



Promotion of sustainable sweetpotato production and post-harvest management through farmer field schools in East Africa

CROP PROTECTION PROGRAMME

Promotion of sustainable sweetpotato production and post-harvest management through farmer field schools in East Africa

R 8167

FINAL TECHNICAL REPORT

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Project R8167 Final Technical Report

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Acronyms and Abbreviations

AESA	Agro-ecosystem analysis
AEZ	Agro-Ecological Zone
ARDC	Agricultural Research and Development Centre
ASARECA	Association for Strengthening Agricultural Research in Eastern & Central Africa
BTA	Biotechnology Trust Africa
BUCADEF	Buganda Development Foundation
CBO	Community Based Organisation
CIP	International Potato Centre
COARD	Client-Oriented Agricultural Research and Dissemination Project
CPP	Crop Protection Program
CRS	Catholic Relief Services
DALEO	District Agriculture and Livestock Extension Officer (Kenya)
DFID	UK Department for International Development
EAFSRE	East African Farming Systems Research and Extension Network
ECOWAS	Economic Community of West African States
FAAB	Farming as a business
FAO	Food and Agriculture Organisation of the United Nations (UN)
FFS	farmer field school
FTR	Final Technical Report
FYM	Farm Yard Manure
GOK	Government of Kenya
GIPMF	Global IPM Facility
GTZ	German Technical Assistance
ICM	integrated crop management
IFAD	International Fund for Agricultural Development
IPM	Integrated Pest Management
IPPM	integrated pest and production management
ISTRC	International Society for Tropical Root Crops
JAF	James Arwata Foundation
JEEP	Joint Energy and Environmental Protection
KAEMP	Kagera Agricultural and Environmental Management Programme
KARI	Kenyan Agricultural Research Institute
M&E	monitoring and evaluation
NAADS	National Agricultural Advisory Service
NAARI	Namulonge Agriculture and Animal Productions Research Institute
NALEP	National Agricultural and Livestock Extension Programme, Kenya
NARI	National Agricultural Research Institutes
NARO	National Agricultural Research Organisation
NGO	Non Governmental Organisation
NRI	Natural Resources Institute
OFSP	orange fleshed sweetpotato
PM&E	participatory monitoring and evaluation
PRA	Participatory rural appraisal
PRAPACE	Programme Régional de l'Amélioration de la Culture de la Pomme de Terre et de la Patate Douce en Afrique Central et de l'Est
REFSO	Rural Energy and Food Security Organisation
RELMA	Regional Land Management
RNRRS	Renewable Natural Resources Research Strategy
SAARI	Serere Agriculture and Animal Productions Research Institute
SADC	Southern African Development Community
SARRNET	Southern African Regional Rootcrop Network
SOCADIDO	Soroti Catholic Diocese Development Organisation
SP	sweetpotato
SPVD	Sweetpotato virus disease
SSA	Sub-Saharan Africa
TEDDO	Teso Dioceses Development Organisation
TEMA	Teso Media Association
ToT	training of trainers
TSAEE	Tanzanian Society of Agricultural Extension and Education
UNICEF	United Nations Children's Fund
VITAA	Vitamin A for Africa Partnership
WVU	World Vision Uganda



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Executive Summary

The 'Promotion of sustainable sweetpotato production and post-harvest management through farmer field schools in East Africa' project began in May 2002 and was funded by the Crop Protection Programme for a period of three years and a total value of £101,468.

The project purpose was specifically to increase the returns from sweetpotato enterprise through enhancing East African smallholders' capacity in sustainable production and post-harvest management. The project aimed to pull together the results of over six years of laboratory, on-station, and on-farm research on improved component technologies, and promote the knowledge to farmers through a process of experiential learning.

This collaborative project was led by Tanya Stathers of the Natural Resources Institute, for the International Potato Centre (CIP) following the resignation of the original leader Elske van de Fliert in 2002. The full time project assistant Sam Namanda was based in Soroti, Uganda and supported by Regina Kapinga of CIP Kampala. The other core team members were Godrick Khisa of the FAO Global IPM Facility in Kenya, and Robert Mwangi of the Ugandan National Agricultural Research Organisation.

The four project outputs were:

Output 1. Location-specific protocols, manuals and materials for sweetpotato integrated pest and production management (IPPM) farmer field school (FFS) developed and field-tested.

The sweetpotato IPPM FFS manual for use by field school facilitators was developed and reviewed by a range of stakeholders. The manual includes sections on: background to FFS and facilitation skills; technical sweetpotato information from planting material selection and land preparation through to post-harvest processing, storage, alternative products, marketing, information on experimentation; a SP FFS learning curriculum; learning activities, group dynamic exercises; monitoring and evaluation forms.

Output 2. Farmers trained in pilot sweetpotato IPPM FFSs to manage their sweetpotato enterprise and produce profitably and sustainably.

The project focused on N.E. Uganda and W. Kenya where a total of 18 sweetpotato FFS occurred during 2002/03 and 2003/04, six of which were farmer facilitated, there were 492 participants, 322 of whom were women. Additional spin-off activities in Tanzania led to four extension facilitated sweetpotato FFS with 92 participants.

Output 3. National cadres of trainers trained

A sweetpotato IPPM training of trainers course was developed and run twice, seven extension staff were trained as master trainers, 12 FFS graduates were trained as farmer facilitators, and a further 15 identified following the 2nd pilot season.

Output 4. Sweetpotato IPPM FFS modules institutionalised into large-scale FFS implementation programs by national extension systems, CBOs, NGOs, and follow-up plans for scaling-up developed.

A wide range of diverse stakeholders were involved in the project and were brought together annually at the planning and evaluation workshops during which the projects activities were reviewed and scaling-up ideas formulated. A stakeholder workshop in 2005 was attended by individuals from organisations with an interest in sweetpotato and food security in Uganda and Kenya. The participants presented



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their plans for integrating sweetpotato IPPM FFS into their own programmes, these were further developed along with feedback systems.

The project's outputs have already contributed to the chain of realisation of the project's goal which is stated as livelihoods of poor people improved through sustainably enhanced production and productivity of RNR systems, by:

- demonstrating that farmers are keen to be involved in sweetpotato IPPM FFS and can use what they learn through the FFS to improve their livelihoods in numerous ways including: improved household nutrition particularly for young children and HIV positive individuals; increased production of sweetpotato; increased confidence in experimenting with different methods and making more informed decisions as a result of collecting information on their own activities; producing and selling new sweetpotato products such as doughnuts, chapatis, juice and soap; linking to factories and processors; preserving clean planting material through the dry season and being able to sell it at the onset of the rains;
- producing a learning curriculum, farmer field school manual and developing a regional sweetpotato IPPM training of trainers course for sub-Saharan Africa which have been field tested over two seasons;
- training a cadre of 34 sweetpotato IPPM FFS facilitators;
- strategically linking with stakeholders such as local government and NGO staff who have lobbied for wider scale continuation of the SP IPPM FFS, and linked the project to school and relief feeding programmes amongst others;
- developing a proposal 'Expansion of sustainable sweetpotato production and post-harvest management through farmer field schools in East Africa and sharing of the lessons learnt during the pilot schools' which builds on this project and provides the opportunity to take what has been learnt further in the next 10 months.



Background

Sweetpotato (*Ipomoea batatas* (L) Lam.) is, globally, the second most economically important root crop after potato and is an important food security crop in many of the poorest regions of the world including sub-Saharan Africa (SSA). Root crops are unusually important relative to cereals in Africa. Sweetpotato with the third greatest production after cassava and yams, is amongst the most widely grown of the major roots crops in SSA, and covers an estimated 2.1 million hectares with an annual estimated production of 9.9 million tonnes of roots. The crop is particularly important in countries surrounding Lake Victoria, in East and Central Africa. It is a co-staple in Rwanda, Burundi, and Uganda and plays a primary role in food security in Kenya, Tanzania and D.R. Congo. Elsewhere in SSA it has traditionally been grown on a small scale as a secondary food crop, and is critical for food security during periods when other foods run short during periods of prolonged drought or when other catastrophes strike. Its adaptation to marginal environments, contribution to household food security and flexibility in mixed farming systems make it an important component of strategies to help the rural poor improve their livelihoods. As it only takes a short period to reach maturity, it is able to provide food in areas with short rainy periods and prolonged drought where other crops cannot survive.

In East Africa, sweetpotato is grown predominantly by women, for both home consumption and to supplement household income by sale to local markets and urban centres (Bashaasha *et al.*, 1995; Kapinga *et al.*, 1995). Although sweetpotato is produced all year round in some locations, others have distinct production seasons that are reflected in the prices at both rural and urban markets. In the past sweetpotato was consumed mainly in rural areas and the utilisation of sweetpotato in urban areas was very limited and often kept secret as it was considered to reflect the low-income status of the consumer.



However, with increasing urbanisation and health-conscious consumers, sweetpotato is becoming increasingly important in urban food systems and there has been a tremendous positive change in attitude towards the crop. In urban areas most consumers obtain sweetpotato roots from markets although some supplement these by growing sweetpotato themselves.

By 2020, Scott *et al.* (2000) envisage that root crops will be integrated into emerging markets through the efficient and environmentally sound production of a diversified range of products for food, feed and industry. In Africa, the growth rates in sweetpotato production, particularly, the area planted, are the highest of any region in the world. However, these are offset by reductions in average annual yields. Average yields of 5 tonnes/ ha in Africa are low compared to those of 14 tonnes/ ha in other developing regions such as China. Currently, several factors, including: lack of planting materials; shortage of high yielding, early maturing, drought tolerant, high dry matter and high beta-carotene content varieties; sweetpotato weevils (particularly in the drier areas); sweetpotato viruses (particularly in the wetter areas); low soil fertility; lack of markets and/or market information; short shelf life of fresh roots after harvest; and limited processing opportunities cause considerable reductions to sweetpotato production.



The problem begins at the beginning of the planting season, as the prolonged dry season is frequently followed by a shortage of planting material. As a result, planting is often delayed and there is little opportunity to select cleaner younger vine parts for planting. This has implications for both pest and disease build up through infested planting materials. Few early-maturing sweetpotato varieties exist in East Africa, and as a result of the delayed planting the crop usually matures after the end of the rains and the soil around the roots dries out and cracks providing easy access to the roots for *Cylas* weevils. While external weevil damage to roots can affect their quality and value, internal damage can lead to complete loss. Many farmers practice piecemeal harvesting removing the larger exposed roots for household consumption as required, but when weevil populations build up, farmers tend to harvest the remaining crop as weevil infestation reduces root quality and marketable yield. As a result, in areas where sweetpotato is not traditionally processed into chips, flour or stored as fresh roots, a glut develops as most local farmers tend to harvest around the same time.

Despite the array of factors that still impede sweetpotato yields in the region, great progress has been made over the past years. Through regional breeding programs a considerable number of varieties with high yielding potential and adapted to low input conditions and broad environments in Africa have been developed. SPN/O, a variety selected in Uganda, Kenya and Tanzania is one such example and is now grown throughout East, Central and Southern Africa under a diverse range of local names. At the same time the varieties have been tested for resistance against major pests and diseases. The introductions in different countries have been supported by vigorous multiplication schemes and enabled evaluation of new germplasm in the national breeding trials. There have been a number of pilot projects with rural women's groups that have successfully marketed products with sweetpotato as a major ingredient. There has also been much progress in the improvement of the quality of flour produced by farmers and millers using simple technologies. Research efforts to open sweetpotato utilization into bakery and flour milling companies have also yielded promising results. All these efforts have left a changed and positive perception on the crop's use in food systems in the region.

The long-term challenge for sweetpotato development in SSA is to increase production per unit area, yield has not only remained static but is below the continental average. The immediate challenge is to ensure that improved varieties that have been generated together with improved production technologies, and nutritional information reach a wider section of the farming community. This problem has been aggravated by programs that support research and development in independent disciplines; while it is the same crop that is affected by all these constraints.

Most of the sweetpotato varieties grown by farmers throughout eastern and southern Africa have white or cream-coloured flesh, which contains little or no beta-carotene. Many rural people in these same areas, particularly children, suffer from vitamin A deficiency (GOK & UNICEF, 1995). Severe deficiency leads to night blindness and death; less severe forms reduce a person's general health and capacity to fight off malaria and other diseases. One particularly effective means of addressing sub-clinical vitamin A deficiencies is through the promotion of food based agricultural interventions, such as new varieties of sweetpotato rich in beta-carotene (Hagenimana *et al.*, 1999). Recently, CIP and other partners from the agriculture and health sectors have formed a partnership on Vitamin A for Africa (VITAA) to promote the use of orange-fleshed varieties rich in beta-carotene, that have been identified as the least expensive, year round source of dietary vitamin A (Low *et al.*, 1997). Several pilot projects have combined local testing with farmers and programs for the multiplication and distribution of planting material, nutrition education to explain the benefits, particularly



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for children under five, and promotion of new recipes and saleable products to add value and develop new markets. These components will be integrated with improved pest and crop management practices, and adapted to farmers' circumstances.

Long-lasting collaborative efforts of CIP, NRI, NAARI (NARO) and PRAPACE with support from DFID have focused on the development of sweetpotato pest and disease management components (R6115, R6769 and R7492) and increased understanding of current attitudes and practices in sweetpotato crop and pest management in Uganda (B0111). Recent work during B0111 focused particularly on areas with proven market prospects, and therefore activities were closely linked to other adaptive research on the evaluation of new varieties and the promotion of improved post-harvest technologies to open up new markets for new products. The most promising results from these studies were brought together into an integrated improved production and post-harvest management approach with the aim of realistically contributing to increased yields, more reliable food security, increased household incomes, and improved livelihoods.

Examples of some of the important crop management practices from the above projects, traditional knowledge systems and other projects e.g. GTZ funded IPM project in Shinyanga region, Tanzania, which could potentially be integrated by farmers included: sanitation; land preparation; nutrient management, rapid multiplication of planting material; selection of clean planting material; use of different varieties; mulching; pest monitoring; roguing of virus infected plants; hilling up; harvest timing; fresh and dry storage, marketing, processing options and product diversification.

The ecological and socio-economic conditions of a farm are normally very specific and farming practices and needs differ from farm to farm (van de Fliert, 1999). Heterogeneity in the agro-ecosystem, as experienced and even exploited by farmers in marginal areas, is often considered a serious obstacle in scientific research and frequently avoided (De Steenhuijsen Piters and Fresco, 1997). In order to implement such integrated, knowledge-intensive and location-specific approaches, farmers require intensive training, so they can understand why some methods are better than others and acquire skills to adapt techniques as necessary to their own specific conditions. CIP's experience with sweetpotato ICM in Asia showed that the farmer field school (FFS) approach provides an appropriate model for such farmer training (van de Fliert, 1999).

The experiential learning approach of farmer field schools provides participating farmers with a deeper understanding of crop ecology and observational, analytic and problem solving skills, which help these farmers evaluate the importance and applicability of their existing and innovative practices. These understandings and skills are usually transferable between field activities (often resulting in the reduced use of synthetic and often inappropriate pesticides or fertilisers on other crops), and can be passed on through traditional knowledge pathways. The formation of cohesive farmer groups during these collective learning activities and their exposure to economic analysis can often increase the negotiating power of producers with traders or suppliers, and lead to an increased awareness of rights and establishment of farmer action networks.

Since 1999 the FAO Global IPM Facility has introduced FFS into selected areas of north-eastern Uganda, western Kenya and Lake Zone in Tanzania, however the focus has been mainly on cash crops. A systems approach, integrating cash, semi-cash and subsistence crops in the FFS curriculum, was perceived as a relevant course the FFS should take in East Africa and the development and testing of sweetpotato IPPM modules was seen to provide an interesting experiment in this respect. This idea also met the demands of the FFS facilitators to include sweetpotato in the field school curriculum. In addition to areas



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with market prospects, the IPPM approach had potential application for the densely populated sweetpotato growing areas where environmental degradation, particularly declining soil fertility, had become a major constraint. The FFS is a promising platform in these areas for collective learning and action in marginal agro-ecosystems. Another lesson from earlier projects was that much greater emphasis needed to be focused on farmer understanding of (as opposed to just participation in) the trials, which requires a real investment in project staff support time over a continued period during the crop management activity season. The FFS responds to these needs. A project focusing on farmer capacity development for sustainable sweetpotato production and post-harvest management, which would link and integrate previous and ongoing research and extension efforts, seemed to have potential for achieving positive impact on sweetpotato farmers' livelihoods in targeted areas in East Africa, and was funded by the Crop Protection Programme for a 3 year period beginning in April 2002.

