

Conservation Agriculture
for
Sustainable Agriculture and Rural Development (SARD)
and Food Security in Southern and Eastern Africa
(CA-SARD)
GCPRAF390GER

Report Joint Evaluation Mission

Republic of Kenya - Ministry of Agriculture

United Republic of Tanzania - Ministry of Agriculture and Food Security

Gesellschaft für Technische Zusammenarbeit on behalf of the German donor BMELV

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Preface

This report represents the views of the independent Evaluation Mission on the performance and achievements of the project Conservation Agriculture for Sustainable Agriculture and Rural Development and Food Security in Southern and Eastern Africa CA-SARD. The project began in May 2004 and will end in April 2006. The mission started with a briefing of the international team members¹ in FAO Headquarters on 20 October and ended in Dar es Salaam on 3 November 2005; four districts (Siaya and Bungoma in Kenya, Karatu and Arumeru in Tanzania²) in the two project countries were visited.

The evaluation was initiated with a view to providing the donor, collaborating agencies and countries as well as FAO with an independent and objective assessment of the achievements of the project, including a review of problems faced and a consideration of future perspectives. The report was finalized in December and will be submitted by FAO to both the Governments of the Republic of Kenya and the United Republic of Tanzania and GTZ.

The short visits paid to the project countries cannot do full justice to the project's performance at country level: encounters with project implementers and collaborators were restricted to short meetings in the capitals, and brief visits to a few project districts. A more in-depth assessment of the performance of the project at farmer's level was beyond the limits of the mission. However, it is hoped that the mission was able to capture main issues concerning the project. In addition, the documentation available on the project provided valuable information.

The mission is most appreciative of the efforts made by the regional and country coordinators & facilitators, their colleagues and collaborators in the countries and districts visited and the staff of FAO offices in the two countries, to make the mission constructive and meaningful. In addition, thanks go to a range of other individuals who provided information and discussed issues in a frank and constructive manner. Last but not least, the mission is grateful to the CA-SARD Farmer Field School members, who always gave a warm welcome to the mission.

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¹ The mission was comprised of two participants representing GTZ and FAO, respectively, and representatives of the Governments of Kenya and the United Republic of Tanzania, who participated in the mission in their respective countries and who contributed to the final report.

² Itinerary and persons met in the Annex.

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List of Acronyms

ACT	African Conservation Tillage Network
AGFSF	Agricultural Management and Finance Service of FAO
AGST	Agricultural and Food Engineering Technology Service of FAO
ASDP	Agricultural Sector Development Programme
ASDS	Agricultural Sector Development Strategy
BMELV	Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz (Germany)
BMVEL	Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft (former designation)
CA	Conservation Agriculture
CA-FFS	Conservation Agriculture Farmer Field Schools
CIRAD	Centre de Cooperation Internationale en Recherche Agronomique pour le Development
DALDO	District Agriculture and Livestock Development Officer
DAP	Draught Animal Power
FAO	Food and Agriculture Organization of the United Nations
FFS	Farmer Field School
GEF	Global Environment Facility
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
HQ	Headquarters
ICRAF	International Centre for Research in Agro-forestry
IFAD	International Fund for Agricultural Development
IIWCCA	Third World Congress on Conservation Agriculture
IIRR	International Institute of Regional Reconstruction
KARI	Kenya Agricultural Research Institute
KEN	Republic of Kenya
LTU	Lead Technical Unit
MAFS	Ministry of Agriculture and Food Security (Tanzania)
MOA	Ministry of Agriculture (Kenya)
MoU	Memorandum of Understanding
NGO	Non-Governmental Organization
NPO	National Professional Officer
OIC	Officer-in-Charge
PBE	Office of Programme, Budget and Evaluation
RAF	Regional Office for Africa
RELMA	Regional Land Management Unit
RP	Regular Programme (FAO)
SARD	Sustainable Agriculture and Rural Development
SARI	Selian Agricultural Research Institute
SIDA	Swedish International Development Agency
SPFS	Special Programme for Food Security (of FAO)
SSA	Sub Sahara Africa
SWOT	Strengths, Weaknesses, Opportunities, Threats
TCAP	Field Programme Development Service (FAO)
TCDC	Technical Cooperation among Developing Countries
TCP	Technical Cooperation Programme (of FAO)
TF	Trust Fund
TOR	Terms of Reference
UNEDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
URT	United Republic of Tanzania

Executive Summary

Agriculture in sub-Saharan Africa suffers from decreasing soil productivity, exacerbated by inadequate soil moisture and erratic rainfalls. Conservation agriculture (CA), which embraces the three basic principles of minimal soil disturbance, permanent soil cover and crop rotations/associations, offers the prospect of stabilizing and, in the long run, improving productivity. By reducing labour inputs, CA can also mitigate the labour shortages that affect small-scale farmers.

The proposal for the CA-SARD project was developed by FAO's Agricultural and Food Engineering Technologies Service (AGST) and discussed with the Governments of Tanzania and Kenya and other collaborators (ACT (African Conservation Tillage Network) and GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit). The German Federal Ministry of Food, Agriculture and Consumer Protection - BMELV (Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz) approved funding for the project in late 2003. The project document was signed and the project declared operational in June 2004. It is scheduled to terminate in May 2006; the project budget is US\$ 1,056,500.

Kenya and Tanzania were selected as project countries due to their prior involvement with CA (in Kenya, among others, a TCP project on CA, and UNDP and IFAD initiatives working with Farmer Field Schools (FFS); in Tanzania, pilot activities on soil conservation, conservation tillage and cover crop management funded by GTZ, SIDA, IFAD and FAO, as well as FFS initiatives). The project's implementation approach was to use participatory extension methods (in particular FFS) to build farmers' capacity to analyse their production systems, identify their most pressing problems and develop solutions using CA technologies. Ultimate target beneficiaries according to the project document are vulnerable small farmers, especially women and farmers affected by HIV/AIDS.

CA-SARD's development objective is: "Improve food security and rural livelihoods and build a foundation for the expansion of conservation agriculture (CA) to contribute to sustainable agriculture and rural development"; the immediate objective was defined as: "The adoption of profitable conservation agriculture practices in at least three districts in two countries".

