

SPECIAL PROGRAMME FOR FOOD SECURITY IN CAMBODIA (TCP/CMB/8821)

**TECHNICAL COOPERATION AMONG DEVELOPING COUNTRIES
(TCDC) EXPERT MISSION**

BY

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SPECIAL PROGRAMME FOR FOOD SECURITY IN CAMBODIA TCDC EXPERT MISSION

EXECUTIVE SUMMARY

The Ministry of Agriculture, Forestry and Fishery (MAFF) launched the Special Programme for Food Security (SPFS) in Cambodia on November 1997 as a national programme. Selected technical staff from appropriate MAFF's line departments, which composed the national, provincial and district teams, carries out the implementation of the programme at the field levels. The initial SPFS activities are implemented through the Farmer Field School (FFS),

which consists of a number of participatory learning sessions. Substantive accomplishment has been achieved through the SPFS-FFS in addressing the food security problems in the pilot sites. The UN's Food and Agriculture Organization (FAO), through the Agreement Concerning the Use of Experts for Technical Cooperation among Developing Countries (TCDC), scheduled an expert mission to SPFS-Cambodia from 16 May 1999 to 06 June 1999. The objective of the TCDC expert mission is to assess and recommend measures on how to (a) further improve SPFS implementation and (b) use FFS more vigorously as an SPFS extension strategy.

The activities undertaken during the TCDC expert mission included field visits, interactions with farmers and local government leaders in the pilot sites, with the national, provincial and district team members, and with MAFF, FAO and other development organization or agency officials involved in SPFS-Cambodia. The TCDC expert participated also in the preparation and conduct of the Fifth SPFS Technical Staff Training (TST5). Likewise, the mission through the documents gathered additional data on SPFS-Cambodia implementation on impact evaluation and constraint analysis available at the office of the FAO Representative in Cambodia.

The major findings of the mission were focused on the strong points and some improvement areas of the (a) SPFS-FFS curriculum, (b) SPFS-FFS farmer-graduates, (c) SPFS national, provincial and district teams, (d) SPFS technical staff training, and (e) SPFS institutionalization at the local levels.

It was evident that the SPFS-FFS was successfully used as a learning tool to generate active participation among farmers in the pilot sites. However, the SPFS-FFS curriculum can be further modified so that it can be used more as a learning tool to develop the decision-making skills of farmers.

At present, there are already 625 highly motivated SPFS-FFS farmer-graduates in one expansion and four pilot provinces. Based on observations and interviews, these farmers are willing to sustain SPFS activities in their respective villages. Potential SPFS-FFS farmer-graduates can be tapped for farmer-to-farmer training or to do participatory technology development (PTD) or farmer-driven research (FDR) activities in order to sustain SPFS-FFS activities at the village levels. Similarly, selected IPM-FFS farmer-graduates can do follow-up activities, particularly in the projected SPFS expansion areas.

The SPFS field team is composed of 50 multi-disciplinary technical experts from the various technical departments of the MAFF at the national (8), provincial (15) and district (27) levels. Their technical skills are constantly upgraded by participating in a three and a half-day Technical Staff Training (TST) conducted every cropping season. About seven (7) provincial team members had undergone the IPM Training of Trainers (TOT). While the provincial and district team members are technically competent in their own fields of discipline, they lack the facilitating skills to effectively and efficiently run SPFS-FFSs. They must undergo a season-long TOT so that they can internalize the concepts, principles and approaches in conducting a season-long SPFS-FSS that is more participatory, experiential and discovery-based.

The Technical Staff Training (TST) serves as an opportunity for the national, provincial and district teams to assess together the strengths, weaknesses and opportunities of the SPFS. It is also a chance to enhance their technical skills in their respective fields of specialization. The TST is also an occasion for MAFF and FAO officials to give encouragement and express appreciation to the SPFS field implementers. While farmers are invited in the TST to share their best experiences during the SPFS implementation, they should also participate to validate and further enrich the output of the SPFS programme assessment. Likewise, the TST will be more meaningful if sufficient interactions are allowed among the national, provincial and district team members by participating in all the technical sessions of the different programme components.

While high MAFF officials try to make themselves visible by attending various SPFS activities at the national, provincial and district levels, the programme is still projected more as an FAO than as a MAFF programme. This is so because the SPFS National Team is based at the office of the FAO Representative (FAOR), and the National Team Leader is identified at the field levels more as an FAO than as MAFF senior staff. This situation has to change if MAFF wants to sustain SPFS activities even beyond the pilot phase. While commune leaders are invited to attend important SPFS-FFS occasions, their participation is more passive than proactive. To enhance community ownership of SPFS and thus ensure its sustainability at the local levels, commune leaders and farmer-participants should perceive the various SPFS activities as theirs.

In view of the above findings, appropriate recommendations were given. These include: (a) training curricula and materials development, (b) capacity and capability building at the provincial, district and commune levels, and (c) conduct of follow-up activities.

As MAFF looks forward to the expansion of the programme by covering additional new provinces and villages in the provinces covered by the initial phase, it is imperative that training curricula and materials are developed to support an enhanced capacity and capability building at the local levels.

There is also a need to continue capacity and capability building at the provincial, district and commune levels to develop a core of trainers who can enhance local SPFS programme implementation and expansion. This strategy will also facilitate community programme ownership.

As indicated in the last three seasons of programme implementation, the SPFS-FFS approach has been successfully used in initially putting in place a group of farmers who are very active and highly motivated to continue implementing SPFS-FFS follow-up activities. To sustain the momentum and to ensure faster community programme ownership, continuous follow-up activities should be undertaken especially in the initial pilot sites.

INTRODUCTION

The United Nations' (UN) Food and Agriculture Organization (FAO) launched the Special Programme for Food Security (SPFS) in 1994 on a pilot basis in 15 countries to combat hunger and poverty and to achieve food security at national and household levels. The programme was endorsed during the World Food Summit (WFS) of 1996 as a worldwide programme that puts food security as a global priority for the 84 Low-Income and Food-Deficit Countries (LIFDC). The SPFS is presently operational in 39 countries and under varying preparation stages in the 34 other LIFDC.

Cambodia was among the first countries, which indicated her interest in participating in the SPFS. The SPFS-Cambodia was launched in November 1997 with a National

Workshop, in which a National Action Plan and a Plan of Operation prepared by the SPFS National Team was presented and approved. The Ministry of Agriculture, Forestry and Fishery (MAFF) is implementing the first phase of the SPFS-Cambodia as a national programme. The FAO is providing technical assistance to SPFS-Cambodia under TCP/CMB/8821. Selected technical staff from appropriate MAFF's line departments, which composed the national, provincial and district teams, carries out the implementation of the programme at the field levels. The initial SPFS activities are implemented through the Farmer Field School (FFS), which consists of a number of participatory, experiential and discovery-based learning sessions. Substantive accomplishment has been achieved through the SPFS-FFS in addressing the food security problems in the pilot sites. A more comprehensive description of the programme is included in Annex A.

THE TCDC EXPERT MISSION AND PROGRAMME OF ACTIVITIES

The FAO, through the Agreement Concerning the Use of Experts for Technical Cooperation among Developing Countries (TCDC), regularly sends expert missions to SPFS-Cambodia. The TCDC expert mission, among others, assesses and recommends measures on how to further improve the implementation of the SPFS in general and the use of the FFS as an extension strategy for SPFS in particular.

The TCDC expert, with experience in Farmer Field School (FFS) and Community Development (CD), complemented the FAO's Associate Professional Officer (APO) assigned in the SPFS-Cambodia. The latest mission was carried out on recommendation and close technical supervision of the responsible technical officer at the FAO Regional Office in Asia and the Pacific (RAP) in consultation with the FAO Representative in Cambodia and the SPFS National Team Leader. The TCDC expert worked closely with the SPFS National Team (SPFS-NT) in Cambodia, particularly, the National Farming Systems Specialist (NFSS). The TCDC expert's terms of reference (TOR) is detailed in Annex B.

Accordingly, the TCDC expert mission was scheduled from 16 May 1999 to 06 June 1999 or duration of three weeks to attain the above objectives. The day-to-day programme of activities for and the people met or involved in the mission are shown in Annex C. The activities undertaken during the mission included the following:

Field visits to SPFS-FFS and other SPFS activities and interactions with farmer-participants and local government leaders in the pilot sites;

Meetings and discussions with the SPFS national, provincial and district team-members in the pilot sites;

Meetings and discussions with officials of the Ministry of Agriculture, Forestry and Fishery (MAFF), the Food and Agriculture Organization (FAO), and other development organizations and agencies in Cambodia; and

Preparation of the programme of activities, identification of topics and participation in the Fifth SPFS Technical Staff Training (TST5).

Likewise, the TCDC expert gathered additional data on the implementation of SPFS-Cambodia through the documents on impact evaluation and constraint analysis available at the office of the FAO Representative in Cambodia. These documents include the following:

Results and Impact of the Activities Ending 1998 Dry Season of the Special Programme for Food Security in Cambodia (Prepared by the SPFS National Team, Phnom Penh, Cambodia in August 1998); and

Analysis of Constraints to Accelerated Food Production of the Special Programme for Food Security in Cambodia (Prepared by the FAO-RAP Policy Assistance Branch, Bangkok, Thailand in May 1999).

MAJOR ACCOMPLISHMENT

The SPFS Team Leader and Associate Professional Officer prepared a day-to-day Programme of Activities for the TCDC Expert Mission (Annex C). The details of the day-to-day activities undertaken by the TCDC expert from 16 May 1999 to 05 June 1999 are shown in Annex D. The highlights of the major accomplishments during the mission are summarized below:

The field visits to the SPFS-FFS and other SPFS activities and the interactions with farmer-participants and local government leaders in the pilot sites allowed the TCDC expert to:

Observe an SPFS-FFS session at Thmear Village, Chum Kiri District, Mlec Pilot Site, Kampot Province and the SPFS-FFS graduation ceremonies at (a) Prey Choev Teal Village, Prey Kabas District, and (b) Kdol Village, Samrong District, Takeo Province;

Observe the SPFS-FFS follow-up activities at (a) Snoul Village, Treng District, Takeo Province, and (b) Pre Veng, Don Swa and Ampil Villages, Puok District, Siem Reap Province on irrigation systems management, crop intensification and farm diversification;

Learn how the SPFS contributed in solving the food security problems in the pilot sites, how the SPFS-FFS empowered farmers technically and institutionally, and what are the strengths, improvement areas and opportunities of the SPFS in general and the SPFS-FFS in particular;

Learn the status and understand the role of the Water Users Associations (WUAs) and Village Livestock Associations (VLAs) in the implementation of various SPFS follow-up activities; and

Understand the current roles and involvement of the local leaders, particularly the provincial governors, the district vice-governors and the commune chiefs in sustaining the SPFS activities in the pilot sites.

The meetings and participatory discussions undertaken with the SPFS national, provincial and district team-members in the pilot sites provided the TCDC expert the opportunity to:

Understand the roles of the team-members in the SPFS implementation and learn how the SPFS activities are operationalized at the national, provincial, district, and community levels;

Understand how the SPFS-FFS is used as an extension strategy in introducing and sustaining the different component activities of the programme;

Learn the strengths, improvement areas and opportunities of the national, provincial and district teams to better address the concerns of the SPFS in general and the SPFS-FFS in particular;

Discuss and clarify issues related to the modification of the SPFS-FFS and SPFS-TST curricula, the development of SPFS-TOT curriculum and SPFS field guides, handbooks and manuals highlighting the participatory, experiential and discovery-based learning approaches;

Share experiences on the FFS implementation, program management and policy advocacy, institutionalization, sustainability and community ownership; and

Develop, in consultation with the SPFS national team, a proposed term of reference (TOR) for the next TCDC expert mission to the SPFS in Cambodia.

The meetings and discussions with officials of the Ministry of Agriculture, Forestry and Fishery (MAFF), the Food and Agriculture Organization (FAO), and other development organizations and agencies in Cambodia served as a venue for the TCDC expert to:

Learn about the status of operationalization, institutionalization or implementation of the SPFS not only in Cambodia but also in other Low-Income Food-Deficit (LIFD) countries as well;

Learn about the commitments of (a) the government of Cambodia, particularly the MAFF, (b) the international organizations, particularly the FAO, and (c) the other development organizations and agencies (Libby and Pok, 1997), particularly the NGOs, in pursuing the SPFS-Cambodia objectives;

Discuss the findings and recommendations related to the improvement of the implementation of the SPFS-FFS and other SPFS activities in the pilot sites and the possible expansion areas;

Discuss and share ideas on how to strengthen collaboration between the SPFS and the National IPM Programme of Cambodia particularly in the areas of (a) implementing SPFS-FFS and IPM-FFS follow-up activities, (b) developing SPFS-FFS and SPFS-TOT curricula, field guides, handbooks and manuals highlighting the participatory, experiential and discovery-based learning approaches;

Share information related to the new developments in the ASEAN region (SEARCA 1998 and 1999), particularly on the establishment of the ASEAN IPM Knowledge Network and the facilitation of the Cambodian membership into the Network; and

Share the successes of many ASEAN countries in using the FFS as an extension strategy, not only for IPM, but also for other concerns, such as crop and livestock production, integrated soil and irrigation systems management.

The TCDC expert's involvement in the preparation of the programme of activities, identification of topics and participation in the Fifth SPFS Technical Staff Training (TST5) allowed him to:

Review and finalize, with the SPFS National Team and the Associate Professional Officer, the draft TST5 programme of activities;

Identify the activities, with the SPFS National Consultant for Farming Systems, for the TST5 sessions on *SPFS-FFS Methods and Approaches*;

Review and list, with the national, provincial and district teams, the current and new SPFS-FFS methods and approaches;

Develop, with the national, provincial and district teams, some field exercises using the identified SPFS-FFS methods and approaches;

Review, with the SPFS National Consultant for Farming Systems, the suggested modification of the SPFS-FFS curriculum and the typical weekly FFS schedule which were discussed later with the TST5 participants;

Brainstorm and finalize, with the national, provincial and district teams, the suggested modification of the SPFS-FFS curriculum and the typical weekly FFS schedule;

Learn the SPFS 1999 dry season activities and results, from the provincial and district team members and farmers in all the pilot sites in Kampot, Takeo, Siem Reap,

and Kampong Cham Provinces and in all the expansion areas in Battambang Province;

Learn the strengths, improvement areas and opportunities of the SPFS implementation in the pilot sites and the expansion areas, as perceived by the national, provincial and district teams;

Discuss with the national, provincial and district teams the findings and recommendations related to the improvement of the implementation of the SPFS-FFS and other SPFS activities in the pilot sites and the possible expansion areas;

Visit field activities related to current technical innovations in (a) aquaculture at the Fishery Station of the MAFF's Department of Fishery at Roshey Keo District and (b) livestock and farming systems at the Royal University of Agriculture-University of Tropical Agriculture at Dangkar District, Phnom Penh, Cambodia;

Develop with the national, provincial and district teams for livestock and fishery components some field exercises related to current technical innovation in aquaculture and livestock using the identified SPFS-FFS methods and approaches;

Additional data related to SPFS-Cambodia implementation were also gathered through the documents on impact evaluation and constraint analysis available at the office of the FAO Representative in Cambodia. These additional information allowed the TCDC expert to:

Validate the impact of the programme on crop productivity, food sufficiency, farmers' decision-making skills, community organization, extension approaches and methods, trainers' facilitating skills, among others;

Determine the topics, activities, time frame, materials, approaches and methods used in the SPFS-FFS, SPFS-TST and other SPFS activities;

Understand some of the important constraints to accelerated food production and community developments related to the SPFS-Cambodia implementation; and

Learn some lessons shared by the major stakeholders during the last three seasons of the SPFS-Cambodia implementation.

MAJOR FINDINGS

The Farmer Field School Curriculum

Strong Points

The SPFS-FFS curriculum, which was a modification of the IPM-FFS curriculum used by national IPM programmes of many ASEAN countries, was successfully used to generate active participation among farmers in the pilot sites particularly on irrigation systems management, livestock and aquaculture concerns. Initial impact assessment also indicated that 56 percent of the farmer-participants had improved awareness about rice pests and diseases and their possible solutions as well as increased knowledge on various crop production technologies such as fertilizer use and management, crop diversification, seed multiplication, and composting. Likewise, the impact assessment indicated that 16 percent of the women FFS farmer-participants perceived an increased confidence in decision-making concerning crop and livestock management (MAFF, 1998).

Improvement Areas

Successful national IPM programmes in Southeast Asia (e.g., Indonesia, the Philippines and Vietnam) use the IPM-FFS more as a learning tool to develop the critical thinking abilities of farmers, especially during the regular FFS season, so that they become better decision-makers and experts in their own fields. It is used more to better understand farmers' problems rather than solving all their problems. This is made possible by avoiding too many interventions in the learning field and focusing the learning activities on the more important aspects of the major crop or commodity in the project sites. This was confirmed in a recent impact evaluation conducted by SEARCA (Navarro, et. al., 1998) of the Philippine national IPM programme. The evaluation showed that majority of IPM-FFS farmer-graduates applied most of the principles learned in the FFS, such as the use of appropriate varieties (82-100%), and the practice of sound cultural management like proper land preparation (84-100%), nutrient (97-100%), insect pest (95-98%), disease (77-100%), and weed (50-100%) management.

In the SPFS-FFS curriculum (Annex E), several interventions (e.g., irrigation systems and water management, crop diversification and intensification, livestock and aquaculture, etc.) are included (Khan, 1999), in addition to the regular crop production topics covered in a typical IPM-FFS curriculum (Annex F). As a result, several important FFS components are sacrificed, such as agro-ecosystem analysis (AESA) and group dynamics activities. The AESA, considered as the soul of an FFS dealing with crop management, is important not only to understand the pest-natural enemy dynamics, but more so to better assess the effects of fertilizer, water, soil or cultural management practices on the growth and development of the crop and the ecosystem. Better understanding of the agro-ecosystem through AESA develops farmers' critical thinking abilities and decision-making skills. In the later stages, farmers addressing other farming systems concerns can use these skills. Group dynamics activities, on the other hands, are important to facilitate commonly encountered FFS problems (e.g., absenteeism and substitution of attendance, conflict management and the like) in an unthreatening manner. Other concerns or interventions not directly related to the major crop or commodity can be better addressed as follow-up or participatory technology development (PTD) activities

after the regular FFS season.

The Farmer Field School Farmer-Graduates

Strong Points

At present, there are already 625 highly motivated farmer-graduates as a result of the 23 FFSs conducted in five (5) provinces of Cambodia since 1998. Based on keen observations and interviews conducted with some SPFS-FFS farmers in the pilot sites, these farmers are willing to sustain SPFS-FFS activities in their respective villages. Many of them are already selected as beneficiaries or are already doing follow-up activities on irrigation systems management, crop diversification, livestock and aquaculture components of the programme.

Improvement Areas

Potential SPFS-FFS farmer-graduates can be selected to undergo Training of Farmer Trainers (TFT) and be tapped for farmer-to-farmer training in order to sustain SPFS-FFS activities at the village levels. Others can be trained to do participatory technology development (PTD) or farmer-driven research (FDR) activities to ensure the development of more location-specific SPFS technologies on crop diversification, crop-livestock integration or crop-aquaculture, and other farming systems interventions. Similarly, selected IPM-FFS farmer-graduates can undergo a shorter SPFS orientation training and do follow-up activities, particularly in the projected SPFS expansion areas.

The National, Provincial and District Teams

Strong Points

The SPFS field team is composed of 50 multi-disciplinary technical experts (e.g., agronomists, farming system specialists, hydrologists, and livestock and aquaculture specialists) from the various technical departments of the Ministry of Agriculture, Forestry and Fishery (MAFF) at the national (8), provincial (15) and district (27) levels (Annex G). The technical skills of the provincial and district team members are constantly upgraded by participating in a three-and-a-half-day Technical Staff Training (TST) conducted by the national team before the start of every cropping season. About seven (7) provincial team members had undergone either a one-month (not season-long) or 4-5 months (season-long) IPM Training of Trainers (TOT).

Improvement Areas

While the national, provincial and district team members are technically competent in their own fields of discipline, they lack the facilitating skills to effectively and efficiently run SPFS-FFSs. Because they can facilitate only SPFS-FFS topics related to

their technical expertise, all the team members had to move from one SPFS-FFS to another unless everyone is present to facilitate in every SPFS-FFS session. Oftentimes, they serve more as technical experts than process facilitators, leading to less participatory, less experiential and less discovery-based SPFS-FFS learning activities.

To improve their efficiency and effectiveness as SPFS-FFS facilitators, non-TOT graduates, using selected TOT graduates as trainers, must undergo a 4-5 months season-long TOT, so that they can better internalize the concepts, principles and approaches in conducting a season-long SPFS-FFS. Because of their three-season learning experiences in conducting SPFS-FFS, a modified three-days-a-week, four-to-five-months, season-long TOT, adapted from the Philippine IPM experience, can be developed to make it more relevant in addressing the varied SPFS concerns. The SPFS National Team and selected Master Trainers from the National IPM Programme of Cambodia can jointly develop, with the technical assistance of a senior ASEAN IPM trainer, the proposed SPFS-TOT curriculum.

In the Philippines (Philippine IPM Program, 1993) and Indonesia (Bruan, 1997), an FFS, whether in IPM or crop production, is normally handled by a team of two trainers who conduct two FFSs in one season and facilitates all the FFS activities in every session. If the SPFS will adopt the same strategy, an SPFS-FFS team composed of six members can be reorganized into smaller training teams consisting of three members who can now facilitate two instead of one SPFS-FFSs every season, thus enhancing the process of programme expansion.

The Technical Staff Training

Strong Points

The Technical Staff Training (TST) serves as a venue for the national, provincial and district teams to assess together the strengths, weaknesses and opportunities of the SPFS. Likewise, the training provides the provincial and district team-members the opportunity to enhance their technical skills in their respective fields of specialization. The TST is also an occasion for MAFF and FAO officials to encourage the sustained participation and appreciate the accomplishments of the SPFS field implementers. The mere presence of high government officials and other stakeholders, as well as the testimonies of successes shared by farmers during the occasion motivate the participants to further commit themselves to the objectives of the programme. The details of the activities tackled in the TST are shown in Annex H.

Improvement areas

While farmers are invited in the TST to share their best experiences during the SPFS implementation, they do not participate in the assessment of the programme. Farmers' participation in this regard will validate and further enrich the output of

the SPFS programme assessment. While the TST allowed technical enhancement of the participants in their respective fields of specialization, the training did not update the participants on recent developments in the other components of the programme. The TST will be more meaningful if sufficient interactions are allowed among the national, provincial and district team members by participating in all the technical sessions of the different programme components (e.g., agronomy, hydrology and livestock). It is suggested that a Refresher Course for Trainers (RCT) with a longer duration (e.g., at least one week) should be conducted, instead of the TST, as the need arises at the provincial levels. This will update the technical competence and facilitating skills of the team members. This strategy will allow the development of a more location-specific curriculum that will better address the needs of the SPFS at the provincial and district levels. It may also be more useful if an Annual Assessment and Planning Workshop is conducted at the national level in lieu of the TST. In this regard, farmers' participation in planning and assessment may also be essential.

