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Recherche et Développement des Cultures Vivrières dans les Zones Semi-Arides

TRANSFER AND COMMERCIALIZATION OF AGRICULTURAL TECHNOLOGY: MICRO-ENTERPRISE DEVELOPMENT IN WEST AFRICA

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Project Proposal (1997/99)

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PROJECT PROFILE

TITLE: Transfer and Commercialization of Agricultural Technology.

EMPHASIS: Micro-Enterprise Development.

REGION: West Africa.

PROJECT SITES: Burkina Faso, Ghana and Senegal.

PROJECT DIRECTOR: Taye Bezuneh.

PHASE I: Two Years.

PROJECT MANAGEMENT AND COORDINATION AGENCY: The Semi-Arid Food Grain Research and Development Agency (SAFGRAD) of the Organization of African Unity's Scientific, Technical and Research Commission.

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I. Background

A successful commercialization of the technologies resulting from on-farm research is a necessary condition for the quantum leap that is needed for agriculture to assume its role as food provider and overall economic development enhancer in sub-Saharan Africa. Such large scale commercialization can be best achieved by the private sector, but there are prerequisites to its success.

The first prerequisite is an adequate institutional framework. At present times, agricultural services are dominated by public agencies. An attempt to quickly replace the parastatals with the private sector runs the risk of taking agriculture backward. In fact, the transition must be smooth, and care should be taken to ensure both that the private sector has the technical know-how to commercialize and service key technologies and that the legal framework allows the control and monitoring of the whole process. Private merchants left to themselves are likely to be tempted to commercialize uncertified varieties or fertilizers to exploit farmers.

The second set of prerequisites are economic. A sustained adoption of a technology will only occur if it is profitable for all actors involved, the sellers and the users. Profitability and stability of the market for the end product are key elements to sustained adoption. A combination of private and public initiatives should be put in place to allow end product market efficiency. The necessary fiscal system should for instance be defined to promote the local or sub-regional demand for the products for which the technology is intended. The example of the cowpea venture by NESTLE through SAFGRAD/INERA and farmers in Burkina Faso is illustrative of this point. Likewise, efficiency of the input market will reduce costs and increase the likelihood of input sales.

Over the last decade, there has been successful introduction and adoption of early maturing maize and cowpea cultivars in semi-arid West and Central Africa. In the Sudano-Guinean zone, maize production along with cotton has substantially increased due to technical factors (new early maturing cultivars, improved agronomic practices, animal traction), the existence of markets for the output, and a synergetic interaction between the different stakeholders (farmers, extension, parastatals, and research). For this technology diffusion to be sustained in the longer run, the permissive factors need to be strengthened through a more systematic way of bringing different actors together, in particular by involving, on the end-user side, organized private sector entities such as industry and large volume traders. In other terms, there is need for capacity building in three areas: human, institutional and infrastructural. Moreover, action will be maximized by involving several countries, through mutual interactions between individual stakeholders and country-level institutions.

II. Goal and Objectives

The overall goal of the project is to facilitate the development of few micro-enterprises linking the major stakeholders, particularly farmers, processors, traders, policy makers, researchers, extension workers, and other end users, in the areas of technology and farm output commercialization, with a regional focus. The ultimate goal is to build capacity to help materialize the much needed virtuous circle of cumulative development of the farm and non-farm activities by exploiting existing and creating or strengthening new inter-sectoral linkages, in a sustained fashion, i.e. that is economically sound and explicitly incorporates gender equity and environmental considerations. This will bring additional employment, improve income for the rural population, and thus contribute to relieving some of the daunting challenges facing sub-Saharan Africa. The regional dimension will facilitate spillover effects among participating countries and micro-enterprises.

