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REPORT AND RECOMMENDATION OF THE PRESIDENT

TO THE EXECUTIVE BOARD ON A PROPOSED

TECHNICAL ASSISTANCE GRANT

TO

THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

FOR

**THE EAST AFRICAN SUBREGIONAL PILOT PROJECT FOR FARMER-FIELD
SCHOOLS IN KENYA, THE UNITED REPUBLIC OF TANZANIA AND UGANDA**



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ABBREVIATIONS AND ACRONYMS

FAO	Food and Agriculture Organization of the United Nations
FFS	Farmer-field school
IPM	Integrated pest management
NGOs	Non-governmental organizations
TA	Technical assistance



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I submit the following Report and Recommendation on a proposed technical assistance (TA) grant to the Food and Agriculture Organization of the United Nations (FAO) to support the East African Subregional Pilot Project for Farmer-Field Schools in Kenya, the United Republic of Tanzania and Uganda, in the amount of USD 1.2 million for a three-year period.

I. BACKGROUND

1. Substantial investments in agricultural technology development and dissemination systems have been made in Africa over the past two decades, with the World Bank alone estimated as having invested about USD 6 billion in research and extension projects worldwide during the period 1976-96.¹ IFAD has provided support for extension in a major share of its agricultural and rural development projects. In a period of budget stringency and the general withdrawal by governments from providing agricultural support services, farmers are obliged to assure ever-increasing responsibility for on-farm decision-making.

2. Given the immense diversity of farming systems and local ecosystems in Africa, extension models that rely on formal research as their source of prescriptive “messages” are of limited relevance in helping farmers respond to the incentives of a market system. In contrast to past agricultural technology transfer methods based on standard messages by government personnel on the use of seeds, improved varieties, fertilizer quantities and pest control, farmers need to be **knowledgeable specialists**, able to take well-informed technical decisions that reflect their particular resource endowment. Farmers also need to know how to articulate their research needs and to decide what services provided by private sector dealers to use.

3. The **farmer-field school (FFS)** was developed by FAO to help rice farmers in Indonesia cope with serious pest outbreaks in the 1980s caused by the application of pesticides that destroyed natural insect predators of the brown plant hopper. The first FFS was established by an FAO pilot project in 1989 to train farmers in integrated pest management (IPM) techniques to control the brown plant hopper. The knowledge that farmers acquired of agro-ecology and the dynamics of pest infestation enabled them to move away from standard prescribed spraying routines and to take informed crop technology decisions. As a result crop yields have risen, input costs have dropped and there has been a decline in environmental and health damage attributed to pesticides. The FFS approach has evolved to focus on organizational and learning techniques to help farmers change their way of thinking and of dealing with pests in the larger context of growing healthy crops. Over the past ten

¹ Purcell, D; and Anderson, J; Agricultural Extension and Research; Achievements and Problems in National Systems, World Bank, 1997.



years, various FAO intercountry programmes have enabled many rice-growing Asian countries to adapt the approach to their needs, and FFSs have been expanded to vegetable crops, maize, cotton, groundnuts and tree crops in Asia.

II. RATIONALE

4. Any future modernization of agriculture in sub-Saharan Africa will depend on the ability of farmers to be self-reliant and to take their own decisions within the framework of a liberalized agricultural sector and retrenchment of public sector support for service delivery to rural areas. Farmers will need to be able to articulate their needs and to actively seek solutions tailored to their specific requirements from both national research programmes and private sector operators. The FFS approach does **not** teach farmers new technologies developed outside their environment, but draws on existing research to develop on-farm solutions. With FFS, farmers are taught an enquiry method to analyse their production practices and identify possible location- and situation-specific solutions to the problems they face. The FFS approach has been developed from training methods for adult literacy education and village-level basic health care, and is based on learning-by-doing, being involved in experimentation, and discussion and decision-making².