The project aimed to impact at the micro level on households that produce and/or consume sweetpotato as an important nutritional and cheap staple food crop, and on those that market sweetpotato roots and products as an income generation activity. As sweetpotato can be grown in relatively marginal soils with very low (or no) levels of external inputs, it is particularly important for a large number of resource poor farmers. Women have traditionally been responsible for production activities, but as commercialisation of the crop has increased over the last few years in Soroti and Kumi districts of Uganda men have begun to play an important role in many of the production activities. Apart from the sale of fresh sweetpotato roots to traders and local markets, women in Soroti district have been producing crisps, chips, doughnuts, chapattis and other snack foods as an important income-generating opportunity. The high vitamin A content of many of the sweetpotato varieties is viewed as important by nutritionists not only for its role in child developmental health but also because of the high incidence of households with HIV-positive members.

The project aimed to impact at the macro level by strengthening linkages between stakeholders, raising awareness and understanding of crop and post-production management issues (particularly those of sweetpotato but also of other crops) and alternative promotion mechanisms and uptake pathways. Although the project focuses only on N.E. Uganda and W. Kenya it has a much wider potential geographical application throughout SSA where small-scale rural households grow sweetpotato. The project initially aimed to directly reach around 250 sweetpotato growing households in N.E. Uganda and W. Kenya, respectively, with the FFS amplifying approach potentially resulting in a large annual increase in the number of households affected after the project ends. Training of master trainers within both national extension systems and NGO/CBO networks would allow for further training of FFS facilitators, hence a potential multiplication of farmers targeted over consecutive years. A spill-over effect to NW Tanzania (Bukoba, Biharamulo, Ngara and Karagwe districts) was expected, through KAEMP (Kagera Agricultural and Environmental Management Program), an IFAD funded government program focusing on the improvement of the rural livelihoods of resource poor communities which work closely with the FAO-supported IPPM-FFS project in N.W. Tanzania. Links with PRAPACE were also expected to trigger initiatives for similar projects applying the protocols developed within these networks.

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Project Purpose

The project purpose was specifically to increase the returns from sweetpotato enterprise through enhancing East African smallholders' capacity in sustainable production and post-harvest management. The project aimed to pull together the results of over six years of laboratory, on-station, and on-farm research on improved component technologies, and promote the knowledge to farmers through a process of experiential learning. The project also hoped to strengthen institutional linkages between the FAO pilot program to promote Farmer Field Schools in north-eastern Uganda and western Kenya, a number of local NGOs and community-based organisations, the Client-Oriented Agricultural and Research Dissemination Project, the Ugandan national research organisation (NARO), the Natural Resources Institute (NRI), and the International Potato Centre (CIP).

This specific project purpose feeds into the more general purpose given by the Crop Protection Programme of promoting strategies to reduce the impact of pests in herbaceous crops in Forest Agriculture systems in order to improve the livelihoods of poor people.

Research Activities

The following paragraphs provide a detailed description of the project activities associated with each of the project outputs and the progress made in achieving them.

Activity A: Orientation, networking and planning:

This activity which was undertaken through both the electronic sharing and discussion of information, planning of the first workshop (Act 1.1) and initial logistics for the pilot field schools; and through face to face discussions during the first planning workshop which enabled team members to become more familiar with the project purpose, expected outputs, suggested activities, timeframe, budgets, linkages and responsibilities.

Output 1: Location-specific protocols, manuals and materials for sweetpotato integrated crop management (ICM) farmer field school (FFS) modules developed and field-tested.

Activity 1.1 Planning workshop with project team members, FFS facilitators, farmers, other stakeholders from research, extension and community development organisations:

- to review ICM and post-harvest management components and compose technical content of FFS utilising outputs from DFID-funded projects B0111, R7492, R6769 and R6115 and CIP's related work in Asia.
- to develop FFS curriculum
- to plan development of learning activities
- to plan pilot FFS implementation
- to identify mechanisms for scaling up
- to design participatory monitoring and evaluation system

Twenty two participants attended Workshop I in Soroti, Uganda from 8-10 May 2002. The workshop served as the initial planning workshop for the project. The objectives of the workshop were:

- to review previous and ongoing work on sweetpotato production and post-harvest management and IPPM farmer field schools in Uganda and Kenya
- to socialize the project proposal amongst project partners and a wider group of stakeholders in north-eastern Uganda
- to develop concrete workplans by project partners

The first day of the workshop consisted of a seminar during which previous and ongoing work on sweetpotato production and post-harvest management was presented to the larger group of



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stakeholder representatives. During the last two days the project partners developed concrete workplans and discussed project implementation issues. A clear overview of the project was established among participants and agreements were made on: the technical content of the sweetpotato FFS; the curriculum; the learning activities; the pilot sweetpotato IPPM FFS, the budget, a communication strategy was developed and detailed work plans for each project partner made. Terms of reference and recruitment strategy for the project assistant were developed. It was suggested that the project assistant would be located in the IPPM FFS Programme Uganda office, at the District Agriculture Office in Soroti. The COARD project based at SAARI also offered to host the project assistant. The need for biometrics advice was also discussed and a plan made and implemented. Mechanisms for scaling up the sweetpotato IPPM FFS were identified and a workshop report was produced



Activity 1.2 Write up of draft technical guidelines and draft FFS learning activities during May/June 2002

The outline of technical manual was drafted during the Planning Workshop I (Act 1.1), based on the list of technical issues drawn up during the workshop to be contained in the sweetpotato IPPM FFS. Possible authors and reviewers for each section, and sources of information were identified, and a deadline of 31st May 2002 was set in order for the first draft of the manual to be available for the training of trainers. The main users of the manual will be FFS facilitators, both extension workers and farmer facilitators. Delay in submission of chapters by some of the selected authors meant the first draft of the sweetpotato technical manual was only actually finished in December 2002, and then distributed to then master trainers and those participants present at the planning workshop I.

Those extension staff who attended the sweetpotato IPPM ToT at Namulonge in June 2002, were given a copy of the S.E. Asia sweetpotato ICM FFS manual in order to enable them to adapt the learning activities presented in it to their respective sweetpotato field schools. They also spent time developing the sweetpotato IPPM FFS curriculum for the season long FFS and identifying which learning activities might be used for which topics.

During the projects conception it had been planned to translate the technical manual into Ateso, Luhya and Kiswahili. Then the team decided that this was not necessary until the final draft of the manual had been developed. As the subsequent drafts of the manual developed the team felt that it would be a huge and extremely complex task to translate it, plus it was also felt that the manual could be a resource for all of sub-Saharan Africa as opposed to just for East Africa. The facilitators, FFS graduates and project team members came to the conclusion that the manual should remain in English, but that shorter 'field leaflets' targeted to farmers on the topics of sweetpotato pest and disease management and sweetpotato processing and recipes should be developed based on the information in the manual and translated into Kiswahili, Ateso and Luganda for use in the field and at home. The development of these field leaflets were included in a proposal on the 'Expansion of sustainable sweetpotato production and post-harvest management through farmer field schools in East Africa and sharing of the lessons learnt during the pilot schools which has been funded by the Crop Protection Programme and will begin in April 2005 for a period of 10 months.



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Activity 1.3 Evaluation/ planning workshop II with project team to review first pilot season, curriculum, modules and technical guidelines in Soroti, Uganda in March 2003

Twenty six participants from Kenya, Uganda, Tanzania and UK attended the Planning and Evaluation Workshop II in Busia, Kenya from 1-3 April 2003. The objectives of the workshop were:

- to socialise the project amongst a wider group of Kenyan stakeholders (*hence the decision to hold in the workshop in Kenya as opposed to Soroti, the workshop also coincided with the period of civil strife related to the LRA insurgency in Soroti*);
- to review the first pilot season sweetpotato IPPM farmer field schools;
- to review the curriculum modules and technical guidelines;
- to review the training of trainers content and curriculum development;
- to plan the second years activities and to develop concrete workplans for project partners

The first day of the workshop consisted of a seminar during which the background to the project was presented, an overview of the first years training of trainers was given, the sweetpotato integrated pest and production management (IPPM) farmer field school (FFS) past years activities in Uganda, Kenya and Tanzania were discussed, the monitoring and evaluation activities were presented, an overview of the VITAA initiative and ongoing work on sweetpotato production and post-harvest management in Kenya was presented, and a discussion on scaling up opportunities and strategies for East Africa was held with the larger group of stakeholder representatives. During the last two days a smaller group of 20 stakeholders reviewed the project activities to date and developed workplans for the second year's activities. A detailed workshop report was produced and distributed to all workshop participants and other interested stakeholders.

The workshop was opened by Mr Andrew Kaptalai, the Busia District Agriculture and Livestock Extension Officer (DALEO). Mr Kaptalai highlighted the importance of the sweetpotato crop to the district, and his pleasure that the project was focusing on this crop as opposed to crops such as maize, which are not as suited to the agro-ecosystems of Busia district. He sees marketing, processing and value adding as important constraints to the increase of acreage and production of sweetpotato in Busia district. He finished by vocalising his hopes that this project would be scaled up in order to help the farming communities of East Africa.



Activity 1.4 Revise technical guidelines and field guides for learning activities in Mar/Apr 2003



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During the course of the first year of the project comments and suggestions were collected from different stakeholders on ways of improving the manual. During the Planning and Evaluation workshop II (Act 1.3) participants submitted their suggested improvements and changes to the technical guidelines which were used for editing the 1st draft. The participants were also split into pairs or groups of three, together each pair/ group reviewed one chapter of the manual, and then presented their suggestions for improving it. These suggested changes were then incorporated into the manual by the project leader and the 2nd draft produced in time to be given to the FFS facilitators during the 2nd ToT at the end of April 2003.

Where areas were identified that needed additional information, named individuals were identified to provide it (e.g. sweetpotato recipes and household level processing techniques; review of the marketing chapter; additional East African agronomic information; additional East African drawings of sweetpotato activities; amino acids and nutritional information). Following the collection of this missing information and editing and incorporation by the project leader a 3rd draft was produced in June 2003. This 3rd draft was initially distributed to >30 interested stakeholders, and in response to demand further copies have been produced.

Activity 1.5 Develop training of trainers (ToT) curriculum by end April 2003.

In order to train the initial master trainers in June 2002, the draft sweetpotato IPPM FFS ToT curriculum was developed during the Planning Workshop I in April 2002, it was then reviewed and amended at all subsequent workshops, and flexibility in its design was encouraged in order to meet the interests and capabilities of the participants. The course has been run by Namulonge and Kawanda Agricultural Research Institutes in Uganda and Dr Robert Mwangi <rmwangi@naro-ug.org> can be contacted for details of future dates or to arrange a similar course.

After the first pilot sweetpotato FFS season highlighted areas that needed greater attention or addition included: experimental design; application of farmyard manure (FYM) so that facilitators would feel more competent to discuss the subject with farmers; farming as a business (FAAB); facilitation skills; ways of improving facilitators confidence in performing calculations, so that they would find it easier to work out application rates; mineral deficiencies; mites; colour photos of pests and diseases in technical manual (this was always planned for the final version – but was too costly to include in each draft version); vertebrate pest management, including mole rats, rats and mice, birds (guinea fowl etc), goats, monkeys, human theft; product development as facilitators wanted to feel confident in demonstrating a range of different products to their FFS, they also wanted to see detailed recipes of sweetpotato products included in the technical manual; the opportunity for FFS facilitators to link with the home economics officers in their respective districts was raised. The subject of tissue culture which had been included in the first sweetpotato IPPM FFS ToT was discussed, interestingly the facilitators felt that it was important for them to learn about it although they would not be applying it practically in the field. The facilitators felt the time (3 days) was too short for the quantity of information they wanted to absorb and so the 2nd sweetpotato IPPM FFS ToT course was extended to one week.

During the 2nd sweetpotato IPPM FFS ToT farmer facilitators were trained and extension facilitators were refreshed and trained in the subjects they felt had been missing in the first course. It was later decided that it was more cost effective and sustainable, particularly because of the language used, if farmer facilitators were trained in-country by already trained and experienced extension facilitators (master trainers) in a specific farmer facilitator sweetpotato IPPM FFS ToT course the curriculum of which is shown below (Table 1).

Further review of the course curriculum was done during the August 2004 Planning and Evaluation Workshop III. The course participants revealed that they had found the preparation of sweetpotato products particularly interesting but that the farming as a business topic had been taught in far too a theoretical way and so an alternative facilitator for that topic needed to be identified. Participants felt that despite the extension of the course to five days it was still too short for the amount of information that needed to be digested. The amended course curriculum for the sweetpotato IPPM FFS ToT course for Master Trainers (extension staff) is shown below (Table 2). The course will be run again at Namulonge in May 2005 under the new project, as well as the 17 participants (4 Ugandan, 10 Kenyan and 3 Tanzanian) identified



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by the project to attend the course, several other organisations have asked if their own staff can also attend it and they will be financially supporting their attendance.

At the start of the project a season long learning activity curriculum was also developed and this has been reviewed by all involved in it following each field school season and improved, a copy of this is included in the manual along with a blank form to encourage facilitators to adapt it to fit their field schools' demands and needs.

Table 1. Tentative programme for East African sweetpotato IPPM FFS ToT for Farmer Facilitators by Master Trainers in country

Day	Topic
Sun	Arrive at Training Venue
Mon	1. Variety development 2. Sweetpotato agronomy <ul style="list-style-type: none"> • Rapid multiplication • Planting methods • Plant density • Compost/ manure application • Weed control 3. Sweetpotato pest and disease management <ul style="list-style-type: none"> • Identification of pests and disease symptoms and their control (incl. vertebrate pests)
Tues	Morning: Facilitation Skills Afternoon: Visit farmers
Wed	Morning: Experimental design and data collection Afternoon: Farming as a business
Thurs	Post harvest practicals
Fri	Post harvest practicals
Sat	Depart

Table 2. Tentative programme for training of master trainers

Day	Activity	Location
Sun	Travel to Kasangati Resort Hotel, Kampala, Uganda	Kasangati
Mon	AM: Opening of course Introduction to Framework of FFS Sweetpotato crop management <ul style="list-style-type: none"> • Variety development <ul style="list-style-type: none"> ○ Demonstrations of Orange fleshed sweetpotato for Vitamin A, tissue culture/ disease elimination ○ Visit crossing blocks (demonstration) and other breeding trials • Sweetpotato agronomy <ul style="list-style-type: none"> ○ Rapid multiplication ○ Planting methods ○ Plant density ○ Compost/ manure application ○ Weed control PM: Crop management practicals	Namulonge
Tues	AM: Sweetpotato pest and disease management <ul style="list-style-type: none"> • Identification of pests and disease symptoms and their control (including vertebrate pests) PM: Pest management practicals Visit farmer fields, Zirowe	Namulonge
Wed	AM: Experimental design and data collection PM: Facilitation and communication skills	Namulonge
Thurs	Farming as a Business	Namulonge
Fri	Post-harvest practicals	Kawanda
Sat	Post-harvest practicals	Kawanda
Sun	Depart	



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Activity 1.6 Evaluation and planning workshop III in Mar 2004 with project team to review second pilot season FFS, and ToT curriculum, modules and technical guidelines and to determine strategy for scaling-up.

Twenty six participants from Uganda, Kenya, Tanzania and UK attended the planning and evaluation workshop III from 22nd-28th August 2004 in Busia, Kenya. The objectives of the workshop were:

- to review:
 - the 2nd pilot season sweetpotato IPPM farmer field schools;
 - the learning activities/ curriculum and technical guidelines;
 - the training of trainers course content;
 - the third (and final) years planned activities
- to determine a realistic strategy for scaling up and continuing SP IPPM FFS activities
- to develop concrete workplans for project partners

The first day of the workshop consisted of a series of presentations during which: the background to the project was briefly presented; extension and farmer facilitators from the second pilot seasons sweetpotato integrated pest and production management farmer field schools in N. E. Uganda and W. Kenya gave overviews of the SP IPPM FFS, and described the strengths and weaknesses of the farmer fields schools, training of trainers and learning activities/ curriculum that they were involved in. Following this the workshop participants broke into three small groups to identify the negative and positive issues related to SP IPPM FFS, ToT and curriculum development, they then identified realistic strategies for addressing the negative issues and preventing them from reoccurring, these were presented back in plenary and discussed. An overview of the highlights of Year 2 of the SP IPPM FFS project was then given by the project assistant. The second day focused on scaling up opportunities for SP IPPM FFS, and presentations of realistic opportunities of scaling up were given by ten different stakeholders from their own perspectives. A list of scaling up strategies was then developed and discussed and prioritised by the participants, the top four strategies were then developed further in smaller groups and presented back to the plenary. The third day focused on reviewing the 3rd draft of the technical manual, all participants submitted their written comments on the manual and these were discussed and agreed on. The workshop then closed at 11am. A small core project team of five remained to work in detail on the Yr 3 workplans, the manual, the extension proposal to CPP, the planning of the stakeholder workshop and the Project Progress Report.