To achieve this goal, there is need to create an enabling environment, with a built-in information generation and sharing systems, and to effectively provide relevant incentives to key actors. Therefore, the salient objectives (from a regional perspective) of the proposed project are:

- ◆ *To Facilitate the development of few micro-enterprises in the farm sector (or the non-farm sector), in selected countries and linking research to this process.*
- ◆ *To enhance the commercialization of agricultural technologies into profitable value-added products.*
- ◆ *To foster linkages and partnerships between "stakeholders" including public and private research institutions; users of technology, such as farmers, development and marketing agencies, NGOs, traders, private entrepreneurs, financial institutions, and policy making institutions of governments.*
- ◆ *To assess the socio-economic and technical constraints and opportunities for developing small and medium sized micro-enterprises.*
- ◆ *To identify and document experiences of few micro-enterprises, to build on successes and learn from failures in technology transfer and commercialization.*
- ◆ *To provide technical backstopping to pilot micro enterprise projects in collaboration with IARCs, NARS, extension systems and NGOs.*
- ◆ *To improve capacity for gathering and disseminating market information on potential products.*

III. The Project Proposal

The project is to set up and/or strengthen a system linking the major stakeholders in the areas of technology and farm output commercialization, namely research, extension, private sector, farmers' associations and other users of technologies. The linkages between the farm and non-farm micro enterprise economy in rural areas will be strengthened. One of the outputs of the project will be the establishment and stabilization of agricultural growth, a condition to poverty reduction in most sub-Saharan African countries.

This proposal is a follow-up of previous initiatives and lessons including:

- i) The November 1996 Accra Workshop on the Commercialization and Transfer of Agricultural Technology gave the impetus for conceptualizing this proposal.*
- ii) The USAID funded technology transfer grant being coordinated through WARDA - provided some experience in the multiplication and dissemination of improved seed and related potential technologies in the pipeline.*
- iii) The SAFGRAD initiative and experience for commercializing cowpea production has linked research and end-users of technology. For example, the partnership among SAFGRAD/INERA/Nestle, farmers, etc. forged a collaborative programme on cowpea improvement, production and utilization. Another purpose of their collaborative programme was to set up a reliable system for enhancing the commercial production of cowpea and its transformation into value-added products.*

3.1 Strategy

To achieve the goals and objectives, the proposal will adopt the following strategy:

- ◆ **Involvement of major stakeholders.** The process will promote users defined needs and therefore be participatory in nature. This will be strengthened through well framed training to base technology transfer and commercialization at the community level. The technical input will be provided by the national agricultural research systems, IARCs, NGOs and SAFGRAD.
- ◆ **Promoting farm/non-farm linkages through the development of micro-enterprises.** In agreement with the above, non-agricultural activities generating income will be identified by beneficiaries. Non-farm enterprises that will lessen the drudgery of work, particularly for women, will be encouraged by the programme.
- ◆ **To facilitate sharing of market information.** Meaningful decision making by private operators, in an era of government withdrawal from direct intervention, requires unobstructed and rapid access to market information. The programme will support local initiatives to develop and share information.

- ◆ A particular emphasis will be placed on assessing the current constraints faced by private entrepreneurs in the areas of financing, production and/or acquisition sources, and product disposal, as compared to parastatals.

While the micro-projects will be developed by the stakeholders starting from grass roots level, coordinated research will focus to provide policy guiding results in the areas of technology demand and supply, the product market and institutional capacity.

3.2 Programme

Based on the identified needs of participating countries, the project will facilitate the transfer and transformation of agricultural research results into commercial value-added products. The development of small to medium sized micro-enterprise ventures will focus on some of the following farming activities:

3.2.1 Commodities

- Food grains: maize, sorghum, millets, cowpea, etc.
- Horticultural crops: Potato, onions, tomato, mango, papaya, strawberries, green beans, peas, yam, and other root and tuber crops including leafy vegetables.
- Small ruminants, poultry, dairy, etc.

3.2.2 Agri-business

The project will facilitate the transformation of technologies of the above commodities into some of the following agri-businesses:

- Development of seed industry.
- Fertilizer other farm - inputs supply/distribution.
- Baby foods.
- Processed products (i.e. canned - vegetables, etc.)
- Confectioneries industries including non-alcoholic beverages.
- Bakeries.
- Supply to breweries.
- Commercialization of traditional medicinal plants.

3.2.3 Assessment of the profitability of various technologies under real farming situations

This includes the careful assessment of the costs of technology at certain level of production under various micro and macro constraints (as mentioned under product market below) faced by the producers in using the technology. Constraints include access to inputs through credit or own cash and the availability of labour. This is key to understanding the dynamics of the sectoral linkages in the rural economy.

