

Moving Innovations

From research into farmers' fields

2nd MATF Experience Sharing Workshop

8th-11th August 2005: Kampala, Uganda



MATF

MAENDELEO AGRICULTURAL TECHNOLOGY FUND

FARM Africa
Making a lasting difference to Africa's families

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The Maendeleo Agricultural Technology Fund (MATF) is a Regional initiative established in 2002 with joint funding from the Rockefeller Foundation and the Gatsby Charitable Foundation (UK) and managed by the Food and Agricultural Research Management (FARM) Africa.

It aims to improve the livelihoods of farming communities in East Africa by identifying and facilitating innovative ways of technology transfer, adoption and improved productivity through competitive grants.

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Improving Livelihoods Through Innovative Partnerships



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Preface

An overview of Fund and workshop objectives

By Dr Lydia Kimenye
MATF Manager

“The workshop is an excellent opportunity for stakeholders to share and learn about new technologies and dissemination methods.”



Workshop Objectives

Maendeleo Agricultural Technology Fund- Discovering innovative technologies and best practices for improving productivity and incomes of small-holder farmers.

The second experience sharing workshop has come at an auspicious period for stakeholders involved in agricultural research and development in East Africa and the continent at large. Governments, UN development agencies and Regional initiatives such as NEPAD are rediscovering the crucial role that agriculture sector can play in socio-economic development, especially in poverty reduction. Besides Governments' commitments to increase funding for agriculture in national budgets, donors too are keenly seeking for more cost-effective approaches to support and improve small-holder African agriculture. Recently, the Gatsby Charitable Trust set up Kilimo Trust as an independent trust to function as its Programme arm on agriculture in East Africa. Kilimo Trust is keenly interested to support the interface between technology development and productivity increasing functions with emphasis on how to achieve better technology delivery processes, access to markets and financial services for small-holders and small agri-business enterprises. Many NGOs involved in African agriculture and research organisations likewise are searching and trying out alternative approaches for working with small-holders to improved technology adoption and farm productivity and incomes. The lessons shared in this workshop will go along way to inform wider stakeholders at policy and operational levels.

Established in 2002, the Maendeleo Agricultural Technology Fund (MATF) has a primary objective of identifying and promoting innovative technologies and their dissemination processes. This is achieved by selecting and supporting projects to disseminate proven technologies by applying innovative methods and building partnerships and linkages with organisations that have expertise in the necessary support functions to enhance adoption and impact. The fund also strives to share lessons from projects through documentation and dissemination and experience sharing and learning workshops

Fifty projects promoting different kinds of technologies and employing various hybrids of dissemination approaches and partnerships have so far been identified. Results from evaluation of the first two rounds of projects indicate that more than 75% of the technologies have increased productivity at farm level. MATF has also captured various approaches and methods that have been used successfully to inform and create awareness about new technologies and help farmers acquire technology inputs and materials, and to impart skills onto small-holders for them to apply and benefit from improved technologies. There are also on-going projects that are trying out exciting methodologies for enabling small-holders to access markets and to participate in them profitably.

The second experience sharing workshop brought together more than 30 participants drawn from round 2 projects, which ended early in 2005, some grantees from on-going third set of projects from Uganda and stakeholders from various organisations within and outside Uganda. These proceedings highlight the achievements and lessons from the ten round 2 projects that have ended and the results coming out of some of the on-going round 3 projects. The workshop is an excellent opportunity for stakeholders to share and learn about new technologies and dissemination methods. For more information on MATF and its projects, please visit our website, www.maendeleo-atf.org



Highlights

From Key-note Speakers

“MATF has demonstrated the capacity that exists on the ground in working and supporting small-holder farmers. This capacity needs to be supported in order to demonstrate greater impact.”

Dr. Christie Peacock
FARM-Africa CEO



Opening Ceremony

Introduction

By Joseph Oryokot

Dr Oryokot, an MATF Advisory Panel member started off the session by welcoming all the participants to Uganda. These were grantees from the second cohort of MATF projects, which had just ended, grantees from ongoing set of projects based in Uganda and representatives from various development partners in and outside Uganda.

In his introductory remarks, Dr. Oryokot emphasized the importance of agriculture in Uganda and how the Government of Uganda had placed agriculture at the center of the fight against poverty. The strategy being used is imbedded in the Plan for Modernization of Agriculture (PMA), which is the guiding frame work for agricultural development in Uganda. The implementation strategy will mainly involve technology development and technology transfer processes. He therefore, viewed the workshop as an excellent opportunity for participants from Uganda to learn about how participants from other countries in the Region are benefiting from MATF in their technology transfer work. He concluded by observing that the results from the evaluation of the Round 2 projects would also provide participants with more lessons in better technologies and effective dissemination methods and processes.

FARM-Africa's Initiatives on African Agricultural Development

Brief Remarks by Dr. Christie Peacock, FARM-Africa Chief Executive

In her opening remarks, Dr. Peacock said that the workshop was being held at a most interesting time for people involved in agriculture, in that there was now considerable renewed interest from Governments in the Region to support agricultural development. She said that it was encouraging to note that the New Partnership for Africa's Development (NEPAD) had recognised that agriculture was a key component of development in most African countries. Agricultural ministries in the continent, she said, were now putting greater emphasis to committing more Government funds to agriculture, with most of them aiming at achieving funding levels of 10% from their national budgets.

“FARM-Africa is doing a lot to support these initiatives in many ways, especially through technological innovations,” she continued. She lauded the continued support from the Gatsby Charitable Foundation and the Rockefeller Foundation in the field of agricultural technology development and said that FARM-Africa is striving to demonstrate the impact of these initiatives on the ground and how they drive economic development. In addition to managing MATF, she added, FARM-Africa is also trying to input to its own projects, lessons extracted from the various MATF projects. “This experience sharing workshop brings into focus these objectives and how best to apply them.”

In concluding, Dr. Peacock observed that the fruits from the establishment of the MATF initiative were clearly being seen on many fronts. Elaborating further on this, she remarked that “MATF has been an eye opener certainly, on capacity at the grass-roots to work and support farmers”. She continued by saying that, “MATF has demonstrated the capacity that exists on the ground in working and supporting small-holder farmers. However this capacity needs to be further supported in order to demonstrate greater impact. The MATF initiative certainly is a unique funding model that can be scaled-up elsewhere in Africa”.

Highlights

From Key-note Speakers

“Kilimo Trust is very keen on how to increase small-holder productivity in a period and history of market constraint and institutional failures.”

Dr. John Lynam



The Kilimo Trust and its Objectives

Brief from Dr. John Lynam, Kilimo Trust Chief Executive

Dr. Lynam gave a brief background to the formation of Kilimo Trust. He said that the Trust was a new initiative of Gatsby Charitable Trust (UK) set up to be its Programme arm in agriculture within East Africa. It was established as an independent trust with a board drawn from the East African Region's agricultural sectors. He added that there are plans to open Regional East African offices and that one is already operational in Uganda.

“Kilimo Trust is very keen on how to increase small-holder productivity in a period and history of market constraint and institutional failures.” Its strategy is based on technological and institutional innovation, with emphasis on technology delivery process and access to financial services and markets. The greatest challenge, “is how to think about funding to achieve these”. The MATF, is one of the foundation's funding initiatives that now fall under Kilimo Trust. Through the competitive grant process, MATF is aimed to identify the most innovative technologies, methodological innovation and institutional partnerships for knowledge transfer; better access to financial services and markets and increased farmer productivity.

He observed that the MATF had come at an opportune time to offer a platform that can inform the on-going process of extension reform within the Region both at policy and operational levels. The challenge for MATF is how to use monitoring and evaluation to capture lessons and for this information to feed into the reform process. In concluding his remarks, Dr. Lynam pointed out the key areas for learning as being:

- Methods to transfer knowledge and to evaluate how this is helping farmers, in other words to determine what is working.
- Institutional partnerships for better access to technology, markets and financial services. How to combine the new approaches and how to integrate farmers into the market.
- Cost effectiveness of the innovative processes of increasing productivity. How much is it costing to reach and benefit the farmers?
- Monitoring and evaluating the technological and institutional innovations.

Overview of Fund and Workshop objectives

Dr. Lydia N Kimenyi, Fund Manager

Dr. Kimenyi, the Maendeleo Agricultural Technology Fund (MATF) Manager gave a brief overview of MATF and the objectives of the workshop. The primary objective of MATF, she said, “is to identify and promote innovation in agricultural technology transfer in order to bring back a much needed improvement in productivity and incomes in small-holder agriculture in the Region.” She said that the fund seeks to support projects that demonstrate innovation in three key areas, namely technology, partnerships and methods for effective dissemination and increased productivity and incomes. Besides this, the fund also has an objective to capture, document and disseminate knowledge on ‘best’ technologies and ‘best’ dissemination practices.

It uses a strategy of competitive grants to identify and support projects to disseminate innovative proven technologies to farmers and other end users in East Africa. In addition, the fund provides other support to the projects through capacity building in financial management and in monitoring and evaluation. Lesson learning and sharing is done through effective documentation and dissemination via various media channels including the MATF web site at www.maendeleo-atf.org as well as through stakeholder experience sharing workshops such as the present one. In terms of achievements, she informed the participants that MATF had funded 50 projects disseminating various technologies. She observed that improved crop varieties and planting materials were very popular but so are technologies on value addition

Highlights

From Key-note Speeches

“MATF projects in Uganda are market oriented in line with PMA and NAADS objectives of raising export earnings for the country.”

Hon. Mary Mugenyi
Minister of State in Agriculture, Animal
Husbandry and Fisheries



and processing and on integrated management of pests, diseases and resource/soil. She gave examples of technologies that had done very well and significantly raised productivity and food security and incomes of small-holders:

- Improved cassava varieties resistant to the African mosaic virus were disseminated to over 1,500 small-holders in Nakasongola District over two years and increased productivity from 3 metres/hectre to 16 metres/hectre.
- Small-holders in Tanzania are moving into value addition of cassava to produce chips to supply both livestock feed and human food industries.
- Improved sweet potato varieties rich in vitamin A and value addition of sweet potatoes to produce novel products such as juice, and bakery products like bread, cakes and doughnuts.
- Tissue culture derive banana planting materials, which have raised productivity from 15Kg bunches to 40-70 Kg bunches in Uganda, Tanzania and Kenya. Through micro-credit revolving fund scheme, farmers have been able to set up commercial orchards of 40-200 plants, which mature at same time.
- New central pulping technology, which produces high quality 'specialty' coffee, which with better marketing linkages is enabling small-holder coffee growers in Tanzania to earn 70% premium prices through direct exports.

In concluding, Dr. Kimenyi told the participants that the workshop was one of the fund's key methods for capturing, sharing and disseminating lessons coming out of the projects. She said that participants should take advantage of the workshop to learn and share from each other about the available proven technologies, the dissemination methods that have worked well and those that have not, the elements that make an effective partnership, strategies for linking farmers to markets for their produce, steps to ensure sustainability of projects and how best to document and disseminate the lessons learnt.

Speech from the Minister of State in Agriculture, Animal Husbandry and Fisheries

Hon. Mary Mugenyi, Minister of State in the Ministry of Agriculture, Animal Husbandry and Fisheries (MAAIF) delivered the key-note speech to mark the official opening of the workshop. She started by congratulating all the grantees who had won grants from the MATF and the role these projects had played in agricultural development. On the same note, she recognised the complementary role played by the MATF in Uganda's efforts to develop the agricultural potential of the country.

The Minister lauded FARM-Africa's projects in many areas of Africa and was especially happy that all the MATF projects in Uganda were market oriented, which she pointed out that it was in line with PMA and the National Agricultural Advisory Delivery Services (NAADS) objectives of raising export earnings for the country. She noted that there was still a big gap between research findings and dissemination of the technologies to rural farmers and said she was happy that FARM-Africa had targeted technology transfer in its endeavors. However, she appealed that the main target in such projects should be the rural peasant farmer.

In her concluding remarks, Hon. Mugenyi praised the Regional approach of the MATF saying that it was in line with the objectives of the East African community for achieving greater Regional integration. Thereafter, she declared the workshop officially opened.

Round 2 Evaluation

Report

by ETC East Africa

Most of the projects had good partnerships necessary for achieving project objectives, where key partners availed themselves to implement activities according to signed MOUs.

Introduction

A total of 10 projects from round 2 were due for evaluation this year. Three of the projects are in Kenya, three in Uganda and four in Tanzania.

Specific methodology adopted in the evaluation exercise included:

- review of project documents (project proposals, quarterly reports and mid-term monitoring reports),
- interviews with MATF staff, project grantees and partners,
- semi-structured interviews of sample beneficiaries in target communities; and,
- field observations.

Evaluated Round 2 projects and their locations

From Tanzania, the projects evaluated were:

1. Diffusion of tissue culture banana technology to small-scale farmers in Arumeru District through micro-credit scheme.
Grantee - The International Service For Acquisition of Agri-Biotechnology Applications (ISAAA Africenter)- NGO
2. On-farm production of cereal seed production in Dodoma Region.
Grantee - Livestock Production Research Institute (LPRI)
3. Transfer of solar drying technologies to sweet potato farmers in Gairo division Kilosa District for sustainable food security and income generation.
Grantee - Sokoine University of Agriculture (SUA)
4. Pilot radio opera and radio magazine initiative, Arusha, Tanzania (Phase I).
Grantee - MEDIAE- Private media company

From Uganda, these were the projects evaluated:

1. Improving food security in South Western Uganda (Bushenyi and Kisoro Districts) through transfer of resistant varieties and integrated management packages for bean root rot disease.
Grantee - Namulonge Agricultural and Animal Production research Institute (NAARI).
2. Ensuring food security through increased goat productivity in Sironko District.
Grantee - Environmental Alert – NGO.
3. Improving household welfare in Rakai District by improving indigenous chicken promotion through Programmed hatching and cockerel exchange.
Grantee - Community Integrated Development Initiative (CIDI) – NGO

From Kenya, the projects evaluated were as follows:

1. Community based sunflower promotion and integration with beekeeping in Kitui District.
Grantee - Kitui Development Centre (KDC) - NGO
2. Improving food and nutrition security among women and families affected by HIV/AIDS in Makueni District.
Grantee - African Medical and Research Foundation (AMREF) – NGO
3. Accelerating market led integration of high value trees into small-holder farms in Western Kenya.
Grantee - World Agroforestry Centre (International Centre for Research in Agroforestry – ICRAF) - NGO

Findings from the evaluation indicated that progress in achieving set objectives and in contributing to household incomes and food security was largely satisfactory. However, some of the projects due to their nature are yet to achieve their objectives, but have a potential of doing so. These include the High Value Tree projects and goat breeding projects. Most of the projects had good partnerships necessary for achieving project objectives, where key partners availed themselves for implementing activities according to signed MOUs. The technologies across the 10 projects were well accepted, an indication that they were addressing genuine community needs.