The workshop was opened by Mr Wilson Oduori, the District Agricultural Officer and FFS coordinator for Busia District, Kenya. Mr Oduori highlighted the fact that 294 farmers in three districts in Kenya had now been trained in ten SP IPPM FFS (6 of which were extension led and 4 that were farmer led) through the project. These farmers are now adapting technologies to their own farms. Three master trainers and eight farmer facilitators from the three districts Kakamega, Bungoma and Busia in Kenya had been trained. Field days have been held by every FFS attended by 1,453 farmers. He saw the challenges for the future as: training of more trainers to ensure that expertise could spread to the other districts; establishment of local planting material bulking sites; need for processing machines at the FFS; exchange programmes; involvement of other extension providers such as REFSO and CREAD. He finished by saying that workshop participants would need open minds to discuss what had already been achieved and to suggest ways for improving the activities for the future.

Activity 1.7 Finalisation of technical guidelines and learning activity field guides (manual) from Mar-Sept 2004.

Using the comments collected on the technical manual at Workshop III (Act 1.6) the final version of the sweetpotato IPPM FFS manual is being completed and will be printed and distributed in April 2005. The final version of the manual includes: sweetpotato technical guidelines from planting material and land preparation through experimentation to post-harvest processing, alternative sweetpotato recipes and marketing; information about the farmer field school approach and facilitation skills; ideas for learning activities and a season long sweetpotato IPPM FFS curriculum for facilitators to adapt; monitoring and evaluation forms and information; and group dynamic exercises.



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Activity 1.8 Printing and distribution of 500 manuals in Oct 2004.

Initially the plan was to print the manuals in Indonesia where the S.E. Asia SP ICM manuals have been printed, however following the departure of the original project leader Elske van de Fliert, who was based in Indonesia with CIP, this was no longer possible. Quotes and samples have been collected from six different printers in Kampala and the manual will be printed immediately following the end of the project and distributed to more than 300 interested stakeholders.

Output 2: Farmers trained in pilot sweetpotato IPPM FFSs to manage their sweetpotato crop and produce profitably and sustainably (10 pilot FFS per site @ 25 farmers).

Activity 2.1 Preparation of first season pilot FFS and field studies (1 location/site) and monitoring and evaluation procedures from May-June 2002.

During the planning workshop I (Act 1.1) the project team made the necessary preparations for pilot FFS. In Uganda the FAO IPPM FFS coordinator, James Okoth, suggested two extension staff who had already been trained in the FFS approach and had been facilitating field schools on other crops. These were:

- Mr. Odiényi James in Katine sub-county, Soroti district
- Mr. Emuria Stephen in Kyere sub-county, Soroti district

In mid 2002, Mr Okoth was promoted and moved to Kampala, unfortunately due to the delay in the start of the Phase 2 FAO IPPM FFS programme he was not replaced during the remainder of the projects lifespan.

In Kenya the FAO IPPM FFS coordinator, Godrick Khisa following consultation with the District Agricultural Officers and the District FFS Coordinators suggested the following extension staff who had already been trained in the FFS approach and had already been facilitating field schools with other crops:

- Ms. Ruth Apondi in Kakamega district
- Mr. Jared Wandete in Bungoma district
- Mr. George Otando in Busia district

In Uganda the sweetpotato planting season starts in June and harvesting occurs from September to November. Post-harvest activities will take place around October to December. In Kenya, the sweetpotato planting season starts in April, and continues until June when the FFS activities were initiated, harvesting takes places from September to December. Kawanda and Kakamega Research Institutes in Uganda and Kenya respectively provided additional training on processing of sweetpotato and enterprise development of processed products.

Due to limited funds the Crop Protection Programme suggested that the project reduce its three country focus suggested in the initial concept note to focus on only two countries. As a result the project only had sufficient funds to operate in NE Uganda and W Kenya. However strong links within the FAO IPPM programme meant that the project decided to fund the Tanzanian FFS coordinator, Thomas Julianus to attend Workshop I. During this workshop Thomas decided that his programme had sufficient funds to run four sweetpotato IPPM FFS, two in each of Katerero and Bugabo divisions of Bukoba district in NW Tanzania where sweetpotato had been prioritised by farmers. The project decided to use some of its funds to support the training of two Tanzanian extension staff already familiar with the FFS approach in sweetpotato pre and post-harvest IPPM. The individuals were:

- Ms. Consolatha Bampenja
- Mr. Dennis Ndamugoba

A summary of the number of SP IPPM FFS and their participants that occurred during the project is given in Table 3. A record of number of SP IPPM FFS facilitators developed during the project is given in Table 4.



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Table 3. Number of SP IPPM FFS and their participants that occurred during the project

Location	2002/03		2003/04	
	No. of FFS	No. of participants (no. of women)	No. of FFS	No. of participants (no. of women)
Uganda				
Soroti	2	57 (21)	6	135 (94)
Kenya				
Busia	1	30 (20)	3	89 (53)
Kakamega	1	25 (17)	2	47 (36)
Bungoma	1	20 (14)	2	89 (67)
Tanzania				
Bukoba	4	92 (83)	0	0
TOTAL	9	224 (155)	13	360 (250)

Table 4. Record of capacity building of new facilitators for SP IPPM FFS in East Africa each year during the project

Country	District	2002/03		2003/04		2004/05
		Extension/ NGO staff	Farmer facilitators	Extension staff	Farmer facilitators	Farmer facilitators
Uganda						
Soroti		3*	0	0	4	8
Kenya						
Busia		1	0	0	4	4
Kakamega		1	0	0	2	4
Bungoma		1	0	0	2	4
Tanzania						
Bukoba		2	0	0	(4)**	0
Total		8	0	0	12	20

* 1 Master trainer was from SOCADIDO, Soroti, but left for further study shortly after the ToT and never facilitated a FFS

**4 Tanzanian FFS graduates were selected from the 1st season pilot FFS to be farmer facilitators but due to the delay of FAO IPPM FFS Phase 2 they have not yet run FFS

During workshop I a brainstorming session on issues for the design and implementation of a participatory monitoring and evaluation (PM&E) methodology was conducted. This work was used by Tanya and Elske in addition to the existing FAO FFS M&E forms and the SE Asia sweetpotato ICM FFS M&E forms to develop a PM&E framework and data collection guides. The FFS participants were involved in the monitoring process in many ways: through the development of indicators for their learning plots e.g. what form of data to collect, vine length, insects, diseased leaves, plant parts, yield; through collection, analysis, visualisation and group discussion of the above data; through interviews with the project assistant; through record keeping of their personal sweetpotato activities; and through attendance of the annual planning and evaluation workshops.

Opportunities for enhancing the biometrics components of the project design were discussed. The team saw the need for this mainly during the design and analysis of the monitoring and evaluation activities as well as during the curriculum development workshop when PM&E procedures and field study design would be discussed. This meant we needed to find someone with a broader interest and experience in quantitative and qualitative data collection and application in multi-dimensional, socially and ecologically complex conditions. Several names were suggested and contact was made with them. Margaret Nabasiye of Makerere University in Uganda was selected and a request was sent to CPP for additional support. Margaret visited the first season pilot SP IPPM FFS schools with the project core team to orientate herself with the activities being done in the SP IPPM FFS. She then developed



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guiding procedures on experimentation both for the ToT course and for inclusion in the SP IPPM FFS manual and provided advice on M&E activities and analysis. Initiation of monitoring and evaluation activities was postponed due to late recruitment of the project assistant, Mr Sam Namanda, who only started on 1 September 2002.

Activity 2.2 First season pilot FFS and field studies (1/site @ 25 farmers) using first draft of curriculum and learning activities: FFS activities with existing FFS group, but field studies (on separate experimental plot) with selection of FFS participants conducted from June/Jul 2002 – Dec/ Jan 2003 in W. Kenya and Soroti, in N.E. Uganda.



AESA data analysis - Undugu FFS, Busia

224 farmers of whom 155 were women, participated in nine pilot sweetpotato IPPM FFS (3 in Kenya (Umoja, Saasia and Undugu), 2 in NE Uganda (Okunguro and Apa Amora (2 others were intended but due to facilitation problems they were delayed until the 2nd pilot season)) and 4 in W. Tanzania (Abatekanasha, Neema, Jaribu and Juhudi)) from June 2002- Jan 2003 (see Table 3 in Act 2.1 for further details).

The activities that made up the learning curriculum of the FFS included: field identification and preparations; AESA data collection; crop management; maturity and yield determination; post harvest handling practices; marketing of roots and chips.



Checking root development - Okunguro FFS

The FFS participants chose to conduct experiments on: varieties, planting systems (ridges vs mounds, and different plant densities and planting patterns); vine length; and different application rates of farm yard manure (FYM). They also studied pest and disease symptoms and management practices, soil fertility assessments, processing and product development, rapid vine multiplication and conservation, record keeping of home sweetpotato production data as well as FFS field data, and pit storage of fresh roots. The FFS's held six field days promoting their activities, during which farmers displayed the different products and demonstrated the practices learnt in the farmer field school. Prizes were awarded to the winning groups.

Key practices that were adopted from this first season of pilot sweetpotato IPPM FFS were: rapid vine multiplication; sweetpotato composite flour making; machine chipping of sweetpotato roots; use of vines as a vegetable; making of sweetpotato products such as doughnuts, chapattis; and planting of new varieties particularly the OFSP varieties (SPK 004, Ejumula and Zapallo).

Extra curricula activities included: story telling; plays; songs; merry-go-round saving clubs; non sweetpotato activities such as vegetable production, poultry keeping; HIV/ Aids information; malaria prevention; nutrition.



Singing and dancing - Saasia FFS



Data sheet reviewing - Umoja FFS



Triangulation trial - Okunguro FFS



Activity 2.3 Monitoring and evaluation of first season pilot FFS from June 2002-Jan 2003.

The following areas were monitored from Nov 2002 to Feb 2003: FFS field activities from participants and other stakeholders' perspectives; facilitators planning and field performance; linkages with other organisations and stakeholders; participants own sweetpotato activities at home. The tools used included:

- baseline questionnaire conducted with all participants in all the five FFS;
- individual interviews with policy makers and traders to seek their opinion about sweetpotato FFS activities in their respective locations;
- individual interviews with SP IPPM FFS participants and non-participants;
- group evaluation process, discussions were held with SP IPPM FFS participants to assess the benefits, usefulness and applicability of the FFS approach;
- training schedules for facilitators;
- AESA information collected by the FFS participants at each meeting included: crop growth performance; yield; pest, disease and natural enemy incidence;
- annual planning and evaluation project workshop.

Activity 2.4 First season monitoring and evaluation data processing, participatory analysis and report writing during Feb 2003.

Following the collection of the data described in Activity 2.3, procedures for entering and processing it were developed by the project leader and assistant in July/August 2003. A series of Access databases were built into which the first seasons M&E data was entered following training on the use of Access. Problems with the quality of the data became apparent during the data entry process, and as a result the data collection procedures and most of the questionnaire and recording forms were changed in order to improve the quality of the M&E data collected during the second pilot season FFS. One new form was developed to capture information on pests and diseases which the farmers were interested in.

At the end of season, each FFS group was involved in a group evaluation exercise during which the project assistant asked them to give their scoring of and opinion about three issues: benefits/usefulness of what was learned in the FFS; satisfaction with the learning process; and applicability of what was learned for their own farming practices. The information collected is summarised in Table 5.

Data collected during the AESAs and at harvest was processed and analysed in the field schools by the participants themselves, reports of this information were then made by the facilitators at the planning and evaluation workshop II. During this workshop (see Act. 1.3) the first pilot seasons SP IPPM FFS activities, learning curriculum and training curriculum were reviewed by the wide range of stakeholders present. Based on their own experience of the sweetpotato IPPM FFS and what they had learnt during day 1 of the workshop, participants were asked to write (on post-its/ stickers) three positive and three negative issues about the first pilot season FFS. These stickers were then placed on the wall, and compiled into groups. Five small groups were then formed to develop suggestions for changes that could help address each of the negative issues raised, in order to improve the 2nd seasons SP IPPM FFS, the negative issues and suggested ways of addressing them are presented in table 6.



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Table 5. Summarised group evaluation of the benefits, learning process and applicability of SP IPPM FFS process during 2002/03 (Responses from different FFS were combined)

+ve	-ve	
<p>What were the benefits from participating in the sweetpotato farmer field school?</p> <ul style="list-style-type: none"> • Got money, food and vines • Chapatis, mandazis and cakes can be made from sweetpotato • Pests and diseases can be controlled without chemicals, disease plants should be destroyed, learnt about sweetpotato viruses, and covering soil cracks during weeding • Ready market for orange-fleshed sweetpotato • Learnt good methods of planting, e.g. ridges retain water • Field day was good • Got knowledge about sweetpotato varieties • High yielding varieties • Sweet potato is a good crop • Made field easy to work • Importance of nutrition and economic returns • Visiting gardens • Gained skills for my own field and was well taught • Learnt ridging, AESA, economic analysis, crop management and got yellow fleshed varieties • Knowledge about vitamin A and orange fleshed sweetpotato, and how good OFSP is for children • Learnt about root storage • Knowledge on use of synthetic pesticides and botanical pesticides • Learnt to do rapid multiplication of planting materials • Good knowledge of production techniques • Important food security crop • Use of FYM to increase yield • Helps to develop the community 		
<p>Learning process</p> <ul style="list-style-type: none"> • Learning is once a week and we do the work ourselves • Study once in 2 weeks and books are provided • Farmer field school brought us together • Farmer field schools bring unity • Practices used on other crops could be useful such as banana weevil trap • Involved in data collection & FFS always first agreed on what to do • Enjoyed field day • Teaching well understood • Farmer field school is a good approach: we eat and help others to improve on fertility of their fields • FFS are a good practice • Farmer field training has a lot of advantages • Understood thoroughly • We are taught to teach others • We became artists by collecting pests & drawing them • Learning by doing • Cooperated closely with Agric Extension • Taught good techniques • Learnt and understood the actual production process and acquired knowledge at own field 		<ul style="list-style-type: none"> • Season was dry • Poor rains
<p>How are you able to apply the information that you have learnt during the FFS at your own field?</p> <ul style="list-style-type: none"> • Got new sweetpotato varieties (including orange fleshed ones) for planting • I will practice rapid multiplication • Planted orange-fleshed sweetpotato for making mandazi • Timing of planting • Different vars. accessed, nutrition & good mgt practices • Method of planting on ridges, avoid use of harmful pesticides and teaching others • Ridges result in high yields • New varieties are spreading in the area • Learnt management of pests and diseases • SPK 004 has more diseases, and mounds loose water more easily than ridges • Learnt root and vine storage, AESA and method of planting • New varieties and visiting the garden is a good practice • Learnt planting on ridges, and Zapalo is more susceptible to viruses (Matawi) • Learnt good methods of crop production • Her husband is also impressed • Farming practices have improved • Learnt good field practices my potatoes at home are doing well 		<ul style="list-style-type: none"> • Did not get enough orange-fleshed vines



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- Manure application was a good practice
- We are taught to teach others

Table 6. Negative issues from the first season sweetpotato IPPM FFS and strategies for addressing them

