

PROJECT PROFILE

<u>Sector:</u>	Agriculture
<u>Sub-sector:</u>	Soil
<u>Code:</u>	AG 81 (A)
<u>Title:</u>	Soil Fertility Enhancement Research
<u>Implementing Agency:</u>	NARO
<u>Location:</u>	Country-wide
<u>Total Plan Exp:</u>	US\$ 2.16m
<u>Funds Secured:</u>	US\$ 2.16m
<u>Funding Gap:</u>	Nil
<u>Start Date:</u>	2001
<u>Completion Date:</u>	2005

Background

With increasing pressure on land, a continuous evaluation of a country's agricultural resource base is becoming increasingly important. Knowledge gained from this study sharpens the understanding of the resource-bases from which the production of crops, livestock, fisheries, and forests can be sustained. This knowledge influences the shaping of research programmes and is a vital tool in devising more productive farming and production systems. Higher productivity depends on optimal planning to identify the resources and the pertinent production systems adapted to given environments whether or not these environments are well endowed with resources. Soil fertility enhancement is crucial for sustainable agricultural productivity.

Objectives

NARO will implement strategic research activities designed to guarantee conservation, sustainable management of soil fertility as well as sustainable land use. Specifically, research will focus on technologies that will:

- (i) Document current nutrient management practices and their consequences
- (ii) Promote judicious use of inorganic inputs
- (iii) Assess the availability and use of locally available organic amendments
- (iv) Enhance utilisation of biological associations (intercropping, nutrient fixing/recycling agents)
- (v) Determine the cost effectiveness of soil and rain water management practices suited to different situations.

Expected Outputs

- Strategic and basic knowledge for generation of new technologies as well as pertinent policy oriented research for development and sustainable management of soil fertility.
- Important technology options that respond to the problems and opportunities of a given priority soil and water KES at district level as brought out by stakeholders and end users.
- Functional structures and mechanisms for adapting, promoting and disseminating client accepted technology options for soil fertility development and management.

Technical Description

Considering the nature of Uganda's natural resource base, it was necessary to organise research focus on natural resource concerns to cover three general groupings: (a) the forest ecosystem (b) the highlands ecosystem and (c) the range ecosystem. The ecosystem perspective will ensure appropriate focus on the land and water resources, cropping systems, livestock and people concerns as well as their corresponding interaction with the environment.

Research focus will be on appropriate factor related natural resource and ecosystems as well as KES specific concerns in terms of national level strategic and policy oriented research in support of district level constraints/opportunities identified through the work of ARDCs. The research agenda will focus on sustainable intensive agriculture in the highlands and the Lake Victoria crescent, in the rangelands and other fragile ecosystems to develop community natural resources management initiatives.

It is necessary to address the needs of small holder farmers by developing two areas of adaptive research: (a) post clearing management of acid soils, using agro-forestry in combination with acid tolerant crops and (b) rehabilitation of degraded soils by testing methods to develop forestry, agro-forestry or pioneer cover crops.

#### Performance Indicators

- Technologies for improved soil fertility and soil and water management developed and promoted
- Agro-meteorological decisions support systems developed and promoted.

#### Feasibility Study

The major areas identified for research were (i) development and dissemination of methods for restoration and maintenance of soil fertility and (ii) mitigating the effects of drought and unreliable rainfall. Components of post harvest and value addition research supported by external donors have been presented to and agreed upon by the donors and NARO.

#### Financing

The project is jointly financed by GoU and CIAT. The GoU provision for the FY 2002/03 is US\$ 0.0333m and CIAT will contribute US\$ 0.9724m

#### Plan of operation.

The project is implemented by the National Agricultural Research Organisation, (NARO). Major activities include:

- (i) Needs assessment for improved soil fertility management technologies for each zone
- (ii) Systems oriented adaptive research involving participatory client oriented on farm trials of new technologies
- (iii) Outreach, technology and information dissemination, training and service to the public.