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Semi - Arid Food Grain Research and Development  
Recherche et Développement des Cultures Vivrières dans les Zones Semi-Arides

**REVIEW AND PLANNING WORKSHOP**  
**On Sustainable Agricultural Development**  
**3 and 4 April 2000**  
**Ouagadougou, Burkina Faso**

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**INTRODUCTION TO THE PROGRAM\***

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\* Presented by International Coordinator, OAU/STRC-SAFGRAD

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**I. BACKGROUND**

Over the last decade, the African Development Bank has supported SAFGRAD activities particularly to enhance the verification of food production technologies. This program also contributed for strengthening the development of sustainable agriculture in semi-arid ecology in West and Central Africa.

As you know, Africa faces serious food in-security and environmental degradation problems. The primary thrust of the program (within SAFGRAD) is to strike a balance between sustainable food production and the restoration of the resource base/i.e. soil fertility through the efficient management of on-farm resources).

To avoid massive hunger and poverty in the 21<sup>st</sup> century, agricultural production and productivity not only should substantially increase but also diversify in order to broaden food resources, market opportunities to generate income and improve the livelihood of farm households.

The purpose of this review and planning meeting is first, to facilitate technical dialogue and analysis on country-level program with particular emphasis to improve technical viability and potential economic impact for each project; second, to include technical suggestions of this meeting so that projects to be undertaken enhance food security, employment and income generation; third, to framework program components and partnerships that will lead to meeting the challenges of food security for increasing population and the development of sustainable agriculture; and fourth, to discuss both technical and administrative issues and set mechanism and linkages for an effective implementation of the program.

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## 1.1 Objectives

Among the main objectives of the program include:

- ◆ To substantially improve agricultural productivity by making available technological options to farmers to build the natural resource base, minimize risks, and the degradation of the environment.
- ◆ To enhance integrated on-farm enterprises management which can yield to recycling of renewable resources and concurrently induce both agronomic (biological) and economic complimentary between and among components of the program.
- ◆ To forge and strengthen partnerships among stakeholders including farmers, technology transfer agents, researchers, NGOs, the public and private sector, etc. in the development of sustainable agriculture.
- ◆ To access environmentally friendly, but more productive technologies to farmers including women, and the youth to attain food security, generate employment, and income for improving the livelihood of millions of households in the sub-region.

## 1.2 The Rationale of the Program

Among the rationale that this program can enable farmers to improve their production to both meet their food security and generate income are:

- ⇒ Technological options that could double or triple crop yields in sustainable manner are available. This program will enable participating countries, to verify and repackage these technologies to further increase agricultural productivity. The program emphasis in each country is to access and deliver more productive technologies to farmers and other end-users.

- ⇒ The project model encompasses on-farms integrated resource management with aim to fully exploit the agronomic, economic and environmental complementarities and synergies.
- ⇒ Technological components of proposals should be chosen based on identified innovative options and successes.
- ⇒ Participatory approach involving the beneficiaries, for example, farmers, extension, etc. will be employed in the implementation of project activities.

## **II. TECHNICAL COMPONENTS OF THE PROGRAM**

### **2.1 Verification of food grain production technology**

Beneficiaries: this program will be implemented in Benin, Cape Verde, Mauritania, Niger and Togo

Elite cultivars and improved agronomic practices available from networks, IARCs, NARS and SAFGRAD will be evaluated through research - extension - farmer collaborative activities in participating countries. This program will identify not only viable technologies, but also:

- ◆ Narrow "yield gap" of the performance of technologies between on-station and on-farmers' field, which has been one of the mission links prior to the adoption of improved crop production innovations.
- ◆ Facilitate linkage between research and extension so that broad technological options are delivered to farmers. Consequently, the extension agents will have easy access not only to technology, but also to updated information and technical knowledge about the particular innovation being promoted for adoption. Concurrently, researchers, through such a "research-extension-inter phase" activity will receive direct feedback information on the performance of a particular technology.

- ◆ Identify agronomic practices that could minimize risks of crop failures due to environmental and socio-economic constraints.

Even though the adoption of more crop productive technologies has been realized in several countries, the living conditions of farmers have changes very little since farmers lack the incentives to produce beyond their family needs. There is, therefore, need to diversify both agricultural production and products not only to enhance food security, but also to generate income in order to *break the vicious circle of subsistence agriculture*. In this regard, this proposal compliments, the USAID supported program to enable farmers generate income through the transfer and commercialization of agricultural technology.

## **2.2 On-farm resource management**

Beneficiaries: This program will be implemented in Burkina Faso, Cameroon, Ghana, Senegal and Nigeria.

This sub-program will assist these countries to develop packages of technology based on on-farm resources. These include the use of herbaceous legumes/cereals cultivation systems; systems of production, such as mixed cropping, crop rotation, crop associations and the integration of small ruminants with aim to diversify resources of income of the households and to improve the fertility of the soil (basic design Annex 1).

## **2.3 Capacity building**

Seminars/training/workshops/ occasional symposium - lasting few days to few weeks will be organised in collaboration with partner institutions to improve skills of technology transfer by farmers and extension technicians and to document knowledge base on semi-arid agriculture.

## **2.4 Annual project review and planning workshops**

The objective of this workshop is to critically review the results of performance of technology options and plan activities for the up coming season.

### **III. Expected Output of the Workshop Include:**

3.1 Review and improve the technical viability, potential economic and environmental impact of each project considered.

3.2 Framework for program design

3.3 Schedule of program activities

## **Annex 1. Elements of Program Design for On-farm Resource Management**

- 1.0 The purpose of the program support is not necessarily to generate technology, but to delivery viable available technological options to farmers to increase yield, improve soil fertility and generate income.
- 2.0 It is asumed that technological options that can double and triple agricultural production and productivity are (available) shelved at major national and IARCs Centers.
- 3.0 Forging partnerships is the key strategy for implementing the program. Farmers should be the center of the program design.
- 4.0 Technology components and design consideration: Lessons of the last two decades showed:
  - 4.1 Simplicity of design is very crucial for success of on-farm trials. Focus on few components (cultural practices and cultivars) to effectively demonstrate the introduced technology is economically feasible and provide advantages to farmers.
  - 4.2 Appropriateness of technology - should have acceptance and affordable to farmers.
  - 4.3 Technology components should be evaluated by farmers in partnership with researchers and extension agents. The on-farm design components may include:
    - One improved and high yielding cereal cultivar.
    - An improved legume cultivar.
    - An improved forage legume or dual purpose grain legume.
    - Improved small ruminant husbandry (i.e. veterinary services, housing, feed/or ration) 10-15 head/farmer.
    - Crop residue management + manure incorporation including compost making.
    - Size of farm: ¼ ha cereal ; ¼ legume or ¼ ha forage legume.
    - Number of participating farmers 4 to 8 per site.
- 5.0 The farmer is an investor. Program elaboration and development should start at on-farm.

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