The objectives³ were broken down into a number of outputs: (i) "farmers apply conservation agricultural practices"; (ii) "owners of draught animal power and tractors are able to offer hire services in CA practices to others"; (iii) "extension staff trained to organize, facilitate and provide on-going support to conservation agriculture farmer field schools (CA-FFS)"; (iv) "local manufacturing and retail sector able to supply tools and equipment suitable for conservation agricultural practices to farmers on a sustainable basis"; (v) "knowledge networks for exchanging experiences established at local, national and regional levels"; and (vi) "technical and operational support to the project including international and national procurement".

Towards the attainment of these objectives, important results have been achieved:

- the formation of 72 FFS groups (31 in URT, 41 in KEN), partly formally registered⁴;
- the establishment of study field plots (one acre each) by each of these FFS groups, where farmers try out different elements of CA (field preparation with e.g. rippers, subsoilers, jab planters; introduction of cover crops, different management practices);
- the organization of training sessions, field days, exchange visits, etc for farmers as well as the training of field and district extension staff on CA and FFS methodology;

³ Objectives and outputs in the signed document differ from the project workplan, used for project implementation. In the summary the original wording is used.

⁴ In URT, registration has been delayed due to the quoted high registration fee (approx. US\$ 150 per group).

- the organization of training for artisans and the owners of draught animal power, to facilitate input supply and provision of services;
- forging agreements with commercial implement manufacturers and distributors for future collaboration in the provision of implements and repair/maintenance services; and
- the creation of much wider awareness and interest in CA, not least through giving substantial support to the organization of the III World Conservation Agriculture Congress in October 2005 in Nairobi.

Furthermore, the project has initiated other activities which will help to establish CA-SARD activities further in Kenya and Tanzania:

- participation in a “write-shop” on CA best practices, which produced a manual for CA for farmers and extension workers in Africa (published by IIRR);
- linkages with ongoing national programmes and projects to facilitate dissemination of CA knowledge and experiences and/ or link additional services to CA farmers;
- networking with international stakeholders in the field of CA (e.g. RELMA in ICRAF, CIRAD) to exchange experiences and coordinate activities to promote CA.

The CA-SARD project has thus provided a foundation for future CA efforts in East Africa, after its scheduled termination in April 2006. However, CA remains far from being in the mainstream of agricultural development in the two countries. There remain many issues that will require continued attention and efforts in the future.

Progress has been limited or requires further efforts in the following areas:

- while the number of FFS in the CA-SARD project is in line with the planned target, many of them will have had only one season to experiment with CA, when the project phases out: experiences (incl. a larger number of options for testing) are yet too limited to assess adoption of CA by the project beneficiaries;
- crop-livestock integration remains a challenge for CA promotion (crop residues as soil cover versus livestock feed);
- training of extension agents has taken place, but may not be sufficient to provide substantial backstopping to solve site specific problems (e.g. weed management, pest and disease management in cover crops) or to further develop CA technology (e.g. choice of cover crops, crop rotation, suitable management practices based on the socio-economic conditions of the target group);
- CA equipment is currently being tested by the FFS, but further efforts are needed to provide options fully adapted to the agro-ecological conditions (e.g. use of jab planter under wet conditions) as well as the socio-economic conditions of the target group (e.g. cost of equipment and/or services);
- demand for CA equipment and private CA services (e.g. DAP) is still limited – with the present demand it is difficult to predict if the private sector will be able to provide equipment and services entirely under market conditions while remaining affordable to the target group;
- a consistent and sustainable “dissemination approach” as to how best to provide farmer groups with facilitation (FFS), technical advice and private services for CA is yet to be developed;
- regional coordination and linkages between Kenya and Tanzania have been confined to specific services provided by ACT (regional management unit) for both teams; however, procedures for coordination between the Kenyan and Tanzanian pilots have not been defined; and
- administrative bottlenecks delayed distribution of inputs and grants and thus implementation of field activities; not clearly defined institutional responsibilities (e.g. regional splitting of project management – LTU/Rome, budget holder/Accra, FAO

country offices), cumbersome administrative procedures (e.g. administrative requirements to provide FFS with grants) and an incomplete institutional set-up (e.g. missing steering committee in Tanzania) have hampered effective project management and delayed implementation.

By the end of the current phase, several CA components will have taken roots in selected districts of Kenya and Tanzania. Sustainability of CA activities at farmers' level, the continued inclusion of CA in the extension system as well as institutional sustainability within the collaborating institutions has yet to be achieved. Awareness of CA has been boosted by the III World Congress on Conservation Agriculture held in Kenya in October 2005, with substantial inputs from the project. At the same time, it remains doubtful whether the up-scaling of CA to a more widespread adoption by farmers nationwide, as well as its promotion by national programmes in both countries, will have advanced significantly by April 2006.

In the mission's view the planning for the CA-SARD project has been very ambitious and the time given to achieve these results very limited. To allow CA to unfold its potential, a medium-term if not long-term approach is required. Therefore, FAO and the countries themselves should make continuous efforts to secure additional donor funding, in order to keep the momentum created by the CA-SARD project and ensure that the level of CA practices attained in both countries does not deteriorate.

It is yet too early to make an assessment about any impact of the CA-SARD project, as more time is needed to translate the potential of CA into concrete results in the two countries. Therefore, the mission recommends a follow-up project to CA-SARD of preferably three years duration to make use of the existing CA foundation.

A thorough and more realistic planning with regard to the project's development and immediate objectives, target group and prospects for sustainability is recommended. A review of the current internal project set-up should be done jointly by the Kenyan and Tanzanian project teams and the FAO units concerned, before the end of this first phase. The exercise should clearly define institutional responsibilities and linkages and provide transparency and guidance on the most feasible administrative procedures to implement the CA-SARD project.

A follow-up project should concentrate on the existing countries and the selected districts⁵ to deepen and locally spread CA.

Better adaptation and fine-tuning of CA to specific agro-ecological as well as socio-economic target groups and conditions (and in particular the issue of dual crop residue use for cover and feed) is still needed and will be the major challenge for a follow-up project. Farmer learning and experimenting with CA using participatory approaches, follow-up training and comprehensive backstopping to extension agents, higher-level staff and farmer facilitators and the adaptation of CA equipment and provision of CA services to farmers need to continue as major project activities. Regional coordination, including systematic efforts to secure additional support for CA needs to receive more attention. Finally, concept development for CA promotion and mainstreaming, looking not only at "what" needs to be done at farmer level, but also at "how" (suitable approaches for the promotion) and "with whom" (institutional set up and strategic linkages) should feature more prominently in a follow-up project in order to provide a more strategic orientation for CA.

