

PURPOSE AND OBJECTIVES OF THE FOOD GRAIN
PRODUCTION TECHNOLOGY VERIFICATION
PROJECT

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INTRODUCTION

The crucial problem engulfing most countries in sub-Saharan Africa first and foremost is attaining food self-sufficiency and security. Agricultural practices need to be improved so that alternative systems that could accelerate food production can be adopted.

Much has been written on the technical and institutional problems that continue to hamper the application of research results by farmers. Over the last three decades, changes in agricultural technology in Africa in general and in semi-arid regions in particular have been very slow except in few countries and crops. In fact, the production of food grain and other crops has stagnated or even declined in many countries. This situation raised several concerns by different governments and donors. Some of the issues are related to agricultural policy. In many countries, agriculture accounts for more than 50 percent of gross

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- v) To improve on-farm research skills and consequently enhance the transformation of research results into extension recommendations and production.

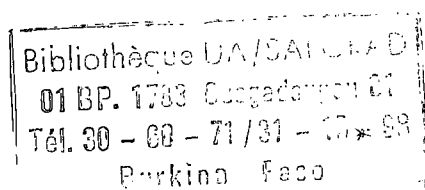
With regard to the management of agronomic practices, the 1990 planning workshop pointed out: (3,4).

- i) The need to integrate the production of food crops with that of cash crops, such as cotton, in order to enhance both technical and economic complementarities.
- ii) That on-farm verification trials should be simple with the main purpose of demonstrating improved agronomic practices to farmers i.e. the fewer the treatments in the trial, the more likely that farmers would adopt the technology.
- iii) The need of quality seed production.
- iv) That conventional research methods of replicated trials for on-station verification should be employed with major emphasis on finished research results or potential technologies.

Project Activities

Initially, an agronomic planning workshop was held from 19 to 22 February 1990, in Ouagadougou, Burkina Faso to assess the status of improved crop cultivation practices in semi-arid areas of West

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domestic product, employment and foreign exchange earnings. Yet most of these countries devote less than 10 percent of their national budgets to agriculture (5).

There is no intention to elaborate here the causes except to mention some of the inherent interlinked problems. These include lack of motivation and incentives to farmers, extension agents and researchers and limited access of technology to farmers due to ineffective linkage between research, extension and farmers. In some instances, technologies that farmers need simply do not exist. If available, these technologies are unprofitable considering not only the meagre resources of farmers to invest but also, the prevailing prices of inputs and of crops. How can one overcome this cycle of low production? Ideally, relevant research should lead to the development of appropriate technology that could fit into existing farming systems by minimizing risk, meeting farmers objectives and economic resources (1,2).

and Central Africa. Some of the important results of the workshop were a) the identification of biotic and abiotic constraints to the production of food grains; b) inventory of available and potential technologies; c) the exchange of technical information and experiences regarding the transformation of research results into extension recommendations and production and d) a review of proposals on on-farm verification trials. Nine sub-projects that received financial assistance from the African Development Bank were implemented in eight countries (4).

In Burkina Faso, six improved cowpea varieties and agronomic practices were evaluated in crop associations and in mono-culture, using plant protection measures in 13 districts in cooperation with rural development centres and 120 farmers.

In Cameroon and Mali, the project emphasis has been to develop packages of improved agronomic practices for the adoption of early (80-90 days) and extra-early (75-80 days) maturing maize cultivars in the Sudan and Sudano-Sahelian zones. These short cycle maize varieties have drought resistance characteristics which could enable the expansion of maize production in semi-arid zones with major emphasis to fill gaps of food shortages (for green maize available within 65 days) two to three months before the harvest of sorghum and millet.

In Senegal, the production of an improved cowpea variety designated as IS-86-275 was promoted in five villages since it has

been accepted by farmers. The second sub-project support in Senegal is to enable researchers and farmers to develop appropriate millet-based farming systems in three villages (Diourbel, Thies and Kaolack-Fatick). The on-farm trials included the evaluation of improved agronomic practices to maximize the yield of improved and local varieties of millet and cowpea.

In Ghana, on-farm verification trials were conducted in the districts where fallow land (5-15 years) is still affordable (Birmilla district). This practice has virtually disappeared (Wa and Naduci districts) due to population pressure on the land. The packages of technology include cereal/cereal association with minimum doses of fertilizer application; cereal/legume rotation; and the promotion of improved cowpea varieties with good seed quality and acceptance by farmers.

In Nigeria, various technological options to enhance the performance and acceptability of improved varieties of sorghum, maize, millet and cowpea under different land preparations planting systems and fertility levels were evaluated.

In Niger, technology verification trials were conducted in three villages at Maradi (Kagadama, Tajaye and Takalmawa) with 200, 150 and 450 families, respectively. Some cowpea and millet varieties were evaluated with base application of fertilizer and under different agronomic practices. The second sub-project

support is in Gaya area of Niger in Sokondii Birini village in the Sudanian zone involving close to 2000 farm families. Some of the agronomic practices evaluated were to develop appropriate intercropping (sorghum/millet/cowpea; millet/groundnut) systems and relay cropping systems with the application of minimum doses of inorganic fertilizer.

This working group has the following three important tasks:

- a) To review the 1990 results of on-station and on-farm verification trials.
- b) To consider the 1991 planned verification trials.
- c) Issues of verification trials:
 - i) Narrowing the yield gap between on-station and on-farm.
 - ii) Building strong links between research and extension through agronomic research.
 - iii) Standardization of on-farm verification trials.
 - iv) Duration of project.

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