5. The FFS approach has been extremely successful in Asia for a variety of crops, both as a complement to and/or instead of traditional extension. In Africa, preliminary pilot activities focusing on rice were started in Burkina Faso, Côte d'Ivoire, Ghana and Mali in 1994, and have been well received by African farmers. Building on preliminary work in rice-growing West African countries, the purpose of the proposed grant is to test the FFS approach both in terms of farmer receptiveness and suitability for other crop combinations (horticultural crops, maize-bean system, and cotton) within the overall smallholder farming system of the East Africa subregion.

6. The proposed IFAD grant financing is expected to extend the testing and refinement of FFS-based extension methods to areas where IFAD-funded extension activities are ongoing, and to test extension options for the design of future IFAD projects. While farmer training will be the central focus of the grant, there will also be a strong action-research orientation for farmer-based applied technology testing. The implementation of the TA grant will support IFAD's strategic thrust of promoting field-level beneficiary-oriented thematic research and development activities in the region. Preliminary results from Ghana have shown that women farmers in that country are particularly enthusiastic about the knowledge they have gained by attending FFSs. The proposed TA grant will also support both the gender-focus of IFAD's Corporate Strategy and the Fund's strategy for adapting and disseminating technology in the context of the financial difficulties facing many African countries and the low impact of past approaches to extension.

III. THE PROPOSED PROJECT

7. The overall objective of the project is to expand the capacity of governments, non-governmental organizations (NGOs) and the private sector to respond to the needs of resource-poor farmers for knowledge and access to information that will enable them to upgrade their farming systems. The empowerment of small and marginalized farmers through greater understanding of the determinants of farm performance and awareness of technical options for improvement will contribute significantly to reducing food insecurity and enhancing the sustainability of agricultural land use. The specific objectives of the project will be to: (a) increase the competence of extension systems to provide farmer education that responds more effectively to local resources and conditions; (b) establish a networking capacity for exchanging FFS experiences within and among African

² See Appendix I.



countries; and (c) contribute information on the replicability and effectiveness of FFS as an alternative and sustainable extension vehicle to IFAD's target groups.

8. **Project area.** The IFAD grant is intended to finance pilot FFS activities in tandem with three IFAD projects in Kenya, the United Republic of Tanzania and Uganda. The pilot areas have been selected on the basis of: (a) relevance of specific crops within the overall smallholder farming system; (b) need to develop appropriate interface mechanisms between smallholders and limited ongoing extension activities; (c) testing of FFSs to transfer agricultural technology under the decentralized district-based approach now used in east-african countries; and (d) potential linkage with ongoing IFAD project activities for extension. The districts selected are Busia District in Kenya; Mbinga District (Ruvuma Region) in the United Republic of Tanzania; and Soroti District in Uganda. Specific activities have been designed for each district to reflect existing government and non-government support for FFS issues with a view to avoiding duplication and to assuring complementarity with other projects. These activities are summarized below.

9. **National planning and assessment workshops.** Before the beginning of each crop season, a planning workshop will be convened to develop the specific technical content and coverage of field activities. The workshop is expected to be attended by district extension managers, and facilitators and farmer-to-farmer farmer facilitators. At the end of each crop year, an assessment workshop will be held to take stock of progress, identify critical issues affecting implementation, and provide refresher training. Representatives of other programmes and projects supporting the use of FFS or similar approaches to farmer training will also be invited. The workshops will have a duration of five days and an average attendance of 25 persons.

10. **Training of trainers.** Since FFS facilitators already have been trained in Kenya and the United Republic of Tanzania, field activities in those countries may be initiated promptly. In Uganda, a total of 25 persons from national agricultural research organizations (NAROs), district extension services and NGOs operating in the Soroti District will receive residential training (110 days, corresponding to the crop season). Consequently, field training of farmers in that country will not begin until project year (PY) 2.