⁵ With the possible addition of two districts in URT – see Conclusions and Recommendations.

1. Background and Context

The CA-SARD project started from the premise that agriculture and rural development are sustainable when they are environmentally sound, technically appropriate, economically viable, socially acceptable and able to adapt to changing circumstances and conditions. This definition coincides with the concept of Sustainable Agriculture and Rural Development (SARD), which FAO has adopted as one of its major strategic objectives and which also features prominently in Agenda 21.

According to the project document, the prospects for SARD in Sub-Saharan Africa are threatened by two factors: a decline in the available agricultural labour due to HIV/AIDS and other diseases, and a parallel drop in the availability of draught animal power. In addition, agriculture in Sub-Saharan Africa suffers from decreasing soil productivity, exacerbated by inadequate soil moisture and erratic rainfalls. Conservation Agriculture (CA), which embraces the three basic principles of minimal soil disturbance, permanent soil cover and crop rotations/associations, offers the prospect of stabilizing and, in the long run, improving productivity. By reducing labour inputs, CA can also mitigate the labour and farm power shortages that affect small-scale farmers.

Kenya and the United Republic of Tanzania were chosen for project implementation because they had already ongoing field activities which could be built upon, and also because together they offered a wide range of farming systems in which to promote CA. The experience to be gained from CA applications in the two countries was expected to lay the foundation for a promotion in other areas of Africa with analogous farming systems, especially maize mixed systems.

The proposal for the CA-SARD project was developed by FAO's Agricultural and Food Engineering Technologies Service (AGST) and discussed with the Governments of Tanzania and Kenya and other collaborators (ACT (African Conservation Tillage Network) and GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit). The German Federal Ministry of Food, Agriculture and Consumer Protection - BMELV (Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz) approved funding for the project in late 2003 as a German contribution to the UN's SARD initiative. The project document was signed and the project declared operational in June 2004. It is scheduled to terminate in May 2006; the project budget is US\$ 1,056,500.

Kenya and Tanzania were selected as project countries due to their prior involvement with CA (in Kenya, among others, a TCP project on CA, and UNDP and IFAD initiatives working with Farmer Field Schools (FFS); in Tanzania, pilot activities on soil conservation, conservation tillage and cover crop management funded by GTZ, SIDA, IFAD and FAO, as well as FFS initiatives).

2. Assessment of Project Objectives, Outputs and Design

2.1 Justification of the project

Rural poverty has a major impact on the extent of sustainable utilisation of natural resources. Widespread poverty in rural areas compels people to overexploit natural resources around them (e.g. deforestation, overgrazing) in order to survive. Therefore, interventions that address rural poverty will have to promote sustainable utilization of natural resources.

The CA-SARD project aims at "improvement of food security and rural livelihoods and building a foundation for the expansion of conservation agriculture".

As the CA-SARD project will contribute to the development in rural areas by improving agricultural production and productivity, it is generally in line with the major strategies and policies of the partner countries.

2.1.1 Kenya

Kenya's prime resource is land and in order to achieve economic growth, it is vital to make maximum use of this available resource. Policy documents recognize agriculture as the engine of growth for the Kenyan economy as agriculture contributes 25% directly to Kenya Gross Domestic Product and another 27% indirectly. Despite this major contribution, the country is not yet food self-sufficient. The CA-SARD project can therefore contribute to Kenya's agricultural objective of ensuring food security, offering employment to the farming community hence increasing their income.

Policy documents that support the objectives of the CA-SARD project include; (1) *Economic Recovery Strategy for Wealth and Employment Creation (ERSW&EC)*, (2) *Manifesto of National Rainbow Coalition (NARC)*, (3) *Strategy for Revitalizing Agriculture (SRA)*, (4) *Ministry of Agriculture Strategic Plan (MASP)* as well as (5) *the National Agricultural Sector Extension Policy (NASEP)*.

Below are major policy statements giving full justification for the CA-SARD project in the Kenyan context. Those are:

- *"Facilitation of agricultural productivity hence improvement of food security"* as main mandate of the Ministry of Agriculture (cited in *ERSW&EC* and *SRA*);
- *"Management of conservation of the natural resource base for agriculture"*
An objective of CA-SARD is to build a foundation of conservation agriculture to contribute to sustainable agriculture and rural development. This is in line with one of the core functions of the Ministry of Agriculture outlined in the MASP;
- *"Transformation of agriculture into a profitable, commercially-oriented and internationally competitive economic activity."* CA-SARD contributes to this through its minimal disturbance to soils, increased biomass and less water run-off hence improved agricultural production. This is in line with ERS, which has set an annual average growth rate of 3.1 % to reach 5 % in 2007 for the agricultural sector to contribute to general economic growth and poverty eradication;
- *"Linkage of private sector in input procurement"* and *"establishment and development of a market based agricultural credit and input system"* is stated in the SRA;
- *"Farmer participation in training"*: CA-SARD has adopted the Farmer Field Schools (FFS) approach in training and dissemination of CA technologies. This is in line with the National Agricultural Sector Extension Strategy (NASEP). NASEP states: *"Given the current thinking on new approaches, the government has embraced participatory and demand driven approaches to effectively tap farmer participation and private sector contribution in running extension services."* The FFS approach underlines thus the request to *"reform the extension service system to create a more effective linkages"* with other stakeholders.

2.1.2 Tanzania

In Tanzania the CA-SARD project can be directly related to the *National Agriculture and Livestock Policy* and the *Agricultural Sector Development Strategy (ASDS)*.

The objectives of the National Agriculture and Livestock Policy of 1997 are:

- Assure food security for the nation including improvement of the national standards of nutrition;
- Improve standards of living in rural areas;
- Increase foreign exchange earnings;
- Produce and supply raw materials and expand the role of the sector as a market for industrial outputs;
- Develop and introduce new technologies for land and labour productivity;
- Promote integrated and sustainable use and management of natural resources;
- Develop human resources;
- Provide support services; and
- Promote access of women and youth to land, credit, education, and information.

The Agricultural Sector Development Strategy (ASDS), which was approved by the government in 2001 is based on the Agriculture and Livestock Policy of 1997. The objective of ASDS is to create an enabling environment for improving agricultural productivity and profitability, to increase farm income and reduce rural poverty while ensuring household food security. The strategy provides guidance for future interventions in which small, medium and large-scale farmers are encouraged to produce more through better land security and better access to credit and markets.