Institutionalization of SPFS-FFS

Strong Points

High officials (e.g., Secretary and Undersecretary of State) of the Ministry of Agriculture, Forestry and Fishery (MAFF), provincial and district officials (e.g., governors, vice-governors and directors of the Department of Agriculture) and commune chiefs normally visit, attend field days and graduation activities of the SPFS-FFS. In addition, they conduct dialogues with farmer-participants and other stakeholders in SPFS pilot sites. National, provincial and district teams are assigned to oversee implementation of SPFS activities at various levels. Water Users Associations (WUAs) and Village Livestock Associations (VLAs) are either continuously organized or strengthened to ensure sustained involvement of the farming communities in the implementation of SPFS activities. SPFS-FFS farmer-graduates in all the pilot sites regularly undertake follow-up activities.

Improvement Areas

While high MAFF officials try to make themselves visible by attending various activities at the national, provincial and district levels, SPFS is still projected more as an FAO rather than as a MAFF project. This is so because the SPFS National Team is based at the office of the FAO Representative (FAOR), and the National Team Leader is identified at the field levels more as an FAO than as a MAFF senior staff. This situation has to change if MAFF wants to sustain SPFS activities even beyond the pilot phase. Similarly, while commune leaders are invited to attend some important SPFS-FFS occasions (e.g., field days and graduations), their participation are more passive (e.g., mere presence) than proactive (e.g., signing invitation letters for guests and visitors, giving welcome or closing address, etc.). Even the SPFS-FFS farmer-participants attend only the closing programs to receive their certificates of graduation. To enhance community ownership of SPFS and thus ensure its

sustainability at the local levels, commune leaders and farmer-participants should perceive the various SPFS activities as theirs. The commune leaders should be given a chance to share their ideas by addressing their constituents during some important SPFS-FFS occasions. Likewise, the farmer-participants should have a time to reciprocate the messages of encouragement from their guests on the said occasions by giving their own impressions about the SPFS activities undertaken in their villages.

CONCLUSIONS AND RECOMMENDATIONS

During the last three seasons of SPFS implementation, substantive accomplishment has been achieved through the SPFS-FFS in addressing the food security problems in the pilot sites. A group of highly motivated farmers who are willing to do follow-up activities in their villages and multi-disciplinary technical experts from the various technical departments of MAFF at the national, provincial and district levels that are committed to sustain SPFS activities are already in place in all the pilot sites. It was aptly demonstrated that the programme could indeed alleviate the food security problems in Cambodia. The SPFS can now be implemented as a truly national programme. However, a number of preparatory activities should be undertaken to further improve SPFS implementation in the pilot and projected expansion sites. In consultation with the SPFS National Team, the TCDC Expert recommended the implementation of the following activities:

Training Curriculum and Material Development

As MAFF and the SPFS National Team looks forward to the expansion of the programme by covering additional new provinces and additional new villages in the provinces covered by the initial phase, it is imperative that training curricula and materials are developed. These activities are necessary to support an enhanced capacity and capability building at the local levels. These should include the following:

Development of SPFS Curricula for Training of Trainers (TOT), Refresher Course for Trainers (RCT), and Training of Farmer Trainers (TFT).

The impact assessment conducted by the SPFS National Team (MAFF, 1998) and the TST5 participants (1999), as well as the constraint analysis undertaken by the FAO-RAP Policy Assistance Branch (FAO, 1999) recognized the need to improve the technical and facilitating skills of the SPFS provincial and district team-members. The same situations were observed during the TCDC expert mission and these justify the need to immediately develop a curriculum and conduct a modified season-long SPFS-TOT for the team-members. The SPFS-RCT, on the other hand, may be necessary when there are already enough SPFS-TOT graduates in the provinces or districts and there are new developments in technologies and methodologies. Similarly, the SPFS-TFT may only be necessary when there are enough SPFS-FFS graduates in the communes or villages and

there are prospects for SPFS programme expansion with very limited SPFS-FFS trainers. Thus, the development of the SPFS-RCT and SPFS-TFT curricula may come only after two or three seasons.

Modification of the Current SPFS Farmer Field School Curriculum.

In order to benefit from the use of SPFS-FFS as a learning tool to develop farmer's critical thinking ability, a number of modifications will have to be instituted in the current curriculum. If the current 20 weekly sessions will be maintained, some topics not directly related to the day-to-day management of the major crop should be repositioned. This strategy will minimize mixing of so many ideas during the SPFS-FFS crop management sessions and thus allow continuity of observations and assessments of the crop ecosystem on a weekly basis. This will result to enhanced decision-making process. These modifications, among others, should include the following:

Topics on off-farm irrigation systems management should be discussed either during the first two weekly sessions before the cropping period or during the last two weekly sessions immediately after the cropping period. However, relevant on-farm water management topics should be discussed during the 14-16 weekly sessions in the regular cropping period.

Livestock topics may be discussed during the cropping period. However, afternoon sessions should be allotted for this purpose to avoid disruption of the progress of the decision-making process allotted for the major crop during the morning sessions. Topics on crop diversification can be discussed as special topic during or as a regular topic immediately after the cropping period.

Agro-ecosystem analysis (AESA) should be done continuously on a regular basis, starting from the second weekly session after planting until two weeks before harvest. The AESA should be used in a broader context to improve the decision-making skills of farmers, not only on pest-natural enemy dynamics, but also on soil fertility, fertilizer, water, weed and other cultural management practices during the cropping period. A typical AESA exercise is detailed in Annex I.

Group dynamics activities should be done regularly within the 20 weekly sessions to tackle commonly encountered SPFS-FFS problems such as domineering, tardiness, absenteeism, substitution of attendance, etc. A typical weekly schedule for Farmer Field School (FFS) at any given day is shown in Annex J.

Development of a Field Guide of Discovery Based Exercises for SPFS Farmer Field Schools

The field guide will be a collection of field discovery-based exercises that the SPFS provincial and district teams used and adapted during the last three seasons of conducting the SPFS-FFS and follow-up activities in the pilot sites. This can be further enriched by the experiences of the national IPM programmes of Cambodia (FAO, 1998) and the Philippines (Philippine National IPM Program, 1996). This activity can be accomplished as a collaborative activity of the SPFS-Cambodia, the ASEAN IPM, and the national IPM programmes of Cambodia and the Philippines. This should be done immediately to standardize the approaches and methods of the SPFS-FFS and the follow-up activities in the pilot sites. The field guide will also help the training teams gain more self-confidence in facilitating technical topics, even those outside their fields of specialization, in the SPFS-FFS.

Development of a Handbook of Non-Formal Education and Team Building Exercises for SPFS Farmer Field Schools

The handbook will be a collection of non-formal education methods and approaches, team building exercises, energizers and icebreakers, and evaluation exercises that the SPFS provincial and district teams used and adapted during the last three seasons of conducting the SPFS-FFS and the follow-up activities in the pilot sites. This can be further enriched by the experiences of the national IPM programmes of Cambodia and the Philippines. This activity can be accomplished as a collaborative activity of the SPFS-Cambodia, the ASEAN IPM, and the national IPM programmes of Cambodia and the Philippines. This should be done immediately to standardize the approaches and methods used in the SPFS-FFS and the follow-up activities in the pilot sites. The field guide will also help equip the training teams with the necessary facilitating skills in conducting the SPFS-FFS and the follow-up activities.

Development of a Manual for Follow-up and Participatory Technology Development Activities for SPFS Farmer Field Schools

The manual will be a collection of exercises, methodologies, and approaches in participatory technology development (PTD) or farmer-driven researches (FDR) (ILEIA, 1989) that the SPFS provincial and district teams used and adapted during the last three seasons of conducting the SPFS follow-up activities in the pilot sites. This can be further enriched by the experiences of the national IPM programmes of Cambodia and the Philippines. This activity can also be accomplished as a collaborative activity of the SPFS-Cambodia, the ASEAN IPM, and the national IPM programmes of Cambodia and the Philippines. This activity should be done immediately to standardize methodologies and approaches used in the SPFS follow-up activities in the pilot sites. The handbook will standardize the approaches and methodologies as well as help equip the training teams with the necessary facilitating skills in conducting the SPFS follow-up activities.

Capacity and Capability Building at Provincial, District and Commune Levels

There is also a need to undertake capacity and capability building at the provincial, district and commune levels to develop a core of trainers who can be tapped to enhance local SPFS implementation. This strategy will also facilitate SPFS community programme ownership. The following activities can be undertaken:

SPFS Training of Trainers (TOT). The TOT will be undertaken to put in place the needed provincial- and district-based trainers who will implement SPFS Farmer Field Schools and other SPFS related activities at the village levels. They can also be tapped to develop capacities and capabilities of NGOs who are interested to do parallel or complementary SPFS activities in the projected expansion areas.

SPFS Farmer Field School (FFS). The FFS will be used as a learning tool to develop the critical thinking ability of farmers, which will lead, to their better decision-making skills. During the initial stage of SPFS implementation, a modified SPFS-FFS model will be used to make farmers better understand and find solutions to some of their major problems rather than to all their problems. It will prepare SPFS farmer-participants to analyze and solve more complicated problems of rice-based farming systems in the future.

SPFS Refresher Course for Trainers (RCT). The RCT will be conducted to update the technical expertise and facilitating skills of the provincial and district teams. To be more relevant for local capability and capacity building, the RCT should be conducted, on a case-to-case basis, at the provincial level. The participants should be the provincial and district team members of the pilot sites and the projected expansion areas.

SPFS Training of Farmer Trainers (TFT). The TFT will be undertaken to put in place the needed commune- or village-based farmer-trainers who can be tapped to work with SPFS-FFS district-based trainers to implement SPFS-FFS follow-up or participatory technology development (PTD) activities at the village levels, especially during the expansion phase.

Conduct of Follow-up Activities

As indicated in the last three seasons of programme implementation, the SPFS-FFS approach was successfully used for initially putting in place a group of farmers who are very active and highly motivated to continue the SPFS activities after regular SPFS-FFS activities. To sustain the momentum and to ensure faster community ownership of the SPFS, continuous follow-up activities should be undertaken. Some of these are:

Farmers' Congress for SPFS Farmer Field School Graduates. Farmers' congresses can be organized at provincial or district levels to allow farmers to share their best practices and innovations with other farmers within a province or district, as the

case may be, every two or three seasons. This will also promote closer collaboration among farmers' groups and serve as an avenue to improve their technical knowledge.

SPFS Farmer-to-Farmer Training. Selected farmer-graduates of the SPFS-TFT can be tapped to facilitate regular SPFS-FFS, with the assistance of at least one regular SPFS-FFS trainer based at the district level. This strategy will enhance faster community programme ownership and expansion.

Participatory Technology Development (PTD). Selected farmer-graduates of the TFT can also be tapped to conduct SPFS-PTD activities to enhance development of more location-specific technologies, which can be used by farmers in the SPFS, project sites, with the assistance of at least two SPFS technical experts based at the district level. This strategy will hasten programme expansion and community ownership.

Terms of Reference for the Next TCDC Expert Mission.

The terms of reference (TOR) for the next TCDC expert mission should focus on providing technical assistance to SPFS concerns related to the major recommendations made by the last expert mission. The details of the proposed TOR for the next TCDC expert mission are shown in Annex K. In addition to the TOR specified in the last expert mission, the next expert mission should address the following concerns:

Follow-up activities on the modification of the SPFS-FFS curriculum as well as the introduced SPFS-FFS approaches and methods;

Development of SPFS curricula for Training of Trainers (TOT), Refresher Course for Trainers (RCT) and Training of Farmer Trainers (TFT);

Development of field guides, handbooks and manuals of participatory, experiential and discovery-based exercises for the SPFS-FFS and SPFS follow-up activities; and

Conduct of Training of Trainers (TOT), Refresher Course for Trainers (RCT), Training of Farmer Trainers (TFT) and Participatory Technology Development (PTD) activities.

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ANNEX A

SPECIAL PROGRAMME FOR FOOD SECURITY IN CAMBODIA (TCP/CMB/8821)

INTRODUCTION

The Ministry of Tourism (1997) estimated the population of Cambodia to be about 10.7 millions, eighty percent of which is dependent on subsistence farming, with rice as the main agricultural crops. Next to rice, vegetables are the second largest crops produced in the country (Numa, S. et. al., 1997). The agricultural sector contributes to almost 50% of the gross domestic product (GDP) of the country. Agricultural productivity is low in comparison with neighboring countries in Asia. Average yield is only 1.5 t/ha for rainfed rice and 2.3 t/ha for irrigated dry season rice (Nesbitt, 1997). Food production remains highly vulnerable to the effects of adverse weather conditions, due to flooding and droughts (MAFF, 1998). Years of civil strife have also taken substantial agricultural areas out of production and an important part of the population in Cambodia is subject to temporary seasonal or chronic food shortages and nutritional deficiencies. Thus, food security or the right to have an adequate and secure supply of food for its population is the first and basic condition for future prosperity in Cambodia (FAO, 1998).

Cambodia was among the first countries, which, in the wake of the World Food Summit of 1996, indicated its interest in participating in the Special Programme for Food

Security (SPFS). Thus, in November 1996 FAO assistance was requested in the formulation of a Special Programme for Food Security in Cambodia (FAO, 1998). Exploratory missions visited Cambodia in December 1996 and July 1997 and established the framework for the formulation of SPFS-Cambodia. The SPFS-Cambodia is an exclusively national programme and the formulation and implementation of the SPFS plan of operation is entrusted to a SPFS National Team (NT) under the policy guidance of a high level SPFS National Steering Committee (NSC) in the Ministry of Agriculture, Forestry and Fishery (MAFF).

An Undersecretary of State chairs the NSC. The NT includes five specialists in key disciplines of agronomy-soil fertility, farming systems and integrated pest management, irrigation systems and water management, livestock and aquaculture. Adequate support is assured from various national and international agencies involved in agricultural development in the country.

FAO WORLDWIDE SUPPORT TO SPFS

The World Food Summit (WFS), organized by the UN's Food and Agriculture Organization (FAO) in November 1996, focused worldwide attention to the global problems of inadequate food production in many countries of the world, resulting in hunger, malnutrition and rural poverty. In many countries, food deficits are still common and it is estimated that over 800 million people are chronically undernourished, mainly in the over 80 Low-Income Food-Deficit Countries (LIFDC). In response to this global challenge, FAO launched SPFS in 1995 to directly assist LIFDC member-countries in the formulation and implementation of national action plans. Through a direct assistance to farmers, the SPFS pursue in a participatory manner the intensification and diversification of food production and an increase in productivity, efficiency, pest control and effective water use and programming. Presently, SPFS is operational in twenty-five countries and is under varying preparation stages in 30 other countries. Financial institutions and donor countries have agreed to provide financial assistance in the expansion of the programme, while cooperation is established with major development partners, such as UNDP and other UN agencies, as well as with NGOs and other private sector (Libby and Pok, 1997).

GENERAL OBJECTIVES

Within the framework of the Strategy for National Agricultural Development (SNAD), towards the horizon of 2010, the general objective of the SPFS-Cambodia is:

To maximize national food self-reliance and to reduce the risks of disruptive variation in supply by demonstrating and facilitating a rapid increase in agricultural productivity and food production in an economically and environmentally sustainable basis.

APPROACH AND MAIN COMPONENTS OF SPFS

To achieve the nationwide impact on food security, SPFS follows a phased approach.

The formulation of a National Programme is a first step implemented through a participatory process, evaluating the existing farming systems in the various ecological regions and identifying potential suitable technologies, crops and cropping systems and areas where improved technologies would be most promising. Suitable pilot areas are selected with a promising potential for substantial production increase and appropriate technologies are identified in four major components (e.g., water management, crop intensification, farm diversification and constraint analysis).

During the pilot phase, which typically consists of a two to three year period, the various technologies are introduced in an integrated participatory approach through a well-trained SPFS field team in the farmer's field. Through a process of continuous monitoring and adaptation, the technologies are consolidated in a set of recommendations for implementation in a National Action Plan.

A national capacity building is undertaken and technical and extension staff at central, provincial and district levels receives technical and in-service training and forms the institutional basis for the expansion of the SPFS.

In the expansion phase, the package of proven technologies combined with appropriate measures and policies at national level to support the programme, are disseminated at national and regional levels with appropriate financial support of investment agencies.

EXPECTED OUTPUTS AND RESULT OF SPFS

In support of the overall objectives, the specific outputs of the SPFS pilot projects can be summarized as follows:

A set of proven integrated techniques and technologies for increasing production through improved water, soil fertility and pest management, intensifying crop production through the introduction of improved varieties, and diversifying farm income through the integration of small livestock production and aquaculture in the farming systems.

Recommendations and measures for overcoming constraints related to specific ecological and socioeconomic conditions (including market conditions, availability and price of agricultural inputs), community participation, environmental preservation, etc. in the pilot areas.

Participatory approaches, which will set in motion the participatory process of technology adaptation, increased farmers knowledge and initiative, and the essential community participation and development (including the role of women).

A national, provincial and district capability in place that will provide sustainable support services to farmers in the introduction of appropriate technologies.

Established linkages for on-going and planned agricultural development and

investment programmes in the country.

Agreement and procedures on the further extension of the pilot projects into national and regional development and investment programmes.

TECHNIQUES AND TECHNOLOGIES FOR SPFS

Techniques and technologies have been identified to increase agricultural production. The selection will depend on the potential and constraints in the selected pilot areas and will be subject to farmers' priority appraisal. The various techniques and technologies are summarized below:

Irrigation Systems and Water Management Techniques

- Improved procedures in operation and maintenance of irrigation and drainage systems
- Expansion of irrigation areas through effective water distribution and use
- Improved on-farm water management techniques
- Formation and strengthening of Water Users Associations

Crop Intensification

- Intensification and diversification of the cropping systems
- Introduction of improved seeds and high yielding varieties
- Appropriate plant nutrient management and fertilizer use
- Integrated pest management

Diversification Components

- Improved poultry production
- Improved swine production and farming techniques
- Introduction and promotion of rice-fish culture and aquaculture
- Formation and strengthening of Village Livestock Associations

Constraint Analysis

- Evaluation of socioeconomic conditions (including the role of women)
- Farming systems analysis and participatory rural analysis
- Access to credit
- Evaluation of marketing and post-harvest techniques
- Environmental sustainability

PILOT SITES OF SPFS IN CAMBODIA

A total of seven (7) pilot sites have been selected in four (4) provinces for the first year of SPFS implementation. In the selection of the pilot areas, their representativeness,

accessibility and clear potential for increased agricultural production were considered. The main criteria for selection of cooperators were the interest and motivation demonstrated by farmers to contribute in the programme. All pilot sites have established irrigation systems with potential for further improvements. The scheme selected includes:

Kampong Cham Province

Tuk Char Irrigation Project

A recently rehabilitated ADB irrigation scheme for 3,000 ha, it has no Water Users Associations (WUAs) yet established for its operation and maintenance. Although water is adequately available in the dry season cropping, only 500 ha are effectively irrigated due to improper water distribution and poor on-farm water management. SPFS aims to strengthen the WUAs, introduce rotational water supply and demonstrate appropriate on-farm irrigation techniques, which are expected to substantially increase irrigated dry season production. Introduction of improved agricultural practices (e.g., plant nutrition and improved seed quality) and diversification with alternative dry season crops will further intensify agricultural production. Diversification through the integration of aquaculture, poultry, and swine production in the farming systems is also expected to improve agricultural production.

Takeo Province

Kan Tourt Irrigation Scheme

A lift pump scheme for 350 ha with well established WUA, which fully contributes to the cost of operation of the pumps and has initiated further improvements of the irrigation system. Recently rehabilitated by ADB, water is pumped from the reservoir for supplemental irrigation of rice in the pre-monsoon period (May-September) and main monsoon period (October-January). Farmers plant recession rice in the reservoir from January-March. SPFS assistance is focused in the improvement of the on-farm irrigation system, demonstration of non-rice cash crops in the dry season, and introduction of improved agricultural practices for pre-monsoon rice crops, which are expected to increase agricultural production. Diversification through the integration of aquaculture, poultry, and swine production in the farming systems is also expected to improve agricultural production.

Thnot Te Irrigation Reservoir

The reservoir has been recently rehabilitated by ADB and irrigates an estimated area of 5,000 ha of rice fields in the dry season. The irrigable area is flooded during the monsoon period and unsuitable for crop production. Rice is planted after recession of floodwaters and should be provided (but not provided) with supplemental irrigation during the dry season (November-March). A WUA has been established, but is not effective in organization, management, and collection of fees. SPFS should strengthen

the WUA and improve the on-farm irrigation system in selected pilot sites to increase effectively the irrigated area and promote sustainability of the irrigation scheme. Introduction of improved agricultural practices will further increase irrigated rice production, while demonstration of non-rice crops will diversify the cropping system. Diversification through the integration of aquaculture, poultry, and swine production in the farming systems is also expected to improve agricultural production.

Prey Kabas Groundwater Irrigation

The areas covered by the system are situated in the flood plains of the Mekong River and are suitable for shallow tube wells. Several farmers invested already in pumps and small tube wells for supplemental irrigation of pre-monsoon and main monsoon rice or for irrigation of vegetable crops. Farmers do recession rice cropping during the early dry season in the flooded areas. SPFS improvements include assistance in promoting further the use of small pumps, the introduction of small on-farm irrigation works and promotion of cooperation among farmers in marketing and sharing of water and pumps. Introduction of improved cultural practices and diversification by planting other irrigated cash crops will further increase crop production. Diversification through the integration of aquaculture, poultry, and swine production in the farming systems is also expected to improve agricultural production.

Kampot Province

Mlec Irrigation Scheme

A major reservoir constructed during the Pol Pot period and recently accessible after the de-mining of the dam areas. The areas covered by this scheme are irrigated through two main canals and cover an estimated area of 3,000 ha through supplemental irrigation in the pre-monsoon period. Although major rehabilitation works are required to upgrade the system to its full potential of irrigating 6,000 ha, the scheme can reliably supply water during the dry season if mobilizing farmers through the WUAs does simple rehabilitation works. Introduction of improved agricultural practices would further increase production. Diversification through the integration of aquaculture, poultry, and swine production in the farming systems is also expected to improve agricultural production.

Siem Reap Province

Barai Irrigation System

The 5,000 ha scheme and reservoir has been rehabilitated under the UNDP/CARERE project with ILO technical assistance for the reconstruction of an irrigation network and formation of WUAs. The lower part of the scheme is flooded during the monsoon period and planted on receding floodwaters with supplemental irrigation from the reservoir. The upper more sandy parts of the scheme are cropped during the main monsoon with supplemental irrigation from the reservoir and the Siem Reap River. In

limited parts of the scheme, dry season irrigation of vegetables is practiced. SPFS improvements will include support to selected WUAs in the operation and maintenance of the system for dry season (recession rice) irrigation and demonstration of on-farm water management improvements. Further promotion of vegetables and other cash crop production under irrigation and introduction of improved agricultural practices should also be done. Diversification through the integration of aquaculture, poultry, and swine production in the farming systems is also expected to improve agricultural production.