Groupings of issues	Negative Issues that occurred during the 1 st pilot SP IPPM FFS	Strategies for addressing them and preventing them reoccurring
Methodology	<ul style="list-style-type: none"> • Need to enhance farmers monitoring and evaluation process 	Participatory M&E
	<ul style="list-style-type: none"> • Gender analysis not well addressed 	Include gender analysis in the curriculum for Master trainers (TOT), hire gender specialist where necessary
	<ul style="list-style-type: none"> • Lack of investigation of insect life cycles (friend or foe) – some facilitators tell the FFS participants and don't help them to discover by themselves 	Sensitisation on facilitation skills so that facilitators don't tell farmers which is a pest or a natural enemy etc. Need to have more emphasis on facilitation skills in the TOT curriculum
	<ul style="list-style-type: none"> • Groups should not only focus on production but also consider other pests/diseases on IPPM principles 	Joint planning and sensitisation
	<ul style="list-style-type: none"> • Varieties were harvested at once while most farmers piecemeal harvest 	Discussion over the fact that accurate data recording needs to be made if piecemeal harvesting is carried out, the different FFS are not replicates of each other
	<ul style="list-style-type: none"> • Project addresses food security; need to develop indicators for this with farmers 	Monitoring (participatory)
	<ul style="list-style-type: none"> • Field designs not uniform • Field plots were too small in the case of Tanzania 	Statistician to come up with simple standard field design?? But experiments are different between FFS and that is right. We hope to include a session on experimental design in the 2 nd TOT to increase facilitators' confidence in designing and paying out experiments.
	<ul style="list-style-type: none"> • Were the experiments and measurements designed by the farmers or were they sometimes designed by the facilitators/ researchers 	Farmers should identify the problem they suggest solutions, facilitators help to identify simple design to be used.
	<ul style="list-style-type: none"> • Field designs had too many variables in some cases 	Keep numbers of treatments low (max 5), define objective, define treatments
Planning	<ul style="list-style-type: none"> • Inadequate funding to accommodate e.g. exchange visits, motivation & project implementation 	Recommend inclusion of exchange visit budget Realistic budget & approved funds provided in time
	<ul style="list-style-type: none"> • Poor linkages delayed vine delivery, seed planted at wrong time or late. • Schedule of activities should be understood by all 	Advance planning for field activities Multiplication of vines close to sites Close collaboration between farmers and source of vines
	<ul style="list-style-type: none"> • Time allocation to group members for other activities 	Farmers should allocate or prioritise their time and should be involved in planning
	<ul style="list-style-type: none"> • Delays in establishing other (new) groups 	New groups should be formed at least 1 month before the beginning of the season
	<ul style="list-style-type: none"> • Frequency of meetings, need to harmonise 	To be agreed on by facilitators and farmers
Strategies for acquiring planting materials	<ul style="list-style-type: none"> • To have orange fleshed sweetpotato in Tanzania 	Introduction and evaluation of orange fleshed sweetpotato by groups, NARIS and CIP
	<ul style="list-style-type: none"> • Not enough vines (planting materials) 	Bulking of selected and acceptable varieties by the farmer groups Establish nurseries for commercialisation of planting materials
	<ul style="list-style-type: none"> • Not enough roots for processing groups • Pests • Sweetpotato weevils are a big problem • If roots are left in the field rough weevils, termites, millipedes and vertebrate pests damage them • Moles and rats damage roots 	Commercial production of fresh roots More emphasis on pest management during TOT Strengthen FFS time/ emphasis on pest management Access information on control of moles and rats from the recent FAO project in Uganda (Nathan to access info) and use traditional methods



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Stresses	<ul style="list-style-type: none"> • Effect of drought 	Plant at on-set of rains Use wetlands to conserve materials Conserve planting materials in banana plots
	<ul style="list-style-type: none"> • Birds (guinea fowl) that dig up the sweetpotato roots and eat them 	Collect more information from farmers and suggestions for control. Guinea fowls digging up roots of all varieties and eating them
	<ul style="list-style-type: none"> • Poor group leadership, is it due to gender imbalance in some groups • Apart from being sweetpotato experts. ToTs need other skills e.g. farming as a business, gender analysis etc. • Post-harvest potential not exploited in Kenya 	Include other topics such as gender, market linkages, leadership, FAAB and post harvest and value addition in the TOT
Needs	<ul style="list-style-type: none"> • Need to give more emphasis on linking farmers to markets, processing and value addition, to be included in curriculum • To ensure market procedures are clear to group members 	Linking farmer groups to market and private sector
	<ul style="list-style-type: none"> • Commercialisation requires financial assistance 	Link farmers to credit facilities
	<ul style="list-style-type: none"> • Scaling up not clear, was broad 	Strengthen linkages with private sectors Integration/ institutionalisation
Scaling up and sustainability	<ul style="list-style-type: none"> • Sustainability of the project especially funding not clear 	Establish and implement revolving fund system Introduce income generating activities within the groups and individuals
	<ul style="list-style-type: none"> • Farmers still allocate marginal soils for sweetpotato production 	Sensitisation of training
Commitment	<ul style="list-style-type: none"> • Lack of seriousness by the farmer due to ignorance e.g. illiteracy amongst farmers 	Joint planning and reviews Memorandum of understanding to specify roles and responsibilities
	<ul style="list-style-type: none"> • Slow/ inactive FFS could be left behind. Seasons do not wait for the slow ones 	Sensitisation of training Joint planning and reviews Memorandum of understanding to specify roles and responsibilities
	<ul style="list-style-type: none"> • If a master trainer is slow the FFS is likely to be slow and lag behind 	Monitoring by co-ordinator to encourage slow master trainers
	<ul style="list-style-type: none"> • Sweetpotato not a policy issue in Kenya yet, food security crop 	The emphasis is already there on food security crops at the policy level There is a need for continued sensitisation
Policy	<ul style="list-style-type: none"> • Not considered as a major food crop 	Refer to solution on policy Need for increased funding and involvement by government and other stakeholders
Attitudes	<ul style="list-style-type: none"> • Sweetpotato not considered a cash crop 	Sensitisation and provision of market information
	<ul style="list-style-type: none"> • Very active participants who want to work alone are not likely to join FFS 	Only involve interested farmers
	<ul style="list-style-type: none"> • Data presented does not indicate actual planting material availability 	Collect and present data on number of vines and multiplication factor
Reporting/ analysis	<ul style="list-style-type: none"> • Some of the data taken may not be useful if not related to yield etc. 	Clear presentation of all data More time needs to be allocated for presentation of data at future workshops or reports including the data need to be prepared by facilitators and sent to participants in advance of workshops
Motivation	<ul style="list-style-type: none"> • Out of pocket allowance for this workshop is very little 	The out of pocket allowance is determined by the budget and normal extension workshop rates, and is not different than that provided during other workshops in both Kenya and Uganda.



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Activity 2.5 Planning and preparation of second pilot season using revised curriculum which will also serve to train trainers (April 2003).

During the Busia workshop II plans and logistics of the second season SP IPPM FFS were discussed in detail by the facilitators and country co-ordinators, including the names of farmers who would become facilitators, timing of initial sessions, acquisition of planting materials and funds. Details of the revised ToT are given under Activity 1.5.

In Kenya 7 FFS were planned, 3 facilitated by the three master trainer extension staff and 4 facilitated by FFS graduate farmer facilitators. In Uganda 6 FFS were planned, 4 facilitated by the two master trainer extension staff and two facilitated by FFS graduate farmer facilitators. In Tanzania it was hoped that an additional 6 - 8 sweetpotato FFS would be run depending on the Tanzanian IPPM FFS co-ordinators access to independent funds.

As a result of the increased number of field schools a new sampling procedure for the projects M&E was developed to ensure high quality data was collected during the 2nd pilot season (details are given under Activity 2.7).

Activity 2.6 Second season pilot FFS (9 pilot FFS/site @25 farmers) and field studies enabling farmers to plan activities and experiments based on findings of first season conducted from June 2003 – Jan 2004.

In Uganda six SP IPPM FFS were run: two farmer facilitated schools (Aspogavim and Angole FFSs) in Kyere subcounty; four extension facilitated schools (Akisim and Eketakinos FFSs led by Mr. Emuria, and Abari and Omodoi FFSs led by Mr Odiényi). Unfortunately the LRA insurgency in Soroti district disrupted the activities of Abari and Omodoi FFSs temporarily. There were 135 active participants in the six schools. Unfortunately the Ugandan master trainers were somewhat distracted this season, due mainly to the attraction of extremely well-paid NAADS activities which also negatively affected many NGO activities in the district. This meant the project assistant frequently had to act as the facilitator, on top of his numerous other project responsibilities.

In Kenya seven SP IPPM FFS were run: two farmer facilitated schools (Alungoli Upendo and Esimuma FFSs) and one extension facilitated school (Okoka mujuru FFS) in Busia district; one farmer facilitated school (Tumaini FFS) and one extension facilitated school (Khasunire FFS) in Kakamega District; one farmer facilitated school (Neuni FFS) and one extension facilitated school (Mtelani FFS) in Bungoma District. There were 225 active participants in the seven FFS (Busia-89, Kakamega-47 and Bungoma-89).

Unfortunately the delay to Phase 2 of the FAO Global IPM programme caused disruption to activities in Tanzania and although the project had planned to train four farmer facilitators this did not happen.

The activities that made up the FFS learning curriculum were the same as those during the 1st pilot season (see Activity 2.2 for details). In addition to repeating the experiments done by the 1st season sweetpotato FFS, participants of the 2nd season FFS also chose to conduct experiments on:

- shelf-life of sweetpotato chips using manual vs mechanical chipping methods
- different chip drying methods (open sun drying and controlled solar drying),
- development of different flour composite recipes,
- extension of doughnut shelf-life,
- weevil management practices (clean vines vs weevil infested volunteer vines, hilling up, guard rows of sorghum),
- virus management (varietal differences and roguing),
- the effect of different time periods between harvesting and chipping on chip quality
- different sweetpotato juice recipes



Mechanical chipping



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- different soap and animal feed recipes using by products from sweetpotato chipping and/or juice making
- different relish recipes using sweetpotato leaves
- use of oxen for ridging
- different packaging techniques for sweetpotato products



Making planting ridges using oxen



AESA taking of sweetpotato learning plot



Open sun drying of sweetpotato chips



Orange fleshed Sweetpotato juice



Orange fleshed sweetpotato crackies



Orange fleshed sweetpotato doughnuts

All the FFS held field days promoting their activities, during which farmers displayed the different products and demonstrated the practices learnt in the farmer field school. Prizes were awarded to the winning groups.

In addition to the key practices that were adopted by farmers during the from this first pilot season, the 2nd season FFS participants also adopted: oxen ridging; sweetpotato composite flours; mechanical chipping; supplying of sweetpotato products such as doughnuts and crackies to local shop keepers and for sale to school children; linking with commercial millers in Kampala and Nairobi who buy the sweetpotato chips; increased awareness of the potential sweetpotato market clientele.

Extra curricula activities were similar to those that occurred during the first pilot season, one poem is shown below.



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FARMERS, FARMERS, FARMERS

What a responsibility we have
Fighters of food terrorism
Masters of environment and life resources
Judges of both domestic and wild life
Imagine life on earth lies in our hands

What then is the natural sentence?
Live positively with the environment
Cautiously utilise the surrounding to fight
Ignorance, Famine, Disease, Poverty and Disaster

Farmer Field Schools are our modern technology satellites
They are basic platforms for decision making
Our participation in the sweetpotato farmer field school is exemplary
We earned a golden skills prize
Indeed we are proud of it

It has won us admiration, interest and support of many
However it is endemic and yet it needs to reach many
Farmers are already repeating acts of others
Others becoming scientific and educators
Others processors and consultants, name it
But all these need diverse support
Please it is too early to wean us

Skillful farmers are becoming the pivot of community
Our desire is better living conditions
What a blessing to be a trained farmer
Bravo, CIP, NARO, NAADS, SOCADIDO, FAO, KARI, NALEP
Long live our Governments, long live the East African Federation

Drafted by Abuket FFS members, and refined by Sam Namanda

During the course of implementing the 2nd season sweetpotato FFS, a range of interesting other activities emerged, such as:

- 35 sweetpotato FFS graduates receiving further specialised training in quality sweetpotato processing following their development of a proposal that was funded by the NARO COARD DFID project;
- testing of different sweetpotato composite flour recipes in order to capture local preferences, and for sale and donation to internally displaced people camps in Soroti, Uganda;
- supply of 1 tonne of sweetpotato chips to Kirinyaga millers every fortnight by Gamalengo women processors who purchase OFSP roots from Kakamega FFS, following linkages made by Africa Now, Kisumu;
- monitoring of the role of orange fleshed sweetpotato products in sustaining the HIV positive/ AIDS afflicted persons in FFS pilot areas;
- ICRAF Kenya have been purchasing sweetpotato chips from FFS groups for animal feed formulations;
- CABI/KARI collaborative project has made use of the sweetpotato IPPM FFS curriculum and manual developed by this project to run further sweetpotato FFS in W. Kenya using the facilitators trained under this project to do so;
- conservation and multiplication of promising and popular OFSP varieties by FFS groups for on-farm testing, resulted in 9 tonnes of vines being sold to a collaboration of several organisations (e.g. Plan International, CIP, JEEP) for use by schools and sweetpotato farmer groups in Tororo district, Eastern Uganda;



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- Mr Richard Emanio (policy maker, FFS farmer graduate and promoter of sweetpotato FFS activities in Soroti district, Uganda) and Mr. Eugene Ekinyu (FFS graduate and sweetpotato processor) participated in the Terra Madre – World meeting of Food Communities organised by Slow Food in Turin, Italy from 23rd October, 2004 for 3 days;
- a paper titled 'Promotion of sweetpotato marketing and utilisation through improved chipping techniques: Evidence from Abuket Sweetpotato Processors Association, Uganda' was given at the 13th Symposium of the ISTRC (International Society for Tropical Root Crops –Africa Branch) African regional workshop held in Mombasa, Kenya 1st – 5th November, 2004;
- FFS graduate Eugene Ekinyu presented a poster on quality sweetpotato processing at the NARO 'Integrated Agricultural Research for Development – Achievements, Lessons Learnt and Best Practice' conference in Sept 2004;
- Abuket FFS group invited to attend the meeting with parliamentarians in Jinja town, Uganda to enable them to meet entrepreneurial farmer groups in the community;
- NAADS held a field day to which the Soroti FFS groups were also invited, and they won first prize for their achievements;
- it is notable that many other organisations are choosing to work with the existing SP FFS groups because of the skills they have developed;
- facilitators capacity and confidence was further enhanced through their exposure to other programmes activities and attendance at several workshops and meetings;
- the Kenyan FFS network has been formed to coordinate FFS activities;
- Kyere SP FFS association has been formed with the aim of training other groups and individuals in SP production and they are ambitious to take on other activities;
- linkages with NARS enabling the sweetpotato breeder to feel confident that he can send planting materials to FFS groups for multiplication and evaluation.

Activity 2.7 Monitoring of second season pilot FFS and pilot training of trainers from June 2003- Jan 2004.

The following areas were monitored from August 2003 to March 2004: FFS field activities from participants and other stakeholders perspectives; facilitators planning and field performance with particular focus on the farmer facilitators who were running FFS in pairs for the first time; linkages with other organisations and stakeholders; participants own sweetpotato activities at home. Sam Namanda, the project assistant, collected all the data himself. The tools used included:

- baseline questionnaire conducted with 12 participants from: both extension and farmer led FFS in Kakamega, farmer led FFS in Busia and Bungoma, both extension and farmer led FFS in Soroti;
- individual interviews with SP IPPM FFS participants (as per baseline questionnaire) and non-participants;
- individual interviews with six selected individuals who had been involved in the 1st pilot season SP IPPM FFS;
- individual interviews with policy makers and traders to seek their opinion about sweetpotato FFS activities in their respective locations;
- group evaluation process, discussions were held with SP IPPM FFS participants to assess the benefits, usefulness and applicability of the FFS approach;
- training schedules for facilitators (1 farmer led and 1 extension led FFS in Soroti; 1 farmer led and 1 extension led FFS in Busia and Kakamega; 1 extension led FFS in Bungoma);
- field data sheets to capture insect and disease development;
- AESA information collected by the FFS participants at each meeting included: crop growth performance; yield; pest, disease and natural enemy incidence;



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- annual planning and evaluation project workshop held in August 2004.

There was also informal collection of information from spin-off activities such as:

- sweetpotato processors in Kenya and Uganda;
- traders, intermediaries and retailers of sweetpotato roots in Kampala; tracking of roots from the Soroti field to the Kampala market and their subsequent dispersal;
- dissemination of FFS activities to non-pilot areas such as: Tororo, Uganda; Mwanza and Zanzibar, Tanzania; and Vihiga in Kenya.
- monitoring the role of different stakeholders including policy makers in scaling out the sweetpotato farmer field school approach;
- monitoring of sweetpotato processors training under COARD/DFID funded short course on quality sweetpotato processing, which included 35 graduates of previous SP FFS.

Activity 2.8 Evaluation of second seasons pilot FFS and pilot training of trainers during Feb/Mar 2004.

Following the collection of the data described in Activity 2.7, it was entered into spreadsheets and databases by the project leader and assistant from July 2004 onwards. The quality of the data was much better than that collected during the first pilot season as a result of changes to the data forms and recording procedures. As with the first pilot season each FFS group was also involved in a group evaluation exercise, the results of which are presented in Table 7.