Presentation

Livestock Production Technologies



Improving Household Welfare in Rakai District by Improving Indigenous Chicken Production through Programmed Hatching and Cockerel Exchange Programme

Background

This project ran from May 2003- April 2005. The main objective of the project was to contribute to poverty alleviation among the subsistence farmers, especially women and orphanage farmers in two sub Counties of Lwanda and Ddwaniro in Rakai District.

The project was implemented by **Community Integrated Development Initiatives (CIDI)** in collaboration with several stakeholders and partners and with funding from FARM-Africa under the Maendeleo Agricultural Technology Fund. The project targeted 400 resource poor direct beneficiaries (Women and Orphans). The beneficiaries were organized in groups and trained in modern poultry management practices.



Before the CIDI intervention, Communities in Rakai had engaged in chicken rearing. Unfortunately, the methods of rearing did not tap the full potential of indigenous chicken. Local chicken took a long time to mature, had small carcass weight and produced fewer eggs/offspring per bird per year. For the last two years CIDI has been working with its partners and community farmers and has managed to improve the local chicken through Programmed hatching of local chicks, improved cockerel exchange and selective breeding and better management.

The Technology

The Programmed hatching technology synchronises birds to hatch on a particular day of the week. This is vital for quick multiplication of birds as well as helping farmers manage them better:



During the project each farmer in a group was given ten selected indigenous hens (of the same age) and two improved cockerels.

The following methodology was used:

- For each bird that begins to lay, a nest is made.
- Each egg that the bird lays is removed and marked with the date at which it is laid. This is important in identifying new and old eggs as very old eggs rarely hatch into chicks.
- When the first bird begins to incubate, it is left with the infertile egg and this date is recorded. The hen is left to sit on the egg for ten days during which most of the other hens will also go broody and be similarly provided with infertile eggs.
- On the tenth day, infertile eggs are removed and all hens that would have incubated given 15 fertilised eggs to incubate starting with the ones laid recently. Any bird that does not incubate in the ten days is left out of the Programme. Hatching usually takes 21 days and six hours but the hens do not have the senses to count days and will sit on them till hatching.

1. Nabojji Juliet of the Tukorerewamu (means "Work together") development group feeding the chicken brood
2. A Healthy improved Rakai Cockerel
3. A man feeding his chicken in Rakai

Presentation

On Rakai programmed hatching and cockerel exchange project

To date, there are 402 direct and 2,238 indirect beneficiaries, a total of 2,640 farmer households representing 14,480 project beneficiaries.

Dr Jjuuko Fulgensio
Project Leader



Through this methodology it is possible to adjust the days at which the birds are given the eggs so that they hatch on specific desirable days of the week. They can be given another 15 eggs to incubate on removal of the hatched eggs. Some farmers have done it for three consecutive clutches.

Programmed hatching was coupled with selective breeding of indigenous chicken that were improved upon by simple cross breeding with improved commercial cockerels for meat or eggs.

- First, selected Indigenous hens were crossed with improved layer cocks to produce F1s [first generation] that were good egg producers.
- These were crossed with improved commercial broiler cocks to produce F2s that were both good egg and meat producers. The F2 hens are now being crossed with selected indigenous cocks to produce F3s.

This is expected to be a more stable bird that is resistant to diseases, yet high yielding dual-purpose bird called the "Rakai chicken". There was training of farmers in good poultry husbandry practices such as brooding techniques, nutrition, housing and disease control and capacity building of farmers' groups to undertake their developments.

Achievements and Impact of the project.

- To date, the project in Rakai has 20 main farmers groups registered at the District and sub county with each group having an average of 20 members as the initial beneficiaries of the project.
- Each member represents a household. Each main group has got a number of affiliated farmers who benefit indirectly through a pass on of offspring. Many more individual farmers have picked interest in improved chicken production and have started improving management of their local chicken into improved types.
- To date there are 402 direct and 2,238 indirect beneficiaries a total of 2,640 farmer households representing 14,480 project beneficiaries. The farmers groups are organized in "The Indigenous Chicken Breeders and Marketing Association" is spearheading farmers interests especially marketing.

There has been an increase in poultry products like eggs and chicken, more sales have also been realised as well as the improved price of egg. Some households are able to sell approximately 200 trays per year. Chicken sales have also increased. On average a household can sell 200 pullets/cockerels and 60 adult birds in a year. The cost of an adult improved chicken ranges between Ushs, 8,000 and UgShs 10,000 compared to about US\$ 3,500 for a commercial broiler chicken while the cost of improved chicks is between US\$ 2,500 and 1,700. There are increased crop yields especially the size of banana bunches and vegetables through the use of chicken manure, household nutrition has also improved, there are also marked improvements in housing, family incomes, general living conditions and payment of school fees and purchase of stationery materials for school going children and orphans. As a result of its performance in the poultry project, CIDI was asked by the District authorities to participate in the National Agriculture and Advisory Services (NAADS) Programme and is now a service provider in two sub counties of Kirumba and Kacheera.

Key lessons learnt.

The group approach has been very cost effective as most of the trainings were done at group level. Construction of the recommended poultry house would be impossible for some individuals like the orphans and elderly women.

The CBTs have been instrumental as regards the multiplier effect of the project both within and outside the targeted beneficiaries. Their farms have also acted as demonstrations and more and more farmers have been visiting their farms and learning from them.

Some farmers have demonstrated that an incubating hen can sit on the eggs for 65 days,

Presentation

On Rakai Programmed hatching and cockerel exchange project

Working in close collaboration with project partners greatly contributed to project success.

Project partners were very cooperative and took keen interest in the project.

Dr Jjuuko Fulgensio
Project Leader



this enables it to hatch chicks 3 times non-stop. Eggs that are stored for more than 10 days have low hatchability. It was realised that Indigenous chicken if improved and well managed can be as productive as the exotic commercial birds. It has also been discovered that F1s can go broody and can incubate eggs up to hatching. Well trained farmers can do the selection of local Cocks to cross with F2s to produce the F3s. Farmers can earn a living just by engaging in multiplication of birds and selling poultry products. Improved and well-managed chickens (F1 and F2) can lay for more than 12 months with all the characteristics of disease resistance, high growth rate and start laying eggs as early as 4.5 months.

What worked well

- The technology was well understood by farmers, which resulted into increased production of poultry products.
- Working in close collaboration with project partners greatly contributed to project success. Project partners were very cooperative and took keen interest in the project
- Local leaders were very supportive

What did not work well?

- The project targeted poor households including orphans from whom it was difficult to raise community contribution
- Managing poultry farms as the entire group was not much preferred by many farmers. Rather they preferred to work as individuals within groups managing farms at household level.

Key challenges

Some key challenges encountered include:

- Limited reach of farmers in the District.
- Scarcity and high cost of feeds owing to prolonged drought.
- Increased demands on CIDI's extension field staff due to the high number of chicks being hatched by farmers over a wide geographical area.
- Scarcity of good quality drinking water for humans as well as for the chicken flocks.
- Out-break of diseases in the project area from un-vaccinated chicken but this did not have serious impact among the CIDI poultry beneficiaries as they had vaccinated their birds.
- The ill health of some farmers, especially due to HIV/ AIDS affected their steady progress.

Project Sustainability

Even for a well implemented project, 2 years are too few for an agriculture Programme to yield sufficient volume of farmers for scaling up. Besides need for consolidation, there is also need for extension in new areas to create sufficient volume of farmers for faster replication and scaling up of project benefits. CIDI was working in only 2 out of 25 sub counties in the District and as much as the project was successful in those areas, there is risk of engaging in a few isolated development interventions that compromises on impact. There is therefore need to give more than 2 years of project implementation as some of the technologies need a long time to give successful results.

There is need to support farmers and get them linked to potential markets and consumers e.g. Schools and supermarkets, there is need to develop capacity of the management structures such as the Parish Coordination committees, CBTs and the **Indigenous Chicken Breeders Association** to manage their own business. There is need to produce more training materials / manuals on poultry management and translate them into Vernacular language for quick reference by farmers.

CIDI is working hard to link farmers to existing Programmes such as the NAADS and other service providers for scaling up and also sustainability purposes and this process is still premature and needs to be supported.

Discussion

On Rakai Programmed hatching and cockerel exchange project

Discussion and response from participants

Workshop participants were concerned about the minimal participation of the poor farmers and orphans in the project and were keen to find out from CIDI the reasons behind this. The response was that most of the poor farmers had a problem meeting their contributions. They were however supported with mobilised resources, hence the need of an input revolving fund, to support them early in the implementation.

Participants were also keen to find out whether there were any project adoptors from outside the target area. The response from CIDI was that indeed many farmers had adopted the poultry technology from outside the target area. The farmers had compared the improved poultry with local birds and found there was a big difference. With the CIDI improved indigenous birds, each clutch is 50 eggs as compared to the local birds where 2-3 clutches have a maximum of 10 eggs. The local birds start laying at 9 months while the improved hens start at 4.5 -5 months. The improved birds could also be used as both layers for eggs and broilers for meat. Essentially, the local birds were also selected before being used in the purposive breeding system due to their desirable traits such as resistance to local bird diseases.

Finally, the issue of the breeders association's role in Rakai was raised by participants, and their impact on the project. The response from CIDI was that the Rakai Breeders Association was key to the sustainability of CIDI activities. This would be through farmer groups market linkages and provision of information. The association will help coordinate the Community based trainers (CBTs) and also help in linking to other services. The farmers could also save and borrow from the Association.

Presentation

On Livestock Production Technologies

Ensuring food security through increased goat productivity in Sironko District, Uganda



Background

The project began in April 2003 and ran upto April 2005 in 2 sub-counties of Buhugu and Busulani in Sironko District located in Eastern Uganda. The project implementers were Environmental Alert.

The main project objective

To increase food security and household income of resource poor men and women through improved goat management.

Quantifying the project: Specific objectives

The project set out to attain 2 major objectives and the achievements are examined under each objective:

1. To enable the farmers of Buhugu and Busulani build strong 20 farmer groups and PMC to efficiently and effectively obtain extension services, market their products and monitor their livelihoods.
2. To enable at least 160 households from Buhugu and Busulani improve their nutrition and household incomes by adopting improved goat and vegetable production methods

Achievements under the First Objective

- 427 farmers have formed 21 farmer groups.
- All 21 groups trained in group dynamics.
- PMC formed to oversee group activities and resolve group conflicts.
- More improved access to veterinary and other extension services by farmer groups.
- Farmer groups strengthened through exchange visits(Meru and shows) and mentoring.
- Other partners (District, SAARI, SVIP) are committed to give continued technical support (MOUs).



Outcomes:

- Stronger farmer groups involved in participatory planning processes.
- Sironko goat breeders association formed and registered with an office, address and bank account
- 28 farmers have so far received goats from the pass on scheme managed by the association and District Vet.
- Breeding plan is now operational with 2 breeding centers and 4 buck stations /sub-county.
- Farmers are utilizing skills acquired during trainings.

Achievements under the Second Objective

- 160 quality goats delivered to 160 households.
- All 21 farmer groups trained in vegetable growing; compost making; natural pests control; goat husbandry and management.

1. A farmer with healthy kids from one of the farms in Sironko District, Uganda.
2. A healthy dairy goat in Sironko District, Uganda

- 23 farmers, 2 District veterinary staff facilitated for an exposure visit to Meru goat breeders association
- Representatives from the 21 groups trained in fodder establishment
- Each of the 160 farmers put up a good goat structure.
- Farmers keep up-to-date records to monitor animal health

Presentation

On Livestock Production Technologies

Participatory approach in planning and decision making is important to bring about ownership of the project. Frequent reminders about project goal and purpose is necessary to maintain focus

Outcomes

- 78 kids delivered to date.
- 44 local does serviced and 13 kids of 50% Toggenberg blood produced to date
- All 78 farmers use the nutritious goat milk.
- More farmers growing vegetables and fodder varieties.
- Farmers can easily identify diseases and symptoms and alert District extension staff for assistance.
- Utilisation of compost manure made from goat waste has improved soil fertility of farmer gardens

Impacts

- Improved local stock of goats due to cross-breeding.
- More households have access to goat milk (78 households out of the 160 households under the project)
- More farmer groups(5) have been formed in a project area as a result of the benefits seen accruing from project groups.
- Some households save money previously used to buy vegetables since they can grow them with higher yields.
- Improved Banana and coffee yields due to the use of compost and liquid manure
General animal health has improved because of skills imparted and the more frequent visits by veterinary skilled partners

Lessons

Methods and approaches used:

Participatory approach in planning and decision making is important to bring about ownership of the project. Frequent reminders about project goal and purpose is necessary to maintain focus

Partnerships and linkages:

Involving all partners is important for stakeholder cohesiveness and commitment to the project. Use of various Partners with varied disciplines can be very resourceful and cost saving.

What did not work well and why

Farmers wanted to pass on kids only to people in their groups/friends.
At some point partnership was individualised and absence of that individual led to a weak partnership

Other lessons

Groups that were formed before the project should have been second priority as far as receiving goats is concerned.
Monitoring is costly and should have been given a substantial budget since it determines the success or failure of a project after launch.

Key Challenges Encountered

- Project shift from just a dairy goat project for improved nutrition to a dairy goat breeding project.
- Consistent participation of partners to share views and ideas during the quarterly stakeholder meetings.
- Handling issues where a farmer losses a goat after a pass on.
- Sustainability of the breeders association after the exit of the development partner support.

Vision for Sustainability

- Encouraging communities to have sustainability structures, e.g PMC or SIDAGOBA which will last.
- Farmers commitment by paying an annual subscription, coupled with investment of income from goats can initiate savings schemes to support their future financial needs.

Discussion

On Livestock Production Technologies

- Lobbying the District authorities (as has been done by EA) for provision of PMA grants helps support farmers through their association and roll the project to other sub-counties.
- Donors need to look at agricultural projects in a long term perspective (3 years) to allow enough time for capacity development and sustainability.
- Group formation is a good channel to ensure efficient service delivery and more ownership by stakeholders

Discussion and response from participants

The participants requested more information on the farmers' Association and its fund management. The response from Environmental Alert was that the fund was a revolving one where each member of the association contributed 5000 UGsh. With the sale of goats, the farmer would get 85% of the proceeds while 15% would go to the association. The role of the Association was essentially to link up farmers to the private sector; to offer farmers one voice for increased bargaining power and generally make the management of the dairy goat project easier. It was also very instrumental in asking the farmers to put up the goat sheds.

Participants wondered how categories of poor people that were to be targeted by the project were verified. The response was that a criteria was first established by the project implementers at the start of the project to identify poor farmers who could receive the goats. This was in terms of farmers contributions for the construction of the goat sheds. The ones unable to raise the contribution were readily classified as the most needy.