Client empowerment and participation in the planning and implementation of earmarked interventions through community based organizations are key features of ASDS. The strategy also encourages private sector participation in the production and trade of agricultural products. Government support will be confined to creating an enabling environment for the private sector participation in agricultural activities, and will include provision of support services, market information, and concentrate on law and order (regulatory functions) and providing an enabling environment for the private sector to carry out the commercial functions.

The Agricultural Sector Development Programme (ASDP) has been designed to operationalize ASDS. The four agricultural sector lead ministries, Ministry of Agriculture and Food Security, Ministry of Cooperatives and Marketing & Ministry of Water and Livestock Development and the Presidents Office Regional Administration and Local Government jointly prepared ASDP. The programme constitutes agricultural production and processing, public sector activities at the national level in support of agricultural development, and cross-sectoral issues, which go beyond the four lead ministries

The CA-SARD Project is quite consistent with the Agriculture and Livestock Policies as well as the ASDS and ASDP, since it is intended to ensure sustainable utilization of natural resources, promote food security in the long run, improve standards of living and introduce technologies for improving land and labour productivity. The project also puts considerable emphasis on capacity building and gender balance in its interventions. Farmer Field Schools (FFS) are community-based organizations that are meant to empower farmers and ensure their full participation in CA interventions.

In addition, the parallel TCP project 'Conservation Agriculture Conservation Agriculture and Appropriate Mechanization for Sustainable Crop and Livestock Production (TCP/URT/3002)', which has the same National Project Coordinator, supports the current drafting of a national agricultural mechanization strategy which to a large extent will reflect the experience gained with both CA projects.

2.2 Project document - objectives and outputs

The project concept was to introduce CA technologies through the Farmer Field School (FFS) methodology. Farmer awareness of the benefits of CA would in turn stimulate demand for specialized labour-efficient and labour-saving minimum tillage equipment, which was expected to be met by local artisans and the agricultural implements retail network. In the long run, participating farmers were expected to move from subsistence level to being small entrepreneurs, who would also provide small farm power hire services to help overcome local labour and farm power shortages.

The expected End-of-Project-Situation was that ultimately the adoption of CA practices would lead to improved food security and more sustainable livelihoods for the beneficiaries and the community at large. Farm power and labour requirements for land preparation and for weeding would be reduced, and the application of cover crops and soil cover within the cropping cycle was expected to lead to improved soil quality and increased water retention capacity of the soils, which would make crops less vulnerable to erratic rainfall and drought.

The project's development objective was formulated as "improve food security and rural livelihoods and build a foundation for the expansion of conservation agriculture (CA) to contribute to sustainable agriculture and rural development (SARD)", with the immediate objective of "the adoption of profitable conservation agriculture practices in at least three districts in two countries".

These objectives were to be attained through the following outputs: (i) "farmers apply conservation agricultural practices"; (ii) "owners of Draught Animal Power (DAP) and tractors are able to offer hire services in CA practices to others"; (iii) "extension staff trained to organise, facilitate and provide on-going support to conservation agriculture farmer field schools (CA-FFS)"; (iv) "local manufacturing and retail sector able to supply tools and equipment suitable for conservation agricultural practices to farmers on a sustainable basis"; (v) "knowledge networks for exchanging experiences established at local, national and regional levels"; and (vi) "technical and operational support to the project including international and national procurement".

While the objectives and outputs are broadly linked, the logical hierarchy between development objective, immediate objective, and outputs is not immediately evident. For example, the logical link from the adoption of CA in a few districts to the expansion of CA and improved food security (presumably on a larger scale) would require a better description of intermediate steps. Output number one (farmers apply conservation agricultural practices) covers most of the immediate objective (the other outputs dealing with knowledge networks and CA implement manufacturing and retailing would have merited separate objectives); output number six is less of an output than a project management function.

In sum, the project design had certain deficiencies:

1. the development objective contains two objectives in one;
2. the immediate objective calls for adoption of *profitable* CA practices, without further definition of the profitability. The actual benefit for the beneficiaries is therefore not the adoption as such, but the fact that the adoption is profitable (see second indicator of immediate objective);
3. Indicators or interim results are mainly output/activity related, and hardly impact oriented. Indicators do not capture benefits nor changes resulting from activities or outputs; at best they state if activities have been done and funds disbursed;

4. the project workplan, elaborated in the Arusha planning workshop and used as main document for project implementation, makes no reference to the indicators agreed upon in the original project document. As a consequence these targets were no more reflected during implementation.

While the general principles of CA are supported by the mission, the objectives of the project are too ambitious for a two-year project, and the limited budget resources available. Conservation agriculture is by nature a long-term intervention, and any real impact will take time to materialize.

This makes a positive assessment of the project - using the given objectives as a yardstick – a challenge. In comparison to the logframe the accompanying text is more cautious with regard to achievable impact, which indicates already that more realistic formulations are required⁶.

A possible explanation for the shortcomings of the project document is that the project formulation phase was very short (mid-October to mid-November 2003), and that little direct interaction took place with future project implementers in Kenya and Tanzania.

2.3 Institutional Arrangements

The CA-SARD project has been designed as a regional project with implementation activities in Kenya and Tanzania.

The project document envisaged that the Conservation Agriculture Working Group of FAO (CAWG)⁷ under the lead of AGST would, in collaboration with the national FAO Offices and the Ministries of Agriculture, local government bodies and contracted service providers, manage the implementation of the programme activities. Furthermore, a steering committee was to be constituted made up of key officials, scientists and technicians drawn from involved organizations. Members of the CAWG were to provide regular guidance, arranging for expertise in the region to provide close backstopping, ensuring the adequate planning, monitoring and evaluation. In addition, links were to be established with international centres or regional organization such as ICRAF and RELMA.

Due to the regional character of the project the budget holder for the CA-SARD project is the FAO Regional Office in Accra, Ghana. Funds are allocated from there, and then disbursed to the FAO offices in Kenya and Tanzania. Other regional functions – related to technical support – are delegated to the African Conservation Tillage Network (ACT) (see below).

National Project Coordinators (NPC) in both countries were to coordinate the implementing arrangements and activities, and become the chairperson of the proposed steering committee. The African Conservation Tillage Network (ACT) was to be assigned to coordinate regional activities such as trainings, exchange visits and study tours, and also to have a facilitating role in the documentation and uptake of best conservation agriculture practices and of lessons learnt.