The planning and evaluation III workshop was held in Busia, Kenya in August 2004. During this workshop (see Act. 1.6) the second pilot seasons SP IPPM FFS activities, learning and training curriculum were reviewed by the wide range of stakeholders present. Based on their own experience of the sweetpotato IPPM FFS and what had been learnt from the presentations and discussions during day 1 of the workshop, participants (working in three small groups) identified the key positive and negative issues related to the SP IPPM FFS, ToT, and learning activities/ curriculum. They developed realistic strategies for addressing each of the negative issues raised and preventing them from reoccurring in future SP IPPM FFS. The positive and negative issues identified by the participants are shown in Tables 8 and 9.

The training of trainers course evaluation is described in Act 3.2, the pilot FFS themselves also act as 'on the job' ToTs for farmer facilitators.



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Table 7. Summarised group evaluation of the benefits, learning process and applicability of SP IPPM FFS process during 2003/04 (Responses from different FFS were combined)

	+ve	-ve
What were the benefits from participating in the sweetpotato farmer field school?		
	<ul style="list-style-type: none"> • Learnt the importance of pest and disease identification and management and it was well understood. Used to think that the crop was burnt but didn't knowing that it was diseased. Accessed varieties resistant to pests and diseases • Learnt good management practices including weeding, disease and pest management • Pest control using natural enemies was interesting • Knowledge has improved yields • Spacing well learnt • Learnt that OFSP can provide vitamin A for improving on eyesight. OFSP introduction was good, e.g. SPK004 are good for Vit A. Used to neglect the yellow and orange-fleshed varieties. • Learnt improved method of planting- We used to plant sweetpotato in the traditional way which does not give high yields and a lot of losses through pests used to occur. Triangulation method of planting 3 vines per mound gives high yield. Learnt how to ridge. Planting on flat ground is not good. • Rapid multiplication is a good technique • Chance to learn product development • Vines are both manure and vegetables • Soil cracking is an indicator of possible infestation of roots • Rather plant a small plot and get high yield than a big one • Can set up a small plot at home the way he learnt at school to maximize root yield • Grateful to FFS for the good lessons and bringing us visitors • Have gained techniques of improving on yields and storage • Have learnt processing and value addition into pancakes • Sweetpotato leaves are a vegetable • Sweetpotato is a food security crop • Seedbed preparation excited me • Storage of fresh roots was very good • Good methods of planting and can produce enough to sell for money 	<ul style="list-style-type: none"> • Off-types in the trial gave low yields • Pest effects not well understood • Utilisation not well covered • Learnt the new method of planting and root storage but not yet internalized and seen the differences • Marketing is a problem • A lot of pest damage was realized due to delayed harvesting • Special topics should emphasise on unity and togetherness • Sweetpotato is not a venture
Learning process		
	<ul style="list-style-type: none"> • Attendance was good at the beginning but dropped later (a lot of absenteeism) • The learning could be transferred to other crops • FFS learning is popular to a wide coverage of areas • FFS process is participatory and issues are well understood • AESA is a good tool to understanding of insects and weeds • FFS is a good dissemination approach • Shyness has disappeared • Coming to FFS only once a week for 2 hours learning is not too long • This good learning could be taught to her children • Some of us had forgotten about learning but can 	<ul style="list-style-type: none"> • Learning process was long and conflicted with activities at home • Received highly weevil infested vines for planting from Buganda • Need more meetings with the project • Dropouts and latecomers were common due to some participants commuting from far • No money provided for own activities at home • The learning is tiresome • Difficult to practice measuring • Main issue is that we have not practiced



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	<p>now teach others</p> <ul style="list-style-type: none"> • Facilitator was patient and jolly even when we came late • Performing group dynamics and method of nursery planting were interesting • Taking measurements helps us to be systematic and planting according to type without mixing • Learning has been completed and has shown him how to plant food • Drawing and measuring is okay for progressive assessment of crop performance • Achieving good production requires patience • Monitoring of crop performance is good approach to crop management • Learnt how to control pests in the field • Techniques that are easy should be devised • Evaluation process indirectly reveals that everybody should be learned • Learnt useful skills such as measuring • The training followed the life cycle of the crop therefore professionally covered • Flexibility in programs to absorb emergencies • Learning was good because most of us have never practiced such skills of observation and recording • Applicable to adult people and was participatory (facilitation was the basis) • Have had chance of hosting good visitors 	<ul style="list-style-type: none"> • FFS process is demanding • The training was very intensive and AESA was tedious • The harvested roots were weevil-infested which discouraged the participants because they realized that they had wasted their energy • The learning period was too long • The training was even short considering that post-harvest and marketing were part of the training • There is a lot of work to be done at home than what is done at school • Learning has not emphasized on certain skills such as cake preservation and juice making • Missed some lessons due to lack of attendance • More facilitation requested • Members are not active in participating • Starting with prayer before field creates delay and laziness • FFS has come to the village and out of 36 weeks 26 have been covered • Details such as measuring vines are involved which makes the learning tedious and more technical for those who cannot read and write • Time management within the group was poor because of late reporting and lessons could go beyond scheduled hours • Training is not seriously reflected in the graduates because of lack of commitment • As adults, weekly routine reporting is a stress to other commitments • Receiving cash besides is one of the expectations from participants
How are you able to apply the information that you have learnt during the FFS at your own field?		
	<ul style="list-style-type: none"> • Conserving vines in the swamp • Triangulation method is good • Knowledge is applicable and already in practice • Already selling her own sweetpotato and food security has been enhanced • Has learnt the importance of hilling-up, pest and disease management. Hilling -up reduces weevils • Understood what to do at his place • Curriculum covers skills • New technologies were good • Ridges help in soil conservation • Accessed early maturing varieties • Sweetpotato can be transformed into a commercial crop • Earned income in the school • Convinced to allocate sweetpotato to a fertile area of their field • AESA could be done since it covers the entire crop growth stages up to harvesting • Good grasp and confidence has been gained 	<ul style="list-style-type: none"> • Ridges cannot be practiced well in sandy soils • Planted 2 vines and were scorched by sun • Farmers are not likely to use small plots because they will try to commercialise • Requests more learning on ridges • Measuring is time consuming • More is required to implement the practices and steps learnt • At school we were working as a group for AESA taking but at home you are alone • Without school going children, AESA cannot be kept on individual farms since a lot of activities pre-occupy the farmer • Inadequate planting material for good varieties • Feels the knowledge gained cannot be practiced individually due to unpaid member contributions • Ability to learn and practice varies • Intermittent attendance due to absenteeism affected learning and applicability



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	<p>through FFS training</p> <ul style="list-style-type: none"> • Learnt planting, weeding and leaf measurements of vegetation was the most useful component • The learning has provoked us to help the community especially by feeding Vitamin A for eye health as a vegetable • Good variety introductions • Grateful for practical learning in school and has started planting at his home • Her own field has earned her KSH 800 and harvesting not completed • Spacing well learnt. Planted 2 rows each 20m long which she ate and sold KSH 200 • Use of sweetpotato leaves as a vegetable has been adopted • Can plant a small plot as done in FFSs 	<ul style="list-style-type: none"> • Knowledge is applicable but there is no land • Misunderstandings within family hinders applicability • Has not been observant of the changes in the field with FFS
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Table 8. Positive issues from the sweetpotato IPPM FFS 2nd pilot season

Group 1	<p>70% of farmers practice what they learnt from FFS at home Commercialisation of vines, boosted household incomes SP leaves used as a source of vegetables SP products e.g. juice etc Farmer experimentation Adaptive research Improved income opportunities for FFS participants Created awareness on importance of OFSP Farmer linkages within and outside countries New skills on storage facilities developed FFS special topics result into behaviour change e.g. HIV/ AIDS Improved levels of technology adaptation</p>
Group 2	<p>Farmers adopted utilisation/ processing and other management techniques Increased access of planting materials through rapid multiplication techniques Farmers empowered Created entry point for other programmes Increased skills & knowledge of farmers & technical people on SP management & utilisation Increased production especially of OFSP varieties at farm level</p>
Group 3	<p>Gives recognition of importance to previously unrecognised crops (sweetpotato) Linked farmers, extensionists and researchers Has brought in new and higher yielding varieties and these varieties were in KARI but farmers accessed them through FFS Encouraged farmers to work in a cohesive group making them more recognised Promoted knowledge build up about the crop Provides entry points for other players KAR-CABI-FFS Creates space for people from East Africa to come together & share experiences</p>



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Table 9. Negative issues from the sweetpotato IPPM FFS 2nd pilot season and strategies for preventing their reoccurrence

	Negative issues	Realistic strategies for addressing these negative issues
Group 1	<p>Absenteeism by members High expectations from members</p> <p>Competition with other extension programmes e.g. NALEP in Kenya & NAADS in Uganda Lack of sustainability measures</p>	<p>Proper groundwork during group formation to prevent unrealistic expectations and reduce absenteeism Collaboration to reduce duplication and competition Link FFS to other actors e.g. national extension programmes, NGOs Commercialisation of FFS activities in order to support a revolving fund Strategy to increase awareness of the effectiveness of FFS amongst policy makers</p>
Group 2	<p>Too many burials Absenteeism Late coming Drop out High expectations Low participation of men Low facilitation morale</p>	<p>Strengthen group dynamics Harmonize expectations Gender sensitivity Strengthen linkage to markets</p>
Group 3	<p>Some varieties not resistant to drought or sweetpotato weevil Drop outs</p> <p>Need to strengthen the linkages (Research/ Extension/Farmer) Low levels of technical backstopping</p> <p>Less involvement of men</p> <p>More sensitisation about potential for sweetpotato as a commercial crop Limited coverage (geographical area and no. of groups) No facilitation for the district Limited exchange visits & exposure Limited external facilitation</p>	<p>Increased and timely payments Early planting, disease and pest management techniques to reduce pest/ disease incidence Level & clarify objectives & expectations as early as possible and keep reminding the farmers Carry out effective & adequate ground working to minimise on drop outs Regular visits by technical (extensionists & researchers) people to backstop facilitators Provide adequate funds to extension and researchers for backstopping Arrange & conduct exposure visits</p> <p>To encourage men, integrate commercial oriented activities in addition to production & marketing At least five FFS per district for impact Provision for funds for external facilitator Linking to other resource people as ext facilitators for relevant & special topics</p>

Outputs 3: National cadres of trainers trained (20 per project site).

Activity 3.1 Pilot training of trainers (20 per site) (on the job consecutively with second season pilot FFS) from June 2003 to Jan 2004

As mentioned under activity 1.5, the initial master trainers (7 extension staff (2 from NE Uganda, 3 from W Kenya and 2 from NW Tanzania) and 1 NGO staff member from SOCADIDO, Soroti, Uganda who then shortly left for further study) were trained during a tailor made sweetpotato IPPM ToT course at Namulonge in June 2002. These master trainers acted as facilitators for the first pilot season sweetpotato IPPM FFS, following which talented graduates of the FFS were then selected to become farmer facilitators for the second pilot season. These 12 farmer facilitators (4 from Uganda, 8 from Kenya, 4 were also selected from Tanzania but did not manage to attend the ToT or run FFS in the 2nd season) were then given additional training to the season long field schools they had participated in, during a one week sweetpotato IPPM ToT course as Namulonge in April 2003. In the second pilot season both the master trainers (the extension facilitators) and the farmer facilitators ran sweetpotato IPPM FFS. The farmer facilitators worked in pairs, with two of them facilitating each field school, the project assistant and their local master trainer helped with backstopping and support when necessary. During this second pilot season 15 talented graduates of these sweetpotato IPPM FFS were again identified as further potential farmer facilitators for new sweetpotato IPPM



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FFS. These individuals will receive a further one weeks training in-country from the master trainers prior to starting to facilitate sweetpotato FFS in pairs. The project assistant and master trainers will be available for backstopping and support during this third year (2005/2006), during which additional potential farmer facilitators will be identified. There is huge demand from farmers and extension systems who participated in these FFS for further training opportunities to enable the facilitation of more SP IPPM FFS, and particularly more farmer run FFS as has already begun to happen in Kenya and Uganda through the pilot SP IPPM FFS. The future of FFS in the region lies in the hands of these skilled farmer facilitators who are not only trusted by their colleague farmers but are also highly experienced and committed. Further support to build both the competence of more of these farmer facilitators and to cover the running costs of the FFS they will facilitate is needed.

Activity 3.2 Participatory monitoring and evaluation of training-of trainers.

Details of the process of participatory development of the sweetpotato IPPM ToT course are given under Activity 1.5. In addition to the review of the course content during the annual planning and evaluation workshops, the participants were also asked to evaluate the course at the end of it. A summary of their comments for both years ToT course are given below:

Participants evaluation of the 1st seasons ToT for master trainers (extension staff already familiar with FFS methodology)

- The practicals were very enjoyable, e.g. we can now distinguish SPVD from Alternaria disease, the farmer we visited knew so much about the different varieties, seeing how sweetpotato roots can be stored, what products can be made from the roots etc.
- Pests and diseases were well covered and this has been a major problem in the field
- A lot of topics were covered within a very short time, but were well understood
- It was too theoretical
- Need more information on the different sweetpotato varieties
- More information on processing and product development needed
- Seed production collection and propagation of planting material well explained and can even be tried at village level
- Sweet potato agronomy, mineral nutrition, seed multiplication. Very fundamental to sweetpotato production. Needs to be backed up with good notes
- Post harvest management, the course was interesting especially to find that almost only women handled this as a sign that even in the families it is the women who are concerned with post harvest handling. This will popularise sweet potato production especially in the light of exploring new avenues for sweetpotato consumption and eventually increased vitamin A intake.
- The best of all and most interesting issue was the tissue culture facilitator
- Facilitators were well organised
- Staff showed cohesiveness and competence in their work
- The handouts given following each lecture were useful
- All materials needed were available, suggesting timing and organisation was good
- Invitation letter should contain a map of how to reach the training location
- Accommodation was comfortable (easy to sleep, good food and warm water for washing, although towels should be changed after every two days) and all staff were hospitable
- Course was too short

Participants evaluation of the 2nd seasons ToT for farmer facilitators (graduates of 1st pilot season FFS) and refresher course for master trainers

- Farming as a business needed more time and it should be tackled to meet grass root situation, it was too advanced for farmers and had no practical session
- Practical sessions were the most interesting
- A certificate of attendance should be issued to all those who participated in the course which would act as good proof to our FFS



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- I found it so interesting to learn about sweetpotato and how to make mandazi, chapatti, crisps, biscuits and cakes
- The program was very good because we have learned many things about sweetpotato. I hope we will be good facilitators because we know about diseases.
- Sweetpotato variety development facilitator demonstrated very well how you can get a new variety from two old varieties
- I learnt a lot practically about sweetpotato pests and their management and sweetpotato processing
- the experimental design topic needed expansion
- the facilitators lectured very keenly to make sure everyone had understood
- post harvest topics both theory and practicals were handled well as were the pest management and agronomy topics
- disease topics were handled shallowly both theory and practicals
- enjoyed visits to NARO Kawanda and the host farmer
- out of pocket allowance was very small
- meals were not served on time, insufficient entertainment facilities in the hall
- catering station was well taken care of
- mosquito nets should be provided in hotel
- a recreational tour should have been included in the schedule

The above comments were echoed during the workshop review of the ToT, and during group work some strategies were suggested to help address the negative issues raised. Those developed following the 2nd pilot FFS season are shown in Table 10.

Table 10. Summary of the negative issues experienced during the 2003 ToT and strategies that were suggested for addressing them

Negative issues	Realistic strategies for addressing these negative issues
Content too technical for farmer facilitators and language needed to be simplified Not realistic to mix farmers & extension staff in training (farmers often left behind)	Develop a less technical ToT and manual for farmer facilitators, farmer facilitators could be trained by master trainers in their own countries to avoid language problems
Practicals were not allocated adequate time. The training was very theoretical.	Revisit the ToT programme to ensure more time is spent on practical learning activities.
Farming as a business and facilitation skills were poorly taught	SOCADIDO to provide FAAB training Separate 5-7 day course on facilitation skills, group dynamics and team building, need to identify a good facilitator
Short duration of course	Increase training duration to at least 10 days (compare with FAO IPPM maize which takes 3-6 months)
Post-harvest training period at Kawanda was too short, only ready made products were shown to the extension facilitators during their refresher course	Training period could be extended if budget is available, participants are keen to increase the proportion of the course spent doing practical learning activities
Training on experimental design needs further explanations, it was taught in a rush	Practicals to be included in the experimental design module
Out of pocket facilitation was not realistic.	