Finally, participants asked the project implementers whether a socio-economic survey had been conducted before the start of the project to establish a baseline from which impacts arising from the project could be measured. The response was that a survey for bench mark establishment was carried out. Amongst the issues it explored was the levels of malnutrition in the target areas, hence the entry of the dairy goat project. It also established that the farmers were resource poor, especially on availability of land. The technology therefore, being cheap and affordable, would be easily taken up. However, the participants concluded that the project period needed to be longer, at least two more years, for the project objectives to be fully realised and felt.

Presentation

Creating alternative sources of income for food insecure communities of Kenya.

“The project has over 2,256 farmers practising sunflower production and 632 farmers practising modern beekeeping. Over 75% of these farmers are women.”

Janet Syombua Mumo
Kitui Development Centre (KDC)

Livestock Related Technologies

A case study of community-based Sunflower production and utilisation integrated with Beekeeping by the Kitui Development Centre (KDC).

Introduction

Kitui Development Centre (KDC) is a registered Non-Governmental Organisation working in Kitui District of the eastern province of Kenya. KDC plays a significant role in socio-economic development in the project area. It services targets and benefits small-scale farmers through promotion of appropriate agricultural technologies, simple food processing, marketing and asset development.

In March 2003, KDC with support from FARM-Africa under Maendeleo Agricultural Technology Fund initiated a project on community-based sunflower production integrated with beekeeping. £60,000 was awarded to KDC to cover trainings on technology transfer, procurement of langstroth hives, bee suits, oil and honey extraction machines and project coordination.

The implementers and partners to this project include: 4 CBOs from Yatta, Matinyani and Central Divisions, Kenya Agricultural Research Institute (KARI-Katumani), Ministry of Agriculture, Ministry of Livestock Development and Fisheries, Ministry of Gender and Sports and African Beekeepers Limited.

Technologies under consideration include:

- Promotion of sunflower production.
- Promotion of simple sunflower oil extraction by use of simple oil press.
- Promotion of langstroth hives.

The three technologies supplement each other for a greater impact. Sunflower provides bees with nectar while providing edible oil to the community and the sunflower seedcake is used as animal feed.



1. Sunflower farm, with protective trees around it, in Yatta division of Kitui District.
2. Community resource person extracting sunflower oil using a motorised diesel oil press in Itambya Mulango CBO.

Project achievements, outcomes and impacts

The project has over 2,256 farmers practising sunflower production and 632 farmers practising modern beekeeping. Over 75% of these farmers are women. The area for sunflower production has increased from 4 CBOs to 7 CBOs due to availability of the sunflower seeds. The beekeeping technology has improved honey yields from 2kgs per hive per harvest to 7kgs per harvest. The harvesting periods have also increased from twice per year to 4 times per year. Honey prices have also increased during harvest from Ksh. 50 per kg to Ksh. 110 per kg. The quality of honey has also improved thus meeting the national standards. KDC through KARI – Food Technology Department is in the process of sending the honey for analysis to Kenya Bureau of Standards (KBS).

Key lessons learned

- It is good to recognize community participation during resource mobilisation since this process ensures project sustainability. This contribution can be in cash, material or labour.

Presentation

On Livestock Related Technologies

- Due to communities pressing needs, it's advisable to develop strategies / interventions that give immediate results as you continue with long term strategy since this motivates the communities while building confidence for a longer intervention.
- Close collaboration and clear defined roles with other stakeholders is necessary and leads to successful and timely project implementation.
- Identification of key partners should be given more time to ensure every partner understands the expected outcome



Key challenges encountered

- The District experienced severe drought leading to acute water shortage for livestock and people. This led to reduction of anticipated honey and sunflower harvest.
- Some partners are unwilling to continue with the partnership after the first round.
- Low rate of loan payments especially when they realise that the project funding is over.



Vision for sustainability

The conventional oils/fats are unaffordable to most families, therefore there is need for value addition, packaging and preservation of the sunflower oil and honey to ensure its availability throughout the year. In addition, fruit juice extraction and packaging using honey is among the projects in the pipeline. This will increase the price of honey at the local market while providing fresh and nutritious juice during the dry periods of the year.

To achieve this, resource mobilisation and community organisation is essential. This will include interested partners, formation of cooperatives, sending sample products to Kenya Bureau of Standards (KBS) and developing business plans with the community.

Discussion and response from participants

It was noted that some key marketing partners had pulled out of some project implementation aspects and the participants were keen to know the reasons why. The response from KDC was that the company invited to market the honey (African Beekeepers Limited) was initially supposed to introduce the centrifugal machine for harvesting purposes at Ksh. 150,000. The company found the investment too expensive and not cost effective. They therefore did not buy it, and it was left to the project implementers to find another supplier.

On sunflower production, participants wanted clarification on the benefits that had been realised by farmers in Kitui District. The response was that sunflower does much better than maize and it's oil can be sold through the year. Compared to maize, sunflower is now regarded as a major cash crop in Kitui. Currently, the demand still exceeds the supply and there are plans to market it outside Kitui District with realisation of increased production.

1. Langstroth hives on site.
2. Women TOTs from Itambya CBO ready for hive inspection and harvesting.

Presentation

Applied Nutrition Project

By David Nzioki,
Ministry of Agriculture and
AMREF Partner

Gender issues were discussed throughout the implementation period to raise community awareness and promote gender sensitivity and equitable access to resources and benefits with a focus on women

Improving Food And Nutrition Security Among Women And Families Affected By HIV/AIDS.

Background

The project ran from 2003-4 in three divisions of Makueni District namely Makindu, Nguu and Mtito Andei, with a total population of 159,037 from 2003-2004. The area is semi arid with poor, erratic rains with an unequal distribution and timing patterns. The annual average rainfall is estimated at 500mm. Other factors that contribute to poor food production include lack of farming inputs, inadequate extension services, poor farming methods and high poverty level. It is estimated that approximately 60% of the population in Makueni District lives below the poverty line.

Project Objective

The Goal of the project was improved availability and accessibility to quality food at household level. The purpose was to ensure food insecure households in the project area are applying appropriate agricultural technologies and managing resources well to sustain availability and accessibility to quality food.

Methodology

Methods used included:

- capacity assessment
- beneficiaries sensitisation and capacity building
- promotion of a revolving fund
- production of drought tolerant crops and improved breed of small livestock (goats and poultry)
- development of nutritionally balanced diets
- improving access to labour saving devices, and use of manure.

Achievements

- Results included adoption of crop production technologies by 32 groups each with 20 members through training in improved farming practices.
- 96 kitchen gardens were established among the 32 groups that the project worked with.
- application of goats and chicken manure for kitchen gardening increased by 30% from baseline.
- All groups with small livestock were trained in management of manure and proper application.
- Small livestock (goats and poultry) improved breeds was promoted among 120 families. 312 poultry were given to beneficiaries; 27 bucks and 39 does (*Toggenburg*) given to beneficiaries in both credit and in kind.
- 15 extension workers were trained on goat management.
- Regarding nutrition, balanced diets were developed using locally available foods and 32 groups of about 20 women each were trained in production.
- Labour saving devices such as ox-ploughs were promoted among 120 households. The ploughs were purchased and distributed.

Gender issues were discussed throughout the implementation period to raise community awareness and promote gender sensitivity and equitable access to resources and benefits with a focus on women.

Monitoring was done throughout the implementation.

Lessons Learnt

- Project sustainability concerns must be inbuilt into the project from the start
- involvement of MoA personnel and community empowerment were important in this case.
- All partners must participate fully in order to genuinely own the process.
- Families will accept and easily adopt technologies, which address their day to day needs and concerns.

Presentation

Applied Nutrition Project

- Implementing a goat project requires at least four (4) years ensuring that structures to promote continuous production and disease control go beyond the funded period. A water component should be included when planning to include kitchen gardens and dairy goats into a project in semi arid area.
- Adequate skills building is an important ingredient of success and sustainability.
- It is good to recognize community participation during resource mobilisation since this process ensures project sustainability. This contribution can be in cash, material or labour.

Challenges

Key challenges faced during the implementation of the project included:

- Drought, which led to failure of crops in some parts
- Saline water, which affected the performance of kitchen gardens;
- Poultry diseases; and,
- Slow adoption of *Toggenburg* breed.

Discussion and response from participants

Participants raised the issue of the AIDS-affected families in the target areas of the project and how the implementers were helping raise their living standards with the project. The response was that the affected families were being trained on how to cook foods with high nutritional values hence ensuring improved health for the family members. Such families who needed the training, were identified by the community members themselves through the farmer groups.

Participants were of the view that the overall success of the goat project could not be fully assessed due to the limited project period. Most agreed that a reasonable period would be four years for the project to realise most of its objectives.

Presentation

Crop Production Technologies

Diffusion of Tissue Culture Banana Technology to Small-Scale Farmers in Arumeru District of Tanzania through a Micro-credit Scheme.

320 farmers have accessed clean planting materials totalling 31,000 tc plantlets and 89 per cent of these plantlets have grown into beautiful orchards.



Introduction

Tissue culture (tc) is a form of biotechnology that refers to regeneration of plants from very small plant-parts, tissues or cells under sterile media conditions that excludes fungi, bacteria and pests from the production system. With bananas, this results into production of large quantities of clean, superior plantlets within a relatively shorter period of time than that obtained when using traditional suckers.

Project Objectives

The project aimed to:

- expand benefits of tc banana production through acquisition of planting material for establishing viable commercial orchards (at least 80 plantlets per farmers)
- establish pilot micro-credit scheme through MBD's Jitegemee loaning system (Target at least 500 farmers); and,
- increase household incomes through exploitation of entrepreneurial opportunities from increased adoption of the tc technology (at least 30%)

Implementation

The project was implemented through partnerships, each partner having clearly defined roles and responsibilities. These partners were:

- The International Service for the Acquisition of Agri-biotech Applications, ISAAA AfriCenter;
- Microfinance Business Development Services Company Limited (MBD); and,
- The Directorate of Research and Development (DRD) of Tanzania through Selian Agricultural Research Institute (SARI).

ISAAA was the lead institute and facilitated:

- access to tc planting materials,
- identification of partners,
- maintenance of project focus by responding to project needs; and,
- experience-sharing through farmer-to-farmer visits.

MBD administered and managed the micro-credit through a group-based lending methodology known as "Jitegemee" loan system and worked alongside DRD in the identification and screening of participating farmers.

SARI coordinated:

- The provision of extension services and training for farmers on orchard management,
- Post-harvest handling and market linkages within Arumeru Region, one of the major banana producing Districts in the country and where sensitisation on the technology had already taken place.

Methodology

The project was executed through participatory approaches to technology transfer in the form of Farmer Field Schools (FFS), and groups' lending model of micro-credit delivery.

Farmer Field Schools (FFS): The Advantages

- A highly effective method of accessing education and enhancing skills in a most cost-effective manner to small-scale farmers.
- Provides useful entry points for experience-sharing and introduction of other desirable products useful for the improvement of overall farm enterprises.
- Strengthening farmers' field observation and management skills
- Scales up to new areas without additional facilitation since trained farmers become



TC Plantlets ready for distribution

Presentation

Crop Production Technologies



1. Training in orchard management cycle.
2. Farmers proudly showing off their newly acquired tc plantlets

- “trainers of trainers” (TOTs) and
- Improving cost-effectiveness in monitoring and evaluation.
- Improved the bargaining power of farmers through collective marketing thus minimizing exploitation from middlemen.

Groups lending model of micro-credit delivery

The group-based lending methodology which operated through the Jitegemeo loaning system constituted small groups of 3 to 8 individual farmers known as “UKO”. 4 to 8 UKOs were combined to form a larger group known as MBOKO. The MBOKO was the administrative and legal entity through which loan transactions to individual farmers were carried out. Security for the loans constituted a combination of cash collateral and pledges through a sworn affidavit. The UKO savings as well as the members’ guarantee to each other offered additional security for these loans.

The mode of loan repayment was tailored to match the cash flow of the farmers. They were expected to pay the interest portion of the loan monthly and the principal in one balloon payment after realising sales of their first crop, estimated at 14 months. Loan disbursements were made in kind (in form of plantlets, fertilizers and pesticides) and attracted an interest rate of 15% p.a. on a straight line.

Lessons Learnt

- Small-holder farmers highly appreciate technologies that demonstrate real impacts.
- The farmer-field school approach is cost-effective in capacity-building for orchard management, micro-credit administration and improving overall farm enterprise.
- Gender equity issues can be addressed using a group approach as this provides opportunities for competition along gender lines.
- Micro-credit can enhance technology diffusion and mobilise farmer savings.
- Majority of small-scale farmers have limited knowledge/skills in farming-as-a-business
- Exchange visits enhance experience-sharing and appreciation of strengths and opportunities which can be used to overcome farmers’ weaknesses and threats.
- Respect of goodwill from partners at institutional and field level is essential.
- Anticipation of unusual weather conditions is a crucial assumption.

Achievements

The project has made remarkable impact in terms of technology transfer and realisation of set objectives.

- 320 farmers have accessed clean planting materials totalling 31,000 tc plantlets and 89% of these plantlets have grown fully into beautiful orchards.
- A loan portfolio of TSH 42,290,133 million (£30,207) was disbursed which also helped mobilise farmer savings.
- Assuming that the 320 farmers are directly responsible of an additional eight dependants each, the total number of beneficiaries so far is 2,560. The potential spill over effect is expected to be larger at Regional level through revolving of the microcredit.
- The early recruits have already started harvesting and report increased food at family level and a rise in disposable income for participating households
- Training on full orchard management cycle has enhanced farmers’ skill in technology uptake while the credit management process has improved their skills in record-keeping, mobilisation of savings and re-orientation of farm enterprises into business ventures.
- Links have been formed with service providers through farmer-to-farmer and Kenyan exchange visits, and the farmers have had opportunities to interact with different stakeholders including banana processors, motivating them even further.

Challenges:

- Unreliable water distribution from the village councils and persistent drought have been critical challenges to successful implementation of thee project.
- Negative perceptions of credit by the communities, suspicion and political interference where some of the village leaders incited farmers against the credit influenced the repayments especially at the initial stages.

Presentation

Crop Production Technologies Tissue Culture Bananas

- The project also experienced a drawback from distribution of one un-adaptable variety where close to 3,000 plantlets had to be uprooted. This was a real threat to the gains made by the project but some intervention measures have been agreed upon among partners and the supplier of plantlets through some form of compensation.
- The source of tc plantlets which were all sourced from Kenya and absence of distribution nurseries for plantlets. This has resulted into high loss of plantlets due to transportation stress and delays in availing the materials to farmers even where loans had been approved.