The institutional arrangements foreseen in the project document were revised soon after project inception; the Arusha workshop proposed some modifications: with regard to the

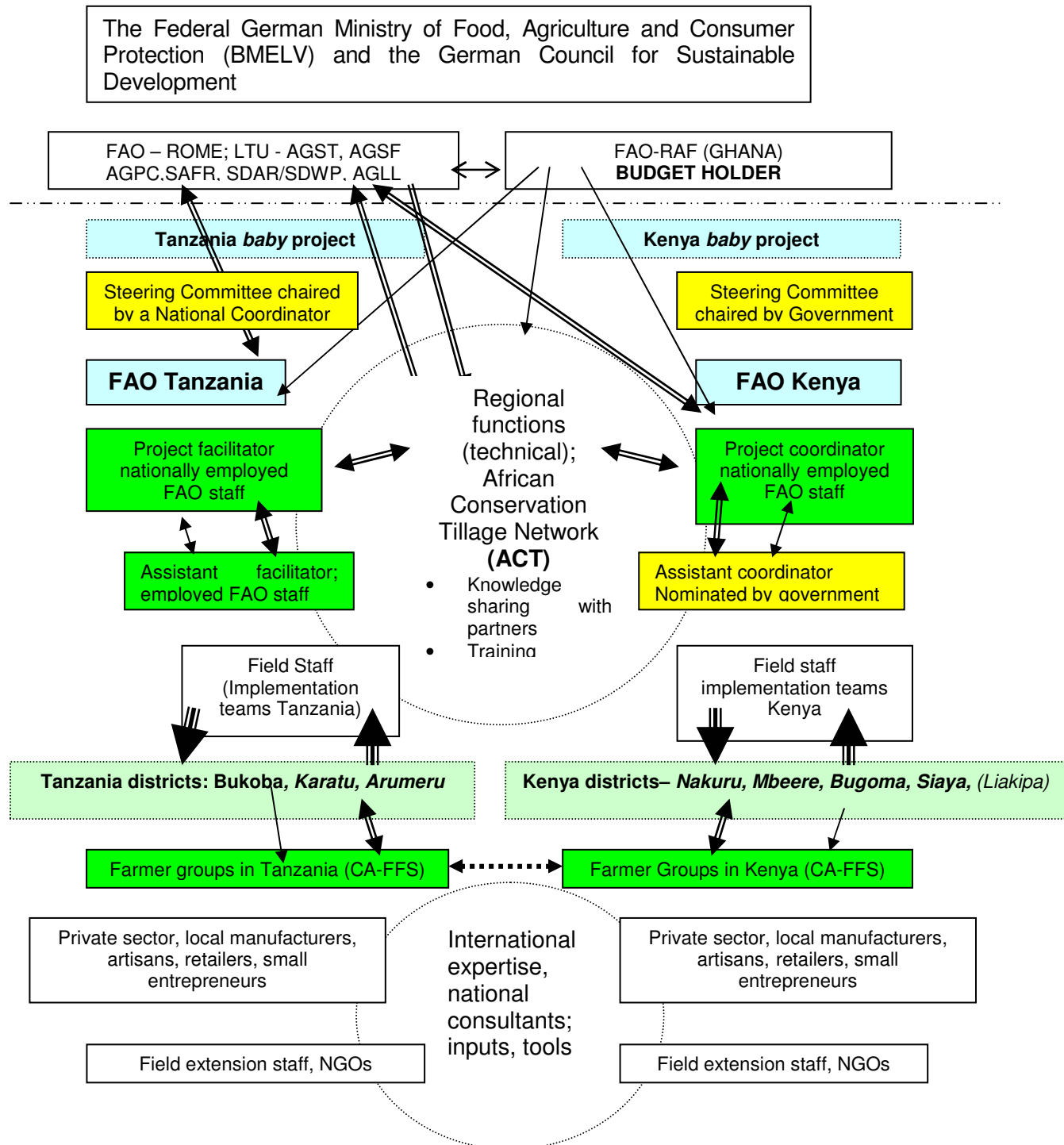
⁶ A first planning workshop, held in Arusha 8-11 June 2004, amended part of the initial logframe in particular to revise overambitious elements. Most project stakeholders were present, including GTZ, Governments of Kenya and Tanzania, FAO Nairobi and FAO Dar-es-Salaam. The BMVEL and the budget holder from FAO-RAF (Accra) were approached but could not attend. Also, there were no farmers or private sector representatives. The changes introduced by the workshop were, however, neither formally discussed nor agreed upon by the donor.

⁷ An inter-disciplinary working group to coordinate FAO activities on CA made up of officers from AGST, AGPC, AGAP, AGLL and AGE

position of the National Coordinator Kenya and Tanzania followed different procedures⁸. While in Kenya FAO employed a National Coordinator and a government representative of the MoA operates as Assistant Coordinator, the Tanzanian government representative is called National Coordinator, assisted by a National Facilitator on FAO contract

The figure below illustrates the project design and intended linkages for implementation:

Project Governance



⁸ The project document stated: "He/she will be employed by FAO and report to FAO. A close collaboration with the Ministry of Agriculture is envisaged."

taken from “Project Workplan and Budget 2004 – 2006”

The project document foresaw a Steering Committee both for Kenya and Tanzania. In the words of the project document, the Steering Committee “... will be constituted and will (be) made up of key officials, scientists and technicians drawn from involved organizations. Members of the CAWG will provide regular guidance, arranging for expertise in the region to provide close backstopping, ensuring the adequate planning, monitoring and evaluation.” While in Kenya this has been put in place, in Tanzania it has not been constituted⁹. In any case, the Steering Committee also in Kenya has met only rarely, and then in an advisory function. Overall, it appears that the already complex project management functions are rendered more difficult by the present set-up: responsibilities are spread over many positions, and no project “champions” are immediately evident.

2.4 Indicators, Work Plans and Assumptions

A logical framework matrix prepared during the project design phase (separate from project document) proposed a number of indicators related to the immediate objective and the outputs: some indicators referred to quantitative targets (e.g. area under CA increased from <10 ha at project start to >500 ha; >1000 farmers practice CA after 2 years; 50 CA-FFS are using regularly extension staff for special advice on CA), which gave an idea of the numerical progress expected. Others remained ambiguous (e.g. the indicator DAP owner farmers and/or tractor farmers in each project district have started offering farm power hire services at small scale commercial scale), and do not give a clear idea of the magnitude of the expected changes.