Although the project assistant regularly visited all the field schools and helped with technical backstopping, there were also suggestions that it might be good for some of the tutors from the ToT to occasionally provide backstopping if the budget could support it.

Facilitators were asked to keep training schedules for each session, each schedule had three sections, the plan, the implementation and the evaluation (from both the facilitators and the farmers' perspectives). Unfortunately the potential value of this information is less than originally anticipated as most facilitators found the forms too time consuming to fill in carefully with any degree of detail, many appeared to find it difficult to critically analyse their own performance in order to improve their future facilitation.



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Output 4: Sweetpotato ICM FFS modules institutionalised into large-scale FFS implementation programs by national extension systems and follow-up plans for scaling-up developed.

Activity 4.1 Development of large scale program proposals with national programs from June-Sept 2004.

In the planning and evaluation workshop II in Mar 2003, the project team took advantage of the wide range of stakeholders present to discuss opportunities and strategies for scaling up, given that the project only had funds to work on a small-scale in W. Kenya and N.E. Uganda and only for a total of three years. The participants worked in small country groups to discuss and develop plans for scaling up opportunities and strategies, these were then shared with the whole group, reviewed and followed by a discussion of regional and greater scaling up opportunities (Table 11).

Table 11. Scaling up opportunities and strategies for the sweetpotato IPPM FFS in East Africa and elsewhere developed during Workshop II in March 2003

Country/ region	Opportunities/ Strategies
Uganda	
Opportunities	<ul style="list-style-type: none"> • NAADS – encourages commercialisation • Farmer groups for multiplication and production of sweetpotato planting materials (especially OFSP) • District farmer association as umbrella organisation of farmer groups • Market opportunities – processors, schools, others – exports, urban (the Vitamin A link has stopped sweetpotato being perceived as a poor mans diet) • Research institutes, CBOs, NGO's for backstopping • More master trainers in addition to the natural multiplier effect, especially as sweetpotato is becoming an important political issue
Strategies	<ul style="list-style-type: none"> • Planting materials, FFS or individuals • Consolidate NAADS linkages to markets and processors use of their technical support fund to help • Exploration/ identification of diverse markets • Sustainability: <ul style="list-style-type: none"> – Fundraising; proposals; integration with existing programs; sensitisation through mass media (posters, radio, newspapers)
Kenya (due to large numbers, Kenyan participants were split into groups A and B)	
Group A	<ul style="list-style-type: none"> • More farmer led FFS, suggestion of 5 FFS per district (=15 FFS) • 2nd cycle extension staff led FFS 1 per district (=3 FFS) • More TOT' for staff especially IPPM facilitators and farmer facilitators • Rapid multiplication of planting materials in graduate FFS • Institutionalisation of the orange fleshed sweetpotato and other varieties • Collaboration/ partnership to be increased • Value adding strategies on sweetpotato • Create awareness on market opportunities • Change of attitude towards sweetpotato • Change of eating habits (promotion of consumption) • Planting material conservation mechanisms • Increased funds for SP activities
Group B	<ul style="list-style-type: none"> • Sensitise the community on orange fleshed SP through: <ul style="list-style-type: none"> – Barazas (community meetings); special topics in FFS; field days • Increase availability of planting materials through bulking (on farm) by: <ul style="list-style-type: none"> – NGOs; CBOs; farmer groups; individuals farmers • Processing (adding value to product) • Exchange visit of stakeholders • Use the primary focal areas (FFS) as starter points for scaling up • Need for scaling up information e.g. pamphlets, leaflets, radio programmes
Tanzania	
	<ul style="list-style-type: none"> • There is already existing work going on with 4 SP ICM FFS groups without assistance from the on-going project • Expansion to 8 SP ICM FFS groups (4/AEZ) in year 2 • Additional training for other 4 facilitators to facilitate 8 new groups • SP ICM FFS groups can be a good source of planting material especially new varieties • Introduction, testing, evaluation and dissemination of OFSP varieties in all AEZ • Organising, promotional activities on the use of OFSP through the FFS in the district



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	<ul style="list-style-type: none"> • Production of OFSP for home utilization and commercialisation • Processing and product diversification of SP • Sensitisation of local government leaders, policy makers and NGO's e.g. PARTAE, welcoming them to FFS sessions • Expand SP IPPM FFS activities to other regions where sweetpotato is very important as a food crop
East African region and elsewhere	
	<ul style="list-style-type: none"> • Regional exchange programs to share experiences • Newsletters produced by the project (~ every 6 months, although there would be budget implications), feed into specific uptake pathways, FAO FFS are thinking about a national/ possibly regional FFS newsletter we could feed into that • Project website (need to check with CIP Indonesia re progress and access, then add links to the PRAPACE website) • Regional workshops like this one to share experiences • Use of the technical manual in other countries • Increased involvement of private sector in projects w/shops and field days • Increased involvement of Kenyan Agricultural Research Institutes (KARI) and Tanzanian Agricultural Research and Development organisation (ARD) • Involvement of equipment fabricators • Other networks to link with: <ul style="list-style-type: none"> – VITAA initiative – EAFSRE (East Africa Farming Systems Research and Extension Network) – ISTRC (International Society for Tropical Root Crops – Meeting in Tanzania, 2003) – FOODNET • NGOs with regional presence: <ul style="list-style-type: none"> – Catholic Relief Services (CRS); World Vision; CARE; UNICEF; Africa Now; Action Aid; SASAKAWA Global 2000; Red Cross; Save the Children; RELMA (Regional Land Management); Africare; Biotechnology Trust Africa (BTA)

The scaling up discussion also highlighted the fact that:

- Sweetpotato was still predominantly seen as a women's crop, thus there was an opportunity for gender sensitisation work
- FFS are becoming sustainable in their own right in some areas
- The existing extension systems are taking up the farmer field school approach in many areas in the region and could benefit from the sweetpotato materials, approaches and activities already developed by this project
- District level extension staff could encourage appropriate NGO's in their districts to get involved and play a role in scaling up
- The FAO IPPM FFS plan to use a revolving fund model in phase 2 (due to start June 2003 but delayed until 2005), from experience they have seen that revolving funds work best when used by already established FFS (who have worked together for at least one season) not newly formed FFS. The farmers usually set up an enterprise project such as a commercial plot (which may not be the same crop as they are focusing on in the FFS) to help generate funds so they can payback the initial loan given to support the FFS season long costs
- In Kenya, they have a farmers district network, which has monthly meetings, these could be used to help pass on information

At the planning and evaluation workshop III in August 2004, realistic scaling up opportunities were presented by different stakeholders. From these presentations, ten scaling up strategies were identified (Table 12) and using a scoring system four of these were chosen as priority strategies (Table 13) preliminary plans were then developed for each strategy.

Table 12. List of ten key scaling up strategies for SP IPPM FFS

1. Working with established NGOs or other organisations (e.g. feeding programmes) who will be able to continue the activities post project
2. Working with Government extension system and lobby them and policy makers to get them to use their budgets to support FFS approach including SP
3. Revolving fund approach to enable continuity (by pushing the business enterprise side (e.g. vines, processing), linking to soft loan providers (microfinance institutions)) but need to specify in detail from the setting up of the field school
4. Promoting processing and utilisation of SP and linking to markets to encourage demand for SP and as a result SP IPPM FFS using farmer facilitators
5. FFS networks and associations to form an umbrella organisation that others could link to



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6. Proposal writing (from different actors, e.g. FFS farmers, extension staff, researchers) to other interested donors to support more SP IPPM FFS
7. Dissemination and promotion of the manual, the TOT, curriculum and approach within SSA
8. Linking to educational institutions and supporting the inclusion of SP IPPM FFS into their curriculum
9. Identification of stakeholders and then who does what in the scaling up approach
10. Linking with research to provide farmers with clean planting materials

Table 13. List of the four prioritised key scaling up strategies for SP IPPM FFS from the above ten, that were then developed further by the workshop III participants (numbering relates to above table)

4. Promoting processing and utilisation of SP and linking to markets to encourage demand for SP and as a result SP IPPM FFS using farmer facilitators (*also to incorporate 5*)
3. Revolving fund approach to enable continuity (by pushing the business enterprise side (e.g. vines, processing), linking to soft loan providers (microfinance institutions)) but need to specify in detail from the setting up of the field school (*also incorporate 5*)
6. Proposal writing (from different actors, e.g. FFS farmers, extn staff, researchers) to other interested donors to support more SP IPPM FFS
1. Working with established NGOs or other organisations (e.g. feeding programmes) who will be able to continue the activities post project (*also to incorporate 10, 8, 2*)

Activity 4.2 Final stakeholder workshop, scaling up of sweetpotato IPPM FFS activities plans finalised by end of Nov 2004.

The projects stakeholder workshop IV held in Soroti, Uganda from 9-10th March 2005. This workshop was planned in order to achieve the following objectives:

- to familiarise (including sharing of success stories) a wider range of stakeholders with SP IPPM FFS
- to understand opportunities available amongst these stakeholders to integrate and disseminate SP IPPM FFS
- to review and finalise the scaling up plans

The workshop was attended by 56 stakeholders (25 of whom were Ugandan sweetpotato IPPM FFS participants who opened the workshop with a display of songs, dances and poems which they had developed in their sweetpotato IPPM FFS, and then exhibited and sold sweetpotato products, including composite flour mixtures for porridge, doughnuts, crisps, soap and juice, they stayed and participated in the first day of the workshop).

Those attending were satisfied that a strong field-tested SP IPPM FFS curriculum and manual for sub-Saharan Africa now exists and spent the second day of the workshop making detailed plans of how their own organisations are going to include sweetpotato IPPM FFS activities and approaches in their own programmes, and how they are going to provide feedback to the project and each other on their progress.

Two future training opportunities which organisations interested in integrating sweetpotato FFS into their own activities might wish to send their staff on were highlighted by the project, these are:

1. A 1 week ToT course on pre- and post- harvest aspects of sweetpotato crop management for farmer field school facilitators will be run at Namulonge in May 2005 (Contact person: Dr Robert Mwanga Mobile: 077 825725 E-mail: rmwanga@naro-ug.org)
2. Several 2 week training courses on farmer field schools will be run in Kenya and Uganda during the next few months (Contact person: Godrick Khisa, Tel: 056 30423/20494 Mobile: 0722 813719 E-mail: ffsproj@africaonline.co.ke)

The following organisations developed detailed plans for integrating SP IPPM FFS into their own programmes: NALEP - SIDA; FAO IPPM FFS Phase 2; REFSO; Provincial Administration (Bungoma district); TESO Media Association (TEMA); BUCADEF; TEDDO; NAADS; Soroti District Local Government; World Vision Uganda (WVU); JAF; SOCADIDO.



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In Uganda, NAADS recognises the important role that the existing FFS groups have played in their own activities, and those NAADS representatives present at the workshop were keen to use their funds to increase the number of service providers familiar with the FFS approach so that more of their contracts can be delivered using this successful approach. It is unfortunate that under the current guidelines farmer facilitators no matter how skilled, would not be able to win NAADS contracts to deliver training, although it is possible they could be hired to do the training by a successful service provider firm.

In Kenya, FFS is rapidly becoming the main national extension approach and as result there is strong demand for those curriculum, materials and facilitators that have been carefully developed during projects such as this one.

In Tanzania, FFS is now one of the main national extension approaches being developed, and is also being supported by FAO, the use of the approach has now spread well beyond the original geographical area of NW Tanzania and there is demand for the SP IPPM FFS materials and skills developed by this project from Central, Southern Highlands and the Coastal zones.

Other examples of SP IPPM FFS scaling-up that have already occurred such as:

- dissemination of FFS activities to non-pilot areas such as: Tororo, Uganda; Mwanza and Zanzibar, Tanzania; and Vihiga in Kenya;
- CABI/KARI collaborative project making use of the sweetpotato IPPM FFS curriculum and manual developed by this project to run further sweetpotato FFS in W. Kenya using the facilitators trained under this project to do so;
- GTZ funded mass dissemination of sweetpotato planting material project is adopting a farmer field school approach for its work in Tanzania, Uganda and Kenya and plans to use the curriculum and manual developed by this project;
- the FAO IPPM FFS programme in Tanzania has already supported the running of four extension facilitated SP IPPM FFS, and is keen now that the second phase funds have been released to support further SP IPPM FFS;
- the FAO IPPM FFS programme in Kenya is supporting additional SP IPPM FFS schools during the 2005/06 season;
- the newly approved 'Expansion of sustainable sweetpotato production and post-harvest management through farmer field schools in East Africa and sharing of the lessons learnt during the pilot schools' CPP funded project will support 34 SP IPPM FFS during the 2005/06 season as well as additional linked activities;
- the 'Increasing the utilization and value of sweet potato in East Africa' CFC proposal plans to use the SP IPPM FFS manual as an important training and reference resource;
- there has been significant demand for manual (even in its draft form) from other countries and researchers in SSA not directly involved in the project.

Activity B: Final project report writing during Feb/Mar 2005.

The project team have worked collaboratively on developing the different drafts of this final project report and are satisfied that the project has been fully documented and evaluated.

Outputs

Output 1. Location-specific protocols, manuals and materials for sweetpotato integrated crop management (ICM) farmer field school (FFS) developed and field-tested.

Three drafts of the sweetpotato IPPM FFS manual were developed, copies of each draft were given to at least thirty different stakeholders (farmer and extension facilitators, researchers, local government officials, extension staff, FAO staff, FFS coordinators and all project partners) and were field tested during the two pilot seasons of sweetpotato FFS. Comments from all the different stakeholders following their experience using each draft were collected at the annual planning/ evaluation workshops and were then incorporated or acted upon in order to improve the next draft. The final version is now ready for printing in Kampala, followed by distribution to more than 300 stakeholders. The manual is intended for use by field school facilitators be they extension staff, farmer facilitators or NGO/CBO staff



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facilitators. The final version includes sections on: background to FFS and facilitation skills; eight chapters on technical sweetpotato information from planting material selection and land preparation through to post-harvest processing, storage, alternative products, marketing, including information on experimentation; an example of a SP FFS learning curriculum; ideas for learning activities, examples of meaningful group dynamic exercises; examples of monitoring and evaluation forms and methods used by the project. A general sweetpotato farmer field school curriculum was developed at the beginning of the project, the facilitators have then adapted this to fit their specific schools circumstances and interests, amended versions of the general curriculum have been developed as the project team has learnt.

Output 2. Farmers trained in pilot sweetpotato ICM FFSs to manage their sweetpotato enterprise and produce profitably and sustainably by Jan 2004.

In the first two seasons of the project (June – Jan 2002/03, 2003/04) a total of 18 sweetpotato farmer field schools were run in NE Uganda and W Kenya, six of which were farmer facilitated, there were 492 participants, 322 of whom were women. Additional spin-off activities in NW Tanzania led to four extension facilitated sweetpotato FFS with 92 participants using the curriculum, manual and training developed by the project but with funding for the FFS running costs from FAO.

Output 3. National cadres of trainers are trained by Jan 2004

Seven extension staff were trained as master trainers for sweetpotato IPPM FFS (3 from Kenya, 2 from Uganda and 2 from Tanzania) through attending two technical courses at Namulonge Agricultural Research Institute in Uganda. Twelve farmer facilitators who had graduated from the first seasons field schools were trained at Namulonge, and successfully facilitated sweetpotato field schools during the second season. A further 15 graduates from the second season's field schools who would make skilled facilitators have been identified but due to the project only being funded to run two seasons of FFS, they have yet to actually run field schools themselves.

Output 4. Sweetpotato ICM FFS modules institutionalised into large-scale FFS implementation programs by national extension systems, CBOs, NGOs, and follow-up plans for scaling-up developed by March 2005.

A wide range of diverse stakeholders have been involved in the project since its start, and many of them have been brought together annually at the projects planning and evaluation workshops. A stakeholder workshop was held in March 2005, to which individuals from organisations with an interest in sweetpotato and food security in Uganda and Kenya were invited. The participants came with presentations on their plans for integrating sweetpotato farmer field school approach and activities into their own programmes, and these plans were then further developed by groups of participants during the workshop, and a feedback system to enable progress in achieving the plans was developed.