Vision for Sustainability

Ways of ensuring sustainability of the project activities beyond the grant period are being worked out. The vision is that:

- MBD will convert the micro-credit into a revolving fund.
- Over half of the trained farmers are expected to become trainers of trainers (TOTs) and form new schools. The upcoming entrepreneurs will be encouraged to establish hardening and distribution nurseries for tc plantlets and marketing of the fruit.
- Diversification of banana use through value-addition, while
- Formation of a Banana Growers and Marketing Association (BGMA) would be a key ingredient towards developing an exit strategy that would ensure sustainability of technology uptake paths.

Discussion and response from participants

The workshop participants were concerned that there were several losses of plantlets while on transit from Kenya. They were keen to know the plans by ISAAA to reduce these losses. The response to this from the ISAAA participants was that the solution lay in establishing a laboratory in Tanzania. This was already underway and once completed, it will create a sustainable way of preserving the plantlets.

The issue of accessing the micro-finance system by HIV positive people was also raised. Participants were keen to know how MBD had handled this since most micro-credit institutions were known in practice, to reject such applicants. The response from MBD was that the company does not carry out blood tests of its applicants. In case of any demise from whatever reason, either the member's group or family takes over the debt.

Participants were also keen to discuss the mechanisms put in place to recover loans from defaulters. MBD clarified that the use of peer pressure within the UKO groups had been effective in ensuring low default rates and regular repayments by loan beneficiaries. The groups understood that low repayments would affect their individual chances of accessing the same credit from MBD.

The participants also discussed the involvement of youth in the project, for sustainability purposes and they were interested in knowing how ISAAA was going about it. The response was that the youth had been integrated into the project. Most were formerly working in the Tanzanite mines and had lost their source of incomes when some closed down. The project was therefore an opportunity for them to regain lost incomes and occupations.

Presentation

Crop Production Technologies

On-Farm Production of Cereal Seeds (Maize, Sorghum and Pearl Millets) in Dodoma Region-Tanzania

Background

Started in January 2003 in Dodoma, the project aims to alleviate the chronic problem of insufficient and low quality cereal seeds. It is promoting on-farm production of maize, sorghum and millet in the Region.

The Overall Project Objective

To ensure availability of improved cereal seeds to Dodoma farming communities at affordable prices in order to improve house-hold food security and incomes.



Specific Objectives

- Production of high quality seeds of 120 tonnes of maize 30 tonnes of sorghums and 30 tonnes of pearl millets during the two-year project period.
- Reduction of distance and time spent by farmers in search of improved cereal seeds from seed traders.
- Increased house-hold food production and incomes through increased production and marketing of good quality seeds.
- Impart improved seed production technology to Dodoma farming communities.

Technology

- Foundation seeds were acquired from Ilonga Research station as origin seeds for the Seed production Groups (SPGs).
- Farmers multiplied these seeds in their fields by adhering to all seed production conditions to produce Quality Declared Seeds (QDS).
- All seed production regulations were monitored by District Seed Inspectors. Finally, seeds are tested by the Tanzania Official Seed Certification Agency (TOSCA) laboratories and declared as official seeds.

Quantified Project Achievements

- 81.39 tonnes against projected 120 tonnes of maize seeds (67.83%), 37.65 tonnes against 30 tonnes of sorghums seeds (62.75%) and 5.006 tonnes against 30 tonnes of pearl millets seeds (16.69%) were produced in two years of project period.
- 32 tonnes, 18 tonnes, 1.9 tonnes of maize, sorghums and pearl millets respectively which did not qualify as seed were used as food so as to improve house-hold food security.
- All 29 Seed production Groups (SPGs) were trained on seed production techniques throughout the two production seasons
- Seeds were dressed, packed and labelled to attract customers
- 16 SPGs joined the existing SACCOS in their villages, other 13 formed new SACCOS.
- All maize seeds, 60% of sorghums and 80% of pearl millets were disposed by end of March 2005.
- Farmers have built good burnt bricks houses, furniture, bicycles, Pig and dairy cattle keeping and installed solar electric lighting.

Lessons Learned

- Several sensitisation and mobilisation meetings are necessary before the implementation starts.
- During planning, several partners (13) were identified while at the time of implementation only a few (7) had participated fully throughout the project period.

A team of different partners inspecting a Sorghum seed plot at Machenje SPG.

Presentation

On-Farm Production of Cereal Seeds

Drought was the main drawback in the first year of the project. It was experienced in the whole of Dodoma Region and Tanzania at large.



Drought encourages out-breaks of sorghum pests (*Callidea dregii*) such pests are rare when the rainfall pattern is normal.

- The success of technology transfer depends very much on many players (cooperation of surrounding farmers, local leadership, Government and NGOs)
- Farmers are proud of what they have achieved and are willing to share their knowledge with other farmers.
- Innovations can be hindered by factors such as climate, traditions and culture.
- A visit to a single farmers' group (SPG) can take half a day to a full day.
- Effective seed marketing implies publicity through various media.
- Good village governance is essential for success of farmers involved in projects.

What worked well and why?

- Seed production by each group was in one plot resulting in easy management and consistency of performance.
Reason(s) for success
Village land was available and village Governments were co-operated to spare land for group seed production.
- Each village has a Village Agricultural Extension Officer (VAEO), therefore, daily technical advice by VAEO and periodic inspection by seed inspectors were possible.
Reason(s) for success
Dodoma Region has a Programme under DANIDA funding on commercial crops seed production. The same District Seed Inspectors were used for FARM-Africa Project.
- On-Farm Training was conducted throughout the two production seasons
Reason(s) for success
MATF funds for training purpose were available.
- SPGs produced 124,046 tonnes against 180 tonnes of the expected improved seeds in the two seasons. Thus seed production was by 68.91%.
Reason(s) for success
Farmers and their village Governments were cooperative, trained, motivated.
- Funding continued throughout the two seasons
Reason(s) for success
MATF was satisfied with our quarterly reports.

What did not work well and why?

- Production of cereal seeds was conducted in four Districts not five Districts as planned (Kondoa District was not reached).
Reason(s) for failure
The two-year period was too short to reach Kondoa as it is very far from the project headquarters.
- Poor harvests in year one
Reason(s) for failure
Unusually little rainfall throughout the Region that year.
- Five sorghum seed plots produce was disqualified hence used as food produce.
Reason(s) for failure
Serious attack by sorghum pests due to unusual drought

Key challenges encountered

- Little cooperation from some surrounding farmers who weakened isolation distance between same crop types
- Out-break of sorghum pests
- Theft of seed produce for the sake of getting free improved seeds
- Higher costs of advertisements than budgeted for
- Low marketing skills of the SPGs
- Lack of alternative sources of incomes forcing farmers to sell seeds before the season at low prices
- Poor support from fellow villagers. They Preferred same quality of seed but not from a neighbouring farmer

Vision for sustainability/recommendation for such future projects

- All SPGs join SACCOS
- Ensure that all loans to SPGs for inputs are recovered and be reinvested in seed production.

Presentation

On-Farm Production of Cereal Seeds

- Advise farmers to identify isolated areas to avoid provision of large amounts of seeds to bordering farmers.
- Ensure properly dressed andt seed bags to discourage fraud.

Recommendation

Two years, the period for project implementation, was too short. In fact, the first year was for learning and second year for actual production. An extension of another two years is recommended for completed projects, and the introduction of a four year funding system for new projects.

Discussion and response from participants

From the presentation, participants observed that each village in Dodoma had access to a village agricultural extension officer. They were keen to know how the project implementers had overcome the problem of inadequate staffs, especially in the Government. The response was that LPRI, had disseminated crop knowledge to extension workers who were in a position to address both crop and livestock issues in the villages.

On the cost of packaging and distribution of seeds, participants were informed that the farmers were normally charged for the packaging. The advertisement costs would be carried by the buyer.

Finally, participants also wanted clarification on the organisational structures of the various farmer groups in the target areas. The response was that there were 29 Seed Production Groups (SPGs), each based at the village level. Each SPG had 10 members and as much as possible, gender equity was highly encouraged during the formation of the groups.

Presentation

Pilika Pilika Radio Project
Arusha, Tanzania

That there is no doubt that a soap opera and magazine combination is a very successful way to disseminate vital messages to the rural audience. The use of radio is popular as every household owns one. (Steadman Survey - November 2004)



Dissemination Methodologies

Radio soap opera and magazine initiatives, Arusha Tanzania: Presentation and listening to radio clips

Introduction

Pilika Pilika Radio Project is a weekly, half-hour radio soap opera and magazine Programme broadcast in Kiswahili on national Tanzanian radio as a way of disseminating information in an entertaining and educative way to its listeners in the rural areas on the subjects of farming, health, water management and social issues.

The Programme has been on air since May 2004 and now has an audience of around 3 million listeners. It is on air with both Radio Tanzania Dar es Salaam, giving it national coverage, and Radio Sauti Ya Injili, a popular FM station based in the northern zone of Tanzania.

Lessons learnt on methods and approaches used

- That there is no doubt that a soap opera and magazine combination is a very successful way to disseminate vital messages to the rural audience. Letters received from listeners are proof that they are both enjoying the Programme and learning lessons from it.
- Partnerships and linkages are a very important part of this project. Partners provide vital information to include in the Programme content, i.e. the storylines and these facts need to be precise so as not to pass on incorrect information to the listeners.
- Technology transferred takes the form of different aspects. For example the Programme can run a storyline on Trypanosomiasis, a deadly cattle disease. One listener wrote to say her cow had just died of this disease but, the rest of her cattle survived because she had been listening to Pilika Pilika and therefore knew how to prevent the rest of her cattle from catching it.
- What worked particularly well on the Programme was the idea of running a competition with prizes involved. This meant that the listeners made the extra effort to write to the Programme and whilst answering the question, they also wrote their comments on the show and this in turn made us realise that the listeners were coming from all over the country. Lindi, Songea, Mbeya, Mafia Island, Bukoba, Tanga to name a few.
- What hasn't worked so well is being able to reach remote listeners face-to-face as travelling these distances is both expensive and time consuming with not enough funds to cover it. This means that most of our interviews take place in the Northern Zone of Tanzania and makes those from other parts of the country feel a little left out. We are planning to make some trips further afield once some more funding becomes available.
- Other lessons learnt are that publicity has been a vital and challenging part of the project. The best way to create awareness of the Programme would be on the radio itself but this will add extra expense to the project which was not foreseen. Attempting to gain commercial sponsorship for expensive radio air time has proved a difficult aim to achieve in Tanzania.

Key challenges encountered

- Financial sustainability of a project like this. Once the costs of the production are covered through funding there is the added expense of having to buy air time and therefore there is no way of breaking even in this situation. The way to try and solve this is to find either a commercial sponsor or further funding.

Presentation

Dissemination Methodologies

Vision for sustainability

Recommendations for future projects are to make sure the funding covers all eventualities as there are always unexpected expenses incurred, for example one radio station doubled its prices in one year which we did not foresee happening.

Makutano Junction: Issue led Television drama series for East Africa

This is a television Programme that blends TV soap and information (infotainment) and aims to reach audiences that are :

- rural and growing rapidly
- open to new and business ideas
- open to taking risks, change
- opinion leaders in rural areas
- balanced in gender use of media
- mainly socio-economic group C I-D (Middle to Working class)

Communication Objectives

- Identify information needs of audiences
- Identify partners who can help meet these needs
- Design Programmes to meet information needs plus entertain and support changes in Knowledge, Attitudes and Practices (KAP)
- Research effectiveness of media in terms of:
 - viewers - type, numbers, areas
 - effectiveness to entertain and educate
 - identify clearly next series content
 - changes in KAP
- Potential other use of materials



The 'Makutano' crew at the market place during a shoot.

Media development objectives

- Place the series firmly in rural area linked to town, otherwise can be urban if commercially driven.
- Bring respect to farming/agriculture development again.
- Establish new large audience in the first 13 part series.
- Complement radio and pick up increasing audience loss
- Research and use results to approach existing and new partners by establishing new information needs. Sectors to be approached include Government and in country partners, and the Commercial sector:

Issue-led educational TV drama series

The following are selected development issues that will be brought out in the television series. For the message to reach home, it is important that the audience identify with the characters portrayed in the TV soap series.

a) Farming

- Milk production and distribution
- Biological pest control/Push Pull (Controlling Maize stalk borer)
- Crop storage
- Quality of products at market

b) Health

- Malaria
- Teenage sexual behaviour
- Role models and values

c) Education

- Rights of parents, school management
- Instructional materials and FPE

Presentation

Dissemination Methodologies

Estimated TV audiences in each country

These are the estimated viewership figures the TV series is likely to attract.

Country	Total	Urban	Rural
Kenya	5 million	2.5	2.5
Uganda	2.5 million	1.5	1
Tanzania*	3 million	1	2
TOTAL to view	10.5 m	5 m	5.5 m

* New TV and Video viewership (Steadman 2004)

Discussion and response from participants

The participants found the Mediae video presentation of the Makutano series quite interesting and informative. A few observations were however raised with the project implementers for further clarification. One of these was the issue of language. The TV drama was in English yet it was targeting the rural community. Wasn't it prudent to have done it in Kiswahili, which is understood across East Africa?

The response was that the target audience was not purely rural but also the urban and peri-urban communities. Some of the issues that would come through the TV series would not only touch on crop and livestock production, but also on general human sanitation, health and nutrition. These subjects would appeal to the urban communities. The series also targets other countries outside the East African Region such as Malawi and Zimbabwe. Funding constraints would also hinder the translation of the Programme to Kiswahili.

One of the challenges mentioned in the TV project implementation was in getting a commercial partner to sponsor the Programme. Participants were keen to know how Mediae would go about getting this sponsorship. The response was that Mediae would target companies in the telecommunication sector such as cellphone companies that are targeting customers across the country. Such companies are likely also, to have the budgets to sponsor such a TV series.

Also on the TV drama series, participants were concerned that relevant issues would be overwhelmed by the entertainment component of the episodes. The response to this was that it was important to offer viewers entertainment value while watching a TV soap drama so as to keep them glued to their televisions. It then becomes easier to put in development issues within the episodes, which can be easily remembered.

Finally, on the Radio Soap aired in Tanzania, participants were concerned that the name 'Pilika Pilika' sounded more urban than rural. Mediae explained that the name had been arrived at after thorough consultation with rural farmers, and indeed a workshop had been held to discuss various aspects of the production. The name was decided there through a vote that was cross-cutting in terms of age groups and gender.

Presentation

Orange fleshed sweet potato promotion through schools in urban and peri-urban Kampala, Uganda

Ongoing Round 3 project

Introduction

Started in February 2004 in Kampala, the project aims to promote orange-fleshed sweet potato varieties through schools in urban and peri-urban communities of Kampala. This will contribute to widespread growing and consumption of these sweet potato varieties for improved house hold food security and nutrition.