Mean Chhey Diversion and Shallow Groundwater Development

The Mean Chhey Diversion in Bakong District has been recently constructed with a commune of 300 ha in the dry season and 700 ha in the wet season, benefiting 500 families. The irrigation network lacks a proper layout and regulating structures, restricting substantially the irrigated areas. The commune has initiated improvements in the system, but lacks the necessary knowledge and resources to further improve the system. SPFS provides guidance and support to the commune in the development and improvement of the system, initiate procedure for operation and maintenance, and demonstrate for selected tertiary units the benefits of on-farm irrigation. Treadle pumps have been introduced with FAO assistance by IDE in open wells and tube wells in nearby Sotr Nikum District and will be further promoted in the pilot areas. In addition to improved rice production techniques, crop diversification is promoted with appropriate cash crop production. SPFS pilot activities can benefit from the support of the FAO (GCP/CMB/OO2/BEL) project on agro-forestry and fishery.

IMPACT ASSESSMENT OF THE SPFS PILOT PHASE

So far, three (3) FFSs have been conducted in each pilot sites. A total of 23 FFSs were established which produced around 625 farmer-graduates in five (5) provinces of Cambodia since 1998. An impact assessment was conducted by the national team (NT) through surveys of 82 out of 170 farmer-graduates who participated in the 1998 dry season FFSs and crop cuttings of field demonstration plots in all the pilot sites (MAFF, 1998). The highlights of the assessment are:

Rice yields substantially increased by an average of 30 percent from 2.0 t/ha before to 2.6 t/ha after FFS through the combined effects of better water management, use of certified seeds and appropriate fertilizer practices.

A significant increases of 20 percent in irrigated area from 1.0 ha before to 1.2 ha after FFS due to better irrigation management and water savings.

The percentage of farmers who grow rice only in the pilot sites decreased from 67 percent before to 51 percent after the FFS due to growing of other cash crops like legumes and vegetables.

Mortality rate in livestock and poultry decreased from 35 percent before to 10 percent

after FFS in swine and from 75 percent before to 25 percent after in chicken, through the SPFS vaccination campaign program.

There was also perceived greater awareness among farmer-graduates of common pests and diseases and their available solutions. Likewise, Water Users Associations were perceived as strengthened resulting to an increase in water use efficiency and decline in conflicts among water users.

On the other hands, the impact assessment also revealed some areas that will need improvements to make the FFS a more useful tool in addressing the major SPFS concerns, such as:

Strengthening the training contents of the current FFS curriculum, to further improve the farmer's decision-making skills,

Addressing problems of tardiness, absenteeism and substitution of attendance by the FFS farmer-participants,

Improving the facilitating skills of trainers on participatory, experiential and discovery-based learning methodologies and approaches, and

Avoidance of the delays in the delivery of agricultural inputs for the FFS sites.

CONSTRAINT ANALYSIS OF SOME SPFS PILOT AREAS

With funding support from the UNDP's Support to Policy and Programme Development (SPPD) facility, socio-economic surveys were conducted to backstop the participatory constraint analysis of the SPFS activities in Siem Reap and Takeo Provinces (FAO, 1999). Using Participatory Rural Appraisal (PRA) methods, the SPPD team directly interacted with a cross section of farmers, government service providers, NGOs, and key informants to understand the problems and constraints at the farm, community and provincial levels. The PRAs were conducted in collaboration with the SPFS National Team using pre-designed questionnaires and guide questions. The highlights of the constraint analysis were as follows:

Foremost, the issue of irrigation, drainage and flood control was cited by villagers and key informants as the most serious constraints in the study villages in Siem Reap Province along with low rice productivity and limited opportunity for agricultural intensification and diversification. In Takeo Province, the existence of shallow hardpan prevents the roots of paddy rice to develop and make use of available soil nutrients.

Farmers consider rice as the main crop for their food security. When they have enough paddy rice, they feel secure that they have at least available rice to eat and only then can they devote time to deal with other income generation and leisure activities. But during the last few years, they were unable to harvest enough rice to satisfy their

household food requirement. Floods were the major problems during the peak rainy season and droughts during the late rainy and dry seasons for rice cultivation. Infestation by rats and birds are serious problems particularly with the dry season rice in the inundated forest area.

Chicken and swine contribute to the income of villagers, particularly chicken that can provide the immediate cash when it is needed. However, major problems affect livestock productivity such as diseases, nutritional deficiency and poor management practices. There are no diagnostic centers in the provinces, particularly in Siem Reap, and there are no veterinary services in the villages especially for chicken and small animals;

There are confusions over extension policies and mandates of the different MAFF line agencies. The head of the Department of Technical, Economic and Extension (DTEE) claimed that his department is doing the actual extension work. The heads of the other departments claimed that they also do the actual extension services, but which they coordinate with the DTEE.

The DTEE, the Departments of Agronomy, Fishery, Hydrology, and Livestock have inadequate technical manpower and financial resources and ineffective extension delivery systems. Only 3 out of 32, 9 out of 67, 5 out of 30, and 10 out of 28 technical staff of the Departments of Agronomy, Fishery, Hydrology, and Livestock, respectively, are college degree holders. No technical staff of the DTEE has earned a college degree.

The capacity of the Provincial Department of Agriculture and its operating commodity and functional divisions must be improved or strengthened both in terms of its technical capability and logistic resources to enable them to undertake effective extension, training and other technology transfer activities.

ANNEX B

**THE TERM OF REFERENCE AND THE TECHNICAL BACKGROUND
OF THE TCDC EXPERT ON FARMER FIELD SCHOOL**

AND COMMUNITY DEVELOPMENT

The Technical Cooperation among Developing Countries (TCDC) expert will complement the Food and Agriculture Organization's (FAO) Associate Professional Officer (APO) assigned in the Special Programme for Food Security (SPFS) in Cambodia. He was selected from among the national experts engaged in FAO technical assistance projects of countries in the region and registered in the FAO-TCDC roster. The TCDC expert with experience in Farmer Field School (FFS) and Community Development (CD), who had previous experience with FAO IPM project in the Philippines, was selected from the ASEAN IPM Knowledge Network Project of the SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA). His mission was scheduled as follows:

Timing: 16 May 1999 to 05 June 1999

Duration: Three Weeks

The mission will be carried out on recommendation and close technical supervision of the responsible technical officer of the Regional Office in Asia and the Pacific (RAP) in consultation with the FAO Representative in Cambodia and the SPFS National Team Leader. The TCDC consultant will work closely with the SPFS National Team (SPFS-NT) in Cambodia, particularly with the National Farming Systems Specialist (NFSS). The TCDC expert terms of reference are as follows:

Review, in discussions with the SPFS-NT and visit to the pilot sites, the impact of the first farmers training and the technologies introduced in the SPFS pilot sites during the first dry season, and assess the composition of the farmer's groups targeted in the farmers training;

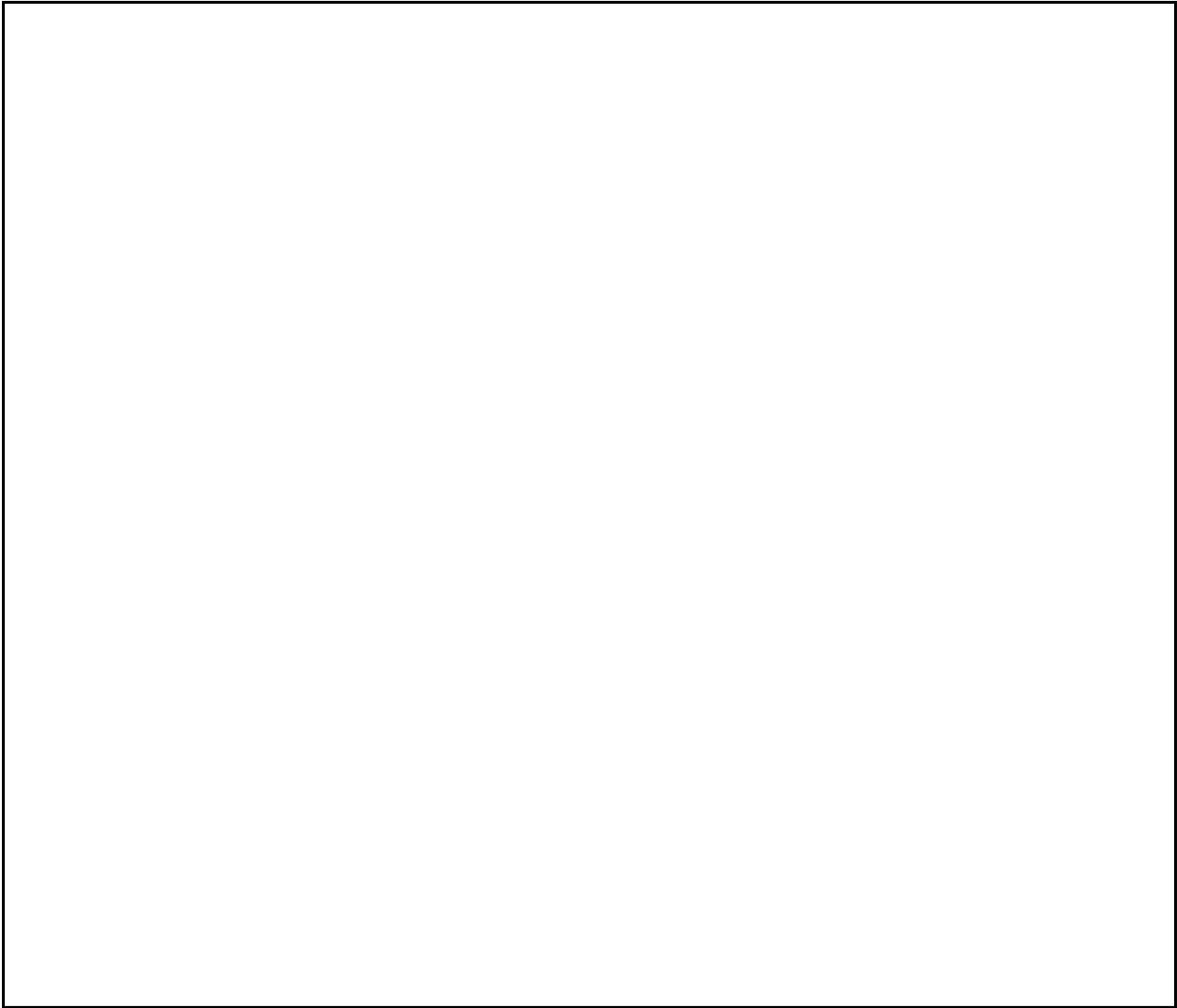
In interviews with the farmer's groups, evaluate social coherence and constraints to cooperation in the formation of communities and water users group motivated to undertake joint activities;

In cooperation with the SPFS-NT and the FAO consultant in farming systems, advise on the preparation of a relevant curriculum for the farmers training and on the development of appropriate training and extension materials;

Prepare a detailed work plan to be implemented in consultation with the SPFS-NT;

Participate in the Technical Staff Training (TST) for the SPFS Provincial and District Staff;
and

Prepare a brief technical mission report on activities and findings and terms of reference (TOR) for the second mission as necessary.



ANNEX C

**PROGRAMME FOR THE VISIT OF TCDC EXPERT IN FARMER FIELD SCHOOL AND
COMMUNITY DEVELOPMENT UNDER THE SPECIAL PROGRAMME
FOR FOOD SECURITY IN CAMBODIA (TCP/CMB/8821)**

DATES	ACTIVITY UNDERTAKEN	PEOPLE MET/INVOLVED
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<p>17 May 1999 (Monday)</p>	<p>Briefing of the TCDC Programme</p> <p>Meeting with National Team for General Introduction on SPFS in Cambodia</p>	<p>Mr. M. Pushparaja, Forestry Advisor and OIC, FAO Representative (Cambodia)</p> <p>Mr. Khieu Borin, National Consultant for Livestock and Poultry</p> <p>Mr. Prum Sitha, National Counterpart for Fishery</p> <p>Mr. Prum Viratha, National Consultant for Irrigation</p>
<p>18 May 1999 (Tuesday)</p>	<p>Meeting with the National Team Leader of SPFS in Cambodia</p> <p>Discussions with the National Team of the 5th Technical Staff Training</p>	<p>Mr. Ouk Phal, Agronomist and SPFS Team Leader</p> <p>Mr. Buntuon Simona, National Counterpart for Agronomy</p> <p>Mr. Ouk Phal</p> <p>Mr. Khieu Borin</p>
<p>19 May 1999 (Wednesday)</p>	<p>Visit SPFS-FFS and other related activities in Takeo Province (Prey Choeu Teal Village, Prey Kabas Pilot Sites)</p>	<p>Mr. Chen Koeun, Agronomist and Provincial IPM Coordinator</p> <p>Mr. Mean Rykan, Provincial Hydrologist</p> <p>Mr. Ouk Sokiap, District Livestock Specialist</p> <p>Ms. Mao Maly, District Agronomist</p> <p>Mr. San No, District Hydrologist</p> <p>Mr. Khieu Borin</p> <p>Mr. Buntuon Simona</p>

DATES	ACTIVITY UNDERTAKEN	PEOPLE MET/INVOLVED
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<p>19 May 1999 (Wednesday, Continued)</p>	<p>Discussions with SPFS-FFS farmers, provincial and district teams and other officials</p>	<p>Mr. Mey Srorn, District Vice-Governor Mr. Mr. Sok Salao, District Director, Department of Agriculture Mr. Ly Sriv, Commune Chief Mr. Chen Koeun Mr. Mean Rykan Mr. Ouk Sokiap Ms. Mao Maly Mr. San No Mr. Khieu Borin Mr. Buntuon Simona SPFS-FFS Farmers (25)</p>
<p>20 May 1999 (Thursday)</p>	<p>Visit SPFS-FFS activities in Kampot Province (Thmear Village, Chras Commune, Chum Kiri District, Mlec Pilot Sites)</p> <p>Discussion SPFS activities in the Mlec Pilot Sites with Provincial and District Teams</p>	<p>Mr. Chan Vanna, Provincial Hydrologist Mr. Sem Sambath, District Livestock Specialist Mr. Hing Samn, District Hydrologist Mr. Mear Kimnony Ratha, Provincial Livestock Specialist Mr. MOUNG Samoun, Provincial Agronomist Mr. Mey Sovanna, District Agronomist Mr. Khieu Borin Mr. Buntuon Simona SPFS-FFS farmers (22)</p> <p>Mr. Chan Vanna Mr. Sem Sambath Mr. Hing Samn Mr. Mear Kimnony Ratha Mr. MOUNG Samoun Mr. Mey Sovanna Mr. Khieu Borin Mr. Buntuon Simona</p>

DATES	ACTIVITY UNDERTAKEN	PEOPLE MET/INVOLVED
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<p>21 May 1999 (Friday)</p>	<p>Visit other SPFS activities in Takeo Province (FFS graduation in Kdol Village, Romchang Commune, Samrong District Pilot Sites) with the MAFF Secretary and Undersecretary of State</p> <p>Visit another SPFS activities in Takeo Province (Follow-up activities of FFS farmer-graduates in Snoul Village, Sreng Commune, Treang District Pilot Sites) with the MAFF Undersecretary of State</p>	<p>His Excellency May Sam Oeun, MAFF Secretary of State His Excellency Teng Lao, MAFF Undersecretary of State Mr. Ith Sarum, Provincial Director of Agriculture Mr. Lay Sokha, Deputy Provincial Governor Mr. Mak Soeun, National Consultant for Farming Systems Ms. Jeannette Broekhuijsen, FAO Associate Project Officer Mr. Ouk Phal Mr. Chen Koeun Mr. Mean Rykan Mr. Ouk Sokiap Ms. Mao Maly Mr. San No SPFS-FFS Farmers (29)</p> <p>His Excellency Teng Lao Mr. Ith Sarum Mr. Lay Sokha Mr. Mak Soeun Ms. Jeannette Broekhuijsen Mr. Ouk Phal Mr. Chen Koeun Mr. Mean Rykan Mr. Ouk Sokiap Ms. Mao Maly Mr. San No SPFS-FSS Farmers (48)</p>
<p>24 May 1999 (Monday)</p>	<p>Meeting with Ministry of Agriculture, Forestry and Fisheries (MAFF) officials</p>	<p>Mr. Nuth Sakhon, Director of Agronomy, MAFF Mr. Sing Var, Department of Technique, Economic and Extension, MAFF Ms. Jeannette Broekhuijsen Mr. Ouk Phal</p>

DATES	ACTIVITY UNDERTAKEN	PEOPLE MET/INVOLVED
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<p>24 May 1999 (Monday, Continued)</p>	<p>Meeting with FAO Community IPM Programme in Asia (FAO-IPM) officials</p> <p>Meeting with Cambodia-Australia Agricultural Extension Project (CAAEP) officials</p>	<p>Mr. Robert Nugent, FAO-IPM (Cambodia) Ms. Jeannette Broekhuijsen</p> <p>Mr. Paul Mason, Farming System Advisor, CAAEP Ms. Jeannette Broekhuijsen</p>
<p>25 May 1999 (Tuesday)</p>	<p>Meeting with FAO Participatory Natural Resource Management in the Tonle Sap Region (GCP/CMB/002/BEL)</p>	<p>Mr. Bruno Cammaert, Associate Professional Officer, (GCP/CMB/002/BEL) Mr. Mak Soeun</p>
<p>26 May 1999 (Wednesday)</p>	<p>Visit SPFS activities in Siem Reap Province (Prey Veng, Don Swa and Om Pil Villages, Sam Rong Yeer Commune, Puok District, Barai Pilot Sites)</p> <p>Discussion with SPFS farmers (Water Users Associations and Livestock Associations)</p>	<p>Mr. Ouk Hoksy, Provincial Livestock Specialist Mr. Tan Bou Chong, Provincial Livestock Specialist Mr. Im Phoey, District Agronomist Mr. Ong Suon Huot, Provincial Livestock Specialist Mou Teau, District Hydrologist Mr. Mak Soeun</p> <p>Mr. Ouk Hoksy Mr. Tan Bou Chong Mr. Ong Suon Huot Mou Teau Mr. Mak Soeun</p>
	<p>Meeting with Director, Department of Agriculture, Siem Reap</p> <p>Meeting with SPFS Provincial and District Team Members, Siem Reap Province</p>	<p>SPFS-FSS Farmer (14)</p> <p>Mr. Tat Bun Chhoeurn, Director, Department of Agriculture, Siem Reap Province Mr. Mak Soeun</p> <p>Mr. Ouk Hoksy Mr. Tan Bou Chong Mr. Im Phoey Mr. Ong Suon Huot Mou Teau Mr. Mak Soeun</p>

DATES	ACTIVITY UNDERTAKEN	PEOPLE MET/INVOLVED
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<p>27 May 1999 (Thursday)</p>	<p>Discussions with National Team on findings of field visits</p> <p>Meeting with Cambodia-IRRI-Australia Project (CIAP) officials</p> <p>Discussions with SPFS National Team on methodologies in facilitating Farmer Field School (FFS)</p>	<p>Ms. Kan Dajy, SPFS National Counterpart for Livestock Mr. Ouk Phal Mr. Mak Soeun Mr. Prum Viratha</p> <p>Mr. Harry Nesbitt, Project Manager and Agronomist, CIAP Ms. Chan Phaloeun, Farming Systems Agronomist, CIAP Mr. Ouk Phal</p> <p>Mr. Ouk Phal Ms. Kan Dajy Mr. Mak Soeun Mr. Prum Viratha</p>
<p>28 May 1999 (Friday)</p>	<p>Meeting with the Secretary of State, Ministry of Agriculture, Forestry and Fishery (MAFF)</p> <p>Meeting with SPFS National Team Leader, FAO Associate Professional Officer and FAO Representative</p>	<p>His Excellency May Sam Oeun, Secretary of State Mr. Ad Spijkers, FAO Representative Ms. Jeannette Broekhuijsen Mr. Ouk Phal</p> <p>Mr. Ad Spijkers Ms. Jeannette Broekhuijsen Mr. Ouk Phal</p>

DATES	ACTIVITY UNDERTAKEN	PEOPLE MET/INVOLVED
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<p>28 May 1999 (Friday, Continued)</p>	<p>Joint Meeting with the SPFS and IPM National Teams</p>	<p>Mr. Iv Phirun, National IPM Program Coordinator Mr. Ngy Sarith, IPM Trainer Mr. Ing Sima, IPM Trainer Mr. Yech Polo, IPM Trainer Ms. Pan Sodavy, IPM Trainer Ms. Mam Sitha, IPM Trainer Mr. Chea Sanmang, IPM Trainer Mr. Try Hong, IPM Trainer Mr. Chou Cheythyrih, IPM Trainer Mr. Chim Somony, IPM Trainer Ms. Long Sovanna, IPM Trainer Mr. Neak Thon, IPM Trainer Mr. Sann Boonn, IPM Trainer Mr. Robert Nugent Mr. Ouk Phal Ms. Jeannette Broekhuijsen Mr. Mak Soeun Mr. Prum Viratha</p>
<p>31 May 1999 (Monday)</p>	<p>Review and finalize the draft programme of the TST5 with SPFS National Team and Associate Professional Officer</p> <p>Identify activities for sessions on SPFS-FFS Methods and Approaches with the SPFS National Consultant for Farming Systems.</p>	<p>Mr. Ouk Phal Ms. Jeannette Broekhuijsen Mr. Khieu Borin Mr. Prum Sitha Mr. Prum Viratha Mr. Buntuon Simona Ms Kan Dajy</p> <p>Mr. Damaso P. Callo, Jr., TCDC Expert on FFS/CD Mr. Mak Soeun</p>
<p>01 June 1999 (Tuesday)</p>	<p>Review and finalize with the SPFS National Consultant for Farming Systems suggested modification of the SPFS-FFS curriculum and the typical weekly FFS schedule to be discussed with the TST5 participants</p>	<p>Mr. Damaso P. Callo, Jr. Mr. Mak Soeun</p>
<p>DATES</p>	<p>ACTIVITY UNDERTAKEN</p>	<p>PEOPLE MET/INVOLVED</p>

<p>02 June 1999 (Wednesday)</p>	<p><i>Participation and Technical Assistance in the 5th Technical Staff Training (TST5)</i></p> <p>Presentation of 1999 Dry Season Results by the SPFS Provincial Coordinators Evaluation of 1999 Dry Season with the SPFS Provincial Coordinators Presentation of field visits findings and recommendations by the TCDC Expert on FFS/CD</p>	<p>His Excellency, Chhun Sareth, Undersecretary of State, MAFF Mr. Ad Spijkers Mr. Nuth Sakhan Mr. Ouk Phal Ms. Jeannette Broekhuijsen Mr. Damaso P. Call, Jr. Mr. Khieu Borin Mr. Mak Soeun Mr. Prum Sitha Mr. Prum Viratha Ms. Kan Dajy SPFS Provincial and District Team Members (42)</p>
<p>03 June 1999 (Thursday)</p>	<p>Methodologies and Approaches in SPFS-FFS (to be facilitated by the SPFS National Consultant for Farming Systems and TCDC Expert on FFS and Community Development)</p>	<p>Mr. Mak Soeun Mr. Damaso P. Callo, Jr. Mr. Ouk Phal Ms. Jeannette Broekhuijsen Mr. Khieu Borin Mr. Prum Sitha Mr. Prum Viratha Ms. Kan Dajy</p>
		<p>SPFS Provincial and District Team Members (42)</p>
<p>04 June 1999 (Friday)</p>	<p>Technical Training for each SPFS Component (field visit to Fishery Station, Department of Fishery, Roshey Keo District, Phnom Penh and the Royal University of Agriculture [RUA-UTA] projects, Dangkor District, Phnom Penh)</p>	<p>Mr. Ean Kim Cheng, Deputy Director, DF Fishery Station Mr. Tes Him, Fishery Technician, DF Fishery Station Dr. Thomas Reg Preston, RUA-UTA Director Mr. Damaso P. Callo, Jr. Mr. Khieu Borin Mr. Prum Sitha Ms. Kan Dajy RUA-UTA Senior Undergraduate Students (9) SPFS Provincial and District Livestock Team Members (13)</p>

DATES	ACTIVITY UNDERTAKEN	PEOPLE MET/INVOLVED
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<p>04 June 1999 (Friday, Continued)</p>	<p>Briefing on the future outlook of SPFS in Cambodia with the FAO Representative</p>	<p>Mr. Ad Spiijkers Mr. Jaap van de Pol Mr. Damaso P. Callo, Jr. Mr. Ouk Phal Ms. Jeannette Broekhuijsen Mr. Khieu Borin Mr. Mr. Mak Soeun Mr. Prum Viratha</p>
<p>05 June 1999 (Saturday)</p>	<p><i>Continue Participation and Technical Assistance in the 5th Technical Staff Training (TST5)</i></p> <p>Format of SPFS Provincial Report (to be facilitated by the National Team)</p> <p>Wrap-up meeting with the FAO Representative for Cambodia</p>	<p>Mr. Ad Spiijkers, FAO Representative (Cambodia) Mr. Damaso P. Call, Jr. Mr. Jaap van de Pol Mr. Ouk Phal Ms. Jeannette Broekhuijsen Mr. Khieu Borin Mr. Prum Sitha Mr. Prum Viratha Mr. Buntuon Simona Ms. Kan Dajy SPFS Provincial and District Team Members (42)</p>

ANNEX D

**HIGHLIGHTS OF THE DAILY ACTIVITIES UNDERTAKEN BY THE TCDC
EXPERT MISSION TO THE SPECIAL PROGRAMME FOR FOOD
SECURITY IN CAMBODIA (TCP/CMB/8821)**

17 May 1999 (Monday)

Activities Undertaken:

Briefing on the TCDC Programme

Meeting with National Team for General Introduction on SPFS in Cambodia

Some SPFS Concerns Raised:

Extension approach. The SPFS-Cambodia uses an innovative agricultural extension approach, where different farming systems technologies are introduced through the SPFS Farmer Field School (SPFS-FFS) and supported by Participatory Field Demonstrations (PFD). However, majority of the provincial and district team members who facilitate the SPFS-FFS did not undergo the season-long Training of Trainers (TOT) but attends a 3 ½ days Technical Staff Training (TST) before the start of every cropping season to continuously improve their technical and facilitating skills.