Contribution of Outputs to developmental impact

The project's outputs have already contributed to the chain of realisation of the project's goal which is stated as livelihoods of poor people improved through sustainably enhanced production and productivity of RNR systems, by:

- demonstrating that farmers are keen to be involved in sweetpotato IPPM FFS and can use what they learn through the FFS to improve their livelihoods in numerous ways including:
 - improved household nutrition as a result of growing, using and understanding about sweetpotato varieties with high vitamin A content that can help to address the serious vitamin A deficiency amongst young children and mothers in SSA,
 - sustaining the health of HIV positive individuals for whom Vitamin A also plays an important nutritional role. Additionally porridge made from the orange fleshed



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- sweetpotato composite flour appears to be attractive to seriously ill HIV positive individuals at a stage when they have given up eating other foods, and it appears to be important in helping them regain their appetite and strength;
- producing more sweetpotato using the techniques they have learnt in the FFS;
 - trialling different practices using the skills they have learnt for experimenting with different methods;
 - making more informed decisions as a result of understanding how to base economic decisions on evidence they collect about their own activities;
 - selling products they have made from sweetpotato such as mandazis (doughnuts), chapatis, juice, soap etc to help increase income opportunities and to encourage children to eat more OFSP;
 - linking to factories and setting up village level quality processing units that function as profit making businesses;
 - preserving planting material through the dry season to reduce the delay in planting at the onset of the rains, to improve the health of the crop grown through selection and use of disease and pest free healthy planting material and to earn income by selling planting material of popular sweetpotato varieties to other farmers at the onset of the rains so that they too can try and avoid delayed planting;
 - producing, trialling, refining and donating sweetpotato composite flour to internally displaced feeding camps around Soroti, following the LRA insurgency;
 - increasing their self esteem;
 - reducing their domestic disputes and the risks associated with them as a result of women having: more control over household food security; more opportunity to produce a range of foods that attract their partners home instead of heading to drinking points; their own income opportunities from selling sweetpotato products; access to soap to help them keep their homes, selves and clothes clean (Gamalengo women processors group, pers. comms).
- producing a learning curriculum that has been field tested over two crop seasons in three different countries in East Africa;
 - producing a sweetpotato farmer field school manual for sub-Saharan Africa for which there is already substantial demand;
 - developing a regional sweetpotato IPPM training of trainers (ToT) course which practically covers subjects from land preparation and planting material selection and conservation through to marketing, product diversification and storage issues;
 - basing the SP IPPM FFS learning curriculum, manual and ToT on all the isolated bits of research on sweetpotato that have been supported over the years but which ignored the fact that farmers rarely face only one constraint, and that the various constraints are often interrelated. These tools have brought together as wide a range of research findings as possible and promoted them in as holistic a method as possible through sweetpotato IPPM FFS in W. Kenya and N.E. Uganda;
 - training of a cadre of 37 sweetpotato IPPM FFS facilitators. There is huge demand from farmers and extension systems who participated in these SP IPPM FFS for further training opportunities to enable the facilitation of more SP IPPM FFS, and particularly more farmer run FFS as has already begun to happen in Kenya and Uganda through the project. The future of FFS in the region lies in the hands of these skilled farmer facilitators who are not only trusted by their colleague farmers but are also highly experienced and committed;
 - 67 other individuals in Tanzania have been initially inducted on the principles of FFS approach by the project assistant with the longer term aim of establishing sweetpotato IPPM FFS using funds from other sources such as GTZ and McKnight Foundation;
 - scaling up plans which will ensure wider scale continuation of the SP IPPM FFS and use of the manual;



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- other organisations are utilising their funding to implement linked activities elsewhere using skills initially acquired through this project and adding value to this project. For example involvement of local governments, other projects (e.g. DFID-COARD_in Soroti, NAADS programs (Busia and Soroti), Kenya- NALEP (Vihiga, Kisumu, Kakamega and Busia), TSAEE, DRD, and Ministry of Agriculture-Zanzibar in Tanzania);
- capacity building of participating FFS members in attracting and accessing additional resources e.g. Abuket FFS sweetpotato processors group in Soroti, Uganda successfully applied for funds from the DFID-COARD project to participate in a tailor made sweetpotato quality processing course, use of FFS participants by district councils to help raise awareness about other topics such as HIV;
- involvement of local government players in promoting sweetpotato IPPM FFS approach amongst their constituencies and in lobbying for funds to support further activities, and in linking the work to national level policy makers and local level programmes such as school feeding programmes;
- information about the project's activities has been disseminated using a number of different media, such as radio, posters at workshop and meetings, stakeholder workshops, local government meetings, linkages and networking with other agencies, written reports, papers and presentations given at conferences, full details of all the disseminations are given in Annex 2 of this report;
- In July 2004 DFID decided to extend its RNRRS research programmes for a further year, the project team developed a successful proposal titled 'Expansion of sustainable sweetpotato production and post-harvest management through farmer field schools in East Africa and sharing of the lessons learnt during the pilot schools' which built on experiences of this three year project and provides the opportunity to take what has been learnt during this time further. In brief this new 10 month project will in response to the significant demand:
 - support and run a further 34 SP IPPM FFS in N.E. Uganda (12), W. Kenya (16) and N.W. Tanzania (6), 24 of which will be extension facilitated and 10 of which will be farmer facilitated;
 - support the training of a further 17 master trainers (extension staff) and 20 farmer facilitators in SP IPPM FFS ToT courses, plus those farmer facilitators that will graduate from the above 34 SP IPPM FFS;
 - support the participation of >800 East African farmers in SP IPPM FFS
 - develop field leaflets on sweetpotato pests and diseases and processing and recipes based on the information in the manual but which are targeted to farmers and translated to Kiswahili, Ateso and Luganda for use in the field and at home;
 - develop and implement a small loan/ grant system for SP IPPM FFS farmer graduate groups to access funds through basic proposals to help sustain the enthusiasm the groups feel upon graduating and enable them to set up some of their schemes (e.g. groups want to process SP chips, multiply and sell vines, produce and market SP food products and often need start up capital);
 - monitor and support the progress of the scaling up opportunities identified with other organisations in order to encourage and inform the institutionalisation of the FFS approach which is beginning to happen amongst the national extension systems in the region;
 - write up of "Synthesis of lessons learnt from the pilot SP IPPM FFS" to share with other FFS stakeholders. As with any process there were problems surrounding the sweetpotato IPPM FFS, and the project has learnt from these lessons and devised solutions to reduce their impact or prevent them reoccurring in the future. The literature surrounding FFS is notable for its lack of criticism and failure to discuss common problems associated with FFS. The issues faced by project R8167 are not specific to sweetpotato FFS and the sharing of this information will help others involved in funding/ facilitating/ participating in or monitoring FFS to avoid repeating these mistakes.

Biometricians Signature



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I confirm that the biometric issues have been adequately addressed in the Final Technical Report:

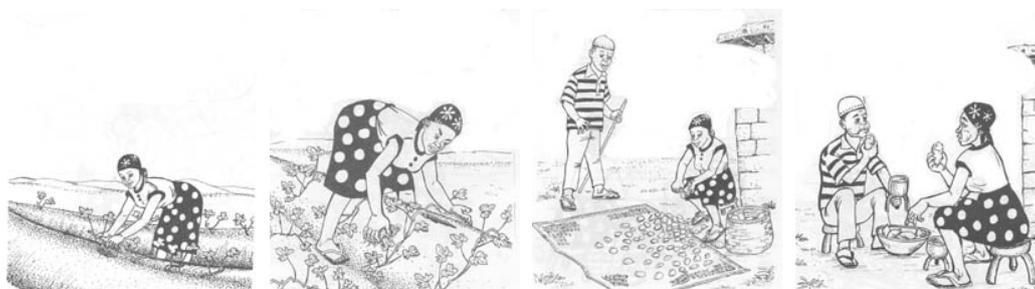
Signature: (see supporting email to be sent in early April)
Name (typed): Margaret Nabasirye
Position: Biometrician, Makerere University, Kampala
Date:



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Annex 1: Logical Framework

Promotion of sustainable sweetpotato production and post-harvest management through farmer field schools in East Africa
April 2002 - March 2005



Narrative Summary	Indicators of Achievement	Means of Verification	Risks and Assumptions
Goal			
Livelihoods of poor people improved through sustainably enhanced production and productivity of RNR systems.			
Purpose			
<p>Promotion of strategies to reduce the impact of pests in herbaceous crops in Forest Agriculture systems, for the benefit of poor people.</p> <p>Specifically to increase the returns from sweetpotato enterprise through improved production and post-harvest management by east African smallholders.</p>	<p>Strategies developed appropriate for use by the poor adopted and promoted by stakeholder intermediaries, for improved root crop production and post-production practices.</p> <p>Adoption of promotion strategies and implementation of learning programs for smallholder farmers by development programmes or community organisations.</p>	<p>Inspection of reports and publications by target institutions. Endorsement of outputs by development fora.</p>	<p>Target beneficiaries adopt strategies and practices.</p>
Outputs			
<p>1. Location-specific protocols, manuals and materials for sweetpotato integrated crop management (ICM) farmer field school (FFS) developed and field-tested.</p>	<p>1.1 Protocols (by April 2003) and draft manuals and materials (Apr 2004) for sweetpotato ICM FFS developed and field-tested. Final versions developed by Apr. 2005.</p>	<p>1.1 Inspection of: draft manuals and materials and details of changes suggested to them by FFS participants, project staff and other stakeholders; project evaluation reports; final manual and distribution list.</p>	<p>Stable political and economic enabling environment.</p> <p>Sweetpotato remains an important food and cash crop for producers in North-eastern Uganda and Western Kenya.</p>



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<p>2. Farmers trained in pilot sweetpotato ICM FFSs to manage their sweetpotato enterprise and produce profitably and sustainably by Jan 2004.</p>	<p>2.1 By end of Jan 2004, 500 farmers in N.E. Uganda and W. Kenya (10 pilot FFS per site @ 25 farmers) trained through sweetpotato ICM FFS and satisfied with their capacity to manage their sweetpotato crop profitably and sustainably.</p>	<p>2.1 Inspection of: field trial reports, FFS; minutes of farmer group meetings; project evaluation reports; interviews with FFS participants, project staff and other stakeholders.</p>	<p>Target institutions invest in uptake and application of research results.</p> <p>No serious changes in project team composition during the project lifecycle.</p>
<p>3. National cadres of trainers are trained by Jan 2004</p>	<p>3.1 Forty trainers from N.E. Uganda and W. Kenya (20 per project site) are satisfied with the ToT experience and understand the FFS approach and feel confident in their ability to facilitate FFS which will help participants increase the returns from their sweetpotato crop.</p>	<p>3.1 Inspection of: project evaluation report; interviews with trainers; feedback on their subsequent utilisation of their training.</p>	
<p>4. Sweetpotato ICM FFS modules institutionalised into large-scale FFS implementation programs by national extension systems, CBOs, NGOs, and follow-up plans for scaling-up developed by March 2005.</p>	<p>4.1 By March 2005, sweetpotato ICM FFS modules are integrated into FFS networks and the proposed 2nd phase of the IFAD funded IPPM FFS regional programme.</p>	<p>4.1 Inspection of: future workplans of FFS programs; copies of FFS curriculum from other FFS programs; and local government budgets for spending on FFS activities. Interviews with national extension policy makers.</p>	



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Activities			
<p>A: Orientation, networking and planning by mid April 2002.</p>	<p>A: Project team and partner institutions clear about purpose, expected outputs, and broad outline of activities, timeframe, budgets, linkages and responsibilities.</p>	<p>A: Copies of email discussions.</p>	<p>Farmers and partner organisations are keen to participate in SP ICM FFS.</p>
<p>1.1 Workshop with project team members, FFS facilitators, farmers, other stakeholders from research, extension and community development organisations in Uganda -end April 2002:</p> <ul style="list-style-type: none"> • to review ICM and post-harvest management components and compose technical content of FFS. • to develop curriculum and learning activities. • to plan pilot FFS implementation. • to identify mechanisms for scaling-up. <p>1.2 Write up of draft technical guidelines and draft FFS learning activities during May/June 2002.</p> <p>1.3 Workshop with project team to review first pilot season, curriculum, modules and technical guidelines in Soroti, Uganda in March 2003.</p> <p>1.4 Revise technical guidelines and field guides for learning activities in Mar/Apr 2003.</p> <p>1.5 Develop training-of-trainers (ToT) curriculum April 2003.</p>	<p>1.1 Project team members, FFS facilitators, farmers and other stakeholders (27 people) invited to workshop in Soroti, Uganda. Those attending are given a clear overview of the project and participate in and are satisfied with the FFS technical content, curriculum and learning activities and pilot plans developed. Mechanisms for scaling up developed by workshop participants with following up responsibilities developed.</p> <p>1.2 Project team has produced electronic drafts of technical guidelines and FFS learning activities in major local languages (Ateso, Luhya, Kiswahili and English) as appropriate by end June 2002.</p> <p>1.3 Project team members (10 people) invited to attend workshop in Soroti, Uganda. Those attending are satisfied that problems and lessons learnt during the 1st season pilot FFS have been highlighted and means of improvement agreed and developed and noted in the workshop minutes.</p> <p>1.4 Project team has produced and is satisfied with revised guidelines and field guides by end Apr 2003.</p> <p>1.5 Project team is satisfied with ToT curriculum developed using S.E. Asia model and E. Africa IPPM approach.</p>	<p>1.1 Inspection of: workshop invitations (1st week April); workshop participant list and minutes (end April); details of technical content and pilot plan of FFS; details of FFS curriculum and learning activities; details of suggested scaling up mechanisms; workshop report.</p> <p>1.2 Inspection of draft technical guideline and draft FFS learning activity plans.</p> <p>1.3 Inspection of: workshop invitations (Feb 2003); workshop participant list and minutes (Mar 2003); details of agreed improvements and responsibilities for action.</p> <p>1.4 Inspection of revised technical guidelines and field guides.</p> <p>1.5 Inspection of: correspondence on ToT curriculum development; final version of ToT curriculum.</p>	<p>Sweetpotato ICM practices provide farmers with knowledge, which can increase their returns from sweetpotato.</p> <p>Stable political and economic enabling environment allowing uninterrupted implementation of activities.</p> <p>All participating collaborators commit resources, mainly staff time, to monitor and execute the planned activities.</p>



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<p>1.6 Workshop in Mar 2004 with project team to review second pilot season, FFS and ToT curriculum, modules and technical guidelines, and to determine strategy for scaling-up.</p> <p>1.7 Finalisation of technical guidelines and learning activity field guides (manual) from Mar-Sept 2004.</p> <p>1.8 Printing and distribution of 500 manuals in Oct 2004.</p>	<p>1.6 Project team members (10 people) invited to attend March 2004 workshop in Soroti, Uganda. Those attending are satisfied that problems and lessons learnt during the 2nd season pilot FFS and 1st ToT have been highlighted and means of improvement agreed and developed and noted in the workshop minutes. Developments on original scaling up plans reported on and decisions on most appropriated strategies made.</p> <p>1.7 Project team has produced and is satisfied with final technical guidelines and learning activity field guides by end Sept 2004.</p> <p>1.8 Manuals containing technical guidelines and learning activity field guides sent to printers beginning Oct 2004, distribution list finalised and distribution mainly completed by end Oct 2004.</p>	<p>1.6 Inspection of: workshop invitations (Feb 2004); workshop participant list and minutes (Mar 2004); details of agreed improvements and responsibilities for action.</p> <p>1.7 Inspection of revised technical guidelines and field guides.</p> <p>1.8 Inspection of printed manual and distribution list.</p>	
<p>2.1 Preparation of pilot FFS and field studies (1 location/site). Preparation of monitoring and evaluation procedures May - Jun 2002.</p> <p>2.2 First season pilot FFS and field studies (1/site): FFS activities with existing FFS group, but field studies (on separate experimental plot) with selection of FFS participants conducted from June/Jul 2002 - Dec/Jan 2003 in W. Kenya and Soroti.</p>	<p>2.1 Project team satisfied all necessary preparations have been made for pilot FFS, field studies, monitoring and evaluation procedures by end June 2002.</p> <p>2.2 Fifty FFS farmers from W. Kenya and Soroti are satisfied with SP ICM activities by Jan 2003 and feel their involvement in the SP ICM FFS has given them the potential to increase their returns from SP production. Field study participants have successfully designed and conducted expts. and want to incorporate their new knowledge into their future practices.</p>	<p>2.1 Inspection of correspondence, lists and notes.</p> <p>2.2 Inspection of FFS plots and activities, field study expt. plots, trial data and reports. Interviews with FFS participants and partner institutions involved.</p>	