Partners

The lead institution implementing the project is Makerere University's Department of Agricultural Extension/Education. This is being done in partnership with various organisations including the local authority, as follows:

- Makerere University
- Kampala City Council (KCC)
- The Sweet Potato Programme of The National Agricultural Research Organisation (NARO)
- The International Potato Centre (CIP)- Vitamin A for Africa project (VITAA)
- The Joint Energy and Environment Projects (JEEP)
- 11 Primary schools (6 in Kawempe and 5 in Rubaga divisions)

Project Rationale

Uganda suffers a lot from Vitamin A deficiencies (VAD). 10,000 to 60,000 children die annually from VAD related illness. Animal and vegetable sources of Vitamin A are not easily used due to the high cost. As an alternative, Vitamin A capsules can also be used but the cost remains prohibitive for many people.

Widespread use of sweet potato is limited, despite NARO releasing the vitamin A rich orange fleshed varieties. These varieties have a number of advantages as outlined below. They are:

- Early maturing at 3 – 4 months
- High yielding, producing upto 20 tonnes/ha
- Tasty (sweet and colour appeal)
- Vitamin A rich (high beta-carotene)
- Value addition in form of other products like chapatis, cakes, juice, mandazis, pancakes, bagiya etc.



Technology and innovations of the project

The following varieties are being promoted: SPK 004 or Kakamega, and Ejumula



Approaches used

- Participatory training and learning.
- Experiential learning, monitoring and evaluation around farmer fields.
- Promotional campaigns through community theatre (exhibitions, music, dance, drama)
- Field days and exchange visits

Project Outputs

- At least 500 families growing 1/10th of an acre of Ejumula and/or SPK004 by the end of project.
- Over 500 rapid vine multiplication technique (RMT) plots established.

1. A child in rural Uganda eating a piece of orange flesh sweet potato
2. Pupils establish a Rapid Multiplication Technique (RMT) Plot in their school farm

Presentation

Ongoing Round 3 project

- At least 150 tonnes of *Ejumula* and/or *SPK004* varieties harvested by the end of project.
- At least 10 community-owned and managed vine multiplication plots of sweet potato established by end of project.

Progress to date

- More than 500 farm families have grown and consumed orange fleshed sweet potatoes
- 32 tonnes have been harvested
- More than 380 pupils are growing the orange fleshed sweet potato (OFSP) this season
- Over 2000 bags of vines purchased and distributed to farmers and pupils. Over one million shillings worth of vines have been exchanged amongst the farmers (50% was sold).
- 8 community school-owned and managed RMT plots.
- Over 200 individual farmer RMT plots also established.
- 42 Trainer of Trainers (TOT) trained in orange fleshed sweet potato agronomy.
- OFSP training manual, in English, published (5000 in LUganda).
- Posters promoting OFSP have been distributed to all schools and communities.
- 22 TOTs trained in OFSP value addition, preservation, storage and processing. TOTs have in turn trained 200 farmers in value addition and processing of OFSP products



Lessons Learnt

- Schools are neutral and pupils involvement increases the spreading the OFSP messages.
- Regular follow-up and monitoring by the team and TOTs are crucial to project success.
- Mutual respect/trust, role sharing, transparency, regular feedback and good leadership lead to successful team work.

Challenges

- Land is increasingly becoming a limiting factor due to urbanization.
- Susceptibility of *Ejumula* to Sweet Potato Virus Disease (SPVD).
- Drought/flooding, domestic animals and theft of vines and roots.

Vision for sustainability and way forward

For the project to be sustainable, the following need to be done:

- Consolidate the project activities
- Complete the remaining planned activities
- Plan an exit strategy
- Enhance community institutional building
- Promote value addition/processing and marketing of the orange fleshed sweet potatoes.

School boys with a good harvest of the orange fleshed sweet potatoes in a Kampala suburb

Presentation

Ongoing Round 3 project



Promotion of Vanilla production in Luwero District, Uganda by the Luwero Farmers' District Association (LUDFA)

Introduction

The project is implemented in four sub-counties of Luwero, namely; Makulubita, Kasangombe, Bamunanika and Zirowe. Implementation of activities started in February 2004. In spite of the fact that the vanilla crop takes 2 years for a farmer to get the first harvest, the vanilla that was planted has not yet reached harvesting. However, farmers have intensified management practices and the crop is growing vigorously in majority of the project sites.

Project objectives

- To increase vanilla production acreage.
- To raise household incomes of small-scale farmers.
- To build capacity of 800 farmers, 100 contact farmers and 10 farmer trainers in vanilla production.
- To promote sustainable environment/agricultural resources management.

Partners and roles

1. LUDFA - overall project implementation
2. District local Government - training personnel, audit and evaluation
3. Uganda National Vanilla Association (UNVA) - Market information, technical backup and availing training material
4. Mukono District Farmers' Association - Avail Vanilla vines
5. Sub-county Authorities - Participation in planning, monitoring and evaluation

Achievements to date

- 10 farmer trainers were equipped with knowledge and skills in vanilla management.
- 113 contact farmers were trained in vanilla production.
- 1000 vanilla production handbooks printed.
- 446 and 200 farmers were trained in vanilla production in the first and second year of project implementation.
- 108 on-farm vanilla demonstration gardens established.
- 50000 vanilla vines distributed to farmers after 50% down payment of the cost of vines.
- 260 farmers taken for a study tour and enhanced their knowledge and skills in vanilla management practices.

1. Vanilla, intercropped with Banana and Coffee

2. A lady farmer in her Vanilla farm

3. Farmer groups receive vanilla vines, wheelbarrows and spades

Presentation

Ongoing Round 3 project

On farm production and distribution of improved sorghum in Pallisa District, Uganda

Introduction

The project was started in February 2004, and it focuses on poverty alleviation in Pallisa District (Kabwangasi, Kakoro and Kamonkolil sub-counties). The project is using a simple and quick means of on-farm multiplication and distribution of improved *Epuripur* Sorghum. It targets active, but poor peasant farmers.

Project Objectives

The project focuses on poverty alleviation in Pallisa District using a simple and quick means of on-farm *Epuripur* Sorghum; by organized farmer groups. The project will improve household income and nutrition.

The improved sorghum variety has been bred at Serere Agriculture and Animal Research Institute; and has proved to be adaptable to local conditions and farmers can easily exploit their advantages; as they are early maturing drought resistant and high yielding (2-3 times compared to local varieties). The grains are high in sugar and starch content, making it suitable for food and brewing industry.



Specific objectives

1. Promote on farm production and distribution of the *Epuripur* improved sorghum variety through community seed multiplication system.
2. Improve farmer knowledge in better crop management practices
3. Strengthen linkages between various stakeholders
4. Improve food security and incomes at household level

Expected outputs

- At least 60% of participating farmers to produce and distribute improved *Epuripur* seed by the end of 2005
- At least 70% of the participating farmers would have improved their knowledge in better crop management by the end of 2005.
- At least 60% of viable linkages would have been put in place by the end of 2005.
- At least 505 of the participating farmers would have attained better living standards by 2005.

Achievements and Key activities.

- Sensitisation and mobilisation
- Training of 360 farmers in crop husbandry; each expected to reach 5 farmers thus a total of 1,800.
- Procurement of 7200kg improved seed, distributed to the 360 farmers expecting nearly 200,000kg of sorghum seeds. At the moment nearly 120,000kg of seed has been produced, though weather has been erratic.
- Training of 36 community Based Trainers (CBTS), who in turn train others and help in monitoring.
- Formation of 9 community out growers associations to help in marketing the improved sorghum collectively.
- Capital support in terms of tools and equipment on a revolving basis.
- In addition to farmer to farmer group visits, the farmers had an external exposure visit to SAARI which has linked the farmers to the researchers.
- 18 farmers' groups were formed and are now at the stage of registration to enable them open bank accounts.

The project progress is good and over 60% of the expected outputs have been realised as planned. The participating farmers have been able to produce and distribute improved seed and look forward to improving their asset base like land,

A lady farmer proudly shows off her Epuripur sorghum harvest to the project co-ordinator, Mr. Watenyeli.

Presentation

Ongoing Round 3 project



Packed sorghum in gunny bags, ready for collection. Traders normally buy the sorghum at farm-level for transportation to the markets.

bicycles, while a majority have used the proceeds to pay school fees.

Challenges

- Unpredictable weather; sometimes with prolonged drought.
- Pest damage – by birds and parasitic weed called *Striga spp.*
- Illiteracy
- Many outgrowers are still unattended to. This may produce poor quality seeds.

Lessons Learnt

1. The technology is good and in line with the Government policy for PMA (Plan for the Modernisation of Agriculture)
2. Good linkages with other stakeholders bring good results.
3. Approaches and methods used were good because they were participatory. They have also built confidence in farmers.
4. Assured high yields and market helped the farmers adopt the technology.

Vision for Sustainability

- Training of CBTs who are permanent residents in the project areas who in turn will continue training the farmers.
- Formation of the growers associations.
- Farmers own the project
- Good linkage with Government through extension staff.

There are plans to convert the growers association into a strong Co-operative movement and link them to other bigger partners in development. Other plans include:

- encouraging group marketing
- starting a seed multiplication scheme for quality sustainability, and
- encouraging farmers to re-invest the money from the Epiripur into other projects such as Poultry and Piggery.

Field Trip

The Poultry project in Rakai District. Discussion and comments from Participants

The field trip to Rakai District was quite an interesting experience for the workshop participants. Participants got to meet and talk to members of three poultry farmers' groups and their comments and observations arising from the trip are as follows:

- Participants were taken through the intricate stages of the cockerel exchange and hatching Programme that produces the improved Rakai chicken. They were impressed by the whole process, but some were of the view that easier techniques could still be developed for hatching the chicks.
- Challenges facing the poultry project were observed first hand with issues such as the lack of clean water yet CIDI is an integrated project. Participants wondered what CIDI can do about water and sanitation.
- The risk of the birds getting infected by opportunistic bird diseases due to group members low access to vaccines was discussed. However, the CIDI project leader, Dr. jjuuko assured participants that most of the birds under the project had been vaccinated through the efforts of CIDI.
- Poultry groups were also involved with the upkeep of children orphaned by AIDS, and this was a great constraint on their resources. Participants wondered whether there were Government HIV/AIDS Programme s that could address the children's needs.
- Also discussed was the issue of micro-finance assistance for the poultry groups. Dr. jjuuko said that CIDI is trying to link them to micro-credit firms operating in the area (despite their stringent requirement of weekly payments).
- It was commendable that group members could now acquire assets such as land, mobile phone, school fees and other household requirements. Participants however noted that there was a lot of effort going into poultry farming at the expense of other activities such as banana production. CIDI was asked to integrate other activities with poultry farming.



1. Healthy layers at a Chicken house ran by the Kyakizige/Kamukamu group.
2. Members of the Tukorerewamu development group during the field visit.
3. Children, most of them orphans, at the Kyaluwakula Farmers group with some of the visitors and CIDI staff.

4. Charles Dumba with his wife, outside their chicken house.
5. An elevated laying nest, made from local material, with a boiled decoy egg.
6. A hen sitting on eggs within a mesh cage (the cage protect it from being disturbed by other hens).

Presentation

By Sokoine University of
Agriculture, Tanzania

Processing and Value adding Technologies

Transfer of Solar drying technologies to sweet potato farmers in
Gairo division, Kilosa District in Tanzania,
for sustainable food security and income generation

Project Overview

Sweet potato is a major cash and food crop in the Morogoro Region of Tanzania. Unfortunately, 50% of the yield is commonly lost at peak season due to:

- lack of appropriate preservation technology, and
- weak price negotiating power

For the farmers in the Region therefore, the need to access affordable preservation methods for the crop is very urgent in order to meet household nutritional demands and income.



Project Partners

- Sokoine University of Agriculture (SUA)
- AMKA Trust
- TAWLAE (Tanzania Women Leaders in Agriculture and Environment)
- District Agricultural Office (Extension)
- District Cooperative Office
- Farmers in 3 villages in Gairo

Project Approach

1. To empower sweet potato farmers by facilitating:
 - adoption of solar drying technology to preserve SP and other products available
 - establishment of farmer groups
 - formation of farmers' Community-based organisation (CBO) to deal with their sweet potato problems

2. To recruit and train local artisans for continuing construction and maintenance of the solar dryers
3. To establish a revolving loan fund to facilitate sweet potato production and solar drying technology

Quantified project achievements

In empowering sweet potato farmers, the following has been facilitated:

- Formation of 16 farmer groups
- Farmers have acquired 35 solar dryers, 16 sweet potato slicing machines, 16 weighing scales, and 16 sets of assorted cooking utensils
- Formation of 1 fully registered community-based farmer organisation (UWAVIMKI) with 206 members
- Acquisition of solar drying skills by 206 farmers (how to dry sweet potatoes, vegetables and fruits)
- Skills on:- leadership (32 group leaders), entrepreneurship and group formation (all 206 farmers)
- Acquisition of one set of office furniture (also hiring of office space for the CBO for one full year)
- Established a revolving loan fund by providing a seed money of Tshs. 6,800,000/- and training on how to manage the fund
- Training and facilitation skills (for training other farmers about solar drying) of 20 members of the CBO
- Participation of farmers in:-
 - (i) The National Agricultural show in Morogoro
 - (ii) Trade show in Dar es Salaam
 - (iii) Several local open market exhibitions in the area

Women selling sweet potatoes at a market place in Kilosa District, Tanzania.

Presentation

By Sokoine University of
Agriculture, Tanzania

Working with farmer
groups is more effective
than individuals in
facilitating fast adoption of
new technology



2. (Until June 2005) farmers in the 3 project villages have preserved the following :
 - 606 kg of sweet potato
 - 402.5 kg of indigenous vegetables and 81.5 kg of Rosella
 - 56 kg of tomatoes
 - 7 kg of various fruits
3. The trained sweet potato farmers trained 20 households from nearby non-project villages
4. A total of 92 individual farmers (48 women and 44 men) and 10 farmer groups have acquired loans for sweet potato production amounting to Tshs. 8,200,000/- by January 2005

Lessons learnt

1. On Methods and approaches used:
Farmers become more motivated when empowered by providing them with:
 - Necessary working material
 - Finances (necessary working capital)
 - Essential skills through training
 - Freedom in decision-making
 Working with farmer groups is more effective than individuals in facilitating fast adoption of new technology
2. On Partnership and linkages:
 - Partnership in a multi-disciplinary team is effective in implementing a technological transfer project
 - Farmers learn better by visiting other farmers who are doing related activities
3. On Technology transfer:
Poverty coupled with low education, can highly limit the rate of adopting a new technology
4. What worked well and why:
Timely disbursement of funds coupled with regular reporting and communication facilitated smooth implementation of the project
5. What did not work well and why:
Abrupt change in project leadership can affect project performance, especially timely reporting

Key challenges encountered

Unreliable weather conditions (drought), which could not be controlled by project implementers, led to low production of sweet potato and therefore lack of surplus products to dry



1. A SUA sweet potato solar dryer
2. Oversized extended sisal bags filled with sweet potatoes awaiting transport to the urban centre and the city.