A rudimentary work plan was included in the project document. A detailed work plan (one work plan for each country) was prepared (and regularly updated) by the national coordinators/facilitators in Kenya and Tanzania, in collaboration with the LTU and (partly) the international expert consultants.

A project launch workshop was held soon after project inception in June 2004 in Arusha, Tanzania¹⁰ in order to “come up with a clear strategy and plan of operations for the project”. Following the Arusha workshop, the plan of operations and workplan were modified and subsequently used for progress reporting.

Assumptions were not spelled out in the project document, but made up a separate column in the logical framework matrix. These included some general assumptions (political stability, no natural or man-made disasters; no extreme climatic seasons; CA equipment and other inputs available in time and technical assistance is provided in time) for the development objective¹¹. (The last point would be more relevant form the immediate objective than for the development objective.)

Under vulnerabilities and risks, the project document took up an aspect already mentioned in the logframe: unfavourable climatic seasons with heavy rains or severe droughts could delay the expected adoption steps towards conservation agriculture practices.

⁹ The mission team was unable to meet with the Tanzania National Coordinator (duty travel to China). The LTU Rome explained that it was envisaged that the national steering committee would be attached to one of the existing taskforces within the Agricultural Sector Development Strategy ASDS. However, these task forces were eliminated after the ASDS was in place and operational. No further efforts were undertaken to install a new committee solely for the CA-SARD project.

¹⁰ Most project stakeholders were present, including GTZ, Governments of Kenya and Tanzania, FAO Nairobi and FAO Dar-es-Salaam. The BMVEL and the budget holder from FAO-RAF (Accra) were approached but could not attend. Also, there were no farmers or private sector representatives.

¹¹ One assumption was added for project output one: participation of farmers in project activities. This point is in fact more than an assumption basic: it is a pre-condition for the project; without it, the project would fail.

The assumptions listed in the project document were generally relevant, but did not include more specific risks and assumptions, such as the generally short timeframe (two years would be very short for any CA project), and the availability of sufficient counterpart staff at district and field level.

2.5 Project Beneficiaries

The project is being implemented in eight districts – three in Tanzania (Arumeru, Karatu, Bukoba) and five in Kenya (Laikipia, Bungoma, Mbeere, Nakuru and Siaya) . The districts represent some of the most rural and agricultural dependent areas in the two countries¹².

Project beneficiaries are vulnerable small farmers in the selected project sites. As women play a central role in small scale farming,¹³ it is intended that the FFS groups should have a good gender balance. Specific groups such as poor youth and female headed households and in addition HIV/AIDS affected farmers incl. orphans - youths who might have lost one or both parents are particularly mentioned. Intended project beneficiaries also include small artisans, retailers and small scale farm power hire entrepreneurs as the input supply chain is crucial for sustainability.

Although the Mission supports the inclusion of vulnerable farm households among the ultimate target group, it feels that extremely disadvantaged groups can not be adequately addressed by the project. The adoption of the CA-SARD approach requires the ability to bear certain risk, both in economic as well as social terms. FFS should thrive for a mix of farmers within a community, but not particularly look for the most disadvantaged. For this reason, the mission supports the view that also medium-scale farmers should be eligible for technical support. The FFS members visited during the evaluation represented already this mix of social groups.

¹² Project Baseline Survey 2005

¹³ Gender balanced participation in field activities is one criteria when forming FFS groups.

3. Assessment of Project Implementation, Efficiency and Management

3.1 Project Budget and Expenditure

The table below presents project budget and expenditure records up to October 2005. The project has had five budget-neutral budget revisions; in the main, the consultants' budget line has been decreased (due to hiring of experts under partnership arrangements) while the contracts budget line has been increased (to support the III World Congress).

	Prior Years		Current Year 2005 Up To:2005-10			Future Years		Project Total	
	Budgets	Expense s	Budgets	Expenses	Balance	Budgets	Budgets	Expenses	Balance
5013 Consultants (Parent)	29,444	29,444	110,000	68,203	41,797	48,000	187,444	101,255	86,190
5014 Contracts (Parent)	30,000	30,000	69,000	52,000	17,000	15,000	114,000	83,000	31,000
5020 Locally Contracted Labour (Parent)	0	0	15,150	3,851	11,299	7,250	22,400	4,395	18,005
5021 Travel (Parent)	30,603	30,603	99,878	84,348	15,530	36,000	166,481	115,795	50,686
5023 Training (Parent)	43,445	43,445	73,000	84,837	<11,837>	65,200	181,645	132,408	49,237
5024 Expendable Procurement (Parent)	2,000	2,000	29,500	15,724	13,776	10,000	41,500	18,724	22,776
5025 Non Expendable Procurement (Parent)	91,388	91,388	28,000	28,273	<273>	1,500	120,888	119,661	1,227
5027 Technical Support Services (Parent)	5,575	5,575	34,075	22,997	11,078	12,500	52,150	28,572	23,578
5028 General Operating Expenses (Parent)	23,843	23,843	49,819	28,071	21,748	14,001	87,663	51,914	35,749
5029 Support Costs (Parent)	33,326	33,326	66,118	45,794	20,324	27,228	126,672	79,120	47,552
5040 General Overhead Expenses (Parent)	51	51	181	181	0	0	232	232	0
Total Expenditure	289,676	289,676	574,721	434,278	140,443	236,679	1,101,076	735,075	366,000

The largest budget components of the project are for consultants, training and travel. This reflects the project's particular set-up: the consultants' budget line funds the National Coordinator (in Kenya) or Project Facilitator and Assistant Facilitator (in Tanzania) as well as international and national consultants, and training is one of the major project activities. The travel budget funds international as well as national travel.

3.2 Activities and Outputs

3.2.1 Farmers apply conservation agricultural practices

The formation of Farmer Field Schools and the experimenting and learning about CA in the selected districts has been the major activity of the project. So far 31 FFS groups in Tanzania and 41 FFS groups in Kenya have been established, already far exceeding the intended 50. In total about 1,800 farmers participate actively in the programme.

According to an updated status report (10/05 provided by ACT) over 60 % of the group have already registered and opened bank accounts. All others are in the process of registering. Once registered FFS are entitled to receive a grant of US\$ 600 to purchase implements and cover costs for extension services provided to the group. Procedures for the disbursement of funds to the FFS is still under discussion with the FAO country offices. For the time being national FAO project staff provides the FFS groups directly with implements and covers the cost for extension services. This has been a pragmatic approach, but raised expectations among FFS groups that the full grant would still be available for group activities.