Technical knowledge. During the TST, the provincial and district team members learn only the latest technical innovations in their respective fields of discipline. However, the TST is never used as an opportunity for the participants to share their individual expertise and to learn by interacting with each other. Admittedly, the SPFS team members at the district levels are also not as technically competent as their counterparts at the national and provincial levels.

Farmer field school curriculum. The SPFS-FFS curriculum addresses all the SPFS components at the same time during a cropping season. Thus, some important FFS components are sacrificed such as agro-ecosystem analysis (AESA) and group dynamics activities. However, it is acknowledged that there is a need to fine-tune the current SPFS-FFS curriculum or to even develop a new one to better address the concerns that are unique in each of the SPFS components.

Sustainability at the local levels. The participation of the commune leaders is more passive than proactive. Their participation is limited to attending some important SPFS occasions. Likewise, the role of the governors is limited to giving welcome or inspirational messages when attending important SPFS occasions. Nevertheless, a consensus indicated the need to develop strategies to enhance ownership of the programme at the provincial, district and commune levels.

Farmers' participation. Farmers actively participate in the SPFS-FFS. There is, however, a need to address recurrent problems of tardiness, absenteeism and substitution of attendance in the regular SPFS-FFS. The SPFS-FFS farmer-graduates are effectively used in conducting follow-up activities for the different SPFS components.

Some IPM-FFS Experiences Shared from the Philippines:

In the national IPM program, there are three types of training conducted to develop a core of trainers at various levels of program implementation. A 4-5 months, intensive 7 days a week, season-long Training of Specialists (TOS), participated by agricultural technologists (ATs) at the national, regional and provincial levels, helps build capacities and capabilities to implement provincial IPM programs. A 4-5 months, less-intensive 3 days a week, season-long Training of Trainers (TOT) participated by ATs from local government units (LGUs) and non-government organizations (NGOs) at the municipal levels helps build capacities and capabilities to implement municipal IPM programs. A 4-5 months, half-day a week, season-long Farmer Field Schools (FFSs) for farmers and ATs assigned in the villages, to build a critical mass of empowered farmers with critical and informed decision-making skills. Selected FFS farmer-graduates undergo a 14-day intensive Training of Farmer Trainers (TFT) to continue implementing FFS or FFS follow-up activities at the community level.

Although the same learning principles, concepts and approaches are utilized in any FFS (e.g., rice, corn, vegetables, coconut or mango), the curriculum development is initially focused on enhancing farmer's decision-making skills in problem solving of production constraints for a specific crop or commodity. Other concerns are usually addressed as follow-up activities during (e.g., as part of village immersion activities of the training team) or after (e.g., as a participatory technology development or PTD activity) a regular FFS. A typical weekly session of an FFS consists of an agro-ecosystem analysis (AESA), participatory discussions, group dynamics exercises and special topics.

To ensure sustainability at the local levels, the national IPM program builds capacities and capabilities of LGUs and NGOs (e.g., through the TOS and TOT) in the provinces and municipalities. This allows LGUs and NGOs to implement their local IPM programs. Likewise, the national IPM program catalyzes local IPM implementation (e.g., funding of initial FFS activities), and advocates for local IPM program ownership (e.g., promoting bottom-up planning and counterpart funding of local IPM activities).

The national IPM program also encounters problems of tardiness, absenteeism and substitution of attendance in the FFS. These problems are minimized by conducting: (a) intensive ground working activities by the training team before FFS implementation, (b) sustained village immersion and follow-up activities during FFS implementation, and (c) regular enhancement of trainers' facilitating skills to motivate FFS participants (e.g., Refresher Course for Trainers or RCT).

18 May 1999 (Tuesday)

Activities Undertaken:

Meeting with the SPFS Team Leader (Mr. Ouk Phal)

Meeting with SPFS National Team for Discussions on the 5th Technical Staff Training

Some SPFS Concerns Raised:

Organizational Set-up

The eight (8) National Consultants and Counterparts, which compose the SPFS National Team, and the Team Leader, a Senior Technical Staff of the Ministry of Agriculture, Forestry and Fisheries (MAFF), are based at the Food and Agriculture Organization Representative (FAOR) Office and not at the MAFF. Likewise, the National Team Leader is identified at the field level more as an FAO than as a MAFF senior technical staff.

The Provincial and District Teams, who attend a 3-1/2 days Technical Staff Training (TST) for two times a year, acts as SPFS-FFS trainers. There are about 15 provincial and 27 district trainers or a total of about 42 SFPS-FFS trainers, of which, only seven (all based in the provinces) had undergone either a one-month (not season-long) or a 4-5 months (season-long) 6-7 days a week intensive IPM Training of Trainers (TOT).

The FAO and MAFF participation in the project are very visible at the field levels, as evidence by *Certificates of Training* bearing the logos and officers' signatures of the above-mentioned organizations. The T-shirts given by the programme also bear the logos of the funding agencies (e.g., FAO and TeleFood) but not MAFF.

Curriculum Design and Training Materials

Basically, the SPFS-FFS curriculum is a modification of the IPM-FFS curriculum with additional four (4) half-day weekly sessions or a total of 20 half-day weekly sessions for the entire FFS duration. All the SPFS components (e.g., crop production technologies, irrigation systems and water management, and livestock and aquaculture topics) are tackled in the SPFS-FFS duration. Some weekly AESA activities are deleted to accommodate other perceived important SPFS component topics.

Some innovative learning tools or approaches and methods were apparently developed or modified by the training teams during the conduct of SPFS-FFSs in their respective areas of assignment. Farmers and trainers alike during the SPFS implementation shared also many indigenous and best practices. The National Team feels the need to collect and collate these best experiences in field guides, handbooks or manuals so that they can be shared to and reused by others for enhancing SPFS-FFS implementation, not only in Cambodia but in the other ASEAN countries as well.

Some IPM-FFS Experiences Shared from the Philippines:

A National Program Officer (NPO), based at the Department of Agriculture or DA (equivalent to MAFF), oversee the implementation of the national IPM program by the regional, provincial and municipal IPM coordinators on a day-to-day basis. The NPO, although initially supported by FAO, is identified as a full-time DA senior staff at all implementation levels. At the national level, DA initiates the program and at the local levels, the LGUs and NGOs implement it. All technical assistance provided to the program by national and international organizations (including FAO and NGOs) are coordinated through the NPO.

The national IPM program is made visible at the local levels as evidenced by the signatures of the Provincial Governors, Municipal Mayors and the Secretary of Agriculture (equivalent to a Minister) in all *Certificates of Training*. The *Certificates of Training* bears the logos of the national IPM program (e.g., no DA logo) and the provincial or municipal LGUs or NGOs concerned. The T-shirts provided by the program (regardless of funding source) during graduation ceremonies bear only the program logo. Mass graduation of FFS participants is usually conducted at provincial or municipal levels with the presence of the Secretary of Agriculture and their respective governors or mayors as guests of honors.

A modified 3 days a week 4-5 months, season-long TOT curriculum (instead of a 7 days a week, 4-5 months TOS curriculum), was designed and used by the provincial IPM programs to develop a core of municipal FFS facilitators, without sacrificing the quality of their facilitating skills. With the use of this curriculum, the national program was able to develop quality FFS facilitators at about 50% training cost reduction. As mentioned earlier, the FFS curriculum is designed focusing more on the major crop or commodity rather than on the program components to bring across simple messages that are initially necessary to develop the farmers' critical thinking ability.

Through the years, the FFS facilitators of the national IPM program had collected, collated, and developed field guides, handbooks, and manuals of farmers' best experiences using participatory, experiential and discovery-based learning approaches and methods. These are continuously shared and reused as training materials in FFS and other IPM-related activities not only in the Philippines but also in the other ASEAN countries.

19 May 1999 (Wednesday)

Activities Undertaken:

Visit to SPFS-FFS graduation and other related activities in Prey Choev Teal Village, Prey Kabas Pilot Site, Takeo Province
Discussions with SPFS-FFS farmers, provincial and district teams and officials in the field

Field Observations and Some SPFS Concerns Raised:

On the Farmer Field School

The main source of livelihood in Prey Choev Village is rice farming. Aside from rice, farmers also grow cassava, vegetables and other cash crops. Backyard cattle raising are also a traditional practice in the village. The FFS participants are composed of 25 rice farmers (5 are women).

Their learning field consisted of a 1,000 sqm irrigated rice field divided into five plots, namely: (1) Integrated Pest Management [IPM], (2) Farmers' Crop Protection Practice [FCPP], (3) Recommended Fertilizer Rate and Practice [RFRP], (4) Farmers' Fertilizer Rate and Recommended Practice [FFRRP], and Farmers' Fertilizer Rate and Practice [FFRP]. The other interventions (e.g., outside the learning field) during the regular FFS season are (1) irrigation systems and water management, (2) organic fertilizer [e.g., composting] production, and (3) livestock [e.g., swine and chicken] raising. Alternative cash crops are also introduced to the farmers after the regular FFS season as follow-up activities.

The TeleFood Special Projects in Cambodia (TeleFood, 1999) provides breeder swine [e.g., one or two breeder swine to selected farmer-participants] and chickens [e.g., five chickens to all farmer-participants] and some construction materials [e.g., one bag cement per selected farmer-participant] through the Village Livestock Association [VLA]. On the other hands, the farmer-participants provide the labor and other materials for pen construction under the livestock component of the programme.

On the FFS Closing Ceremony

Aside from the 25 farmer-participants and 6 members of the training team, around 25-30 farmers from the neighboring villages attended the FFS closing ceremony. The District Vice-Governor, the District Director of the Department of Agriculture, a member of the National Team, and the Commune Chief, graced the occasion.

Before the closing ceremony, the visitors and the guests were shown the exhibits of their agro-ecosystem analysis (AESAs) results, insect zoos and pictorials of their activities on irrigation system, livestock and aquaculture components. A visit of their activities on compost making and backyard swine raising was also conducted. The FFS farmer-participants discussed, with self-confidence, their exhibits to their co-farmers. During interviews, the FFS farmer-participants showed their ability to identify some common pests and natural enemies of rice although they still lack the knowledge on the functions of these organisms in the rice ecosystem.

During the closing ceremony, the invited guests took turn to deliver their messages to the farmer-participants. It was noticeable, however, that the Commune Chief (e.g., did not give message) and the FFS farmer-participants (e.g., did not give impression or folk media presentation regarding the FFS) had only limited participation.

After the closing ceremony, the FFS farmer-participants, together with the visitors and guests, partook lunch which they prepared for the occasion. During interviews, it was gathered that the FFS farmer-participants shared among themselves in the expenses for the food with very small counterpart (e.g., US\$ 5.00) from the programme.

On the Training Team

The SPFS-FFS team is composed of three provincial- (e.g., an IPM master trainer and agronomist, a hydrologist, and a livestock specialists) and three district-based (e.g., an agronomist, a hydrologist, and a livestock specialists) trainers. The team facilitates one FFS per season and had conducted three FFSs during the last three seasons with a total of 75 farmer-graduates.

A participatory discussion was conducted with the team members after the closing ceremony, with Mr. Khieu Borin, SPFS National Consultant for Livestock as the interpreter. The team members admitted that they acted more as technical experts than process facilitators because they tackled only topics in the SPFS-FFS related to their fields of expertise. They also indicated that several component topics are discussed in one FFS meeting so that they resorted to more lectures and less participatory discussions. Hence, only 4-5 agro-ecosystem analysis (AESA) sessions were conducted during the 20-week SPFS-FFS duration.

Some IPM-FFS Experiences Shared from the Philippines:

On the Farmer Field School

A typical FFS site in the national IPM program is located in a village or barangay composed of 25-30 farmers representing a more or less similar agro-ecosystem (e.g., irrigated, rainfed or upland) for a major crop (e.g., rice, corn, vegetables, mango, coconut, etc.) grown in a particular community. Similarly, their learning field consisted of a minimum of 1,000-sqm field. During the initial phases of IPM-FFS implementation, the learning fields were divided into five plots. These represent the comparative studies of various concerns (e.g., integrated pest management or IPM, integrated nutrient management or INM, variety adaptation trials or VAT, and other priority interventions) for a specific crop. In the later phases, a national workshop of FFS facilitators and farmer-graduates decided to focus the learning activities of the FFS on the comparison of IPM and farmers' crop protection (FCP) practices. The other concerns were initially addressed by applying uniform plot treatments in the same learning field. A more in-depth study of these other concerns are done outside the learning field in another time during the regular FFS season or as participatory technology development (PTD) activities (e.g., crop diversification, crop-livestock and crop-aquaculture integration, etc.) in the succeeding seasons. As mentioned earlier, this strategy will enhance the farmers' critical thinking ability to make better decisions in solving their own problems. This

is the ultimate objective of the FFS. This will also prepare the FFS farmers to do participatory technology development (PTD) activities of more complex farming systems interventions after the regular FFS sessions and thus ensuring programme sustainability at the village levels. This approach was successfully used also in the national IPM programs of other ASEAN countries, like Indonesia and Vietnam. Even within FAO (1992), surveys conducted on obstacles to its participatory projects revealed that there is a need for an exchange of ideas and approaches between technical units, staff training in participation, and less emphasis on the use of technology in solving development problems.

As mentioned also earlier and as a matter of policy, all technical assistance (including FAO's) are coordinated through the office of the NPO. The national IPM program undertakes capacity and capability building activities for other government organizations (GOs) and NGOs, when ever necessary, so that they can implement parallel or supplementary IPM-FFS activities, on their own, in their respective areas of coverage under the national IPM program. The visibility of the program at the local levels is assured by highlighting the involvement of the LGUs in their respective communities. All communications (e.g., invitations of visitors and guests, Certificates of Training, program plans, etc.) are affixed with the signatures and the logos of the participating LGUs. In addition, only the logo of the program and the signature of the Secretary of Agriculture are affixed in the Certificates of Training to indicate involvement at the national levels.

On the FFS Closing Ceremony

In the national IPM program, aside from the farmer-participants and two-member training team, farmers usually attend the FFS closing ceremony from the neighboring villages upon the invitation of the Barangay Captain (equivalent to the Village Chief). The occasion is normally considered as an affair of the village and is usually graced by the Provincial Governor, the Municipal Mayor, and the Barangay Captain. The farmers' field day normally coincides with the graduation ceremony to create more impact to the community and to save on cost of preparation. To produce further impact, mass graduations are also conducted at the municipal (e.g., at least 5 FFSs or 150 farmer-graduates) and the provincial (e.g., at least 10 FFSs or 300 farmer-graduates) levels.

Before the closing ceremony, exhibits on agro-ecosystem analysis (AESA) and production results, insect zoos, specimen collections and pictorials of FFS activities are discussed, with enough self-confidence, to their visitors, guests, and co-farmers who attend the occasion. Farmers also show their ability to relate cultural management practices to different crop growth stages and to identify the common pests and natural enemies of the crop. They also articulate their knowledge on the functions of these organisms in the crop ecosystem. During the closing ceremony, the Provincial Governor, Municipal Mayor and other invited guests take turn to deliver their messages of encouragement for the farmer-participants to sustain the program. The Barangay Captain normally welcomes the visitors and guests to the

occasion and some selected FFS farmers give their impressions and present folk media related to their FFS activities. Similarly, after the closing ceremony, the FFS farmer-graduates, partake lunch, which they prepared for the occasion, together with their visitors and guests. The FFS farmers normally share among themselves also in the expenses for the food with counterparts from the LGUs and the program.

On the Training Team

An FFS training team in the national IPM program is composed of two provincial- or municipal-based agricultural technologists (with background in any agricultural sciences). Where farmer-trainers (e.g., selected FFS farmers who had undergone a two-week Training of Farmer Trainers or TFT) are used as FFS facilitators, a training team is composed of two village-based farmer-trainers and a regular facilitator. The team facilitates about two FFSs per season, with a total of 50-60 farmer-participants per season or about 4 FFSs, with a total of 100-120 farmer-participants per year. The team members act more as process facilitators and less as technical experts. Since they also facilitate any topic in the FFS, they readily develop their expertise outside their discipline by constant exposure and practice. Because of their ability to enhance learning through participatory, experiential and discovery-based approaches and methods, technical resource persons are rarely needed in the regular FFS. Technical experts are, however, very useful in the development of curricula, field guides, handbooks and manuals for the use of FFS facilitators in regular and follow-up or participatory technology development (PTD) activities.

20 May 1999 (Thursday)

Activities Undertaken:

Visit to SPFS-FFS in Thmear Village, Chras Commune, Chum Kiri District, Mlec Pilot Site, Kampot Province
Discussions with SPFS-FFS provincial and district teams in the field

Field Observations and Some SPFS Concerns Raised:

On the Farmer Field School

The main source of livelihood in Thmear Village is rice farming. Backyard cattle and duck raising are also traditionally practiced in the village. The FFS participants are composed of 30 rice farmers (7 are women) but only 22 were present during the session. At the time of the visit, only irrigation systems and water management topics were discussed in the FFS session by the provincial and district hydrologists of the team. Since the graduation ceremony was already scheduled within two weeks, planning activities for the occasion was also discussed. The participants, however, were actively sharing their ideas during the discussions.

There are two learning fields established for the FFS. One consisted of a 1,000 sqm

irrigated rice field divided into two plots, namely: (1) Integrated Pest Management [IPM], and (2) Farmers' Crop Protection [FCP] Practices. During interviews with the farmer-cooperator and the training team, it was learned that aside from the crop protection practices, fertilizer treatments were also varied in the two plots making IPM and FCP comparison a little bit confusing. The other learning field, which consisted of another 1,000 sqm located some 100 m away from the first one, was also divided into another two plots planted to variety IR66 from different sources, namely: (1) farmers' good seeds [FGS], and (2) seed growers' seeds [SGS]. Again, fertilizer treatments were also varied in the two plots making FGS and SGS comparison very difficult. Similarly, the other interventions (e.g., outside the learning field) included during the regular FFS season are: (1) irrigation systems and water management, (2) organic fertilizer [e.g., composting] production, and (3) livestock [e.g., swine and chicken] raising. Alternative cash crops were also introduced after the regular FFS season as follow-up activities.

Aside from the training supplies, the project also gives a counterpart fund for food (e.g., US\$5.00 per week or US\$100.00 for the whole FFS duration), while the participants provide additional raw materials and cook the food. Under the livestock component of the programme, as in the other pilot sites, TeleFood provides breeder swine to selected farmer-participants and five chickens to all farmer-participants and some construction materials through the Village Livestock Association [VLA]. The farmer-participants provide the labor and other materials for pen construction. However, the SPFS-FFS activities are identified more as FAO than as MAFF projects at the field levels, as evidence by placards with FAO lettering.

On the Training Team

Similarly, the composition of the SPFS-FFS team is the same as in the other SPFS pilot provinces. Likewise, the team facilitates one FFS per season and had conducted three FFSs during the last three seasons with a total of 82 farmer-participants.

A participatory discussion conducted with the team-members after the SPFS-FFS session also revealed the same observations as in the other pilot sites with regard to the component-topics and methods of facilitating SPFS-FFSs. Likewise, the total number of sessions was increased from 14-16 weeks to 20 weeks and only 4-5 agro-ecosystem analysis (AESA) sessions were conducted during the last 18-week FFS sessions.

Some IPM-FFS Experiences Shared from the Philippines:

On the Farmer Field School

The same experiences were shared to provincial and district team members and officials with regard to the field visit of SPFS-FFS graduation and other related activities in Thmear Village, Mlec Pilot Site, Kampot Province as in Prey Choev Teal Village, Prey Kabas Pilot Site, Takeo Province.

On the Training Team

The success of many national IPM programs (e.g., Indonesia, the Philippines and Vietnam) had been tightly drawn from the effectiveness of the FFS as a learning tool that makes farmers experts in their own fields. This was made possible through the development of local training teams who can enhance farmers' decision-making skills by acting as process facilitators more than technical experts. Effective process facilitators are developed through the regular conduct of season-long Training of Specialists (TOS) and Training of Trainers (TOT), and one- to two-week Refresher Course for Trainers (RCT) and Training of Farmer Trainers (TFT). Continuous development of curricula, field guides, and handbooks for the use of facilitators in regular FFS and follow-up or participatory technology development (PTD) activities further enhance expertise and facilitating skills of trainers, aside from constant exposure and practice.