Vision for sustainability or recommendations for such future projects

For agricultural-based projects that depend on production, two years of implementation is too short to realise tangible impact. In working with farmers who are highly resource constrained, provision of material support for their livelihood becomes necessary in attaining project goals

Discussion

Ongoing Round 3 project

Discussion and response from participants

The presentation mentioned that dried sweet potatoes were still not very popular in the target areas and participants wondered why the technology should be promoted in light of this finding. The project implementers explained that the project introduced dried sweet potatoes essentially to tackle perishability and they were targeted at potential consumers in towns. Other products from sweet potatoes such as flour were also promoted. Farmers traditionally dry sweet potatoes on sand, giving low quality products that were not popular in the rural areas. However, with the new technology of using the Solar driers, popularity of the dried sweet potatoes is gradually rising. Key to this project is the aspect of achieving food security during times of scarcity.

Participants observed that farmers had taken loans of upto TZSh. 8.2 Million and they were keen to know the rate of loan recovery. They were informed that the CBO (UWAVIMKI) had established an effective recovery system in place. Recovery rate was currently standing at 88%. The other roles of the CBO were to promote joint marketing, political lobbying and facilitate production inputs.

Participants were keen to find out from the implementers what type of sweet potatoes was suitable for drying purposes, whether the white local variety or the improved orange flesh kind. The response was that the local white variety was mostly used while the orange flesh was still under promotion.

The project implementers were asked whether a cost benefit analysis had been conducted to compare sales between the dried sweet potatoes and the fresh ones. The response was that this had not been comprehensively done. Farmers, however had given positive indications that the dried variety was profitable. Promotions done through trade fairs had proven quite effective and traders were now looking for sweet potatoes during off seasons.

Finally, there was concern from the participants about the project not targeting the poorest of the poor farmers. It was seen that poverty and lack of education limited adoption of the technology by these groups and the response from SUA was that they had tried not to leave the farmers because of this issue, although it was a major challenge. Further clarification on this issue was provided by the FARM-Africa CEO, Dr. Christie Peacock. She informed the participants that the "poorest of the poor" were not solely the target of MATF. She explained that "there were several innovative projects that had been funded and could be accessed by many people without necessarily requiring lots of resources, high literacy or connections in high places." Two such projects are:

- the promotion of mosaic resistant cassava in Nakasongola, Uganda, and
- the growing of specialty coffee around Mt. Kilimanjaro with access to international markets which are really benefitting farmers.

Presentation

Integrated Natural Resources/ Pest-disease Management Technologies

This project was started with the main goal of improving food security, nutrition and income of the people of Bushenyi and Kisoro through restoring bean productivity in the area.



Improving food security in south western Uganda through transfer of resistant varieties and integrated management packages for bean root rot disease

Project Background

Beans (*Phaseolus vulgaris*) is one of the most important crops in Uganda. Southwestern Uganda was the greatest producer and was responsible for over 30% of beans produced in the country (MAAIF, 1992) until early 1990's when production started declining. By 1994 and 1995 the production had gone down to 25% and less than 20% (MAAIF, 1997) respectively. This decline was mostly attributed to the root rot disease.

In Bushenyi and Kisoro Districts the disease had reached epidemic level with 100% yield loss during severe attack. Farmers could hardly harvest any beans from their fields. There was therefore an urgent need for resistant varieties and other management practices to be availed to the people.

The farmers in the area identified:

- resistant bean varieties,
- improvement of soil fertility and
- cultural practices as priority areas to emphasize handling of root rot problems.

The National beans Programme (based at Namulonge) and the International Center for Tropical Agriculture (CIAT) have developed resistant varieties to root rot and other integrated disease management technologies which proved to be effective in the management of the disease. The resistant varieties developed had a yield potential of two to three tonnes per hectare and with improved soil and crop management practices, the productivity of the beans in the area would be revitalized and even go beyond the 30% of the national production previously produced in the area.

Project Goals

This project was started with the main goal of improving food security, nutrition and income of the people of Bushenyi and Kisoro through restoring bean productivity in the area. The purpose was to make available appropriate technologies (resistant varieties and integrated management practices) and information on bean root rot to farmers and other stakeholders to allow increased bean productivity.

The Key objectives

- Multiplication and distribution of adequate seeds of bean varieties resistant to root rot
- Establishment of demonstrations on integrated management options of the bean root rot
- Implementation of Farmer Field Schools
- Training and sensitizing political and opinion leaders extension staff, local leaders and farmers.

Partnerships

This project was implemented by the:

- National Beans Programme based at Namulonge Agricultural and Animal Research Institute (NAARI) in partnership with Kachwekano Agricultural Research Development center.
- The District Agricultural extension staff based in Bushenyi and Kisoro Districts.
- AFRICARE and NGO and,
- farmers and farmers groups.

Methodologies used

- For each District two sub counties were selected for implementation of the project.

Presentation

Integrated Natural Resources/ Pest-disease Management Technologies



1. Climbing beans in Kisoro District
2. A farm landscape filled with the climbing beans variety in Kisoro District.
3. Wilting bean leaves showing signs of attack from the bean root-rot disease.

- The institutional multiplication was at NAARI and Kachwekano ARDC.
- The Demonstrations were set up on the farmers' fields. The farmers managed the demonstrations and carried out the multiplication.
- A seed loan system was the strategy used in availing seed to individuals or group of farmers. After harvesting the farmers loaned seed would give back (to the extension staff) twice the amount loaned. This enabled seed to diffuse within the farming community.
- The Farmer Field Schools (FFS) were implemented in Kisoro District by AFRICARE a local NGO.

Achievements

- The total area of seed multiplied was 40.55 ha with a total seed production of 24,695 kg.
 - A total of 146 cropping seasons and 52 demonstrations were set up in 2003 B, 2004A and 2004B.
 - Field days at demonstration sites were carried out each growing season. Only the first three sets of Farmer Field Schools were able to go through the Syllabus. The second set only completed one term.
- It was found that over 80% of the farmers from the first 3 FFS were implementing what they had learnt. They were using the new resistant varieties and the soil amendments.
 - About 11% of the farmers from the first set of FFS's participated in instructing the farmers in the second set of FFS.
 - The performance of the technologies stimulated interest from all stakeholders starting from local leaders to farmers. This resulted in quicker adoption of technologies. At the moment beans can be seen growing where there was nothing by the beginning of the project. This means that more beans are being eaten and also sold.
 - The introduced varieties can be seen in markets. Some farmers have earned over UG Sh. 500,000 from beans at the end of one season.

This project has therefore, contributed both to improved nutrition and increased income.

- Over 95% of the extension agents, and 80% of the opinion leaders were trained by the end of the project period. All the top (100%) District leadership were sensitized and an average of 75% of the farmers in the target areas had been sensitized about the management of the bean root rots by the end of the project period.
- Over 70% of the sensitized farmers were utilizing the improved bean varieties.

The key lessons learnt

- (a) On Methodology:
 - The methodology used affects the rate at which the technologies being promoted are adopted. Demonstrations and field days were very useful in informing other members of the community who were not participating in the project implementation.
 - FFS were more effective for farmers to understand and learn the constraints and advantages of the technologies being adopted.
 - The seed loan system was a very quick method for ensuring that seed of new varieties spread through the farming community.
- (b) On Partnerships:
 - The collaboration and partnership becomes stronger and effective if all the partners realise that the constraint being addressed is a priority and impacts on people's welfare. Bean root rot was perceived as priority constraints by all partners in Bushenyi and Kisoro and hence collaboration in promoting technologies for its control was regarded as key to its management. By the end

Presentation

Integrated Natural Resources/ Pest-disease Management Technologies

of the project period it was realised that the project had strengthened the collaboration between research, the District leadership (of Bushenyi and Kisoro), the District extension staff, the local leaders in the sub counties and AFRICARE (in the case of Kisoro) and farmers.

(c) On Technology:

It was found that a good technology with the desired attributes and addressing a serious constraint diffuses very fast within the community and stimulates adoption. For example *NABE 12C (Sugar 31)* is now the most grown and sought out variety in both Kisoro and Bushenyi; and neighbouring Kabale. It has been accepted in Bushenyi, which previously never grew climbers despite the complaints about stakes.

- In addition it was realised that a farmer believes by seeing; Farmers learn better from other farmers and they are encouraged to ask more questions from fellow farmers; Leaders in an area are encouraged to participate in the sensitisation and promotion of a technology once it performs well.

The training and sensitisation of all stakeholders went on very well. This was due to the commitment of the technical team and the District leadership in both Districts. The demonstrations and field days were all well done. This was due to the commitment of District sub county extension staff and leadership of both political and opinion leaders.

Key Challenges

- The main challenge at the beginning was to convince the farmers to grow the new varieties especially the climbing beans. It was only when they saw the performance that more and more farmers demanded for seed.
- Later the challenge was how to ensure that farmers return the seed received on a seed loaned scheme. Even after signing the contract it was still difficult.
- The changes in staff of AFRICARE negatively impacted on the performance of FFS especially towards the end.

Vision for Sustainability

Sustainability for the activities initiated through this project can only be made possible if the Districts concerned integrate them into the District activities. Kisoro and Bushenyi have already initiated a mechanism to ensure this integration.

All Agricultural related projects within the two Districts such as AAMP and NAADS; and the NGO's such as AFRICA 2000 have already started integrating the bean root rot work in their activities. The only concern is the source of clean bean seed in the community. If this can be addressed this will help the continuation of the activities.

A recommendation for such future projects is that, they be funded for a period of at least three to four years. At the end of the second year the farmers are just starting to appreciate the technologies and the project ends before they realise real benefits.

Presentation

Integrated Natural Resources/ Pest-disease Management Technologies



1. A tree seedling of the Moringa variety. The tree is popular due to its medicinal properties.

2. Calliandra tree seedlings. The tree is commonly used as livestock fodder, especially during the dry season.

Accelerating Market-led Integration of High Value Trees into Small-holder Farms in Western Kenya

Introduction

The crisis of low food production is high in the small-holder farms of western Kenya Region due to land degradation, which results from continuous tillage that has led to low and declining soil fertility. Coupled with this, is the high level of poverty and HIV/AIDS pandemic that is affecting the productive age group. Many organisations through the COSOFAP (Consortium for Scaling up Options for increased Farm Productivity in Western Kenya) identified many Challenges within the Region as:

- Inadequate supply of quality planting materials
- Weak linkages between producers and markets
- Weak institutional delivery mechanisms
- Inadequate policies to enhance tree farming as a business
- Inadequate capacity of farmers especially on tree management

Project Purpose

To increase income generating possibilities of small scale farmers in western Kenya by helping them enter into high value tree product markets and produce substitutes for expensive inputs: green manure to substitute expensive fertilizers and fodder shrubs to substitute dairy meal.

Project Partners forming the Consortium:

- KARI Kakamega, KEFRI, Ministry of Agriculture, Vi Agroforestry
- ICRAF Western Kenya, Project Coordinator
UCRC (Ugunja Community Resource Centre), NYAMSAC (Nyaminia Agroforestry Locational Committee), TATRO Womens group, REFSO (Rural Energy and Food Security Organisation), Africa Now

Project Objectives:

- To enhance agro forestry germplasm production and create sustainable distribution networks through support to community nurseries and strengthening existing private nurseries;
- To build farmers capacity in production and marketing of high value trees and tree products through training, workshops and study tours and to integrate high-value trees into small-holder farming systems and mechanisms to deliver and support agro forestry technologies and market agro forestry products by farmers.

Methodologies

- a) 10 Study sites, which were to be focal scaling up areas (FSUA), were selected.
 - Each site was manned by one of the partners.
 - A change team consisting minimum 15 farmers including the area chief and a headmaster of a local school was formed in:
 - Kisumu: Nyahera - Africa Now
 - Nyando: Pap Onditi; Katuk Odeyo- Vi Agroforestry
 - Busia: Mayenje (REFSO); Bulindo (KARI)
 - Siaya: Nyamasare (UCRC); Nyaminia (NYAMSAC); (TATRO)
 - Vihiga: Ebukhaya (MOARD); Ochinga (KEFRI/ICRAF)
- b) The Technologies that were introduced in each of the sites were:
 - Integrated Soil Fertility Management options that include: Improved fallows, biomass transfer, compost and farmyard manure
 - Improved Fruit trees varieties for mangoes, avocado and passion fruit
 - Fast growing timber trees such as *Gravellia robusta* and *Maesopsis emenni* that also provide fuel wood
 - Nutritional and medicinal trees such as *Moringa Oleiferra*
 - Fodder shrubs for cut and curry with key species being *Calliandra calothyrsus*, *Leucaena trichandra* and *Morus Alba*
- c) To enhance agro forestry germplasm production and create sustainable

Presentation

Accelerating market led integration of high value trees into small-holder farms in Western Kenya.

distribution networks through support to community. Field demonstrations on quality seed harvesting, packaging and storing, nursery establishment, seedling transplanting and nursery agronomic husbandry practices were held in all the 10 FSUA sites. After the first season, every member of the FSUA trained at least 20 other farmers who in turn trained 5-10 farmers.

d) To build the capacity of farmers in production and marketing of high value trees and tree products, farmers were trained through workshops and study tours. Farmers were trained on:

- Principles of participatory farming systems analysis (PFSA) targeting capacity building in basic farm economics and planning,
- Investment situations, market conditions and risk analysis, data analysis and processing.
- Market intelligence and enterprise development.

They were also exposed to market opportunities through visit to successful small-holder agro-industries so that they can integrate high-value trees into small-holder farming systems and mechanisms to deliver and support agro forestry technologies and market agro forestry products.