Facilitators visit the FFS group usually once a week and provide technical and organisational backstopping to the groups. Each FFS establishes one jointly managed FFS plot – averaging one acre. Each plot has usually a set of five treatments including one control plot with farmers practice (variations in e.g. soil preparation, cover crop selection, crop management).

All FFS groups in the two countries have received the necessary farm inputs and basic stationary, albeit in some cases late. Main farm inputs included seed (maize, pigeon pea, velvet bean and lablab), fertilizer, herbicides and insecticides (last two in Tanzania only in Bukoba). All groups have at least access to CA implements, and few already own some.

Farmers who went already through a first season, have started to adopt selected CA practices on some of their own fields. A monitoring exercise (by ACT) is underway for actual quantification of the extent of application on private plots.

In addition to the ongoing FFS activities, CA field days have been conducted. In Tanzania (3) and Kenya (2) general awareness days have so far been organized in the project sites. In Tanzania, each FFS group had one awareness day undertaken focused on CA equipment.

3.2.2 Owners of draught Animal Power (DAP) and tractors are able to offer hire services in CA practices to others

The project has conducted training for selected owners of DAP and tractors to provide services for CA farmers. In Tanzania 15 DAP owners, and in Kenya nine have been trained. Twelve tractor operators from Bungoma, Nakuru and Laikipia undertook a three-day special machinery training. The training covered the handling and maintenance as well as business management (profitable management of implement hire services). Initially the number of trainees was lower, but was raised to establish sufficient service providers in the project areas.

From the beginning, the project has followed the approach that the introduction of CA through the FFS and capacity building of service providers are carried out in parallel. Farmers need services, this need however has to develop before the private sector will respond. Therefore achievements in the field of service delivery (output 2 and 4) will only follow when a critical mass of farmers practice CA and demand for services and implements.

3.2.3 Extension staff trained to organise, facilitate and provide on-going support to conservation agriculture farmer field schools (CA-FFS)

In both countries government extension staff have received training to facilitate the FFS groups (one course CA, one course on FFS, three weeks each). Due to replacements, not all facilitators attached to the project were able to participate in the training; new participants are now trained on the job through project staff or fellow colleagues. In Kenya three participants joined a FFS course organized by another project. Tanzania has currently 21 and Kenya 16 facilitators directly engaged with the CA-SARD FFS.

Continuous backstopping of the facilitators and their groups is provided by the FAO project staff and through ACT staff on the job. Technical back-up has been arranged through external local consultants on specific issues (e.g. weed management). The responsiveness of technical backstopping arrangements has been criticized in a few cases as too slow. The preparations for the III World Congress on CA as well as a systematic elaboration of good "CA case studies" in collaboration with CIRAD have offered opportunities for reflection and backstopping.

Extension agents visit the FFS groups on regular basis (usually once a week) and discuss issues arising together with all group members. Through the FFS approach continuous learning is inbuilt and has yielded good results.

3.2.4 Local manufacturing and retail sector able to supply tools and equipment suitable for conservation agricultural practices to farmers on a sustainable basis

Local manufacturing as well as provision of exported equipment are two options to supply tools and equipment to the CA farmers. An inventory of manufacturers, dealers, equipment service centres and input suppliers is available. Closer cooperation has started with some selected enterprises. Commercial manufacturing of some CA equipment is going on with Nandra Engineering in Moshi, Tanzania; and Ndume Ltd of Gilgil, Holman Brothers of Nakuru, Triple W Engineering, Ekima Engineering Works and Magnum in Kenya. However, demand for the equipment is still limited, which makes local manufacturing in small numbers expensive.

Training for local artisans has concentrated more on maintenance and repair than on manufacturing (see 3.2.2.). Lack of necessary equipment and material for manufacturing has put limits to the involvement of the local artisans. In any case, also in this case a critical mass of CA adopters is necessary to create sufficient demand for services.

Several retailers for CA equipment have been identified: TFA Karatu, MUKPAR TZ Arusha, TFA Arusha, PANNAR Seed (T) Ltd, Agro-subra, Nko Agrovvet Karatu, Sumari Jacob shop, Kisongo, East African Seed Company, Kibo Seed. In principle, the private sector seems to be willing to respond to farmer demand. However, it is yet too early to discuss about CA-outlet centres. As indicated earlier, sufficient demand is necessary to get the private sector involved.

3.2.5 Knowledge networks for exchanging experiences established at local, national and regional levels

The project has numerous activities related to knowledge management and networking. At the local level, limited farmer-to-farmer visits are ongoing informally between the groups, though few formal ones have been organized. Well-announced demonstrations of CA equipment have not taken place as intended. They were replaced by informal field days (mini-field days) organised by the facilitators or combined with planned training activities.

Regional knowledge management and networking (covering the two countries) has been the core task for ACT. Exchange has taken place, but appears to be little formalized. The focus seems to be on documentation of best practices and less on exchange regarding how best to manage the actual implementation of the project. This second aspect of regional exchange between project staff should have received more attention.

A monitoring exercise is underway to capture the effects and impacts of the CA-SARD project, elaborate “case studies” and provide a database for further discussion within the project and beyond. Excellent products are a very comprehensive “Conservation Agriculture Manual - for farmers and extension workers in Africa” elaborated in a write-shop. CA experts and practitioners throughout Africa have participated in this event. Posters and leaflets have been prepared for the III World Congress of CA. When the project was confronted with the conflicting demand to provide CA material either in Kiswahili for the Kenyan and Tanzanian farmers or in English for the international community, the project decided to produce material only in English and not in Kiswahili.

The main activity under this output, however, has been the CA-SARD contribution for the III World Congress on CA. (This was not to this extent reflected in the original project plan.) The III World Congress on conservation agriculture was held from 3 – 7 October 2005 in Nairobi in Kenya. This event was executed by ACT, hosted by the Government of Kenya and endorsed by NEPAD. The three major technical and financial supporters of the meeting were France (through CIRAD), Sweden (through SIDA and RELMA-ICRAF) and Germany through the CA-SARD project. Support came also from Kenyan private sector representatives.