11. **Farmer-field schools.** Each trained facilitator will lead four parallel FFS per year, and each FFS will have about 25 participants. Sites for FFS will be selected by the trainers during the planning workshops, in consultation with district extension staff, precedence to be given to areas with a high concentration of poverty and to farmers' groups with large numbers of women members. Site selection will also take account of the representativity of the farming systems, opportunities for improvement and the expressed interest of the farmers. Under the FFS, farmers will be helped to adapt and apply existing knowledge within the context of their specific farming systems, with emphasis on participatory research for strengthening on-farm adaptation. Over the three-year implementation period, about 465 FFS will be held, graduating an estimated 12 100 farmers from the three countries. The cost of each FFS in terms of the purchase of field materials and equipment, one field day and transport will amount to USD 1 000.

12. **Farmer-to-farmer FFS.** After graduation, each FFS will be encouraged to conduct another one for the benefit of other farmers in the same community. Farmer trainers will receive a small honorarium and occasional visits from the facilitator. Alternatively, FFS graduates will begin action-research projects with the assistance of a local research institution, university or NGO. Cross-visits will be useful in developing such community and district-level activities. Support is set at USD 300 per farmer-to-farmer FFS, and is left unstructured to allow for local innovation and act as a catalyst for local initiative. It is estimated that about 325 such farmer-led FFS will qualify for assistance under the project, to the benefit of more than 8 600 farmers.



13. **Regional coordination and evaluation.** A regional coordinator from one of the three countries will be recruited. He/she will be responsible for providing leadership to the country programmes, intercountry coordination, overall monitoring and progress reporting, developing regional networking arrangements and for organizing annual regional meetings for the purpose of planning activities and assessing annual progress. One of the main purposes of the regional meetings will be to make comparisons of extension methods used in the individual countries and other experiences with FFS in sub-Saharan Africa, and to draw lessons on the potential replicability of the approach. A system of participatory monitoring and evaluation within FFS will track economic and social information (crop budgets, community contributions, expenditure). Impact monitoring of the pilot field activities at the end of the implementation period will be contracted to an independent entity. A comparative analysis with other extension options and other FFS experiences in the region will be conducted by IFAD to assess the cost-effectiveness and knowledge-intensity of FFS relative to traditional extension methods. This comparative analysis will include an assessment of the involvement of women in FFS relative to their involvement in traditional extension systems, and their participation in action-oriented research activities. Evidence will be provided as to the extent to which the FFS model is effective in terms of farmer-to-farmer diffusion, particularly for resource-poor farmers.

IV. EXPECTED OUTPUTS

14. The main outputs of the grant are expected to be: (a) actual research-based evidence on the sustainability, replicability, and cost-effectiveness of the FFS system *vis-à-vis* traditional extension systems; (b) more than 20 000 resource-poor farmers will have graduated from FFS and farmer-to-farmer FFS in the subregion; (c) the extension service in each of the three countries will have developed a capacity to lead about 180 FFS per year; and (d) FFS with a strong action-research orientation will have been tested as an extension vehicle for IFAD target groups, including women.

V. IMPLEMENTATION ARRANGEMENTS

15. FAO will have overall responsibility for implementation and administration of the TA grant (submission of annual work programme and budget, supervision, and reporting on progress and expenditures), whereas the Global IPM Facility Project will be responsible for the day-to-day execution of activities (technical backstopping and supervision of field activities). The Global IPM Facility Project was established in 1995 by co-sponsorship of FAO, the United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP) and the World Bank; and it is administered by FAO, with grants from The Netherlands, Norway and Switzerland³. Each country will have its own independent institutional arrangements to bring together government, NGOs, the private sector and farmers. FAO will be responsible for making subsidiary arrangements with national institutions in each benefiting country, and TA grant funds will be channelled through the office of the respective FAO Representative.

