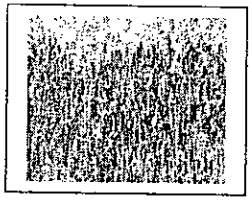
There are medium and early duration varieties; Sepi 1 matures in 4 -5 months, yields up to 1,300 kg/ha and intercrops well with millet at a ration of 1:2. Sepi 2 matures in 3½ months, yields 1,500 kg/ha. It intercrops well with beans, green gram, groundnuts and rice at a ration of 1:1.

Cowpea.

There is SECOW 1T which is a large seeded variety with tan colour. It matures within 90 days and yields 1200 – 1500 kg/ha. The SECOW 2W is also large but white seeded variety. It matures within 70v – 85 days and yield 1200 – 1500 kg/ha.

Cereals:

Finger millet.



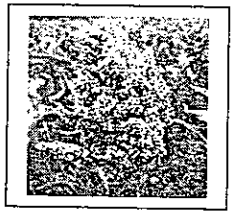
Pese 1 and Seremi 1 are brown seeded varieties. Seremi 2 matures in 85 – 90 days and it is good for erratic or short rainfall areas. Seremi 3 matures between 100 – 110 days and is good for mid- altitude. All the varieties are good for food and local brewing.

Pearl millet.

Serere 1 and Serere II are composite varieties; mature within 90 days; yield up to 2.5 kg/ha. They are tolerant to drought and suitable for food, brewing and livestock feed.

Sorghum.

Research on both high and low land sorghum areas is being conducted.



Low land varieties developed are Serena, Serodo, Sekedo and Epuripuri. Epuripuri variety is now being used for the brewing Eagle Lager beer by Nile Breweries. There are also some more six lines in the pipe line with good grain qualities (high starch content, low tannins) which are likely to be suitable for brewing.

Information available from Nile Breweries indicated that:

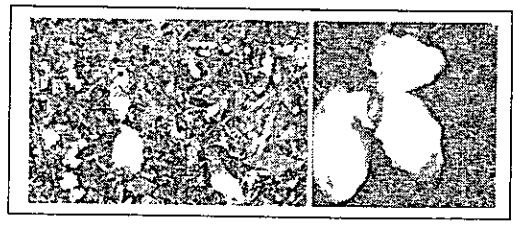
Year	Epuripuri production
B 2001	15 tons foundation seed at SAARI
A 2002	200 tons; farmers earned Ug Sh 60 million
B 2002	400 ton; farmers earned Ug Sh 120 million
A 2003	725 tons, farmers earned Ug Sh 520 million
B 2003	1000 tons; farmers earned Ug Sh 693 million
A 2004	1400 tons; farmers earned Ug Sh 813 million
2005	2,371 tons; farmers earned Ug Sh 711 million
2006 project	4,000 tons; farmers earned Ug Sh 1.2 billion

For the management of striga, farmers endorsed three possible and economically viable technologies: use of striga tolerant sorghum varieties (IS – 33459, IS – 24513 and IS – 25403); use of sorghum / cowpea, sorghum/celosia intercrop and sorghum in rotation with beans – cotton – cowpea – sorghum.

There 25 highland advanced sorghum lines are being evaluated for the production constraints identified during the survey. Evaluation is being done at Kachwekano ARDC.

Fibers:

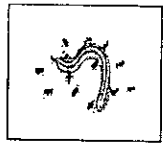
Cotton.



Varieties BPA 2000 and BPA 2002 with G O T up to 40%, desired by ginners and high fiber quality for spinner and lint exporters, but resistant to diseases.

Black ants controls American boll worm,





Also use 20 per cent of Neem extract, aphids parasitoids or intercrop cotton with beans to enhance the role of ant predators.

Livestock:

Cattle.



Boran crossed with zebu for more meat production; matures fast to 250 – 280 kg by 2 years.

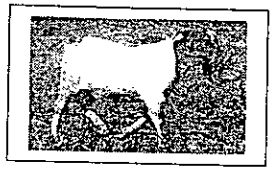
Boran cattle herd.



Sahiwal crossed with zebu for better draught power.

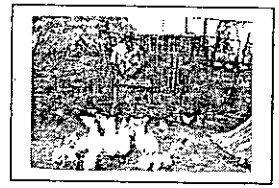
Sahiwal cattle herd.

Goat



South African Boer crossed with Teso or Mubende breeds, Elite indigenous Mubende goats grow fast and reach 32 – 41 kg in 2 years.

South African Boer Poultry



Chicken – Bovans brown crossed with local chicken. Cross breeds mature in 6 months to a weight of 2½ to 3½ kgs and lay (25 – 35 eggs) twice as many eggs as local hens.

A start is being made on the characterization of turkey breeds as a basis for determining a breeding programme for improvement.

Improved pastures seeds.

Many farmers have used improved pasture seeds developed at NASARI.

Animal draft Power.

Is a service to all projects on land preparation, planting, weeding and farm transport and testing of ADP implements developed by AEATRI.

Socio – Economic Research

It is integrated in all biophysical research projects for monitoring, evaluation and impact assessment.

Outreach and Partnership Initiative (OPI) Programme

- For adaptive testing for fine-tuning of rudimentary technologies developed by NASARI, other Institutes and IARC for harnessing in the region and beyond.

- Develop partnerships with uptake pathways including public and private extension systems including NAADS.
- Package of research outputs and disseminate them to uptake pathways through the Information Resource Centre.
- Training of research and extension service providers.

Additional Highlights for NASARI in 2003 – 2006.

- NASARI successful completed pilot NARO – DFID Client – Oriented Agricultural Research and Dissemination Project (COARD)
  - Developed mechanisms for competitive grant funding for agricultural research. They are now to be piloted in (Abi, Kachwekano and Serere zones).
  - A number of special studies eg demand Articulation for the research clients, *inter alia*.
- Inception of an Information Resource Centre under NASARI OPI (support of COARD project)

- Leading in the highly successful NARS International Conference on Integrated Agricultural Research for Development (IAR4D). Achievements, Lessons Learnt and Best Practice, held in September 1 – 4, 2004 Entebbe.
  - Synthesized scientific papers under 5 thematic research areas.
  - Full papers published before the conference in 2 volumes.
  - Thematic synthesis in volume 3.
  - Conference brief has been produced including a CD

- Launching of livestock farmers breeders associations as means of



. Accelerating technology multiplication and dissemination.
. Strengthening farmer – NASARI linkages
. Enhancing NARO – NAADS collaboration

  - Increasing farmers' knowledge and ownership of the technologies.
  - Helped to link farmers to various markets.

Other projects NASARI used to implementing.

There are a number of other projects which implements; such as:
- Project on strengthening the contribution of women to household livelihoods through improved livestock strategies in the Teso Farming System Region, funded by DFID.
- Use of animal draft power as farm power for many operations such as weeding; planting transportation; funded by DFID.
- IPM for small holder cotton farmers also by DFID.
- Support on the oil crop research by Vegetable Oil Development project (VODP) by IFAD / GOU.

Collaborations

NASARI conducts its activities with partners, such as:
- International Agricultural Research Centres, (ICRISAT, IITA, ILRI)
- Universities – research and training, MUK and other local and foreign universities.
- NGOs (AT (U), ACAV, SOCADIDO, TEDDO, Action Aid, VSF, COVECO, Vision Terudo, KULIKA, CARITAS, HEADS).
- Public and private extension service (NAADS, Cotton Ginners Association, UOSPA).
- Private Sectors (Nile Breweries, Seed companies, SAIMMCO).
- Farmer Groups: UNAFFE.

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