21 May 1999 (Friday).

Activities Undertaken:

- Visit other SPFS activities in Takeo Province (FFS graduation in Kdol Village, Romchang Commune, Samrong District Pilot Sites) with the MAFF Secretary and Undersecretary of State
- Visit some other SPFS activities in Takeo Province (Follow-up activities of FFS farmer-graduates in Snoul Village, Srengé Commune, Treang District Pilot Sites) with the MAFF Undersecretary of State

Field Observations and Some SPFS Concerns Raised:

The main source of livelihood in Kdol Village is rice farming. Aside from rice, farmers also grow vegetables and other cash crops. Backyard cattle raising are also a traditional practice in the village. Aside from the 29 farmer-graduates (13 are females) and 6 team members, the FFS closing ceremony was attended by more than 50 village folks and farmers from the neighboring villages. The MAFF Secretary and Undersecretary of State, District Vice-Governor, the Deputy Director of the Provincial Department of Agriculture, members of the SPFS National Team, the FAO Associate Professional Officer, and the Commune Chief graced the occasion. A very conspicuous observation is the provision by the program of T-shirts worn by the participants with logos of FAO and TeleFood giving the impression that the activity is theirs and not by the national programme.

Before the closing ceremony, the MAFF Secretary and Undersecretary of State, and the other visitors and guests were shown the exhibits of agro-ecosystem analysis (AESA) results, insect zoos and pictorials of activities on agronomy, irrigation, livestock, and aquaculture interventions. The MAFF Secretary and Undersecretary of State were very much delighted as the FFS farmer-graduates discussed to them

and to their co-farmers, with self-confidence, their exhibits. During interviews, the FFS farmer-graduates took turn to show them their awareness of the common pests and natural enemies of rice even with their limited knowledge on the functions of these organisms in the rice ecosystem.

During the closing ceremony, the invited guests took turn to deliver their messages of encouragement to the farmer-graduates to sustain the FFS activities in their village. As in the other graduation ceremonies, the Commune Chief (e.g., did not give message) and the FFS farmer-graduates (e.g., did not give impression or folk media presentation regarding the FFS) had very limited participation. After the closing ceremony, the FFS farmer-graduates, and their visitors and guests, immediately dispersed.

The main source of livelihood in Srenge Commune is rice farming. Aside from rice, farmers also grow vegetables and other cash crops. Backyard cattle, swine and fish raising are also practiced in the commune. The 48 FFS farmer-graduates (60% are women) from three adjoining villages of the commune were assembled in Snoul Village for a participatory discussion of their current problems, needs and possible FFS follow-up activities with the MAFF Undersecretary of State. The highlights of the discussions are:

As in the other pilot sites, the provincial and district training team, together with FFS farmer-graduates, showed their existing activities on irrigation systems management, composting, aquaculture, and crop diversification.

The MAFF Undersecretary of State discussed with FFS farmer-graduates various topics related to the different SPFS components. On one occasion, the Undersecretary gave them a lecture on IPM components.

During the participatory discussions, the FFS farmer-graduates demanded for more water pumps and technical knowledge on livestock and aquaculture raising. They also expressed their willingness to do farmer-led experiments.

Similarly, the composition of the FFS training team is the same as in the other SPFS pilot provinces. Likewise, the team facilitates one FFS per season and had conducted three FFSs during the last three seasons with a total of 103 farmer-participants. A participatory discussion conducted with the team-members after the FFS session also revealed the same observations as in the other pilot sites with regard to the component-topics and methods of facilitating SPFS-FFSs.

Some IPM-FFS Experiences Shared from the Philippines:

As in the national IPM program, the morale of the community is extremely boosted when FFS graduation ceremonies are graced by high officials from the Department of Agriculture, the LGUs concerned, and other personalities from national (e.g., NGOs) or international (e.g., FAO) organizations. Experience in the national IPM program also shows that community programme ownership is enhanced by highlighting the participation of local stakeholders. Programme sustainability is

further enhanced by showcasing also the role of the national office (e.g., MAFF) in the capacity and capability building over that of the funding institutions (e.g., FAO and TeleFood).

Regular field visits by national government officials of on-going SPFS follow-up activities generate enthusiasm and commitments among local stakeholders. Furthermore, it allow concerned officials to gather relevant information which are used to adjust government policies and to recommend legislative measures that will ensure programme sustainability at the local levels. In Indonesia and the Philippines, for instance, their governments had declared national IPM program as a national crop protection policy by the issuance of appropriate presidential decree and memorandum order, respectively. In the Philippines, even the President is requested by the Secretary of Agriculture to grace selected FFS occasions (e.g., mass FFS graduations and farmers' congresses) to add impact on the government's effort to enhance local programme ownership.

24 May 1999 (Monday)

Activities Undertaken:

Meeting with Ministry of Agriculture, Forestry and Fisheries (MAFF) officials
Meeting with FAO Community IPM Programme in Asia (FAO-IPM) officials
Meeting with Cambodia-Australia Agricultural Extension Project (CAAEP) officials

Highlights and Some SPFS Concerns Raised:

The initial findings regarding the interactions with national, provincial and district teams, and field visits of SPFS-FFS and other activities were discussed with Mr. Nuth Sakhan, Director of MAFF's Department of Agronomy and Mr. Ouk Phal, National Team Leader, SPFS-Cambodia. These include:

highly motivated FFS farmer-graduates,
technically competent multi-disciplinary field teams,
too many interventions in the FFS curriculum making it less participatory, and
training team members acting more as technical experts than process facilitators.

Recommendations on some concerns raised were also discussed with Mr. Nuth Sakhan and Mr. Ouk Phal. These include:

Modification of the current SPFS-FFS curriculum to focus the learning activities on developing farmers' decision-making skills for the priority problems of the major crop or commodity;
Development of a modified season-long Training of Trainers (TOT) curriculum to address the SPFS components; and
Development of training materials, such as field guides, handbooks and manuals of participatory, experiential and discovery-based learning anchored on SPFS

experiences in the pilot phase to standardize SPFS-FFS approaches and methods and to improve facilitating skills of the team members.

A briefing on the status of the ASEAN IPM Knowledge Network (SEARCA, 1998 and 1999) was also requested. Mr. Sakhan, who is also the Program Director of the Cambodian National IPM Program, explored how Cambodia, now a new ASEAN member, can become also a member of and benefit from the ASEAN IPM Knowledge Network. He suggested that ASEAN IPM should invite Cambodia to attend the next regional meeting.

The initial findings and the recommendations, which were presented to Mr. Sakhan, were also discussed with Mr. Robert Nugent, Project Officer, FAO Community IPM Programme in Asia (FAO-IPM Cambodia) and Ms. Jeannette Broekhuijsen, FAO Associate Project Officer, SPFS-Cambodia. Additional recommendations were made, such as:

Some SPFS interventions not related to crop management of the major crop or commodity should be addressed as follow-up activities after the regular FFS when the FFS farmer-graduates are better prepared to make decisions on more complex farming systems issues;

In addition to SPFS-FFS farmer-graduates, the IPM-FFS farmer-graduates can also do participatory technology development (PTD) or farmer-driven research (FDR) and other SPFS follow-up activities particularly in the SPFS expansion phase; and

SPFS National Team and selected IPM Master Trainers (if possible, with technical assistance of a senior ASEAN IPM trainer) should jointly develop a curriculum and conduct a modified Training of Trainers (TOT) which will address the SPFS concerns.

In a separate meeting, the role of the ASEAN IPM Knowledge Network on IPM implementation within the ASEAN region was also discussed with Mr. Nugent. He looks forward for the early membership of Cambodia into the Network and on how their IPM experiences can be used to enrich the IPM Country Hub to be established in Cambodia. The participation of ASEAN IPM in the conduct of an NGO-GO Dialogue on IPM in Asia was also discussed and he promised to advertise the same to NGOs working in Cambodia on participatory rural development projects.

In the meeting with Mr. Sing Var, Director of MAFF's Department of Techniques, Economics and Extension (DTEE) and Ms. Jeannette Broekhuijsen, FAO Associate Project Officer, SPFS-Cambodia, the following information were gathered:

The MAFF-DTEE has 250 provincial and district extension workers with 9-month extensive training (5 months for theory and 4 months for practice) on extension methodologies that can be tapped for SPFS activities. About 25 of this extension workers had undergone a 4-5 months IPM Training of Trainers (TOT) and are

now tapped as IPM-FFS facilitators in 11 provinces.

Mr. Var, who used to be a member of the SPFS National Steering Committee, is uneasy that he and his extension workers (e.g., unlike the Department of Agronomy field staff) are not formally involved in the implementation of SPFS activities, which he considers as part of MAFF-DTEE extension functions. He suggested that his office should be tapped in SPFS extension activities while the Department of Agronomy should do more research activities.

Some important concerns were raised during the meeting with Mr. Paul Mason, Farming Systems Advisor, Cambodia-Australia Agricultural Extension Project (CAAEP), such as:

The CAAEP, just like the SPFS, works with farmers, most often in the same area, to develop appropriate extension approaches that can be used to hasten farmers' adoption of various farming systems interventions. Oftentimes, there is less coordination in the field because different field workers are involved (e.g., CAAEP taps DTEE field staff while SPFS uses staff of the Departments of Agronomy, Hydrology, Livestock and Fishery).

To avoid duplication of activities at the village level, it was suggested that SPFS and the other agencies or programmes doing the same interventions in the same area should jointly plan their activities and take off from what the others have already started. For instance, SPFS and CAAEP should tap IPM-FFS trained farmers for SPFS and CAAEP for farming systems follow-up activities. However, IPM, SPFS and CAAEP should agree on which IPM-FFS areas and what farming systems interventions they should individually or mutually address.

25 May 1999 (Tuesday)

Activities Undertaken:

Meeting with FAO Participatory Natural Resource Management in the Tonle Sap Region (GCP/CMB/002/BEL) officials

Highlights and Some SPFS Concerns Raised:

The meeting with Mr. Bruno Cammaert, Associate Professional Officer, FAO Participatory Natural Resource Management in the Tonle Sap Region, and Mr. Mak Soeun, National Consultant for Farming Systems, SPFS-Cambodia highlighted the following:

The project is on its second phase and emphasis now is on facilitation of communities for protection and management of natural resources. Currently a total of nearly 5,000 hectares in 14 different locations are under community management with assistance from the project.

The SPFS should take a critical look at the success of the project, particularly the approach they used, in enhancing community participation in the management of local resources. There exist a possibility that these approaches may as well work in some SPFS interventions requiring community participation, such as those related to irrigation systems management and livestock health issues.

26 May 1999 (Wednesday)

Activities Undertaken:

Visit SPFS activities in Siem Reap Province (Prey Veng, Don Swa and Ampil Villages, Sam Rong Yeer Commune, Puok District, Barai Pilot Sites)

Discussion with SPFS farmers (Water Users Associations and Village Livestock Associations)

Meeting with SPFS provincial and district team-members, Siem Reap Province

Meeting with Director, Department of Agriculture, Siem Reap Province

Highlights and Some SPFS Concerns Raised:

During the last three (3) seasons, a total of 64 farmers (27 are women) had participated in the SPFS-FFS from Pre Veng, Don Swa, and Ampil villages. There are eight (8) SPFS-FFS farmers who are also IPM-FFS graduates. Farmer-graduates of the first season SPFS-FFS are now conducting follow-up activities on crop diversification, aquaculture, swine and chicken raising. On the other hands, farmer-graduates of the second and third SPFS-FFS seasons are conducting follow-up activities mostly on swine and chicken raising. The Water Users Associations (WUAs) and Village Livestock Associations (VLAs) had been organized also in these villages. Follow-up activities on aquaculture, swine and chicken raising, and composting of two (2) farmers (e.g., Mr. Hing Pou and Mr. Pum Hout) in Prey Veng village, and one (1) farmer (e.g., Mr. Phun Ban) in Ampil village were also visited. A project on irrigation systems management (e.g., water block construction) was also observed in Ampil village. During interviews, the farmers said that they are now more economically fulfilled than before SPFS-FFS because they do not need to go out of their village to find and earn a living during off-seasons.

It is suggested that IPM-FFS graduates in the SPFS pilot villages need not undergo the regular SPFS-FFS. Rather, they can be tapped to do SPFS-FFS follow-up or participatory technology development (PTD) activities after a short SPFS orientation. Thus, IPM-FFS farmer-graduates can already benefit from the SPFS interventions. This strategy will further enhance expansion of the programme in a shorter period of time.

A participatory discussion was conducted in Prey Veng village with thirteen (13) SPFS-FFS farmer-graduates (3 are female), who are members of WUAs and VLAs, from Pre Veng, Don Swa, and Ampil villages. It was observed that the farmers were very active and highly motivated in continuing the SPFS follow-up activities on irrigation

systems management, crop diversification, livestock and aquaculture interventions.

During interviews, the farmers indicated their need to learn more on many rice production problems, such as soil problems, proper fertilizer management, rice bug and rodent management. The farmers also expressed their readiness to do participatory technology development (PTD) activities. They suggested that the priority should be on the identification and management of problem soils in rice production. As a second priority, they suggested doing PTD activities on better-feed formulation for swine and chicken. They also gave lesser priority on aquaculture (e.g., tilapia fish culture) interventions, as indigenous fish (e.g., mudfish and catfish) are readily available in the rice fields. These observations confirm the need to focus activities on solving priority problems of the major crop or commodity in the regular SPFS-FFS and to address other interventions (e.g., crop diversification and livestock and aquaculture) as SPFS-FFS follow-up activities.

Again, the composition of the FFS training team is the same as in the other SPFS pilot provinces. Likewise, the team facilitates one FFS per season and had conducted three FFSs during the last three seasons with a total of 103 farmer-participants. A participatory discussion conducted with the training team after the FFS session also revealed the same observations as in the other pilot sites with regard to the component-topics and methods of facilitating SPFS-FFSs. During interviews, some technical experts (e.g., hydrologists and livestock specialists) admitted that the SPFS-FFS farmer-participants are more knowledgeable than they are in pests and natural enemies' identification, and their functions in the rice ecosystem.

It was learned also that some technical experts do not actively participate in agro-ecosystem analysis (AESA) because they move from one SPFS-FFS site to another. It was suggested that they should actively participate in all the regular SPFS-FFS field activities, including AESA, so that they can become as knowledgeable as the farmer-participants in pests and natural enemies identification, and in understanding their functions in the rice ecosystem. This strategy will also provide them the opportunity to improve their technical competencies in other disciplines as they interact with the other trainers and learn a lot from farmers as the farmers also learn from them in the process.

The highlights of the visits to some SPFS activities and the discussions with SPFS-FFS farmer-graduates in Pre Veng, Don Swa, and Ampil Villages, were presented to Mr. Tat Bun Chhoeurn, Director, Department of Agriculture, Siem Reap Province. Some important field observations were pointed out. Results of interviews with farmers were also discussed. It was emphasized that farmers also want to focus the PTD on the identification and management of problem soils in rice production (first priority), better feed formulation for swine and chicken (second priority), and a lesser priority on aquaculture (e.g., tilapia fish culture) interventions. The highlights of the discussions and interactions with the SPFS provincial and district team-members in Siem Reap Province were also presented and some of the recommendations were also discussed.

27 May 1999 (Thursday).

Activities Undertaken:

Discussions with SPFS National Team on findings of the field visits at SPFS pilot sites and on the methodologies in facilitating Farmer Field School (FFS)
Meeting with Cambodia-IRRI-Australia Project (CIAP) officials on CIAP farming systems projects in Cambodia

Highlights and Some SPFS Concerns Raised:

The discussions with SPFS National Team on findings of the field visits at SPFS pilot sites and on the approaches and methods in facilitating SPFS-FFS focused on the following: (1) SPFS-FFS curriculum, (2) SPFS-FFS farmer-graduates, and (3) the SPFS national provincial and district teams.

In the meeting with Dr. Harry Nesbitt, Project Manager and Agronomist, and Ms. Chan Phaloeun, Farming Systems Agronomist, Cambodia-IRRI-Australia Project (CIAP) on their farming systems projects in Cambodia, the following information were shared:

The CIAP farming systems agronomists and other specialists integrate their research results and evaluate technology combinations in the field. Productivity improvements are investigated on a whole farm basis and integrate non-rice crops and animals in the system. Economics and social measurements are also taken.

Currently, the farming systems project of CIAP are focused on: (1) land remodeling farming systems trials, (2) legume varietal evaluation, (3) whole farm farming systems trials, (4) fish in the rice paddies trials, (5) household surveys, and (6) legume and rice-based systems.

It was suggested that since the research thrust of CIAP addresses most of the farming systems concerns of the SPFS pilot sites and most of CIAP researches are conducted on-farm, CIAP should use the SPFS-FFS farmer-graduates (e.g., doing PTD activity) as their collaborators. By doing so, SPFS farmers can directly benefit from the CIAP research results.

28 May 1999 (Friday).

Activities Undertaken:

Meeting with the Secretary of State, Ministry of Agriculture, Forestry and Fishery (MAFF)

Meeting with SPFS National Team Leader, FAO Associate Professional Officer and FAO Representative

Joint Meeting with the SPFS and IPM National Teams

Highlights and Some SPFS Concerns Raised:

The highlights of the field visits and the interactions with the major SPFS stakeholders in the pilot sites were presented to His Excellency May Sam Oeun, Secretary of State, Ministry of Agriculture, Forestry and Fishery (MAFF) with Mr. Ad Spijkers, FAO Representative and Jeannette Broekhuijsen, SPFS Associate Professional Officer. The needs for the following were reiterated:

Modify the current SPFS-FFS curriculum to further improve the farmer's decision-making skills in dealing with the various SPFS concerns;

Conduct a modified training of trainers (TOT) for the SPFS Provincial and District teams to improve their SPFS-FFS facilitating skills; and

Develop participatory, experiential and discovery-based training materials to standardize approaches and methods in all the SPFS pilot and expansion sites.

The highlights of the discussions with Mr. Nuth Sakhon, Director of MAFF's Department of Agronomy and concurrent Programme Director of the Cambodian National IPM Programme with regard to the ASEAN IPM Knowledge Network were also presented to His Excellency May Sam Oeun, MAFF's Secretary of State. These include the following:

The possible membership of Cambodia to the ASEAN IPM Knowledge Network should be explored, now that Cambodia is an ASEAN member so that she can also benefit from the Network.; and

The request that the ASEAN IPM should invite Cambodia to attend the next regional meeting of the Network's member-countries. The Secretary of State welcomed such development and suggested that proper ASEAN protocols regarding this matter should be established as soon as possible.

In addition to the highlights, which were presented to the Secretary of State, other concern, were also discussed with Mr. Ad Spijkers, FAO Representative, Ms. Jeannette Broekhuijsen, SPFS Associate Professional Officer and Mr. Ouk Phal, SPFS National Team Leader. These include:

Establishing a closer collaboration between the SPFS and the National IPM Programme of Cambodia particularly in the development of training curricula and materials, planning and implementation of follow-up activities, and exchange or sharing of technical expertise;

Enhancing sustainability and community ownership of the SPFS by projecting it more as a MAFF than as an FAO programme at the national and the field levels and by highlighting the involvement of farmers and commune leaders in SPFS activities at the village level; and

Maintaining existing collaborations with other development projects in Cambodia. These may require tapping the SPFS-FFS farmer-graduates for CIAP on-farm testing of promising farming systems interventions or adapting the participatory

natural resource management approach of GCP/CMB/002/BEL project to facilitate irrigation systems management problems of Water Users Associations in SPFS pilot sites.

The discussions with the SPFS and IPM National Teams focused on establishing a closer collaboration between the SPFS and the National IPM Programme of Cambodia particularly in the development of training curricula and materials, planning and implementation of follow-up activities, and exchange or sharing of technical expertise. The following were the highlights of the discussions:

Representatives will be selected from the SPFS and IPM National Teams to draft an improved SPFS-FFS curriculum and a modified 3 days a week 4-5 months season-long SPFS-TOT curriculum, as well as appropriate field guides, handbooks and manuals of participatory, experiential and discovery-based learning approaches and methods to be enriched by each team's field experiences;

Exchanging or sharing of technical expertise was also suggested, where the IPM facilitators can be tapped as resource persons for group dynamics and team building exercises in SPFS-FFS while some SPFS trainers can be invited as technical resource persons on special topics in agronomy, farming systems and irrigation systems management in IPM-FFS; and

Joint monthly meeting on Thursday of every fourth week of the month was also agreed upon to regularly update each other on new developments as well as to plan and design implementation strategies of follow-up activities.

31 May 1999 (Monday)

Activities Undertaken:

Review and finalize the draft programme of the Fifth Technical Staff Training (TST5) with SPFS National Team and Associate Professional Officer

Identify topics and activities for the sessions on SPFS-FFS Approaches and Methods with the SPFS National Consultant for Farming Systems

Highlights and Some SPFS Concerns Raised:

The national consultants and their counterparts in each component (e.g., agronomy, hydrology and livestock) developed their own programme separately. Likewise, the programme they developed was so designed such that during the actual training, the provincial and district team members will participate only in their respective fields of discipline.

It was suggested that every member of the team, regardless of their expertise, should equally learn all the technical aspects of every discipline during the TST5 so that everybody will be more technically equipped and thus become more effective facilitators. Although this suggestion may not be carried out in the TST5, it was

strongly suggested that it be considered in the TST6. This observation explains why the team-members can only facilitate topics in the SPFS-FFS related to their own expertise. If the suggestion will be implemented in the TST6, the team members will have the opportunity to share their experiences and thus enrich their individual knowledge on the topics not so familiar to them. In this process, it will also allow them to actually practice some SPFS-FFS learning principles and thus enhance their facilitating skills as well.

It was decided with the National Consultant for Farming Systems that a mini-workshop would be conducted during the morning session to review, identify and develop appropriate SPFS-FFS approaches and methods. Likewise it was decided that the afternoon session would be devoted to brainstorming sessions to validate and fine-tune the suggested modification of the current SPFS-FFS curriculum. The suggested programme is shown below:

Morning Session

Review of the SPFS-FFS approaches and methods (the group will be divided by component)

Report output of the small groups in the big group (output will be a list of current and new SPFS-FFS approaches and methods)

Develop some exercises using the identified SPFS-FFS approaches and methods (the group will be divided again by component)

Report output of the small groups in the big group (output will be some developed exercises of current and new SPFS-FFS approaches and methods)

Afternoon Session

Brainstorming in big group on the suggested modification of the SPFS-FFS curriculum (output will be a list of suggestions on how and when the topics for each components will be discussed during the 20 weekly SPFS-FFS sessions)

Brainstorming in big group on the components of each weekly SPFS-FFS session (output will be an agreement of the component of each weekly SPFS-FFS sessions)

Wrap-up session of the day's activities (output will be a highlights of the discussions on the SPFS-FFS approaches, methods and curriculum)

01 June 1999 (Tuesday)

Activities Undertaken:

Review and finalize with the SPFS National Consultant for Farming Systems the list of suggestions for the modification of the SPFS-FFS curriculum which will be discussed with the participants of the Fifth Technical Staff Training (TST5)

Review and finalize with the SPFS National Consultant for Farming Systems the typical schedule of a weekly FFS session which will be discussed with the participants of the Fifth Technical Staff Training (TST5)

Highlights and Some SPFS Concerns Raised:

It was agreed with the SPFS National Consultant for Farming Systems that, if several interventions will be addressed in the SPFS-FFS, but at the same time use the SPFS-FFS as a learning tool to develop farmer's critical thinking ability, several modifications should be instituted in the current curriculum. It therefore means that the current 20 weekly sessions can be maintained but some topics not directly related to the day-to-day crop management will be repositioned. This strategy will minimize mixing of so many ideas during the SPFS-FFS sessions and thus allow continuity of observations and assessments of the crop ecosystem on a weekly basis. This will result to enhanced decision-making process. These modifications will include the following:

Topics on off-farm irrigation systems management should be discussed either during the first two weekly sessions to be allotted before the cropping period or during the last two weekly sessions to be allotted immediately after the cropping period;

However, relevant on-farm water management topics should be discussed during the 14-16 weekly sessions to be allotted in the regular cropping period;

Agro-ecosystem analysis (AESA) should be done continuously on a regular basis, starting from the second weekly session after planting until two weeks before harvest;

AESA should be used in a broader context to improve the decision-making skills of farmers, not only on pest-natural enemy dynamics, but also on soil fertility, fertilizer, water, weed and other cultural management practices during the cropping period;

Livestock topics may be discussed during the cropping period. However, afternoon sessions should be allotted for this purpose to avoid disruption of the progress of the decision-making process allotted for the major crop during the morning sessions.;

Topics on crop diversification can be discussed as special topic during or as a regular topic immediately after the cropping period;

Group dynamics activities should be done more regularly within the 20 weekly sessions to facilitate commonly encountered SPFS-FFS problems such as domineering, tardiness, absenteeism, substitution of attendance, etc.