VI. INDICATIVE PROJECT COSTS AND FINANCING

16. **Costs and financing.** The total cost of the project is estimated at USD 1.43 million over a three-year period. It is proposed that it be funded by an IFAD grant of USD 1.2 million and about USD 230 000 from the Global IPM Facility Project to finance one young professional officer in each of the three countries for the duration of the grant and impact evaluation by an independent consultant at the completion of activities. Senior-level staff time, estimated at about nine months, to monitor field activities and facilitate national planning and assessment workshops has not been

³ See Appendix II.



costed. A service charge of 13% has been included in the IFAD grant to cover FAO overhead costs for supervision and administration.⁴

17. **Grant disbursement.** The grant will be the subject of a trust fund agreement between FAO and IFAD. FAO will be entrusted with the management of USD 1 159 600 of the grant and, each year, it will be expected to submit to IFAD for its approval an annual work programme and budget detailing the expected activities by country. IFAD will administer USD 40 400 to carry out a comparative assessment of FFS with other extension options. Grant disbursement will be made by one advance payment each year to pre-finance the expenditure foreseen under the approved programme of work.

VII. RECOMMENDATION

18. I recommend that the Executive Board approve the proposed technical assistance grant in terms of the following resolution:

RESOLVED: that the Fund, in order to finance, in part, the East African Subregional Pilot Project for Farmer-Field Schools in Kenya, the United Republic of Tanzania and Uganda, for a period of three years commencing in January 1999, shall make a grant not exceeding one million two hundred thousand United States dollars (USD 1.2 million) to the Food and Agriculture Organization of the United Nations upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented to the Executive Board in this Report and Recommendation of the President.

Fawzi H. Al-Sultan
President

⁴ A breakdown of project costs is provided in Appendix III.



UNDERLYING CONCEPTS OF FAO'S FARMER-FIELD SCHOOL APPROACH¹

1. The FFS concept grew out of the traditions of adult literacy education and village-level basic health care, and has been developed under a number of FAO-assisted programmes in Asian countries. The FFS offers farmers the opportunity to learn by doing, by being involved in experimentation, discussion and decision-making. The schools are not meant to teach farmers new technologies developed outside their environment, but to *empower them through education to handle their own on-farm decisions*, using experiential learning techniques developed for non-formal education purposes. The following paragraphs present some of the concepts common to FFS across many countries.

- **Adult non-formal education.** FFS assume that farmers have a wealth of experience and knowledge which can be improved by providing them with a basic understanding of the agro-ecological dynamics in their fields. This is done in a participatory way so that farmer experience is fully integrated into the programme. Dialogue guides a discovery-learning process by sharpening observation and reasoning abilities. Facilitators do not directly answer questions, for example, on insect identification, but use them to help the questioners draw on their own experience by thinking about where the insect was found and what it was doing. They may have to return to the site of discovery to confirm their observations, but eventually insects are described functionally *before* they are named. This reinforces important steps in the observation process, and, from a practical point of view, understanding the function of an insect is more important than learning its name. Had the trainer answered with the name, a vital learning process could not have taken place. FFS facilitators are much more likely to pose problems than to answer questions.
- **Technically strong facilitators.** FFS are usually initiated by government extension staff, members of farmers' organizations or NGOs. It is essential that the facilitators have direct experience in growing the crop concerned or in the cropping system to be improved. Since this is most often not the case, IPM/FFS programmes in Asia have begun by training field staff in season-long courses during which they gain "hands-on" experience with growing a crop. These have been called by some "farmer respect courses" in that field staff come to realise how difficult farming is and why farmers do not immediately "adopt" their "extension packages". Facilitation skills are also included in the training course to strengthen the educational process in the FFS. An uncertain trainer is a poor trainer: a confident trainer finds it much easier to say "I don't know.... let's find out together" when the inevitable unknown situation is encountered in the field.
- **Every learner is a potential trainer.** Training is purposefully designed to reinforce the ability of those trained to replicate the training with other farmers. Each IPM trainee is trained in the same way he or she would be expected to train others. Because of this approach to learning, farmers who volunteer to train other farmers' groups require a minimum of refresher training.
- **FFS are based on crop ecology.** FFS and season-long training of trainers follow the growth of the particular crop. Planting issues are studied during the planting stage, fertilizer issues are discussed during the high nutrient demand stages, and so on. This method allows the use of the crop as a teacher and ensures that farmers can immediately apply in practice the technique or knowledge learned. Meeting on a weekly basis means that farmers are participating in a course for a whole season which corresponds to the same 40 hours as an intensive one-week programme.