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<p>2.3 Monitoring and evaluation of first season pilot FFS from June 2002 - Jan 2003.</p> <p>2.4 First season monitoring and evaluation report writing during Feb 2003.</p> <p>2.5 Planning and preparation of second pilot season using revised curriculum which will also serve to train trainers (April 2003)</p> <p>2.6 Second season pilot FFS (9 pilot FFS/site @25 farmers) and field studies enabling farmers to plan activities and experiments based on findings of first season conducted from June 2003- Jan 2004.</p> <p>2.7 Monitoring of second season pilot FFS and pilot training of trainers from June 2003- Jan 2004.</p> <p>2.8 Evaluation of second seasons pilot FFS and pilot training of trainers during Feb/Mar 2004.</p>	<p>2.3 Ten FFS participants and partner institutions are satisfied the FFS ran according to plans and that they have utilised the opportunities to feedback on the process and outcomes in order to improve it in future.</p> <p>2.4 Project team has produced and is satisfied with 1st season monitoring and evaluation report by end Feb 2003.</p> <p>2.5 Project team satisfied that lessons learnt and problems identified during 1st season have been discussed and appropriate changes made for inclusion in 2nd pilot season by end April 2003.</p> <p>2.6 450 FFS farmers from W. Kenya and Soroti are satisfied with SP ICM activities by Jan 2004 and feel their involvement in the SP ICM FFS has given them the potential to increase their returns from SP production. Field study participants have successfully designed and conducted expts. and want to incorporate their new knowledge into their future practices.</p> <p>2.7 By Jan 2004, 450 FFS participants and partner institutions are satisfied the FFS ran according to plans, and ≥ 40 trainers feel confident in their ability to facilitate FFS.</p> <p>2.8 450 FFS participants, partner institutions, ToT participants and other stakeholders feel they have utilised the opportunities to feedback on the process and outcomes in order to improve it in future.</p>	<p>2.3 Observation of FFS activities and field plots, inspection of quarterly reports submitted to CPP, interviews with FFS participants, partner institutions and project team members.</p> <p>2.4 Inspection of 1st seasons monitoring and evaluation report.</p> <p>2.5 Inspection of revised technical guidelines and field guides.</p> <p>2.6 Inspection of FFS plots and activities, field study expt. plots, trial data and reports. Interviews with FFS participants and partner institutions involved.</p> <p>2.7 Observation of FFS activities and field plots, inspection of quarterly reports submitted to CPP.</p> <p>2.8 Interviews with FFS participants, partner institutions, project team members and other stakeholders. Inspection of evaluation report.</p>	
<p>3.1 Pilot training of trainers (20 per site) (on-the job consecutively with second season pilot FFS) from June 2003 to Jan 2004.</p>	<p>3.1 Forty trainers satisfied with ToT experience and feel confident in their ability to conduct SP ICM FFS by June 2004.</p>	<p>3.1 Inspection of monitoring forms and activity reports</p>	



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<p>3.2 Participatory monitoring and evaluation of training-of-trainers</p>	<p>3.2 Information available about process and impact of ToT for improvement of curriculum.</p>	<p>3.2 Interviews with trainers, inspection of their training evaluation reports and suggestions.</p>	
<p>4.1 Development of large-scale program proposals with national programs from June - Sep 2004</p> <p>4.2 Final stakeholder workshop, scaling up of sweetpotato ICM FFS activity plans finalised by end Nov 2004.</p>	<p>4.1 Stakeholders satisfied with plans for large-scale SP ICM FFS program proposal, and enthusiastic about its potential and practicality by Sept 2004.</p> <p>4.2 Stakeholders (35 people) invited to attend Nov 2004 workshop in Soroti, Uganda. Those attending are satisfied that an optimum and field-tested SP ICM FFS curriculum and manual now exist and are committed to supporting and putting the scaling up plans into operation.</p>	<p>4.1 Inspection of records of discussions and plans, interviews with stakeholders.</p> <p>4.2 Inspection of: workshop invitations (Oct 2004); workshop participant list and minutes (Dec 2004); details of responsibilities for action.</p>	
<p>B: Final project report writing during Feb/Mar 2005.</p>	<p>B: Project team satisfied that project has been fully documented and evaluated in their final report by end Mar 2005.</p>	<p>B: Inspection of draft and final versions of final project report. Interviews with project team members.</p>	



Annex 2: Dissemination details

Publications:

EKINYU, E. (2004) Steps in high quality production of orange-fleshed (Vitamin A) sweetpotato chips. Poster submitted to the NARO Conference on Integrated Agricultural Research for Development – Achievements, Lessons Learnt and Best Practice, Kampala, Uganda, Sept 1-4, 2004. [Presentation]

NAMANDA, S., KAPINGA, R., TUMWEGAMIRE, S., STATHERS, T.E. and VAN DE FLIERT, E. (in prep) Dissemination and promotion of orange fleshed sweetpotato varieties through FFS and VITAA partnerships: Experiences in Eastern Uganda. Draft paper for inclusion in proceedings of 13th Triennial Symposium of the International Society for Tropical Root Crops, 9-15 Nov 2003, Arusha, Tanzania. [Abstract, Presentation and Draft Conference Paper]

NAMANDA, S., STATHERS, T., KAPINGA, R., MWANGA, R., TUMWEGAMIRE, S., ORUKO, L. and OWORI, C. (2005) Promotion of sweetpotato marketing and utilisation through improved chipping techniques: Evidence from Abuket Sweetpotato Processors Association. ISTRC-AB Symposium, Mombasa, Kenya. 1 – 5 November 2004. 9 pp. [Presentation (7 slides) and Conference paper]

STATHERS, T.E., NAMANDA, S., KAPINGA, R., KHISA, G., THOMAS, J. and VAN DE FLIERT, E. (in prep) Promotion of sustainable sweetpotato production and post-harvest management through farmer field schools in East Africa. Abstract submitted to 13th Triennial Symposium of the International Society for Tropical Root Crops, 9-15 Nov 2003, Arusha, Tanzania. [Abstract, oral presentation, draft conference paper]

Internal Reports:

AKELLO EKINYU, C. (2005) Abuket sweetpotato growers and vine multipliers (ASPOGAVM): Report on Sweetpotato ICM training and challenges encountered, achievements gained and gaps to address. International Potato Centre (CIP), Kampala, Uganda. 11 pp.

EKINYU, E. (2004) One week in the brotherhood of 'the colours of mother earth food communities'. Report on the Terra Madre World Food Community Meeting, Turin, Italy, 20-23 October 2004. 7 pp.

MWANGA, R.O.M. (2002). Report of the training of trainers and curriculum development on integrated pest and production management (IPPM) for sweetpotato farmer field schools (FFS) in East Africa, Namulonge Agricultural and Animal Production Research Institute (NAARI), Kampala, Uganda 9-15 June 2002. International Potato Center, Kampala, 19 pp.

MWANGA, R.O.M. and NAMANDA, S. (2003) Report of the Second SP IPPM FFS Training of Trainers course at NAARI, Kampala from 28 April to 2 May 2003. Namulonge Agricultural and Animal Production Research Institute (NAARI), Kampala, Uganda. 59 pp. [12 farmer facilitators and 5 master trainers from Uganda and Kenya]

NABASIRYE, M. (2003a) Report on Biometric Support to the Promotion of sustainable sweetpotato production and post-harvest management through farmer field schools in East Africa project for the period of Nov 2002 - June 2003. Makerere University, Uganda, 5 pp.

NABASIRYE, M. (2003b) Summary Report on Training Session on Experimental Design, Data Collection and Analysis, held at Namulonge, 1 May 2003. Makerere University, Uganda, 3pp.

NABASIRYE, M. (2003c) Experimental Design, Data Collection and Analysis training for farmer facilitators and master trainers of sweetpotato integrated pest and production management farmer field schools in East Africa. May 2003, Makerere University, Uganda, 12pp.

NAMANDA, S. (2002) Review of SP IPPM FFS activities in Soroti and the sustainability of FFS activities in the district, Soroti flying school, Uganda, 4th Oct 2002. [Workshop] [English]

NAMANDA, S. (2003) Brief notes on preliminary meetings of new SP IPPM FFS in Soroti district, N.E. Uganda and initial needs assessment discussions from 17-21/5/03. 9pp.

NAMANDA, S. and TUMWEGAMIRE, S. (2003) Trip report to Tanzania SP ICM FFS. CIP, Kampala, 5pp.

OKOTH, J. (2002). Briefs on the Sweetpotato ICM FFS Implementation/Consultative Meeting 1. Soroti Civil Aviation Academy, Uganda, 14 July 2002. International Potato Center, Kampala, 2 pp.

STATHERS, T., NAMANDA, S., MWANGA, R., KHISA, G. and KAPINGA, R. (2002-2005) R8167 Project Progress Reports. Natural Resources Institute (NRI), Chatham, UK. [A series of project progress reports for submission to the Crop Protection Programme written in September and January of each project year.]

STATHERS, T., NAMANDA, S., MWANGA, R., KHISA, G., KAPINGA, R. and NABASIRYE, M. (2003) R8167 2002/03 Annual Report. Natural Resources Institute (NRI), Chatham, UK. 1pp. [Annual report for submission to the Crop Protection Programme]



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STATHERS, T., NAMANDA, S., MWANGA, R., KHISA, G. and KAPINGA, R. and NABASIRYE, M. (2004) R8167 2003/04 Annual Report. Natural Resources Institute (NRI), Chatham, UK. 1pp. [Annual report for submission to the Crop Protection Programme]

Other Dissemination of Results:

AGRICULTURAL CORRESPONDENT (2003) Two radio talk shows were held by the Soroti district local councillors on the Voice of Teso radio station on 19/8/02 and 20/8/03. [Radio talk show] [National, Uganda]

AGRICULTURAL CORRESPONDENT (2004) The novelty of the sweetpotato farmer field schools. Community Support Book – Consolidating the efforts of NGOs, Government Agencies & the Private Sector in Uganda, Volume 2 with Television Series: p32. [Magazine article and Television Programme, VCDs and Video tapes]

AKELLO EKINYU, C. (2005) Farmers, farmers, farmers. Poem performed at the SP IPPM FFS Stakeholders workshop IV in Soroti, Uganda, 9-10th March 2005. International Potato Centre (CIP), Kampala, Uganda. 1 pp. [Poem]

ANON (2002) Sweet missing vitamin. [Play presented during Soroti field day on promotion of orange fleshed sweetpotato]

ANON. (2002) First Draft Technical Guidelines for Farmer Field School for Integrated Pest and Production Management of Sweetpotato in East Africa. Dec 2002. 76 pp.

ANON. (2003) Third Draft Technical Manual for Sweetpotato Integrated Pest and Production Management Farmer Field Schools in East Africa, June 2003. Natural Resources Institute (NRI), Chatham, UK, 91 pp.

ECHERU, A. (2002) Food for life. [Poem presented by pupil of Anjopet primary school during Soroti field day on promotion of orange fleshed sweetpotato] [English]

KAPINGA, R., NAMANDA, S. (2003) Sweetpotato farmer field schools subproject- SSA. CIP Annual progress report 2003. International Potato Centre (CIP), Kampala, Uganda. 5pp.

KYERE FARMER FACILITATORS, HEALTH AND WORKS SERVICE PROVIDERS ASSOCIATION (2003) Minutes of the formation meeting of the Kyere Farmer Facilitators, Health and Works Service Providers Association (KEFFAH-WOSPA). 5 pp.

NAMANDA, S. (2002) Field day on promotion of orange fleshed sweetpotato, Gweri subcounty, Uganda, 27th Sept 2002. [Field day] [English] [2 Soroti SP IPPM FFS plus > thousand other farmers]

SOROTI DISTRICT COUNCIL (2003) Report of planned speeches on promotion of sweetpotato use in 22 educational establishments in Soroti district, NE Uganda. 7 pp.

STATHERS, T. (2003) Evaluation/ Planning Workshop - II Report, Blue York Hotel, Busia, 1-3 April 2003. Natural Resources Institute, 100 pp.

STATHERS, T. (2004) Evaluation/ Planning Workshop - III Report, Blue York Hotel, Busia, 22-28 August 2004. Natural Resources Institute (NRI), Chatham, UK, 82 pp.

STATHERS, T. (2005) Detailed planning for integration of sweetpotato farmer field schools approach and activities into other programmes as developed in Stakeholders workshop. Natural Resources Institute (NRI), Chatham, UK. 11 pp,

STATHERS, T. (2005) Stakeholder Workshop – IV Report, Soroti Hotel, Soroti, Uganda, 9-10 March 2005. Natural Resources Institute (NRI), Chatham, UK. Pp.

UMOJA FFS (2002) FFS field day, Kakamega, Kenya, 10th Dec 2002. [Farmer field day]

UNDUGU FFS (2002) FFS field day, Busia, Kenya, 13th Dec 2002. [Farmer field day]

VAN DE FLIERT, E. and T. STATHERS (2002). Initial Project Planning Workshop - I Report, Starlight Guesthouse, Soroti, Uganda, 8-10 May 2002. International Potato Center, Kampala, 41 pp.

In addition to the above disseminations

- Eighteen pilot sweetpotato IPPM FFS run (eight in Soroti, Uganda, and ten in Western Kenya) involving 492 farmers.
- Four additional pilot sweetpotato IPPM FFS were initiated as a self-financed spin-off activity in Kagera, Tanzania.
- Training of facilitators, to date seven extension and one NGO staff were trained as master trainers for SP IPPM FFS and 12 farmers as farmer facilitators and a further 15 identified following the 2nd pilot season.



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- The Secretary for production Local Council V, Soroti district spearheaded dissemination of orange-fleshed varieties to Bugondo and Olio subcounties which are outside the project area.
- The project assistant (Sam Namanda) participated in sweetpotato planning meetings with SOCADIDO, with the objective of promoting sweetpotato productions within Kumi, Katakwi, Kaberamaido and Soroti districts. Unfortunately these activities were adversely affected by the insurgency.
- The project assistant attended the NAADS, Soroti district review meeting on 12.08.03 at Soroti flying School during which promotion of orange fleshed sweetpotato was adopted for next season in the sub-counties of Kyere and Gweri in NE Uganda.
- Samples of farmer — formulated composite flour for porridge and local bread (Atap) prepared by farmers of Abuket FFS were presented to different consumers in Soroti including district stakeholders such the DAO and two samples (one for porridge and one for Atap) have been accepted and will be produced for mitigating Vitamin A deficiency and hunger in the internally displaced camps. Distribution was launched on 26.01.04
- Radio and TV coverage were made of the sweetpotato field day held in Soroti on 06.11.03. Since then media coverage has been ongoing with different messages mainly on the promotion and utilization of orange-fleshed sweetpotato for increased food security, rural incomes targeting women and improved nutrition mainly increased Vitamin A intake.
- Two Ugandan SP IPPM FFS Master Facilitators attended TOT training in specialised sweetpotato processing at Kawanda ARI, Uganda in May 2004 and have trained 35 farmer specialised sweetpotato processors trainer (SP IPPM FFS graduates) in Soroti using funds they won competitively through a proposal to the NARO/DFID funded COARD project.
- Printing of T-shirts for Abuket sweetpotato farmer field school processors group members in Soroti, funded by the sweetpotato processing and commercialisation project managed by the FFS farmer groups and funded by the DFID NARO COARD program.
- Mr Ekinyu, one of the Soroti FFS graduates carried several photos of the FFS activities to the Slow Food Tour in Italy, which the other participants enjoyed. He was then asked to make a short presentation at the meeting.

Listing and reference to key datasets generated:

Data set	Location
R8167 – SP FFS Monitoring and evaluation data for Uganda and Kenya	Originals with Sam Namanda at CIP Kampala office namandasam@yahoo.co.uk Electronic copies with Tanya Stathers, NRI, UK T.E.Stathers@gre.ac.uk
R8167 – Photographic collections from Uganda and Kenya	Originals and electronic copies (if existing) with Tanya Stathers and Sam Namanda
R8167 – All the presentations and reports and activities comprising the 4 project workshops	Hard copies with all workshop participants and CPP. Electronic copies with Tanya Stathers, Sam Namanda, Robert Mwangi rmwangi@naro-ug.org , Godrick Khisa ffsproj@africaonline.co.ke , Regina Kapinga r.kapinga@cgiar.org and CPP i.carballal@nrint.co.uk
R8167 – Electronic project communications	Electronic versions with Tanya Stathers, Sam Namanda, Godrick Khisa, Robert Mwangi and Regina Kapinga



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