It was also agreed with the SPFS National Consultant for Farming Systems that the typical schedule of a weekly FFS session, which will be discussed with the participants of the Fifth Technical Staff Training (TST5), will include the following:

During the 14-16 weeks, which typically covers the growing season for a crop, farmers in an FFS will have the opportunity to observe a crop in every stage of its growth and development;

Field monitoring activities in small group result in the development of an agro-ecosystem drawing that is used for analysis. This analysis is related to plant growth, agronomy, crop-field ecological issues (e.g., effects of soil fertility, water, weeds, etc.), and decision-making questions provided as discussion guide. These are treated in small and big group discussions,

The small group discussions get farmers to talk about their ideas on what is happening in the field and why these things are happening. The training team circulates among the groups and helps them to examine their ideas by posing problems and scenarios,

The large group discussion is the time when small groups can present their ideas to the full group. At this time the trainers help them clarify their thinking by posing 'what if' scenarios. The trainers also use this time to present any additional information related to plant growth and ecosystem issues that might not have come out in the discussions (Philippine IPM Program, 1993),

Group dynamics activities are included in the FFS. This component (a) develop the participants into a closer knit of SPFS team. It (b) establish a learning climate that is enjoyable as well as fruitful. It also (c) help participants experience and be able to identify such aspects of team work as mutual support, the importance of individual roles to the team's success and behavior that can build or hinder team work. Likewise, it (d) help participants experience what can be accomplished by working together; and

The special topic sessions might concern particular issues such as rat damage or they maybe involved in a field study being carried out in the FFS learning field. These special topics usually vary from FFS to FFS and reflect the individual FFS needs. Some of the topics are planned out in advance of the FFS and others are developed as the FFS progresses. A typical schedule of an FFS for any given day is shown in Annex J.

02 June 1999 (Wednesday)

Activities Undertaken:

Evaluation of the dry season 1999 results (e.g., strong and weak points as perceived by the provincial and district team, the provincial coordinators, and the national team).
Presentation of the SPFS field visits, findings and recommendations by the TCDC Expert on Farmer Field School and Community Development.

Highlights and Some SPFS Concerns Raised:

The highlights of the evaluation of the dry season 1999 results (e.g., strong and weak points as perceived by the provincial and district team, the provincial coordinators, and the national team) are presented below:

As perceived by the SPFS provincial and district teams.

Strong Points

Among the strong points commonly mentioned for the SPFS was that the (a) local government and Department of Agriculture (DA) officials are supportive of the programme. The farmers are (b) volunteering, wanting to learn more and willing to participate in the programme. The programme gives enough (c) materials, budget and technical supports to the program, (d) the SPFS-FFS uses a good extension approach for the farmers and the team members, and (e) there is good communication and coordination among national, provincial and district teams.

Weak Points

The most commonly mentioned weak points of the programme were:

materials sometimes do not arrive on time, are of poor quality and instructions for their use are not clear,
there are recurrent problems of tardiness, absenteeism and substitution of attendance among SPFS-FFS farmer-participants,
the SPFS-FFS facilitating skills of provincial and district teams are limited and sometimes they can not solve administrative and technical problems of farmers, and
some provincial and district team members arrive late in the SPFS-FFS sites due to problems of mobility.

As perceived by the SPFS provincial coordinators.

Strong Points

Among the strong points for the SPFS commonly mentioned by the provincial coordinators were:

the national team provides new ideas and possible solutions to problems encountered in the field, monitors and evaluates SPFS activities regularly,
there is timely communication of new developments and technologies from the national team to the provincial and district teams and to the farmers in the SPFS pilot sites, and
there is good working relationship among the national, provincial and district teams.

Weak Points

Similar to the perceptions of the SPFS provincial and district teams, the most commonly mentioned weak points of the programme by the SPFS provincial

coordinators were:

materials sometimes do not arrive on time, are of poor quality and instructions for their use are not clear,
there are recurrent problems of tardiness, absenteeism and substitution of attendance among SPFS-FFS farmer-participants,
the SPFS-FFS facilitating skills of provincial and district teams are limited and sometimes they can not solve administrative and technical problems of farmers, and
some provincial and district team members arrive late in the SPFS-FFS sites due to problems of mobility.

As perceived by the SPFS national team.

Strong Points

As perceived by the SPFS national team, the strong points for the programme were:

the provincial and district teams are able to facilitate SPFS-FFS activities in the pilot sites despite their limited facilitating skills, and
the program was able to successfully accomplish a lot more activities during the dry season 1999 compared to the previous seasons.

Weak Points

Some of the weak points of the programme as perceived by the SPFS national team were:

many provincial and district team members lack facilitating skills, hence they do not participate in SPFS-FFS activities that are not directly related to their field of expertise,
some provincial team members delegate their functions to the district team members without conducting regular follow-up of their delegated activities,
procurement of materials are sometimes delayed due to inadequate material specifications provided by the teams,
some provincial and district team members do not include evaluation and planning of the weekly SPFS-FFS sessions, and
some provincial and district team members do not follow guidelines in conducting SPFS activities or tend to do things by themselves without consulting with farmers.

Based on interactions with the national, provincial and district teams, interviews with farmers, review of reports, discussions with various stakeholders, field visits and observations of the SPFS field activities in the pilot sites, the major findings were discussed with the TST5 participants. The discussions focused on the following aspects of the programme: (a) the SPFS farmer field school curriculum, (b) the SPFS-

FFS farmer-graduates, (c) the national, provincial and district teams, and (d) the process of SPFS institutionalization at various levels of implementation. The details of the major findings are discussed under the *Major Findings* section of the report.

On the other hands, some recommendations were presented to the TST5 participants based from the major findings that were collated. These recommendations cover three major areas of concerns, namely: (a) training curriculum and material development, (b) capacity and capability building, and (c) conduct of follow-up activities. Similarly, the details of the major findings are discussed under the *Recommendation* section of the report.

03 June 1999 (Thursday)

Activities Undertaken:

Review and list current and new methods and approaches used in SPFS-FFS.
Development of some exercises using the identified approaches and methods.
Brainstorming on suggested modification of the SPFS-FFS.
Brainstorming on the components of a weekly SPFS-FFS session.

Highlights and Some SPFS Concerns Raised:

The provincial and district team listed a number of non-formal education (NFE) methods and approaches which they said they used in facilitating their SPFS-FFS topics, such as:

Agronomy component (small and big group discussion, role play, simulation game, brainstorming,, actual demonstrations, study tours or field trip, answering questions with questions, participatory evaluation and planning, and use of special topics).

Hydrology component (field observation, field practicum, small and big group discussions, brainstorming, consensus decision-making, sharing of experiences and follow-up of farmers).

Livestock component (pre- and post-test evaluation, participatory discussion, synthesis and summarization, demonstration, field practice, participatory planning and evaluation, field trip, model farms, giving of token gifts to motivate farmers, and use of photos and videos).

During the big group discussions, it was learned that some approaches and methods lack the elements of participatory, experiential or discovery-based learning. These approaches and methods include demonstration, model farms, giving of token gifts to motivate farmers, and use of photos and videos. The use of folk media presentation was even mistaken as similar to the use of mass media. Some new NFE methods and approaches were also discussed, such as: (a) case study, (b) panel discussion, (c) problem-solving exercise, (d) informal debate, (e) conducting mini-workshop, (f) conducting field day, and (g) participatory technology development.

After reviewing and brainstorming on the current and new NFE approaches and methods used or to be used in the SPFS-FFS, the big group was divided by components and each component was asked to develop exercises for topics of their choice using two NFE approaches and methods assigned to them. The topics and the corresponding NFE methods and approaches used were:

Agronomy component: (a) Variety Adaptation Trial (Field Day), and (b) Agroecosystem Analysis or AESA (Discovery-based Exercise)

Hydrology component: (a) Decision-Making in Rehabilitation by Canal Observation (Field Observation), and (b) Site Selection for Hydrology Gate Construction (Sharing of Experiences)

Livestock component: (a) Importance of Vaccination in Swine and Chicken (Role-Play), and (b) Necessity of Building Pen for Chicken (Informal Debate)

During the presentation, it was observed that the participants had sufficient understanding of what is participatory learning approach but lacks internalization of the experiential and discovery-based learning approaches. A topic, which was presented, was selected to illustrate how to develop an exercise that uses these approaches:

Topic: NECESSITY OF BUILDING PEN FOR RAISING CHICKEN

NFE Method

Informal Debate

When is this exercise most appropriate?

Before the distribution of chicken to SPFS farmer-beneficiaries in the pilot site.

How long will this exercise take?

Thirty minutes for field walk and observation

Thirty minutes for brainstorming in small groups

Thirty minutes for informal debate, brainstorming and decision-making in big group

Objectives

To enlighten the participants on the advantages and disadvantages of different types of raising chickens

To provide the participants the necessary information needed for decision-making on which type of raising chicken is more appropriate in a particular village

Materials

Note book, white paper, ball pen and marking pen
Village where different types of raising chicken can be observed

Steps

Divide the group into two smaller groups;
Go to the village and observe chicken raised with and without pen;
Go to a shade and process observations in small groups;
Assign an issue (e.g., Which is better: chicken raised in the pen or chicken raised without pen?) to each group to depend;
Allow each small group to brainstorm on the issues assigned to them;
Let each small group present the positive points of the issue assigned to them;
Allow enough time for each small group to exchange ideas about the issues;
Summarize and synthesize the salient points of each issue; and
Let the group make decision based on the synthesis of the issues raised.

Some suggested questions for processing discussions

What are the advantages and disadvantages of raising chicken in pen?
What are the advantages and disadvantages of raising chicken in pen?
Can we avoid the occurrence of pest and diseases if chickens are raised in pen?
What were the concerns raised by farmers when raising chicken with or without pen?
Which type of raising chicken is more practical and cost effective?

Several important points were raised during the group discussion, such as:

steps should be designed such that the elements of participatory, experiential and discovery-based learning approaches are highlighted,
guide questions should be developed to assist the facilitator in the processing discussions, and
when feasible, an exercise should be preceded by a field walk or field observation.

In addition to the earlier suggested modifications of the SPFS-FFS curriculum, the following points were emphasized during the brainstorming session:

AESA will be conducted starting from the second week after transplanting for at least 8 succeeding weeks,
The use of AESA as a decision-making tool will be broaden, not only for assessing pest-natural enemy dynamics, but also for other aspects of crop production such as the effect of soil fertility, fertilizer, water, weeds and other cultural management to the growth and development of the crop and the ecosystem,
Livestock topics will be conducted either in the afternoon during the cropping period or as follow-up activity immediately after the cropping period, and
The duration of a weekly SPFS-FFS session should be at least 5 hours (e.g., if started

at 7:00 am it should end at 12:00 n, if it started at 8:00 am it should end at 1:00 pm).

As the modified SPFS-FFS curriculum will now allow more activities for crop management during the cropping period, the typical weekly FFS schedule (Annex J) can now be carried out in the SPFS-FFS, as follows:

Instead of conducting only four staggered AESAs, eight consecutive weekly AESAs can now be done in the SPFS-FFS for crop management decision-making, and Special topics will be discussed as often as possible for more in-depth understanding of some technical topics in agronomy and hydrology, and Group dynamics activities will be regularly undertaken to facilitate commonly encountered SPFS-FFS problems on conflict management, tardiness, absenteeism and substitution of attendance, among others.

04 June 1999 (Friday)

Activities Undertaken:

Participated in the technical training for provincial and district teams of the SPFS Livestock Component.

Briefing on the future outlook of SPFS in Cambodia with the FAO Representative.

Highlights and Some SPFS Concerns Raised:

Field visit of the Fishery Station of the Department of Fishery at Roshey Keo District, Phnom Penh was conducted in the morning and the activity provided the participants to learn new developments in aquaculture. The activity was later developed into a field exercise highlighting the participatory, experiential and discovery-based learning approaches and thus allowed the participants also to enhance their facilitating skills. The details of the field exercise are given below:

Topic: TRADITIONAL AND MODERN AQUACULTURE PRACTICES

NFE Method

Field Observation and Brainstorming

When is this exercise most appropriate?

Before the distribution of fingerlings to SPFS farmer-beneficiaries in the pilot site.

How long will this exercise take?

Thirty minutes for field walk and observation

Thirty minutes for brainstorming in small groups

Thirty minutes for brainstorming and decision-making in big group

Objectives

To enlighten the participants on the advantages and disadvantages of different systems of aquaculture

To provide the participants the necessary information needed for decision-making on which systems of aquaculture is more appropriate in a particular village

Materials

Note book, white paper, ball pen and marking pen

Village where different systems of aquaculture can be observed

Steps

Divide the group into two smaller groups;

Go to the village and introduce participants to the fish pond owners;

Conduct field observation of the different systems of aquaculture;

Allow sharing of ideas and experiences among the fish pond owners and the participants on the different systems of aquaculture;

Go to a shade and process observations of the different systems of aquaculture in small groups;

Allow each small group to brainstorm on the issues assigned to them;

Let each small group present their output to the big group;

Allow enough time for the big group to brainstorm on the different systems of aquaculture;

Summarize and synthesize the salient points of their observations, ideas and experiences shared on the different systems of aquaculture; and

Let the group make decision based on the synthesis of their outputs.

Some suggested questions for processing discussions

With these observations, what do you think can be applied in farmers' field? Why?

What criteria should be considered in deciding which aquaculture system to follow in the village?

Did you learn innovative management practices in aquaculture with farmers? What are these innovations?

Were you able to share your own experiences in aquaculture with farmers? What are these experiences?

During the afternoon session, a field visit to the Royal University of Agriculture-University of Tropical Agriculture (RUA-UTA) livestock and farming systems projects was conducted, which allowed the participants to learn alternative practices in swine and chicken raising and farming systems. Similarly, the activity was later developed into a field exercise highlighting the participatory, experiential and

discovery-based learning approaches, which further enhanced the facilitating skills of the participants. The details of the field exercise are given below:

Topic: TRADITIONAL AND ALTERNATIVE FEED SUPPLEMENTS FOR LIVESTOCK

NFE Method

Role-play, Field Observation, and Brainstorming

When is this exercise most appropriate?

Before the distribution of planting materials for establishing village-level project on alternative feed supplements to SPFS farmer-beneficiaries in the pilot site.

How long will this exercise take?

Thirty minutes for field walk and observation

Thirty minutes for brainstorming in small groups

Thirty minutes for role-playing, brainstorming and decision-making in big group

Objectives

To enlighten the participants on the advantages and disadvantages of different alternative feed supplements for livestock

To provide the participants the necessary information needed for decision-making on which alternative feed supplements are more appropriate in a particular village

Materials

Note book, white paper, ball pen and marking pen

Village where different alternative or potential feed supplements for livestock can be observed

Steps

Divide the group into two smaller groups;

Conduct field observations of the different alternative or potential feed supplements in the village;

Allow sharing of ideas and experiences among farmers and the participants on the different alternative or potential feed supplements in the village;

Go to a shade and process observations of the different alternative or potential feed supplements in the village in small groups;

Allow each small group to brainstorm on alternative or potential feed supplements in the village by role-playing (e.g., some participants will act as facilitators and

some will act as the farmers);
Let each actors express their ideas about the alternative or potential feed supplements in the village;
Summarize and synthesize the salient points of their observations, ideas and experiences shared in the role-play on the different alternative or potential feed supplements in the village; and
Let the group make decision based on the synthesis of their outputs.

Some suggested questions for processing discussions

Do you grow cassava? Why do you grow cassava?
Have you tried using cassava leaves as feed supplements for your livestock?
Did your livestock got sick when they ate fresh cassava leaves?
Did you see people in the village getting sick also when they ate fresh cassava roots?
Why do people and livestock get sick when they eat fresh cassava?
Do you have any idea on how to prevent this situation?
Did you learn innovative techniques in preparing alternative feed supplements with farmers? What are these innovations?
Were you able to share your own experiences on techniques for preparing alternative feed supplements with farmers? What are these experiences?

The FAO Representative in Cambodia gave a briefing on the concerns for the future of the SPFS project. He also announced the appointment of His Excellency Teng Lao, MAFF Undersecretary of State, as the Chairman of the SPFS-Cambodia Steering Committee. He also announced that an agricultural loan for MAFF is being negotiated with the Asian Development Bank (ADB) and the possibility of convincing the MAFF Minister to use part of the loan for SPFS-FFS implementation. The highlights of observations, perceptions and impressions about the Fifth Technical Staff Training (TST5) were also solicited. The details of the findings and recommendation of the TCDC Expert on FFS/CD, which were discussed with the FAO Representative, are indicated under the section on *Major Findings*.

05 June 1999 (Saturday).

Activities Undertaken:

1. Brainstorming session with SPFS provincial and district teams on SPFS Report Format.
2. Evaluation of SPFS TST5 by provincial and district teams and wrap-up meeting on SPFS Technical Staff Training with the FAO Representative in Cambodia.

Highlights and Some SPFS Concerns Raised:

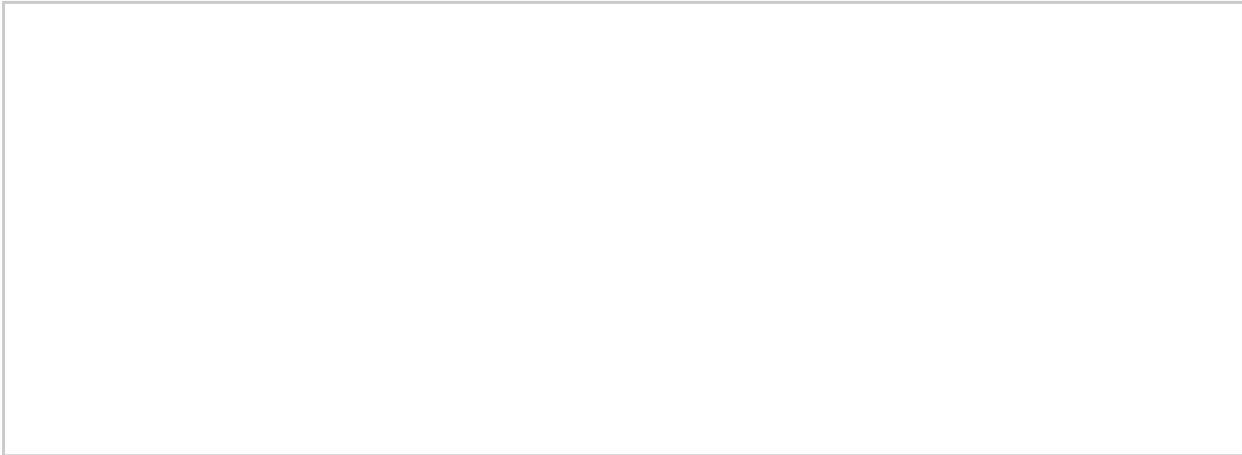
The national, provincial and district teams agreed during the brainstorming session on the reporting format, which will be followed by the SPFS provincial coordinators. The outline of the reporting format is given below:

Executive Summary
Background Information
Activities Undertaken
Results
Problems Encountered and Solutions
Conclusions
Recommendations
Plan of Activities for the Next Season

An evaluation of the SPFS Fifth Technical Staff Training (TST5) by provincial and district teams and a wrap-up meeting with the FAO Representative in Cambodia was conducted. The highlights of the activity are as follows:

The results of the evaluation of the SPFS TST5 by provincial and district teams will still be consolidated by the national team as of this writing and was not made available to the mission due to time constraint.

The FAO Representative in Cambodia gathered impression from the TST5 from the SPFS National Team and the TCDC Expert. The SPFS National Team agreed with most of the observations and recommendation of the TCDC Expert (see details in Annex D).



ANNEX E

CURRICULUM OF THE INTEGRATED FARMER FIELD SCHOOL FOR THE SPECIAL PROGRAMME FOR FOOD SECURITY IN CAMBODIA (SPFS-FFS)

WEEKLY ACTIVITIES/TOPICS	
<p><u>Week 1</u></p> <p>Registration of participants Opening ceremony Introduction of participants Expectation of participants Principles of IFFS</p>	<p><u>Week 4</u></p> <p>Design on-farm animal trials Main diseases in chicken production Principles of disease prevention Ice break Demonstration and implementation of vaccination (chicken and pig) Planning for week 5</p>
<p><u>Week 2</u></p> <p>Pre-test by ballot box Ice break Mapping of irrigation system and presentation (to be continued) Planning for week 3</p>	<p><u>Week 5</u></p> <p>Discussion on field trial Land preparation Ice break Basal fertilizer application Transplanting Planning for week 6</p>

<p><u>Week 3</u></p> <p>Mapping of irrigation system and presentation Identify areas for constructing and rehabilitating hydraulic structure/canal/dike Ice break</p>	<p><u>Week 6</u></p> <p>Rice agro-ecosystem concept Field walk, insect collection and identification and group discussion Ice break Rice growing stage Insect zoo preparation</p>
<p>Introduction to Water Users Association (WUA) Planning for week 4</p>	<p>Planning for week 7</p>

WEEKLY ACTIVITIES/TOPICS	
<p><u>Week 7</u></p> <p>Insect zoo observation Agro-ecosystem analysis (AESA) Ice break Drawing and presentation Planning for week 8</p>	<p><u>Week 11</u></p> <p>Insect zoo observation AESA (Stem borers) Ice break Vegetable growing Planning for week 12</p>
<p><u>Week 8</u></p> <p>Insect zoo observation Ice break Improvement on water distribution Planning for week 9</p>	<p><u>Week 12</u></p> <p>Insect zoo observation AESA Ice break Rat management Planning for week 13</p>
<p><u>Week 9</u></p> <p>Insect zoo observation AESA (Defoliators) Ice break Weeding and on-farm water management Planning for week 10</p>	<p><u>Week 13</u></p> <p>Principles of animal nutrition Ice break Duckweed growing for pig and chicken feed Planning for week 14</p>

<p><u>Week 10</u></p> <p>Insect zoo observation Fertilizer application (top dressing) Ice break Compost making Planning for week 11</p>	<p><u>Week 14</u></p> <p>Insect zoo observation AESA (Rice bug) Ice break Seed purification Planning for week 15</p>
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WEEKLY ACTIVITIES/TOPICS	
<p><u>Week 15</u></p> <p>On-farm water management (Irrigation and drainage systems, pump and well) Ice break Discussion Planning for week 16</p>	<p><u>Week 18</u></p> <p>Water fee collection Ice break Post test Planning for week 19</p>
<p><u>Week 16</u></p> <p>Food web and bad effects of pesticides on the natural enemies, humans and the environment Ice break Botanical pesticide (neem leaves, lemon grass and galanga) Planning for week 17</p>	<p><u>Week 19</u></p> <p>Discussion on the result of the feeding trial Ice break Implementing second vaccination (pig and chicken) Planning for week 20</p>
<p><u>Week 17</u></p> <p>Feeding improvement for the dry season (chicken) Ice break Preparation of insect hole for scavenging chicken Planning for week 18</p>	<p><u>Week 20</u></p> <p>Field day and closing</p>

Note: The SPFS-Cambodia is composed of three (3) main components, which are (a) Agronomy (including Integrated Crop Management, Farming Systems and Constraint Analysis), (b) Hydrology, and (c) Livestock-Fishery. All components are dealt with in the SPFS-FFS. The Agronomy component covers 12 sessions including two sessions for the opening ceremony and the field day. The Hydrology and Livestock-Fishery components cover four sessions each. It is strongly recommended that each session should cover at least four hours. At the beginning and at the end of each session, a review of the previous session and evaluation should be implemented, respectively. Additional time will be needed for farmers, national, provincial and district teams to prepare for field day. The above is an example of a wet season curriculum. The curriculum can be readapted according to the interest of the farmers and the real problems occurring in the pilot sites.