In addition, they were trained on:

- Management of established trees,
- Production of dissemination materials,
- Creation of sustainable seed distribution networks and
- Skills in basic impact assessment

Achievements of the Project

- 10 Functional change teams are in place
- Network of nursery operators/seed vendors in western Kenya established
- Income generation especially nursery operators /Enhanced sale of seedlings
- Enhanced capacity of community members
- Enhanced community organisation
- A CBO (ECHADO) born out of Ochinga Change Team addressing a broad spectrum of issues.
- Culture/gender re-orientation has taken place
- More species of economic and environmental importance in the sites e.g. *Moringa*, *Cassuarina*, *Neem*, *Prunus*, bamboo, *Eucalyptus*, grafted mangoes, *Warbugia*
- The Bulindo Change Team has gotten 10 cows from Heifer International due to the fodder component.
- Posters on *Moringa*, improved fallow and calendars for the year 2005 were produced and distributed to farmers and partners
- There are 23 community nurseries and 65 private nurseries in the 10 sites.
- Each site has a mother block (Mangoes)
- There are 5 seed distribution networks: private nursery operators, development agencies e.g. lead partners, MOA, Learning institutions, communal nurseries
- 20 seed vendors /producers have been trained
- 13 study tours were conducted
- Change Teams have provided structures for sustainable scaling up
- Enhanced fodder security especially during adverse weather conditions e.g. drought for Livestock
- Enhancement of environmental conservation
- Wood fuel security has been enhanced
- Enhancement of networking between producers and markets.
- Establishment of farmer networks – e.g. Nyahera Watershed Management Committee
- Bee keeping and dairy goats have been started in the sites
- Introduction of high value crops e.g. cowpeas, pineapple suckers and indigenous vegetables
- Increased visits by individual farmers to ICRAF, KEFRI, and KARI offices
- 2 members of NYAMSAC were picked for training by the Forest Department in March 2005.

Presentation

Accelerating market led integration of high value trees into small-holder farms in Western Kenya.

Challenges and lessons learned

- Farmers viewed the growing of the high value trees as a long-term investment with no immediate returns
- Timely provision of adequate and high quality germplasm
- Coordinating 10 sites and 10 partners
- Maintaining momentum of change teams
- Wider markets for tree seedlings
- Appropriate technology for value addition of tree products
- Varying and adverse weather conditions in the 10 sites
- Major Socio-cultural constraints
- Dependency syndrome among community members
- Funding did not have provision for a credit scheme
- Concentration on change team vis a vis the other farmers
- Other commitments of partners - rescheduling of activities
- Short duration of project

Sustainability measures that need further strengthening:

- Capacity building at various levels
- Further training of change teams
- Further training of existing nursery operators
- Collaboration/Involvement of Multiple partners
- Further training in market orientation
- Further funding (business orientation, tree management for specific products)

On the Bean root-rot resistant beans: Discussion and response from participants

Participants were keen to know the differences in yields, between the local beans and the improved resistant varieties. It was explained that yields for local varieties range from 400-600kg/ha of dry weight, whereas for improved varieties in good weather, the yields are between 2000-4000kg/ha.

The seed loan scheme operation was also explained to the participants. It is managed by the Districts themselves (District extension staff in the District/parish or sub county). The seed is recovered at the end of the season and given to other farmers who had not participated in the season/project. The seed loan scheme will be managed and integrated into the activities of the local Government.

Participants were curious to know the bean varieties promoted and the most preferred by Farmers. It was seen that initially, there were 20 varieties. Demonstrations were done in 2 Districts with 4 varieties planted in each parish. Field days were conducted and eventually farmers selected the most preferred varieties especially the sugar bean which is easily marketable and early maturing. Other farmers preferred the bushy bean type (3 varieties), though they have had bean root rot disease, and currently the breeders are working on these to improve their resistance to the disease.

The Farmer Field School system and how it operates was discussed and it was seen that the syllabus followed the performance of the crop on the ground. This started from the management of the crop, pests and disease control up to the time of harvesting. At the end of the first term, most farmers had not grasped the whole aspect of FFS, hence the need to run them through the second time to enable them grasp the knowledge and pass it on to the other farmers. In conclusion most comments about the project focused on the need for people on the ground to come up with replicable /up scaling methods so that the technology can reach and benefit many people.

Discussion

Accelerating market led integration of high value trees into small-holder farms in Western Kenya.

On the High Value Trees: Discussion and response from participants

The participants were keen to know how much the communities and building industries were relying on the timber produced from these high value trees. The response was that farmers already had their own indigenous trees, there was no land to plant the trees and no seedlings, thus the need for timber was evident as they could use anything they laid their hands on. When they realised that the project was going to assist them, they gladly accepted it. Furthermore, because of health problems in the area, *Moringa* tree spp was readily accepted and now is being used in treating minor ailments and purification of water in the area.

Participants also raised the issue of constraints due to social cultural practices of the communities involved in the project, especially on the planting of trees by women and how it affected the project. The response from the project implementers was that most of the women were not allowed to plant trees on their farms, however, with the sale of tree seedlings and the income generated, this cultural strictness was gradually toned down.

There was concern from participants about certain trees that are known to grow too big. They wondered how the planting of the same related to availability of land, bearing in mind that the Region is densely populated. The response was that the planting of trees was encouraged along the hedges, fences and areas where farming could not be done. The forest department was incorporated into this activity to create awareness and education on sites where tree planting could be done.

Participants also requested clarification on the change teams. How do they work or demonstrate the technology on their farms and how do the other farmers pick up the practices? The response was that the change teams were used as role models, whereby they could have the nurseries on their individual farms. Field days were organized on these sites thus acting as sites of technology transfer where other farmers could learn and adopt the technology.

The issue of the people targeted by the project also came up. Was the project targeting people to plant trees or people with forests to start forest based enterprises? The project leaders clarified that the project targeted both categories of people. Small-holder farmers with small parcels of land that can generate income by planting high valued plants/trees species were mostly encouraged.

Presentation

On going round 3 project
Project Leader: Ferdinand Olang

Promotion of Gari Processing technology in Lira, Uganda

Introduction

Started in February 2004, the project aimed at disseminating Gari processing technology for sustainable production of cassava and poverty eradication in selected Districts of Northern, Eastern, and Central Uganda. It is led by the Mid-North Private Sector Development Company Limited in Lira – Uganda.

Technology

The production process of Gari starts with the harvesting of cassava. These are peeled and washed clean, then grated into mash. The mash is squeezed or pressed overnight and then dry-roasted for 30-40 minutes at 200-220 degrees centigrade to get Gari, a light, white or creamy, crystalline foodstuff.

Benefits of Gari

- Gari is an instant food (ready-to-serve at table in 2 minutes) and it's made from pure and natural dehydrated cassava.
- It is served as porridge or food with most dishes and it's ideal for schools, hospitals, prisons, army, refugee/Internally Displaced Peoples camps, working mothers, those with little cooking time and everybody.



1. Gari being stirred in a cooking utensil
2. Both men and women can prepare Gari.
3. The grated cassava before it is squeezed or pressed into mash.

- It has a shelf life of 2 yrs under controlled storage hence ensures food security.
- It is gender friendly due to the ease of preparation
- It is environmentally friendly since it promotes sustainable agriculture
- It has a high export potential due to factors such as lightness, long life and potential for mass production.

Project Areas: Districts of Uganda

- Lira (two groups)
Subcounties of Awelo and Aputi with 88 trainees
- Apac
Subcounty of Abongomola with 40 trainees
- Masindi
Subcounty of Kiryandongo with 29 trainees

- Nakasongola
Subcounty of Lwampanga with 40 trainees
 - Luwero
Subcounty of Kalagala with 40 trainees
 - Mukono
Subcounty of Ntenjero with 47 trainees
 - Pallisa
Subcounty of Agule with 52 trainees
 - Busia.
Subcounty of Lunyo with 34 trainees
- (Total of 9 farmer groups with 366 individual farmers)

Project Objectives

The overall aim of the project is household food security and Poverty reduction. In implementing the project, immediate objectives to be met were to:

- Promote increased on-farm production of cassava;
- Promote household and commercial processing of cassava into gari;
- Promote adaptation of gari in local menu;
- Streamline local, national and international marketing of gari.

Project Partners

- Mid-North Private Sector Development Company Limited: the Project Leader
- Palmpot Ltd-Kampala: Lead Trainer and Quality control

Presentation

On going round 3 project
Project Leader: Ferdinand Olang



- NARO/NAARI: On-farm demos of cassava varieties
- International Institute of Tropical Agriculture(IITA)-Kampala: Quality control of Gari
- Eastern private Sector Development Centre Ltd.(EPSEDEC)-Mbale: Follow-up of trained groups
- Southern and Eastern Private Sector Promotion Enterprise Ltd.(SEPSPEL)-Busia: Follow-up of trained groups
- Centre for private Sector Development Ltd.(CPSD)-Masaka: Follow-up of trained groups
- Aid Liaison Department (ALD/MFPED): Coordination of Private Sector Development Companies
- ORIBGING Women's SACCO Ltd.-Lira: Micro credit policy
- Nakasongola District Farmers Association(NADIFA): Follow-up
- Masindi District Farmers Association(MADIFA): Follow-up
- Nine farmer groups: Participation in project activities

Approaches

The following methodologies were adopted in implementing the project:

- Participatory training workshops in Gari processing and its utilization
- On-farm promotion of cassava production
- Exchange visits
- Market planning
- Micro finance linkages
- Product development
- Farmer group development

Achievements

The following were the measurable impacts from the project implementation:

- 9 groups (366 farmers) were able to process their cassava into gari
- 9 cassava demos and two on-farm trials set up
- Draft marketing plan for 2005-07 in place
- Draft micro finance policy in place

Key Challenges

- Further intervention is required in obtaining processing equipment for groups to realise project objectives
- Competition from substitute products
- The difficulty of changing people's attitudes and perceptions from their traditional staple diets to the new foodstuff (Cassava usually regarded as a poor man's food)

Vision for sustainability

This is centred around the need to market and sell the processed product in large volumes. A marketing plan has been formulated based on the market potential of Gari as can be seen below :

- Current demand stands at 5,000 kg per month @ shs 800 to 1,000 wholesale and shs 1,000 to 1,300 retail
- Current supply stands at 2,000 kgs per month

By targeting schools, weekly markets, Armed forces, World Food Programme, supermarkets and the export market there is a potential of generating upto 150,000 kgs per month. The current group capacity is 8,000 kgs per month.

Marketing strategies to be utilised include the 4Ps of marketing, namely:

- Product (group production capacity, product development, packaging and labelling by the Gari Association)
- Pricing strategy based on widest reach.
- Place and distribution (shopping outlets, exhibitions, small and medium enterprises)
- Promotion (demos, documentation, adverts, courtesy calls)

A clean cassava field in Lira District, Uganda.

Presentation

On going round 3 project



1. A bountiful harvest of bananas ready for drying.
2. Farmers of Kyeibare Farmers group in Bwengure parish happy with their constructed solar dryer.

Post harvest handling and marketing of perishable agricultural produce using solar dryers in Mbarara, Uganda

Introduction

Mbarara District Farmers Association (MBADIFA) the implementing agency, is a non-Governmental organisation belonging to the farmers and working with farmers in the whole District. Mbadifa works in partnership with groups of women, youth, community based organisation (CBOs) and non-Governmental organisations and the local Governments.

In the endeavor to improve farmers' livelihood security in Mbarara, Mbadifa is promoting the solar dryer technology that is helping increase the shelf life of perishables in particular bananas. A total of 10 Sub-counties (out of 45) and 20 parishes are drying and adding value to the produce. The project is currently benefiting 5050 registered farmers. The total number of people registered and those unregistered and benefiting from the project either directly or indirectly is estimated at over 30,000.

Project Objectives

The overall project goal is to increase the shelf life of bananas and other agricultural products, vegetables, fruits and mushrooms for marketing purposes .

The specific objectives in attaining this goal are as follows:

- Train 8000 farmers (1000 households) to dry 70 of tones of bananas during peak production periods (January to March and June to August) by end of 2005.
- Train 140 special interest groups for demonstrations in drying and processing of bananas by the end of 2005.
- To train 8000 banana – producing farmers in drying of alternative crops during banana off-peak production periods.
- Train 20 marketing associations at the parish and Sub-county levels.

Project Outputs

- Increased shelf life of agricultural products
- Special interest groups captured in the technology.
- Solar dryers (140 dryers) constructed and in place
- Banana marketing associations are formed and active
- Environmentally sound practices in place.

Level of achievement.

Increased shelf life products.

- Dryers are efficient and shelf life has increased from 5 days – 12 months.
- A total of 4.61 tonne of banana and 900 kgs of other products is reported to have been dried.
- 140 special interest groups have been formed, trained and their capacity built to undertake different project responsibilities
- A total of 104 dryers are already constructed and in use.

Banana marketing associations.

- 14 Marketing associations have been formed and trained in produce value addition and marketing.
- 14 outlets to promote dried products exist in 14 parishes
- Efforts are being made to enrich the banana product with other food additives like protein from soya. This is being handled with KARI and FORI.
- Farmers bought chicken from the sale of their products.

Presentation

On going round 3 project

Environmentally sound practices.

- Banana peels have been composited to produce organic manure that is being applied to plantations.
- Farmers are feeding peels to livestock e.g goats that in turn provide waste to fertilize their plantation.

From their experience, they believe livestock waste is very important in improving soil productivity thus enough bananas to dry for sale and home consumption.

- Other skills or environmental management practices like soil and water conservation structures have been imparted and farmers are practising them.

Challenges

- The project will not be able to provide all the 140 dryers in time. Construction stretches even to the last quarter of the project when the farmers are supposed to have realised the benefits.
- The use of banana flour being a new innovation, market for the product is still low despite the efforts by the project to popularize the product locally. However innovations such as adding other crop products like soya to increase the value of the banana flour are being explored and promoted.
- Low productivity at farm level either due to declining soil fertility or changing climatic patterns. In such circumstance farmers have suggested/ proposed the integration of live stock e.g goats and some poultry with the project.

Partnerships

- Agency for Cooperation and Research in Development (ACORD) has been helpful in providing resource persons to facilitate staff trainings.
- Tropical ecological foods has provided information in product management and promotion.
- District production department – the subject matter specialists have been used on several occasions to train groups and farmers.
- KARI and FORI have been helpful in training Artisans in construction and processing respectively.
- DANIDA /TRAIS funded equipment, vehicles and structures that the FARM-Africa project uses.
- Global fund has facilitated farmers' awareness on HIV/AIDS.
- NAADS has involved some of the groups in training for improved productivity.

Clean yam planting material production in Kayunga, Uganda

Presentation

On going round 3 project



1. Farmers stand around a hot water tank in one of the sub-counties in Kayunga District.
2. A farmer admires his growing yams, free from nematode attack.

Introduction

The project was started in February 2004 in 4 sub-counties of Kayunga District to promote hot water treatment of yam cultivars to kill nematodes so as to increase yam production. It is implemented by the Centre For Integrated Development (Cidev). Yam (*Dioscorea spp*) is a tuber crop which is gaining popularity in Uganda. Uganda has new and improved cultivars from Nigeria but are susceptible to nematode attack.

The project's main goal is to transfer clean yam planting materials to farmers of Kayunga District for food security. Specific objectives of this project are as follows:

- Promote hot water treatment technology among 400 farmers.
- Provide 400 farmers with clean yam planting materials
- Build capacity of farmers to implement and monitor their farm activities
- Strengthening farmers technical capacity in production of clean yams

Approach used

The following approaches were used in the implementation of the project:

- Participatory baseline survey exercise
- Sub County Committees: composed of 8 members each, and well balanced (age and gender)
- Training and Extension services
- Community Agriculture Advisory (CAAS) Services
- Monitoring and evaluation through follow up visits and feed-back reports.