Furthermore, research will be undertaken on repackaging of technology components, to reduce costs of production and marketing.

3.2.4 Product market

With regard to the product markets, there are needs to:

- Assess current demand, including domestic and sub-regional or international sources.
- Assess potential demand, through prospecting new markets or the processing of products.
- Evaluate the functioning of the product market. Are there inefficiencies that can be removed through private or public actions?

3.2.5 Facilitating smooth transition of technical information services from the public to private sector

Although state withdrawal is underway in many countries in the area of agricultural production, there remain knowledge gaps that need to be addressed for a successful take over by the private sector.

- The major knowledge gap concerns the appropriate way of phasing out the public sector to ensure a smooth transition to the private in the area of inputs production, delivery and services.
- Research on alternative ways to the public and private handling of inputs should be undertaken. These include enabling and organizing farmers to assume the technology transfer and inputs delivery services.

3.3 Plan of work

The detail plan of work for micro-enterprise projects will be elaborated starting from grassroots level by the beneficiary participating countries and involvement through the following stakeholders:

3.3.1 Technology development and transfer partners

- NARS including Universities: Burkina Faso, Ghana and Senegal.
- IARCs operating in the sub-region: IITA, ICRISAT, ILRI, ICRAF and WARDA.
- SPAAR and sub-regional research organizations: INSAH, CORAF and SAFGRAD.
- The sub-regional agricultural research networks: maize, sorghum, millets, cowpea, rice and FSR.
- Extension and development agents: The national extension systems, parastatals, NGOs, the private sector, etc.
- Farmers organizations/individual peasants.

3.3.2 End-users of technology

The key partners in the use and commercialization of agricultural technology include:

- Farmers cooperatives/individual peasants.
- Agri-business (i.e. fertilizer, seed companies, etc.)
- Parastatals.
- Processors and consumers.
- Industrialists including breweries.
- Producers associations
- Traders and marketing agents.

From regional perspectives, the project would be initiated and implemented as follows:

<u>Activities</u>	<u>Period of Execution</u>
a) Submission to USAID of revised proposal	End of September 1987
b) Sensitization of institutions and stakeholders to identify and develop components of the micro-enterprise projects	October/November 1997
c) Fielding of national consultants	November/December 1997
d) Meeting of stakeholders for reviewing consultants report, establishing of National Steering Committee and nominating the National Coordinator.	January/February 1998
e) Screening and approval of proposals -	February 1998
f) Technical implementation of micro-projects.	March/September 1998
g) Annual report	September 1998

IV Coordination and Management of the Project

The micro-enterprise projects will be operational in Burkina Faso, Ghana and Senegal. At regional level, OAU/STRC-SAFGRAD will coordinate and follow-up the implementation and management of the project activities. At country level, the Stakeholders Steering Committee will nominate a coordinator, who will liaise very closely the activities of each micro-enterprise with SAFGRAD and NARS. The number of participating countries is expected to increase to five during the second year of project operation.

4.1 Budget

The requirement for initial two years is summarized in Annex 1. For the first year, the sum of two hundred ten thousand dollars (\$210,000) is proposed. Core support for micro-enterprise projects, stakeholders meeting at country level and cost of consultants study constitute about 71 percent of the budget. Research support to NARS and travel costs amount to about 15 percent of the budget.

Annex 1. Budget proposal in US\$ dollars

Activities	1997/98	1998/99	Total
i) Fielding consultants for identifying micro-enterprise projects.	9,000	10,000	19,000
ii) Meeting of Stakeholders at country level.	20,000	25,000	45,000
iii) Coordination activities at country level	7,500	12,500	20,000
iv) Core support to micro-enterprise projects.	120,000	200,000	320,000
v) Travel	10,000	15,000	25,000
vi) Research/technology transfer support.	21,000	50,000	71,000
vii) Regional workshop of stakeholders	NB	30,000	30,000
TOTAL	187,500	342,500	530,000
Coordination Overhead 12%	22,500	41,100	63,600
GRAND TOTAL	210,000	383,640	593,600
	250	300	550

NB: Not budgeted for the first year.

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