¹ Global IPM Facility Secretariat; FFS/FAO: A Group Extension Process Based on Adult Non-Formal Education methods.



APPENDIX I

- **Group study.** Most FFS are organized for groups of about 25 people. Participants usually have common interests and can support and complement each others' knowledge. Usually the participants are subdivided into groups of five persons so that all members can participate directly in field observations, analysis, discussion and presentations to other sub-groups. The small groups analyse plant and field conditions and discuss options for action to ensure the healthy growth of the crop. Each of the five groups elects a rapporteur who uses an agro-ecosystem drawing to present the group's findings to the assembled field school. After each small group has reported, the whole school comes to **consensus** on what actions need to be taken during the following week, before the next meeting. The agro-ecosystem analysis models an effective decision-making process, improves observation skills, makes use of sampling skills and increases overall analytical capacity.
- **Field-school site.** The FFS are always held in the community where farmers live so that they can easily attend weekly sessions and maintain the field-school studies. FFS participants spend the bulk of their training time in an actual field (see below) which becomes the primary source of learning.
- **Building groups.** One of the main objectives of the facilitator is to assist in the development of a group dynamic among participants of FFS so that they can receive support from one another once the FFS is over. During the season, the FFS includes group building exercises to create group trust and coherence.
- **Basic science.** FFS focus on understanding and analysing basic biological, chemical and physical processes through field observations, season-long research studies and hands-on activities. It has been found that when farmers have learned the basic scientific principles and combine these with their own experiences and needs, they make decisions that are more effective. Furthermore, when farmers acquire this basic knowledge, they are better clients for extension and research systems because they have more specific questions and demands.
- **Study fields.** An FFS has a small (usually about 1 000 m²) field for group study. This is essential because participants can carry out studies without personal risk, allowing them to take management decisions that they might not otherwise attempt in trials on their own farm. The FFS methodology assumes that no technology will necessarily work in a new location and therefore must be tested, validated and adapted locally.
- **Evaluation and certification.** All FFS include field-based pre- and post- tests for participants. Using the "ballot box" method, farmers recognize their increased field skills of observation, analysis and decision-making. This boosts their confidence and commitment to FFS and encourages high attendance rates; those who master the field skill tests are awarded graduation certificates. For many farmers, the FFS is the first opportunity which they have had for receiving official recognition of their farming skills, a point of great pride for many families.
- **Follow-up.** All FFS have at least one follow-up season, the intensity of which will depend on the motivation of the participants, time constraints of participants and facilitator and funding. Follow-up sessions could be simply a monthly support session for farmers to discuss their own problems in implementing improved farming practices or as much as the repetition of a complete FFS. The facilitator in the follow-up sessions usually plays a minor role if he/she has done a good job, more often providing some technical backstopping and stimulation of the group.



THE GLOBAL IPM FACILITY PROJECT

1. The Global IPM Facility Project was established in 1995 under the co-sponsorship of FAO, UNDP, UNEP and the World Bank and is currently supported by grants from the governments of The Netherlands, Norway and Switzerland. The Global IPM Facility Project was established in recognition that implementation of national and regional IPM programmes has proved to be complex, requiring specialized technical expertise for project design, operation and monitoring; dedicated and skilled field trainers; and analyses of policy, social and economic issues at the national and local levels. To address these issues, the Global IPM Facility Project draws upon FAO technical expertise, international experts, as well as national and local knowledge and resources.