Partners and linkages

- NGOs: Integrated Environmental Defense (INED) for mobilisation
- Research Based Organisation: IITA for technical guidance on construction and application of hot water tanks, and agronomic aspects
- Private Sector: Standard Metal Works Ltd for fabrication of tanks and training farmers on their maintenance.
- Local Government: (Production department) dissemination and marketing channels
- Farmers: Direct implementers and beneficiaries

Achievements

The following are achievements from the project:

- 4 Hot water tanks purchased for the 4 sub-counties are being used for treatment of yam cultivars against nematodes
- Demonstration gardens have been established in the sub-counties.
- Farmers have adopted the farming methods from demonstration plots and used them to establish their own gardens
- Institutional structures have been established and operational

Challenges

The following challenges were encountered in the project implementation:

- Demand for planting materials was higher than anticipated
- Collecting 10% funds for recovery of costs to the tanks was slow
- Adoption of the technology is a process that took time
- Harmonizing expectations and maintaining motivation of the various partners.
- Farmers adoption of record keeping formats is still slow.

Lessons Learnt

These are the lessons learnt from the project:

- Adoption of new technology requires continuous sensitisation
- The area is quite big; there is need to support local CDOs to conduct some advisory visits
- Use of community structures has increased ownership of the project

Closing Session

Presentation

Advisory panel members on various projects issues.

On Methodologies:

By Mbise Ndema and David Hopkins

From the various presentations at the workshop, it was seen that projects utilised different methods and approaches in transferring the technologies to the farmers. These were through:

- Meetings – awareness and sensitisation
- Trainings – production and value addition
- Drama and Songs - This was especially observed with the promotion of orange flesh Sweet Potato project in Kampala by Makerere University.
- Publications - Pamphlets, booklets and posters
- Farmer to farmer learning and training
- Exchange visits between various groups.
- Micro credit /finance and leasing systems in cash or kind - The micro-credit system was well utilised in Arusha, Tanzania, with the dissemination of the tissue culture bananas by ISAAA and MBD (Micro-finance and Business Development).
- Radio Programme s – This was seen in the soap and magazine initiative by the Mediae company in Tanzania.



Other methods utilised were:

- Relevant partnership mix that create synergy. If the partnership consortium is good, the project is likely to succeed.
- Private sector intervention e.g Honey care Africa (Bee-keeping) and Nile Breweries (Sorghum)
- MATF capacity building in Participatory Monitoring, Evaluation and Financial matters.
- Monitoring visit scheduled by MATF
- Grantee workshops – This helps grantees to share their various experiences in a common forum.
- Networking and linkages.

During end of project evaluation exercises, participants were requested to consider the various issues on approaches and methods that they can utilise in their project implementation.

On Partnerships:

By J. Wekundah

A brief definition of Partnerships is necessary before examining how the various project partnerships worked. Partnerships are built on shared common goals, shared ownership, roles, comparative advantages and resources. These are established on MOUs or Agreements specifying what each partner will do and contribute. Innovative partnerships implies those willing to play their roles in a whole chain of technology aiming at improving the position of a target group. Based on this definition, these are the conditions for a good partnership as seen in the projects:

- Transparency
- Relevance
- Clarity
- Conducive environment and trust
- Respect for each other
- Experiences from the project

School children in a dance to promote the orange flesh sweet potatoes in Kampala.

Presentation

Advisory panel members on various projects issues.

Activities relevant to key partners should be incorporated into their institutional planning for sustainability. This should be a part of the existing strategy.

The following are observations from Partnerships that did not work well:

- Some partnerships were not strong due to lack of transparency with budget, workplan and their roles.
- Coordination and involvement exist only on MOU but not in reality
- Partnerships on individual basis rather than at institutional level. This does not ensure sustainability
- Too many partners - one should have few strong partners - Limit the partners along the key roles in the value chain.
- Some partners that were required in the value chain were not included - its possible and good to review the composition.

Strengthening Partnerships

The various partnerships can be strengthened through:

- Transparency
- Regular (quarterly) review meetings for all partners to review implementation and roles, and Participatory Monitoring and Evaluation.
- Assessment of project contribution to the different partners.
- Provide the required inputs to partners as planned and agreed.
- Activities relevant to key partners should be incorporated into their institutional planning for sustainability. This should be a part of the existing strategy.
- Farmers learn better by visiting other farmers who are doing related activities

On Technological / Impact

By Helen Altshul, Country Director FARM-Africa Kenya

Impacts Issues in MATF projects:

The following points serve to illustrate impact issues as observed from the MATF project experiences:

- Tried and tested verses new technologies being tested
It's usually difficult to introduce a new way or technology of doing things due to the long period it takes before the impact can be felt by target groups. There is always constant comparison with the old, tried and tested technologies.
- Adoption and diffusion of technology.
This is best achieved through sharing - to find out what is best for the project. The spread of the technology adoption is based on the models of technology transfer existing at that time.
- 'Packaging' and 'Disseminating'
Various questions normally arise during the introduction phase of a new technology. Is it a new technology to the farming systems or do they need to overhaul their farming system? Is the technology packaged as new?
- Value addition
Most projects were looking at production issues and the question of whether the technology can be packaged for marketing and creating linkages.
- Cost verses quality of the technology
The example of Honeycare and African Beekeepers Limited hives, where there's quality differences. Sometimes the issue for the farmers is not just about affordability.
- Measurements and indicators of impact.
This is when clear changes can be observed after adoption of the new technology, interms of yield, practices and level of knowledge.
- Farmers Preferences.
Quick benefit from technology leads to high adoption and acceptance, while some technologies take long to realise impact. Where proper targeting and felt need are being addressed, farmers will adopt the technology faster.
- Duration of funding.
The funding period might not be enough for impact to be realised.
- External factors
This can greatly affect the performance of a project both negatively and positively.

Presentation

Advisory panel members on various projects issues.

Technologies with long term impact such as the agro-forestry project are not easily adopted by target groups. This is because impact takes longer than the project funding period, to be felt

On Challenges and sustainability:

By F. Makini and Mbise Ndema

The following were some of the challenges encountered during project implementation:

Challenges of Technologies

- Overcoming pests and diseases such as the bean root-rot and other diseases
- Untrained outgrowers implementing without adequate skills
- Affordability of technology e.g solar driers and beehives
- Lack of adequate seed or planting materials (increased demand and no seed) or production levels not able to meet demand.
- Level of education of the beneficiaries and their attitude have a great bearing on the adoption of new technologies
- Introduction of new technologies such as bean varieties and vanilla, and their integration into existing farming systems and land use is a constant challenge.
- Technologies with long term impact such as the agro-forestry project are not easily adopted by target groups. This is because impact takes longer than the project funding period to be felt.
- Acceptance of processed products was easier than the initial technology. This was seen in the case of dried bananas and sweet potatoes.

Challenges of Methodologies and Approaches

- Poverty and education levels have great bearing on the methodologies utilised in a given project, and how well they work.
- Dependency syndrome is a common phenomena in most of the projects where the target groups expect their needs to be catered for at no costs.
- Leadership of groups: Where there is dynamic leadership, a group is able to succeed in implementing the project. Poor leadership in the group likewise contributes greatly to the failure of the project.
- Recovery of costs of tanks (like in the CIDev project), loans and other inputs provided on credit, sometimes proves to be very difficult during the project implementation, hindering the overall progress.

Challenges of Partnerships

- Sometimes, partners are unwilling to continue with project at initiation or after realising funds.
- Transfers, changes of staff and leaderships, sometimes affects the partnership negatively.
- Administrative problems of partners can also hinder the smooth implementation of a project .
- Other commitments of partners can interfere with their focus on the project.
- Sometimes, a partner mix may turn out to be irrelevant since they do not add value to the project.

General Challenges

- Weather, drought
- Political interference
- HIV / AIDS pandemic
- Socio-cultural constraints
- Inadequate land to produce economic quantities e.g. orange fleshed sweet potatoes in urban and peri-urban Kampala
- Exit strategies not planned at proposal level

Sustainability and way forward

The following measures were seen to impact considerably on the sustainability of the projects.

- The issues of markets, packaging and value addition of various products
- Use of groups to ensures project continuity and replication
- Formation of farmer cooperatives and marketing associations to scale up the project.

Presentation

Advisory panel members on various project issues.

- Business plans for the communities
- Private sector involvement which is commercially driven e.g. the gari project and *Epuripur* sorghum project.
- Sustainability for radio Programme ; by meeting production costs, airtime costs, to break even.
- Creation of Micro-finance, leasing and revolving funds (with stringent conditions in some cases) with the formation of savings and credit schemes to ensure target groups are able to access affordable capital.
- Equipment was needed for the training of Artisans; such as solar driers.
- Seed production and planting (bulking) to ensure supply.
- Integration of activities into Government / other partners normal activities to ensure continuity
- Income generation activities and re-investment in business such as the poultry project in Rakai.
- Capacity building for skill enhancement.
- Multiple partners with comparative advantages and clear roles.
- Increasing the funding period. Two years has been seen to be too short for measurable impact with some technologies.

On Documentation and dissemination of lessons

By J. Wekunda

On documentation, it's important to record in usable forms lessons learned. These could be interesting cases, important processes noted during implementation and packages for the technologies being implemented.

This recording should be based on the profile of the target groups derived from local knowledge. The products of documentation could be booklets, pamphlets, manuals, videos (documentaries and soaps).

On dissemination; this is to share information with other communities pertaining to the technology. This could be through various pathways established in the communities. These are:

- Exhibition or Agricultural Shows
- Local radio stations
- Field-days
- Farmers Associations
- Group meetings
- Websites

Experiences of the MATF Projects

So far, several projects have developed materials for local dissemination, for example, posters, leaflets and pamphlets. Dissemination of some projects has been done through shows such as Nane-Nane in Tanzania, Jinja Agricultural Shows, and some in the Kenya Agricultural Shows. Others are yet to initiate this. However it is important that efforts are made towards this for purposes of dissemination and upscaling.

The MATF could assist in the documentation and dissemination of lessons through various media such as web-sites, print publications and electronic channels, both radio and television. The communication consultancy between MATF and Mediae is expected to play a big role in formulating a comprehensive communication strategy that will document and disseminate best practices and technologies arising from the projects.

Presentation

On Financial Reporting

Overview on MATF Financial reporting:

By Nancy Njoki, MATF Accountant

The following is an outline of the financial guidelines for reporting project quarterly expenditures and financial forecasts for the following quarter. The guidelines are normally availed to each grantee at project onset (Templates are also available for download at the MATF website, www.maendeleo-atf.org/Grantees-Resources/). The following is a brief overview of how a grantee should go about it.

At the end of the first 3 months after the start of the project (as stated in the Funding Agreement), the grantee is required to submit a financial report. The deadline for submitting these reports is the 15th of the month after the end of the quarter (e.g. for quarter Feb-Apr = by 15th May). It's important for the grantees to ensure they meet this deadline.

Subsequent disbursement is made only after timely submission of acceptable quarterly narrative and financial reports. Non-compliance may lead to cancellation of grants and FARM-Africa may demand repayment of un-accounted funds. Project records of spending in local currency should be translated into sterling Pound, £. Without the two currency figures FARM-Africa would not accept the report.

The exchange rate to use to translate the local currency into sterling Pound, £ is what is called the "weighted average exchange rate" of all funds received to date from FARM-Africa. This calculation shows how to do it:

$$\frac{\text{Total amount received in local currency to date}}{\text{Total amount received in £ Sterling}} = \text{exchange rate to use}$$

This information falls under Appendix 1 of the financial reporting table which comes with several columns. These columns cover details on the total budget, actual expenditures and comments or notes arising from the same. On completion of this table, the grantee goes on to fill Appendix 2 (The Financial Forecast table).

This table shows the total estimated expenditure for the next quarter after the one just begun. If the grantee is reporting the actual expenditure in Quarter 1, they should be requesting the cash disbursement for Quarter 3 as FARM-Africa will already have paid for Quarter 1 and Quarter 2. This estimate will be used to calculate the Cash Request in Appendix 3. This will calculate how much cash should be passed from FARM-Africa to the grantee based on the financial reports submitted. The grantee should refer to Appendix 1 and 2 to do this.

The MATF Fund Manager or Accountant can be contacted for more detailed information on the financial reporting guidelines.

ABL	African Beekeepers Limited
ARI	Agricultural Research Institute
BGA	Banana Growers Association
CBOs	Community Based Organisations
CFs	Contact Farmers
CIDev	Centre For Integrated Development
CIDI	Community Integrated Development Initiatives
DANIDA	Danish International Development Agency
DRD	Directorate of Research and Development
EA	Environmental Alert
ELF	Extension Link Farmers
FAO	Food and Agriculture Organisation of the United Nations
FARM-Africa	Food and Agricultural Research Management - Africa
FFS	Farmers' Field Schools
FSUA	Focal Scaling Up Areas
GoK	Government of Kenya
HVT	High Value Trees
ICRAF	International Centre for Research in Agroforestry
ISAAA	The International Service for the Acquisition of Agri-biotech Applications
KARI	Kenya Agricultural Research Institute
KDC	Kitui Development Centre
KEFRI	Kenya Forestry Research Institute
K-REP	Kenya Rural Enterprise Programme
LPRI	Livestock Production Research Institute
LUDFA	Luwero District Farmers' Association
MAAIF	Ministry of Agriculture, Animal Husbandry and Fisheries
MATF	Maendeleo Agricultural Technology Fund
MBD	Microfinance Business Development
MOU	Memorandum Of Understanding
MUK	Makerere University Kampala
NAADS	National Agricultural Advisory Services
NAARI	Namulonge Agricultural and Animal Research Institute
NADIFA	Nakasongola District Farmers Association
NARO	National Agricultural Research Organisation
NEPAD	New Partnership for Africa's Development
NGOs	Non-Governmental Organisations
PMA	Plan for Modernisation of Agriculture
PMC	Project Management Committees
SAARI	Serere Agriculture and Animal Research Institute
SACCOS	Savings and Credit Co-operative Society
SARI	Selian Agricultural Research Institute
SEC	Sub-county Executive Committee
SIDAGOBA	Sironko Dairy Goat Breeders Association
SIGs	Special Interest Groups
SPG	Seed Producer Groups
SQL	Seed Quality Inspectors
SVIP	Sironko Valley Integrated Projects
TOSCA	The Tanzania Official Seed Certification Association
ToT	Trainers of Trainers
VEO	Village Extension Officers
VGL	Village Government Leaders
ZARF	Zonal Agricultural Research Fund

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