ANNEX F

**FARMER FIELD SCHOOL ACTIVITY GUIDE FOR VEGETABLE INTEGRATED PEST
MANAGEMENT PROGRAM (IPM-FFS)**

<p>The IPM Farmer Field School (FFS) brings farmers together to carry out an intensive training on IPM methods and issues over the life cycle of the crop. The FFS trains farmers to become IPM experts in their own fields. The agricultural technician assigned in the area where the FFS is located assists the IPM Training Team.</p> <p>The principles that guide the FFS learning process are:</p> <p><i>The field is the primary learning resource.</i> All learning activities take place in the field and are based on what is happening in the field.</p> <p><i>Experience forms the basis for learning.</i> The activities that take place in the field and their farms form the basis for discussions and analyses by farmers who arrive at concepts, which they test and improve through further field activities.</p> <p><i>Decision-making guides the learning process.</i> Training focuses on the analysis of the agro-ecosystem of the crop. The combination of analytical methods, ecological principles and basic IPM methods helps farmers gain insights into the ecological interactions in the field and provide them with greater confidence in making crop management decisions.</p>	<p><i>Training lasts the entire cropping season.</i> Farmers acquire a firm understanding of the relevant IPM concepts for each growth stage of the crop as well as the factors that influence pest control decision making at all stages of the plant's growth.</p> <p><i>Training lasts the entire cropping season.</i> Farmers acquire a firm understanding of the relevant IPM concepts for each growth stage of the crop as well as the factors that influence pest control decision making at all stages of the plant's growth.</p> <p>The FFS consists of 25 farmers meeting for one day each week, from 14-16 weeks. The Field School has a 1,000 sq. meter 'learning field' containing a farmer-run comparative study of IPM and other relevant field experiments.</p> <p>A typical schedule of a Farmer Field School for any give day is:</p> <p>07:00 - 08:30 Field monitoring in small groups</p> <p>08:30-09:45 Agro-ecosystem analysis and discussion in small groups</p> <p>09:45 - 10:15 Break</p>
<p><i>The training curriculum is based on local conditions of the FFS.</i> The FFS curriculum and materials are based on their appropriateness, the local conditions, and the problems and needs of the farmers in the FFS.</p>	<p>10:15-10:45 Group dynamics activity in small or large groups</p> <p>10:45 -11:45 Special topics: activity and discussions in small and large groups</p> <p>11:45 -12:00 Evaluation and Planning</p>

VEGETABLE IPM FFS ACTIVITIES		
TIME	WEEK 1	WEEK 2

7:00 - 7:30	Arrival of Participants, Registration and Baseline Survey Form (BSF) Data Gathering	Prayer/National Anthem Recapitulation Briefing the Day's Activities Ballot Box Pre-Test
7:30 - 10:00	Opening Ceremonies Overview of the Training Program Introduction of Participants	Finalize Plans for CPT and Other PTD Activities in the FFS Other Related Activities (e.g., continue BSF data gathering and define Farmers' Crop Protection [FCP] Practice, etc.)
10:00-10:15 B R E A K		
10:15 - 11:45	Setting of Training and Other Learning Norms Groupings Leveling of Expectations	Group Dynamics Familiarization and Soil Test Kit (STK) Testing of the FFS Field Site Processing of Field Activities
11:45 - 12:00	Discussion on Crop Protection Trials (CPT) and Other Participatory Technology Development (PTD) Activities in FFS Planning for Next Week's Activities/ Prayer	Evaluation Planning for Next Week's Activities/ Prayer

VEGETABLE IPM FFS ACTIVITIES		
TIME	WEEK 3	WEEK 4

7:00 - 7:30	Prayer/National Anthem Recapitulation Briefing for Field Activities	Prayer/National Anthem Recapitulation Briefing for Field Activities
7:30 - 10:00	Land and Seedbed Preparations Lay-outing of Plots for CPT and Other PTD Trials Other Related Activities (e.g., fertilizer computation and preparations based on STK results)	Planting of the PTD Trials Ecosystem Observations (Concept of Ecosystem) Processing of Field Activities based on Ecosystem Observations (which include pests-natural enemies dynamics, effects of water, weeds, fertilizer, other cultural management practices, weather, etc. on the growth and development of the crop, effects of pesticides to pests, natural enemies, humans and the ecosystem)
10:00-10:15 B R E A K		
10:15 - 11:45	Group Dynamics Continuation of Field and Other Related Activities Processing of Field and Other Related Activities	Group Dynamics Participatory Discussions on the Concept of Integrated Nutrient Management (INM) Election of FFS Class Officers
11:45 - 12:00	Evaluation Planning for Next Week's Activities/ Prayer	Evaluation Planning for Next Week's Activities/ Prayer

VEGETABLE IPM FFS ACTIVITIES		
TIME	WEEK 5	WEEK 6

7:00 - 7:30	Prayer/National Anthem Recapitulation Briefing for Field Activities	Prayer/National Anthem Recapitulation Briefing for Field Activities
7:30 - 10:00	Agro-Ecosystem Analysis (AESA) Processing of Field Activities based on AESA results (pests-natural enemies dynamics, effects of water, weeds fertilizer, other cultural management practices, weather, etc. on the growth and development of the crop) Seedling Morphology at Early Emergence of Different Vegetables (drawing and labeling of important plant parts based on AESA results)	AESA Field Collection and Identification of Pests and Their Natural Enemies Other Related Activities (e.g., replanting, thinning, roughing of diseased seedlings, etc. based on AESA results) Processing of Field Activities based on AESA results (pests-natural enemies dynamics, effects of water, weeds fertilizer, other cultural management practices, weather, etc. on the growth and development of the crop) Insect Zoo Reporting
10:00-10:15 B R E A K		
10:15 - 11:45	Group Dynamics Participatory Discussions on Cultural Management Practices in Relation to Growth Stages of Different Vegetable Crops (relate to AESA results) Participatory Discussions on the Advantages and Disadvantages of Organic and Inorganic Fertilizers in the Context of Integrated Nutrient Management (INM) Introduction of Insect Zoo	Group Dynamics Seedling Morphology at Two Week After Emergence of Different Vegetables (drawing and labeling of important plant parts based on AESA results) Participatory Discussions and Exercises on Pre-Disposing Factors in Seedling Disease Development (e.g., damping off, wilting, etc. based on AESA results) Setting-up of Insect Zoo
11:45 - 12:00	Evaluation Planning for Next Week's Activities/ Prayer	Evaluation Planning for Next Week's Activities/ Prayer
VEGETABLE IPM FFS ACTIVITIES		
TIME	WEEK 7	WEEK 8

7:00 - 7:30	Prayer/National Anthem Recapitulation Briefing for Field Activities	Prayer/National Anthem Recapitulation Briefing for Field Activities
7:30 - 10:00	AESA Field Collection and Identification of Pests and Spiders and Other Natural Enemies Processing of Field Activities based on AESA results (pests-natural enemies dynamics, effects of water, weeds fertilizer, other cultural management practices, weather, etc. on the growth and development of the crop) Insect Zoo Reporting Seedling Morphology at Three Weeks After Emergence of Different Vegetables (drawing and labeling of important plant parts based on AESA results)	AESA Field Collection and Identification of Weeds, Diseases, Other Pests and Natural Enemies Other Related Activities (e.g., weeding, side dressing, hilling-up, roughing of diseased plants, etc. based on AESA results) Processing of Field Activities based on AESA results (pests-natural enemies dynamics, effects of water, weeds fertilizer, other cultural management practices, weather, etc. on the growth and development of the crop) Insect Zoo Reporting
10:00-10:15 B R E A K		
10:15 - 11:45	Group Dynamics Participatory Discussions and Exercises on Any of the Following: Spiders and Other Beneficial Seedling Pests (e.g., cutworm and armyworm, diamond-backed moth [DBM] and aphid) Introduction to Disease Culture	Group Dynamics Morphology at Four Weeks After Emergence of Different Vegetables (drawing and labeling of important plant parts based on AESA results) Participatory Discussions on Integrated Weed Management Set-up Exercises on Pre-Disposing Factors in Disease Development (Disease Culture)
11:45 - 12:00	Evaluation Planning for Next Week's Activities/ Prayer	Evaluation Planning for Next Week's Activities/ Prayer
VEGETABLE IPM FFS ACTIVITIES		

TIME	WEEK 9	WEEK 10
7:00 - 7:30	Prayer/National Anthem Recapitulation Briefing for Field Activities	Prayer/National Anthem Recapitulation Briefing for Field Activities
7:30 - 10:00	AESA Field Collection and Identification of Pests, Parasites and Other Natural Enemies Processing of Field Activities based on AESA results (pests-natural enemies dynamics, effects of water, weeds fertilizer, other cultural management practices, weather, etc. on the growth and development of the crop) Reporting on Disease Culture Morphology at Five Weeks After Emergence of Different Vegetables (drawing and labeling of important plant parts based on AESA results)	AESA Field Collection and Identification of Pests, Parasitized and Insect Pathogen Infected DBM, Aphids and Other Pests Other Related Activities (e.g., side dressing, spot weeding, etc. based on AESA results) Processing of Field Activities based on AESA results (pests-natural enemies dynamics, effects of water, weeds fertilizer, other cultural management practices, weather, etc. on the growth and development of the crop) Set-up Insect Zoo (Parasites and Insect Pathogens)
10:00-10:15 B R E A K		
10:15 - 11:45	Group Dynamics Participatory Discussions and Exercises on Any of these: Biology and Life Cycle of DBM, Other Pests and Parasites (Trichogramma, Diadegma and Cotesia) Utilization of Field Insect Pathogen and Bt (Bacillus thuringensis)	Effect of Pesticides to Humans and the Environment Group Dynamics Morphology at Six Weeks After Emergence of Different Vegetables (drawing and labeling of important plant parts based on AESA results) Reporting of Insect Zoo (by group) Participatory Discussions and Exercises on Life Cycle and Food Webs
11:45 - 12:00	Evaluation Planning for Next Week's Activities/ Prayer	Evaluation Planning for Next Week's Activities/ Prayer

VEGETABLE IPM FFS ACTIVITIES

TIME	WEEK 11	WEEK 12
7:00 - 7:30	Prayer/National Anthem Recapitulation Briefing for Field Activities	Prayer/National Anthem Recapitulation Briefing for Field Activities
7:30 - 10:00	<p>AESA Field Collection and Identification of Diseases, Insect Pests and Natural Enemies Other Related Activities (e.g., observation of different plant types, roughing of diseased plants, spot weeding, etc. based on AESA results) Processing of Field Activities based on AESA results (pests-natural enemies dynamics, effects of water, weeds fertilizer, other cultural management practices, weather, etc. on the growth and development of the crop)</p>	<p>Last AESA Processing of Field Activities based on AESA results (pests-natural enemies dynamics, effects of water, weeds fertilizer, other cultural management practices, weather, etc. on the growth and development of the crop) Morphology at Eight Weeks After Emergence of Different Vegetables (drawing and labeling of important plant parts based on AESA results)</p>
10:00-10:15 B R E A K		
10:15 - 11:45	<p>Group Dynamics Morphology at Seven Weeks After Emergence of Different Vegetables (drawing and labeling of important plant parts based on AESA results) Introduction of and Participatory Discussions on Folk Media in IPM Participatory Discussions on Selecting Vegetable Varieties with Different Plant Types</p>	<p>Group Dynamics Participatory Discussions and Exercises on Any of the Following: Farm Record Keeping Post Harvest Operations and Marketing Planning for Field Day and Selection of Appropriate Folk Media for Advocacy and Sending Across IPM Messages</p>
11:45 - 12:00	Evaluation Planning for Next Week's Activities/ Prayer	Evaluation Planning for Next Week's Activities/ Prayer

VEGETABLE IPM FFS ACTIVITIES		
TIME	WEEK 13	WEEK 14
7:00 - 7:30	Prayer/National Anthem Recapitulation Briefing for Field Activities	FIELD DAY* *The Field Day is ideally held two weeks before the expected date of harvesting
7:30 - 10:00	Tabulation of AESA Results from CPT and Other PTD Trials Preparation and Summation of PTD Results	GRADUATION CEREMONIES* *The Graduation Ceremonies is usually held simultaneously with the Field Day
10:00-10:15 B R E A K		
10:15 - 11:45	Folk Media Rehearsal and Other Preparations for the Field Day and Graduation Ceremonies	RESTORATION ACTIVITIES
11:45 - 12:00	Evaluation Planning for Next Week's Activities/ Prayer	PREPARATION OF TERMINAL REPORT

VEGETABLE IPM FFS ACTIVITIES		
TIME	WEEK 15	WEEK 16
7:00 - 7:30	Prayer/National Anthem Recapitulation Ballot Box Post-Test	FINALIZATION OF TERMINAL REPORT
7:30 - 10:00	Processing of Field Day and Graduation Activities Reporting of CPT and Other PTD Results	FINALIZATION OF TERMINAL REPORT
10:00-10:15 B R E A K		
10:15 - 11:45	ECONOMIC ANALYSIS OF CPT AND OTHER PTD TRIALS (Based on Baseline Survey Form)	SUBMISSION OF TERMINAL REPORT
11:45 - 12:00	FINAL EVALUATION AND FINALIZATION OF TERMINAL REPORT	SUBMISSION OF TERMINAL REPORT

**PROFILE OF THE NATIONAL, PROVINCIAL, AND DISTRICT TEAM-MEMBERS
OF THE SPECIAL PROGRAMME FOR FOOD SECURITY IN CAMBODIA**

NO	NAME	GENDE R	DISCIPLINE	AREA COVERED	ASSIGNMENT
1	Ouk Phal	M	Agronomy	All Pilot Provinces	National Team
2	Khieu Borin	M	Livestock	All Pilot Provinces	Leader
3	Prum Viratha	M	Hydrology	All Pilot Provinces	National Team
4	Mak Soeun	M	Farming	All Pilot Provinces	National Team
5	Prum Sitha	M	Systems	All Pilot Provinces	National Team
6	Kan Dajy	F	Fishery	All Pilot Provinces	National Team
7	Tan Ratana	M	Livestock	All Pilot Provinces	National Team
8	Buntuon Simona	M	Hydrology Agronomy	All Pilot Provinces	National Team National Team
9	Mei	M	Livestock	Mlec, Kampot	Provincial
10	Kimuniratha	M	Agronomy	Mlec, Kampot	Coordinator
11	Muong	M	Hydrology	Mlec, Kampot	Provincial Team
12	Samoeun	M	Hydrology	Mlec, Kampot	Provincial Team
13	Chan Vanna	M	Agronomy	Mlec, Kampot	District Team
14	Hing Vann Mei Sovanna Sem Sambath	M	Livestock	Mlec, Kampot	District Team District Team District Team
15	Ly Bunthoeun	M	Livestock	All Sites, Takeo	Provincial Team
16	Chin Koeun	M	Agronomy	All Sites, Takeo	Provincial
17	Mean Rikan	M	Hydrology	All Sites, Takeo	Coordinator
18	Tep Trin	M	Livestock	Kantourt, Takeo	Provincial Team
19	Voeun	M	Agronomy	Kantourt, Takeo	District Team
20	Chanthan	M	Hydrology	Kantourt, Takeo	District Team
21	San No	M	Hydrology	Thnot Te, Takeo	District Team
22	Ek Sam Ang	M	Agronomy	Thnot Te, Takeo	District Team
23	Chan Chourn	M	Hydrology	Thnot Te, Takeo	District Team
24	Chea Phirun	M	Hydrology	Prey Kabas, Takeo	District Team
25	Sok Salao	F	Agronomy	Prey Kabas, Takeo	District Team
26	Mao Maly Ouk Sokha	M	Livestock	Prey Kabas, Takeo	District Team District Team

27	Lon Sophal	M	Livestock	K. Cham, Tuk	Provincial Team
28	Katam	M	Agronomy	Chhar	Provincial Team
29	Sonnavan	M	Hydrology	K. Cham, Tuk	Provincial
30	Thai Mov	M	Hydrology	Chhar	Coordinator
31	Kao Thavara	M	Agronomy	K. Cham, Tuk	District Team
32	Chrin Tith	M	Livestock	Chhar	District Team
	Sing			K. Cham, Tuk	District Team
	Samphoeun			Chhar	
				K. Cham, Tuk	
				Chhar	
				K. Cham, Tuk	
				Chhar	

NO	NAME	GENDE R	DISCIPLINE	AREA COVERED	ASSIGNMENT
33	Ouk Hoksy	M	Livestock	All Sites, Siem	Provincial
34	So Sarin	M	Agronomy	Reap	Coordinator
35	Yin Sovan	M	Hydrology	All Sites, Siem	Provincial Team
36	Kong T.	M	Agronomy	Reap	Provincial Team
37	Theavun	M	Livestock	All Sites, Siem	District Team
38	Loun Soeun	M	Hydrology	Reap	District Team
39	Peang Sambon	M	Agronomy	P. Bakong, Siem	District Team
40	Im Phoeuv	M	Livestock	Reap	District Team
41	Ong Sun Hourt	M	Hydrology	P. Bakong, Siem	District Team
	Mam Teav			Reap	District Team
				P. Bakong, Siem	
				Reap	
				Pourk, Siem Reap	
				Pourk, Siem Reap	
				Pourk, Siem Reap	
42	Tim Phean	M	Livestock	All Sites,	Provincial Team
43	Choup Sophy	M	Agronomy	Battambang	Provincial Team
44	Yoeung Yoeun	M	Hydrology	All Sites,	Provincial
45	Em Vorith	M	Agronomy	Battambang	Coordinator
46	Kim Koy	M	Livestock	All Sites,	District Team
47	Chhun C.	M	Hydrology	Battambang	District Team
48	Thoeun	M	Hydrology	C. K., Battambang	District Team
49	Tan Kim Nun	M	Livestock	C. K., Battambang	District Team
50	Si Tara Phoussa	M	Agronomy	C. K., Battambang	District Team
	Nang Chantha			R. C., Battambang	District Team
				R. C., Battambang	
				R. C., Battambang	

ANNEX H

**SCHEDULE OF ACTIVITIES FOR THE FIFTH TECHNICAL STAFF TRAINING (TST5) OF THE
PROVINCIAL AND DISTRICT TEAMS UNDER THE SPECIAL PROGRAMME FOR FOOD
SECURITY IN CAMBODIA (TCP/CMB/8821)**

02 JUNE 1999 (WEDNESDAY): MORNING SESSION

Chairman/Facilitator: Mr. Nuth Sakhan, Director, Department of Agronomy
and Mr. Ouk Phal, SPFS Team Leader and Agronomist

TIME	TOPIC/ACTIVITY	PERSON(S) RESPONSIBLE
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<p>08:15-09:00 09:00-09:30</p> <p>09:30-12:00</p>	<p>Registration of participants Opening session</p> <p>National hymn Welcome remarks</p> <p>Opening remarks</p> <p>Presentation of SPFS 1999 dry season activities and results</p> <p>Kampot province (activities and results) Takeo province (case study) Takeo province (activities and results) Siem Reap province (activities and results) Kampong Cham province (case study) Kampong Cham province (activities and results) Battambang province (activities and results) Short summary of the morning session's presentations</p>	<p>Secretariat</p> <p>Secretariat Mr. Ad Spijkers, FAO Representative (Cambodia) His Excellency Chhun Sareth, MAFF Undersecretary of State</p> <p>Mr. Mey Kimoni Ratha, SPFS Provincial Coordinator Mr. Hieng Tanny, Takeo SPFS Farmer Mr. Heng Taing Ny, SPFS Provincial Coordinator Mr. So Sarin, SPFS Provincial Coordinator Ms. Va Chek, Kampong Cham SPFS Farmer Mr. Thai Mov, SPFS Provincial Coordinator Mr. Tem Phean, SPFS Provincial Coordinator Mr. Mak Soeun, SPFS National Consultant for Farming Systems</p>
<p>Remarks: Special guests from MAFF and cooperating agencies will be invited for the morning session. Presentations will be made in Khmer and translated in English as necessary.</p>		

02 JUNE 1999 (WEDNESDAY): AFTERNOON SESSION

Chairman/Facilitator: Mr. Yu Chreav, Director, Department of Livestock and Mr. Khieu Borin, SPFS National Consultant for Livestock

TIME	TOPIC/ACTIVITY	PERSON(S) RESPONSIBLE
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14:00-17:00	<p>Evaluation of SPFS 1999 dry season results (strong and weak points)</p> <p>Small group discussions</p> <p>Presentation to the big group of strong and weak points of the SPFS 1999 dry season (as perceived by the provincial and district teams))</p> <p>Presentation of strong and weak points of the SPFS 1999 dry season (as perceived by the national team)</p> <p>Presentation of he findings of the field visit and recommendation of the TCDC Expert on FSS/CD</p>	<p>National, Provincial and District Teams</p> <p>Mr. Em Vorinth (Battambang Group) Mr. Katam Sonnavan (Kampong Cham Group) Mr. Ek Sam Ang (Takeo Group) Mr. Moung Samoeun (Kampot Group) Mr. Chin Koeun (Provincial Coordinators Group)</p> <p>Mr. Ouk Phal (National Team Group)</p> <p>Mr. Damaso P. Callo, Jr., TCDC Expert on Farmer Field School and Rural Development</p>
<p>Remarks: Four levels of evaluation will be conducted, namely: (a) National Team, (b) Provincial and District Teams, (c) Farmers, and (d) Others.</p>		

<p>03 JUNE 1999 (THURSDAY): WHOLE DAY SESSION</p>		
<p>Chairman/Facilitator: Mr. Damaso P. Callo, Jr., TCDC Expert on Farmer Field School and Rural Development and Mr. Mak Soeun, SPFS National Consultant for Agronomy</p>		
<p>TIME</p>	<p>TOPIC/ACTIVITY</p>	<p>PERSON(S) RESPONSIBLE</p>

08:00-09:00	Review and list current and new methods and approaches used in SPFS-FFS (divide group by component)	National, Provincial and District Teams
09:00-09:45	Report outputs of the small groups in the big group	National, Provincial and District Teams
09:45-10:00	Coffee Break	
10:00-11:00	Development of some exercises using the identified methods and approaches	National, Provincial and District Teams
11:00-12:00	Report outputs of the small groups in the big group	National, Provincial and District Teams
14:00-15:00	Brainstorming on suggested modification of the SPFS-FFS	Mr. Mak Soeun and Mr. Damaso P. Callo, Jr.
15:00-16:00	Brainstorming on the components of a weekly SPFS-FFS session	Mr. Mak Soeun and Mr. Damaso P. Callo, Jr.
16:00-16:15	Coffee Break	
16:15-17:00	Wrap-up session for the day's activities	Mr. Mak Soeun and Mr. Damaso P. Callo, Jr.
<p>Remarks: The activities should include: (a) review of current and identification of new methods, (b) modification of the current SPFS-FFS curriculum, and (c) preparation and application of sample exercises.</p>		

04 JUNE 1999 (FRIDAY): WHOLE DAY SESSION		
TECHNICAL COMPONENT TRAINING: AGRONOMY Chairman/Facilitator: Mr. Mak Soeun, SPFS National Consultant for Agronomy and Mr. Buntuon Simona, SPFS National Counterpart for Agronomy		
TIME	TOPIC/ACTIVITY	PERSON(S) RESPONSIBLE

09:00-12:00	Soil fertility management (soil physical, inorganic fertilizers [type, method, rate and time of application], organic fertilizers [green manure and compost], cropping systems and crop rotation)	Mr. Ouk Phal, Mr. Mak Soeun and Mr. Buntuon Simona
14:00-16:00	Integrated Pest Management (natural enemies [predators, parasites and insect pathogens], major pests and their management, rats, crabs and their management)	Mr. Ouk Phal, Mr. Mak Soeun and Mr. Buntuon Simona
16:00-17:00	Seed selection and seed purification	Mr. Ouk Phal, Mr. Mak Soeun and Mr. Buntuon Simona
Remarks: The participants are divided by component. Practices and exercises will be included in each technical component. Technical papers will be prepared and distributed during the training.		