2. The project has provided a good response to the needs of farming communities and national IPM programmes and has enhanced resource utilization by national governments and development agencies. Pilot programmes in West Africa (Côte d'Ivoire and Ghana) have begun scaling-up activities, while other introductory pilot projects are under way in Southern and Eastern Africa, particularly in Kenya, Malawi, the United Republic of Tanzania (including Zanzibar), Zambia and Zimbabwe. Activities in the focus countries covered by the IFAD TA grant will be closely linked to ongoing activities in other countries. The Global IPM Facility Project is expected to carry out the following tasks:

- (a) Create awareness and a conducive policy environment through study tours, exchange visits and briefings demonstrating the potential of IPM to farmers, technical leaders and policy-makers.
- (b) Help promote, design and facilitate funding for pilot activities to demonstrate the feasibility of a farmer-oriented approach. The project will identify and backstop skilled, experienced resource persons who can advise or guide these pilot activities.
- (c) Assist countries with successful pilot activities to move into a full-scale project phase. The emphasis will be on strengthening IPM implementation through greater participation by national and local institutions, including NGOs and farming community organizations.
- (d) Help establish, strengthen and expand national and regional IPM programmes by providing linkages to other national IPM programmes and facilitating access to relevant models, experts, research findings and studies.
- (e) Establish cooperative linkages with relevant officers, both technical and policy, within aid agencies, international agencies and NGOs and offer assistance in project identification, project proposal screening and policy development with regard to IPM.



IFAD TA GRANT COSTS

TABLE 1: TA GRANT SUMMARY COSTS

Activity	Quantities				Costs (USD)			
	PY1	PY2	PY3	Total	PY1	PY2	PY3	Total
Trainers available	25	45	45	115	-	-	-	-
Training of trainers	25	-	-	25	112 500	-	-	112 500
Planning workshops	2	3	3	8	15 000	22 500	22 500	60 000
Farmer-field schools	105	180	180	465	105 000	180 000	180 000	465 000
Farmer-to-farmer	40	105	180	325	12 000	31 500	54 000	97 500
Coordination	1	1	1	3	15 500	15 500	15 500	46 500
National workshops	3	3	3	9	55 500	55 500	55 500	166 500
Regional meetings	1	-	1	2	36 800	-	36 800	73 600
FAO service charge (13%)	-	-	-	-	-	-	-	138 000
Comparative analysis (IFAD)	-	-	1	-	-	-	40 400	40 400
Grand total					352 300	341 800	367 900	1 200 000

TABLE 2: TA GRANT COSTS BY COUNTRY
(USD)

Country	Activity	PY1	PY 2	PY 3	Total
Kenya	Farmer-field schools	60 000	60 000	60 000	180 000
	Farmer-to-farmer	9 000	18 000	18 000	45 000
	National workshop	18 500	18 500	18 500	55 500
	Planning workshop	7 500	7 500	7 500	22 500
	Regional meeting	36 800	-	-	36 800
Kenya total		131 800	104 000	104 000	339 800
United Republic of Tanzania	Farmer-field schools	40 000	40 000	40 000	120 000
	Farmer-to-farmer	3 000	12 000	12 000	27 000
	National workshop	18 500	18 500	18 500	55 500
	Planning workshop	7 500	7 500	7 500	22 500
	Regional meeting	-	-	36 800	36 800
	Training of trainers	-	-	-	-
	Trainers	-	-	-	-
United Republic of Tanzania total		69 000	114 800	78 000	261 800
Uganda	Farmer-field schools	5 000	80 000	80 000	165 000
	Planning workshop	0	7 500	7 500	15 000
	Training of trainers	112 500	-	-	112 500
	Trainers	-	-	-	-
Uganda total		136 000	107 500	130 000	373 500
Regional	Comparative analysis	-	-	40 400	40 400
	Coordination	15 500	15 500	15 500	46 500
	FAO service charge (13%)	-	-	-	138 000
Regional total		15 500	15 500	55 900	224 900
Grand total		352 300	341 800	367 900	1 200 000