04 JUNE 1999 (FRIDAY): WHOLE DAY SESSION		
TECHNICAL COMPONENT TRAINING: LIVESTOCK Chairman/Facilitator: Mr. Khieu Borin, SPFS National Consultant for Livestock and Mr. Prum Sitha, SPFS National Counterpart for Fishery		
TIME	TOPIC/ACTIVITY	PERSON(S) RESPONSIBLE

09:00-12:00	Field visit to Fishery Station (FS), Department of Fishery (DF), Roshey Keo District, Phnom Penh	Mr. Khieu Borin and Mr. Prum Sitha (with Mr. Ean Kim Chheng, FS Deputy Director and Mr. Tes Him, FS Technician)
14:00-17:00	Field visit to Royal University of Agriculture-University of Tropical Agriculture [RUA-UTA] to observe: (a) alternative protein supplement and non-conventional feeds for swine and chicken (available feed sources and potential for introduction of new crops for animals), and (b) cassava silage, swine feeding, and earthworm cultivation).	Mr. Khieu Borin and Mr. Prum Sitha (with Dr. Thomas Reg Preston, RUA-UTA Director, Mr. Hong Sokidon, Mr. San Thy, Ms. Heli Simon, Ms Chea Chandy, Ms. Tech Theavy, Mr. Soeun Tanine, Mr. Chhay Ty, Ms. Seng Sol Erya, and Mr. Lay Somkol, Senior Undergraduate Students)

Remarks: The participants are divided by component. Practices and exercises will be included in each technical component. Technical papers will be prepared and distributed during the training.

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04 JUNE 1999 (FRIDAY): WHOLE DAY SESSION

TECHNICAL COMPONENT TRAINING: HYDROLOGY/IRRIGATION
Chairman/Facilitator: Mr. Prum Viratha, SPFS National Consultant for Hydrology
and Mr. Tan Ratana, SPFS National Counterpart for Hydrology

TIME	TOPIC/ACTIVITY	PERSON(S) RESPONSIBLE
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09:00-12:00	Hydraulic structure (site selection, type and size), discharge calculation (manning formula and floating method), piping and uplift forces on hydraulic structure (Lane's Weighted Creep method), contact pressure and stability (overturning, uplift and slide)	Mr. Prum Viratha
14:00-17:00	Agreement on quality norm of some construction materials (cement, gravel, sand, form-wood, nail, tie-wire) and design format (irrigation area, numbers of farmers to be benefited)	Mr. Prum Viratha
05 JUNE 1999 (SATURDAY): MORNING SESSION		
MONITORING AND EVALUATION Chairman/Facilitator: Mr. Ouk Phal, SPFS Team Leader and Agronomist		
TIME	TOPIC/ACTIVITY	PERSON(S) RESPONSIBLE
08:00-10:00 10:00-11:00 11:00-12:00	SPFS Report Writing Evaluation of the Fifth Technical Staff Training (TST5) Closing Session	Mr. Ouk Phal, Mr. Prum Viratha and Mr. Khieu Borin
Remarks: Other important points to be included in the evaluation of the Fifth Technical Staff Training (TST5) are: (a) follow-up activities, (b) report writing by provincial and district teams, and (c) bookkeeping for farmers associations.		

ANNEX I

FIELD EXERCISE ON MAKING A CROP MANAGEMENT DECISION THROUGH AN AGROECOSYSTEM ANALYSIS (AES)

Each week during the cropping season, you will study the components of the rice agro-ecosystem. You will study the plant morphology and agronomy, herbivores, and natural enemies of the herbivores. You will look at diseases and rats. You will examine the effects of soil fertility, fertilizer, irrigation, water, weeds and other cultural management practices on the growth and development of the crop.

Agro-Ecosystem Analysis (AES) is a way of assembling and placing what we are

studying into a process useful for decision-making based on so many biotic and abiotic factors. The traditional IPM practices relied on economic threshold levels (ETL) to make decisions. ETLs however, are extremely limiting and do not include the other factors in the agro-ecosystem or farm management.

The following activities will lead you through weekly set of questions and drawing. In the beginning, the analysis will take a lot of time. At the onset of the cropping season, the AESA is introduced more as a tool to understand the pests-natural enemies' dynamics in the ecosystem. As the farmer field school progresses, however, other components of the ecosystem are also critically assessed. By the end of the season, however, you should be able to do a complete analysis while standing in the field.

When is this exercise most appropriate?

As soon as there is a decision to make in the field for example one week after sowing the seedbed.

How long will this exercise take?

At most two hours per weekly session during the early stages to at least thirty minutes per weekly session as the FFS progresses. The weekly session during the early stages includes:

15-30 minutes for field observation in small groups,
15-30 minutes for small group discussions,
15-30 minutes for drawing an agro-ecosystem, and
15-30 minutes for presentation and big group discussions.

Learning objectives

Develop the participants' critical thinking abilities through field situation or agro-ecosystem analysis by observation, drawing and discussions in small groups.
Improve the participants' decision-making skills through presentation, participatory discussions and critiquing of the small groups' output in the big group.

Materials

Learning field with standing rice crop
Notebook and Manila or white paper
Crayons, marking pens, and ball pen

Steps

Conduct a participatory discussion in big group, taking the following into considerations:

If the participants are a little familiar with AESA, ask why they do AESA.

If they are unfamiliar with AESA, ask what sort of information they need to get in the field to make crop management decisions.

Discuss how many plants it is necessary to choose and how they should be chosen.

Insects. Discuss how the crop should be examined for insects, insect symptoms, egg masses, in plant, on plant, above plant, etc. How should this be recorded? Bring the specimens back for drawing. How shall they appear on the drawing? (Pests, natural enemies, other, 'do not know's')

Disease. Discuss how the crop should be examined for disease, its symptoms, etc. How should this be recorded? How shall it appear on the drawing?

Plant morphology and growth stage. What is useful to record about the crop stage (e.g., height, number of leaves and tillers, etc.)? How shall it appear on the drawing?

General observations. What else is important to notice (e.g., weeds, irrigation water, fertilizer, and symptoms of drought, nutrient deficiencies, and weather influence)? Is it generally a healthy crop or not? How could this appear on the drawing?

Divide the big group into five smaller groups. Go to the learning field for 15-30 minutes and collect the data as agreed upon in the big group;

Go to a shade or processing area to summarize, integrate and synthesize the result of field observations in small groups;

Draw the plant showing the average height, number of leaves and tillers, and other information somewhere on the Manila or white paper. Show also in the drawing the effects of soil fertility, fertilizer, irrigation water, insect and disease symptoms, etc. Use color crayons to make it look real;

Calculate the total number of insects, non-insect pests, and natural enemies and write how many of each was found on the sample plants. If local names are known, use them to identify the insects, non-insect pests, and natural enemies;

Draw the insect and non-insect pests looking at the actual specimens brought back from the field. They could be drawn, for example, on the left side of the plant. Draw the natural enemies or friends on the other side of the plant. An arrow can clarify where on the plant they were found;

Indicate the weather conditions (e.g., by drawing a sun, clouds, rain, strong wind, etc.). Indicate with drawings or words the treatment and activities in the field since last week (e.g., fertilizer sacks, spray nozzles, watering, etc.). At the bottom could be made a list of important observations and recommendations, particularly on the

effects of weeds, irrigation water, fertilizer, and symptoms of drought, nutrient deficiencies, and weather influence.

Each small group presents their agro-ecosystem drawing to the big group. The presentation should lead to sharing of experiences and participatory discussion on any relevant topics necessary for better decision-making. The sharing should either allow the group to change their initial perceptions or make them feel more comfortable with the decisions they made. The main thing is that all relevant aspects are taken into account. The agro-ecosystem drawing should be kept for comparison when the AESA is conducted the following week. Remember to agree on whom will be responsible for implementing the decisions made.

The agro-ecosystem drawing should represent one or two treatments. Two treatments are shown in the agro-ecosystem drawing, if the group is doing the AESA for both treatments (e.g., IPM and farmers crop protection [FCP] practices or certified seed [CS] and farmer's seed [FS]).

Some suggested questions for the processing discussion

This is very difficult to generalize. It is different from crop to crop, from season to season, from stage to stage and from place to place. It should include some of the following questions and a lot more:

Seedbed

Do the plants have a good start? Is there enough water in the seedbed?

What morphological structures can you readily distinguish now? Are the roots and leaves developing as expected? When will the seedlings be ready for transplanting?

Is there any foliar blast or 'bakanae' disease? If there are problems, will they follow the plants when they are transplanted?

Is there any yellowing? Is it fertilizer deficiency or disease? What is the effect of weather on the plant growth now?

What kinds of natural enemies are present in the field? What are the numbers? Where did they come from? What do they eat or what did they eat before there were pests?

Are there egg masses of pests? Are they parasitized? Are there egg masses of friendly insects?

How does the natural enemy population compare with previous the week? Was the field sprayed with insecticides or other pesticides?

What is the importance of many natural enemies now?

What kinds of pests are seen? What is their average population density in the field?

What is the main pest seen? What sort of damage do the pests do at this stage?

Is there any way to prevent these from increasing in numbers in the field?

What is the condition of other fields in the area? Do other fields influence your field?

How many pests can one spider eat in one day?

Are there any signs of rats? Any damage of rats? What can be done?

How does the condition of the field compare with the previous week? What do you expect will happen next week?
Are there any specific pests to monitor more carefully?
Considering the density of friendly insects and the density of pests, is there a need to apply insecticide? If yes, is there an alternative?
Are there many weeds? When is the right time to do weeding?
What is the management plan for the next week?
Is it generally a healthy crop?
What records will you keep for future use?
If you have different treatments, compare. What treatment would you recommend in the future?
Were last weeks decisions made effective?
Based on your observations, what experiments like insect zoo or disease culture would you make now to learn more?
Do you want to do simple experiments related to seed germination and seedling vigor?

After transplanting

Have the plants recovered from transplanting? Is there anything you will do different in the seedbed next season? Are there missing hills?
Is the plant development as expected (e.g., how many leaves, what is the height, etc.)?
Are some leaves dying? Why? Is this natural?
Are there defoliators? Can the plant compensate these? Would defoliation simulation studies be relevant in this crop now?
How is the color of the plant? Are there yellow leaves? Is there a fertilizer deficiency? Is there any soil problem in the field?
What kind of fertilizer was applied? How much was applied? What was the method of application (e.g., broadcasting, drenching, basal, plants specific, etc.)?
Is there any disease in the field now? How can it be managed or controlled? How can spreading are prevented? Does it influence yield qualitatively or quantitatively?
What is the effect of the weather on the growth of the plant?
Is irrigation water needed now? Is water depth important to manage at this time? Why?
What kinds of natural enemies are present in the field? What are the numbers? Where did they come from? What do they eat or what did they eat before there were pests?
Are there egg masses of pests? Are they parasitized? Are there egg masses of friendly insects?
How does the natural enemy population compare with previous week? Was the field sprayed with insecticide or other pesticides? What is the importance of many natural enemies now?
What kinds of pests are seen? What sort of damage do the pests do at this stage?
What is their average population density in the field?
What is the main pest seen? Is there any way to prevent these from increasing in

numbers in the field?

What is the condition of other fields in the area? Do other fields influence your field?

How many pests can one spider eat in one day?

Are there any signs of rats? Any damage of rats? What can be done?

How does the condition of the field compare with the previous week? What do you expect will happen next week?

Are there any specific pests to monitor more carefully?

Are there important agronomic characters to monitor at this time? What and why?

Considering the density of friendly insects and the density of pests, is there a need to apply insecticide? If yes is there an alternative?

Are the pests and natural enemy populations increasing or decreasing compared to previous weeks?

What is the management plan for the next week?

Is it generally a healthy crop?

What records will you keep for future use?

If you have different treatments, compare. What treatment would you recommend in the future?

Were last weeks decisions made effective?

Based on your observations, what experiments like insect zoo or disease culture would you make now to learn more?

Do you want to do pot experiments related to water or fertilizer management?

Before harvest

Is the plant development as expected (e.g., number of leaves, height etc.)? Are some leaves dying? Why? Is this natural?

How is the color of the plant? Are there yellow leaves? Is there a fertilizer deficiency?

Is there any disease in the field now? How can it be managed or controlled? How can spreading be prevented? Does it influence yield qualitatively or quantitatively?

What will happen if some plants are less vigorous than the others at this time are? Can the neighbor plants compensate for that?

What is the effect of the weather on the growth of the plant? Is irrigation needed now?

What kinds of natural enemies are present in the field? What are the numbers? (Increasing, decreasing or the same?) Where did they come from? What do they eat or what did they eat before there were pests?

Are there insects that are neither pest nor natural enemies? What are they doing?

Are there decomposers that eat dead material in the soil? What is their effect on soil fertility? What is their effect on the crop growth and development?

Are there egg masses of pests? Are they parasitized? Are there egg masses of friendly insects?

How does the natural enemy population compare with previous week? Was the field sprayed with insecticide or other pesticides? What is the importance of many natural enemies now?

What kinds of pests are seen? Are there more parasitized larvae now? What sort of damage do the pests do at this stage? What is their average population density in the field?

What is the main pest seen? Is there any way to prevent these from increasing in numbers?

What is the condition of other fields in the area? Do other fields influence your field?

How many pests can spiders, ladybird beetles, parasitoids, hoverfly larvae and others eat in one day? What does that say about balance?

What if the field is sprayed and all natural enemies die, and then there is an immigration of pests? What would happen?

Are there any signs of rats? Any damage of rats? What can be done?

How does the field condition compare with the previous week? What do you expect will happen next week?

Are there any specific pests to monitor more carefully?

Considering the density of friendly insects and the density of pests, is there a need to apply insecticide? If yes is there an alternative?

Are the pests and natural enemy populations increasing or decreasing compared to previous weeks?

Will spraying of insecticide be too close to harvest now? What is the management plan for the next week?

What is the depth of water in the field at this time? Will the lack or oversupply of water affect severely the crop's growth and development at this time?

Is it generally a healthy crop? Can see the effect of the fertilizer at this time? What morphological structures can help you see the effects of fertilizer at this time? How are these structures affected?

When is the expected harvest time? How can you see that on the crop?

If you have different treatments, compare. What treatment would you recommend in the future?

Were last weeks decisions made effective?

Based on your observations, what experiments like insect zoo or disease culture would you make now to learn more?

At Maturity and Harvest

Select relevant questions mentioned above. How do you determine the right time for harvest?

What is the level of insects and diseases? What can you do in your field from now to prevent insect problems next season? What can you do in your field from now to prevent disease problems next season?

What lessons did you learn on the role of proper soil fertility, fertilizer, irrigation water and other cultural management practices to improve crop productivity? Will you consider these lessons for decision-making next season?

What can you do in your field from now to prevent weed problems next season?

Will you use the same variety next season?

If you have different treatments, compare. What treatment would you recommend in the future?

After harvest what will happen to the natural enemies?

What will be done to rats different next season? Is there a good community action program planned and ready to start after harvest?

What could you do to improve yield different next season?
 What could you do to improve profit different next season?
 From your agro-ecosystem analysis, can you do an economic analysis?
 From your agro-ecosystem analysis, can you do an environmental impact analysis?
 What records will you keep for future use? How can you assist other farmers next season?

ANNEX J

TYPICAL SCHEDULE FOR ANY GIVEN DAY OF A FARMER FIELD SCHOOL

TIME	ACTIVITY/TOPIC
07:00-08:00	Field Monitoring in Small Groups
08:00-09:00	Agro-ecosystem analysis (AESA) and Discussions in Small Groups
09:00-10:00	Large Group Discussions
10:00-10:15	BREAK
10:15-10:45	Group Dynamics Activities in Large or Small Groups
10:45-11:45	Special Topics Activities in Large or Small Groups
11:45-12:00	Evaluation the Week's Activities and Planning for Next Week's Activities

NOTE:

During the 14-16 weeks, which typically covers the growing season for a crop, farmers in an FFS will have the opportunity to observe a crop in every stage of its growth and development. Field monitoring activities in small groups result in an agro-ecosystem drawing that is used for analysis. This is related to plant growth, agronomy, crop-field ecological issues (e.g., effects of soil fertility, water, weeds, etc.), and decision-making questions provided as discussion guide. These are treated in small and big group discussions.

The small group discussions get farmers to talk about their ideas on what is happening in the field and why these things are happening. The training team circulates among the groups and helps them to examine their ideas by posing problems and scenarios. The large group discussion is the time when small groups can present their ideas to the full group. At this time the trainers help them clarify their thinking by posing 'what if' scenarios. The trainers also use this time to present any additional information related to plant growth and ecosystem issues that might not have come out in the discussions.

Group dynamics activities are included in the FFS. This component (a) develops the participants into a closer knit of SPFS team. It (b) establishes a learning climate that is enjoyable as well as fruitful. It also (c) help participants experience and be able to identify such aspects of team work as mutual support, the importance of individual roles to the team's success and behavior that can build or hinder team work. Likewise, it (d) helps participants experience what can be accomplished by working together.

The special topic sessions might concern particular issues such as rat damage or they may be involved in a field study being carried out in the FFS learning field. These special topics usually vary from FFS to FFS and reflect the individual FFS needs. Some of the topics are planned out in advance of the FFS and others are developed as the FFS progresses.

ANNEX K

PROPOSED TERM OF REFERENCE (TOR) AND TECHNICAL BACKGROUND OF THE NEXT TCDC EXPERT MISSION TO SPFS-CAMBODIA

The Technical Cooperation among Developing Countries (TCDC) expert will complement the Food and Agriculture Organization's (FAO) Associate Professional Officer (APO) assigned in the Special Programme for Food Security (SPFS) in Cambodia. He will be selected from among the national experts engaged in FAO technical assistance projects of countries in the region and registered in the FAO-TCDC roster. The TCDC expert with experience in Farmer Field School (FFS) and Community Development (CD), who had previous experience with FAO IPM project in the Philippines, will be selected from the ASEAN IPM Knowledge Network Project of the SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA). His mission will be scheduled as follows:

First Mission

Timing: November to December 1999

Duration: One and A Half Months

Second Mission

Timing: May to June 2000

Duration: One and A Half Month

The mission will be carried out on recommendation and close technical supervision of the responsible technical officer of the Regional Office in Asia and the Pacific (RAP) in consultation with the FAO Representative in Cambodia and the SPFS National Team Leader. The TCDC consultant will work closely with the SPFS National Team (SPFS-NT) in Cambodia, particularly with the National Farming Systems Specialist (NFSS).

In addition to those specified in the last TCDC expert mission, the TOR for the next TCDC expert mission should focus on providing technical assistance to SPFS concerns related to the major recommendations made by the last TCDC expert mission. The details are as follow:

First Mission

Review, in discussions with the SPFS-NT and visit to the pilot sites, the impact of the last farmers training and the modifications introduced on technologies, methods and approaches in the SPFS pilot sites during the last wet season, and assess the

composition of the farmer's groups targeted in the farmers training;

Proposed further improvements and work out a detailed proposal for the further consolidation of the SPFS-FFS and SPFS follow-up activities;

Participate in the next SPFS National Workshop and present a report on the findings on the technologies, methods and approaches introduced in the SPFS farmer field schools;

Participate in the Technical Staff Training (TST) and present to the SPFS Provincial and District Teams the proposed improvements for the technologies, methods and approaches introduced in the SPFS farmer field schools; and

In cooperation with the SPFS National Team and in consultation with the IPM National Team, develop the SPFS curricula for Training of Trainers (TOT), Refresher Course for Trainers (RCT) and Training of Farmer Trainers (TFT);

In cooperation with the SPFS National Team and in consultation with the IPM National Team, develop the first draft of field guides, handbooks and manuals of participatory, experiential and discovery-based exercises; and

Prepare a brief technical mission report on activities and findings and terms of reference (TOR) for the next mission as necessary.

Second Mission

Review, in discussions with the SPFS-NT and visit to the pilot sites, the impact of the last farmers training and the technologies, methods and approaches introduced in the SPFS pilot sites during the last dry season, and assess identify constraints and weaknesses;

Proposed further improvements and work out a detailed work plan, in consultation with the SPFS-NT, to be implemented for the further consolidation of the SPFS-FFS and SPFS follow-up activities;

Participate in the Technical Staff Training (TST) and present to the SPFS Provincial and District Teams a report on the findings on the modification and the proposed improvements for the technologies, methods and approaches introduced in the SPFS farmer field schools;

In cooperation with the SPFS National Team and in consultation with the IPM National Team, validate and finalize the field guides, handbooks and manuals of participatory, experiential and discovery-based exercises;

In cooperation with the SPFS National Team and in consultation with the IPM National Team, oversee the conduct of the first two weeks of the Training of Trainers (TOT)

for SPFS Provincial and District Teams; and

Prepare a brief technical mission report on activities and findings and terms of reference (TOR) for the next mission as necessary.