The project gave strong support to the congress organization. The CA-SARD office in Nairobi doubled as congress office, the CA-SARD field sites and FFS groups were visited by mid- and post-congress field tours, and CA-SARD FFS farmer representatives were invited to address the congress. The congress thus constitutes a major milestone for achieving the project outputs.

The steering committee in Kenya, though not mentioned under networking has in a way served as suitable platform to prepare the CA World Congress (less so, to steer the project). Steering group members come from the public side (ministry, research), the private sector (manufacturer) and includes also other donor project members (RELMA in ICRAF, SUSTAINET-GTZ). Networking has also been facilitated by the initial planning workshop for the project.

Up to now no activities have been planned to formalize regional networking under the CA-SARD project. However, this issues needs to be tackled with urgency as the future of ACT - as a regional network - is currently at stake. The funding for ACT has phased out and no new funding is foreseen yet. The project LoA with ACT covers only actual services, but currently no overhead costs.

3.2.6 Technical and operational support to the project including international and national procurement

Technical backstopping, both by international and national consultants has been provided on a very regular basis and in good quality. For a two-year project the number of external consultant month is on the high side. The preparation for the III World Congress of CA has surely contributed to this.

International experts and FAO staff covered the following topics:

- (i) general project backstopping/ preparation and participation III World Congress on CS; FAO – LTU (AGST); June 2004, November 2004; February 2005, April/May 2005; October 2005;

- (ii) general project M&E, SARD linkages; August 2004;
- (iii) CA general training, FAO - AGLL; September/October 2004;
- (iv) CA equipment training; freelance consultant; January/February 2005;
- (v) elaboration of CA- case studies; CIRAD – France; April/May 2005;
- (vi) cover crop-soil cover/ weed control/ soil biology; University of Santa Maria, Brazil; May 2005; and
- (vii) participation III World Congress on CA, FAO – AGST, September/October 2005.

National backstopping covered the ACT support (knowledge sharing, M&E of project impact, assistance with preparation and documentation of the III World Congress on CA) as well as FFS backstopping in Tanzania through a national consultant.

The frequent backstopping visits by FAO-LTU indicate that there are strong linkages and regular involvement in day-to-day activities. All steering committee meetings in Kenya took place while the FAO-LTU officer was in the country.

Operational support has been provided by the respective FAO country office and the regional office in Accra. Certain delays have been noted (see 3.4), but in general the support has facilitated project implementation.

3.3 Government Support

Both governments have supported the CA-SARD project through allocation of staff both at national and local level (Assistant National Coordinator in Kenya & National Coordinator in Tanzania, field staff) and have facilitated implementation of field activities. Political support by the respective Ministries is essential to create sufficient interest and to incorporate the CA concept in national strategies and ongoing programs. CA is surely assessed positively by both governments and considered one concept among others.

Kenyan officials saw CA as “one possible option among many to develop the agricultural sector”, but with no particular emphasis on CA. In Tanzania interest in CA is more specific and CA thus receives more political attention and support. Indicators for that are the incorporation of CA as one explicit element in the currently discussed “mechanization strategy” as well as own government funds for a new project in the field of CA. The MAFS has allocated TZS 87 million to initiate CA activities in 13 additional districts throughout the country¹⁴.

In both countries Ministry representatives (see list of people met) underlined their interest in, and the importance of, CA, confirming previous statements made during the III World Congress on CA.

3.4 Project Management

Responsibility for project management has been spread over several positions: FAO-LTU/ in Rome, budget holder in Accra, FAO country offices with local staff and partners, African Conservation Tillage Network (ACT), and the National Coordinators/facilitators. This, in combination with vague statements regarding responsibilities and linkages in the project document has been a challenge to the CA-SARD project. The absence of a Steering

¹⁴ Oral conversation with Mr. Lymo and Mr. Mtunze, Agricultural Machinery and Technical Service Section, MAFS, Tanzania.

Committee in Tanzania, and the mostly advisory role of the Steering Committee in Kenya meant that there was no systematic oversight and guidance mechanism built into the project. Also, there have been no coordinated project reviews including the donor, recipient governments and FAO, which would have been useful to discuss and approve e.g. the changes made following the Arusha workshop.

Certain difficulties with regard to **administrative issues** and the way they have been handled reflect that. They have been stated in the last two bi-annual progress reports (BPR) and again been brought up in the course of the evaluation.

- (i) Lack of transport in Kenya and Tanzania (delayed registration of vehicles) – BPR 12/04;
- (ii) late disbursement of operational funds (Kenya and Tanzania) – BPR 6/05;
- (iii) amount and procedure to obtain cash requires time and resources (Tanzania) – BPR 6/05;
- (iv) late procurement and clearing of CA equipment (Kenya and Tanzania) – BPR 6/05;
- (v) (intransparent) budget cuts, activities planned for in the Arusha WS had to be dropped – BPR 12/05;
- (vi) pending of LoA with SARI, as main implementing partner in Tanzania (solved 10/05):
- (vii) (still) unclear procedure for FFS grants disbursement.

Most of the above points have been clarified or eased over time (the LOA with SARI has been finalized prior to the arrival of the mission after final intervention of the FAO-Representative Tanzania). Some concerns remain with regard to the transfer of funds for the FFS school activities. While it is understood that general FAO procedures need to be adhered to and will not change, ways have to be found to solve administrative issues, when they arise and find the most suitable procedures to guarantee smooth transfer of funds to implement planned activities in the field. (The original project document envisaged Letters of Agreements with individual FFS – clearly not an appropriate way of transferring funds to small farmer groups.)

Overall management and coordination has been carried out by the FAO-LTU (AGST) and the FAO Regional Officer for Africa (RAF). (A mandate for technical supervision by AGST/RAFA has been stated in the project document). Supervision of the country pilots was supposed to be in the hand of the FAO country offices and implementation carried out by the respective local FAO staff, including their government partners. However, overall coordination and regional coordination had not been sufficiently clarified (splitting of technical support/ operational support).

In the “Project Workplan 2004 – 2006” the role of ACT is described as follows: “ACT will be having a technical regional coordination role in the “CA for SARD” project. It will, on behalf of the LTU, partly take on a technical support role to the two national project teams. This is required as the project purposely did not foresee a formal international regional coordination office. Moreover ACT will take on responsibilities in regional training on CA and implantation methodologies, in knowledge documentation and sharing as well as networking with other partners as listed below. The services of ACT will be bought in by the project through an LOA.”

While ACT has taken over the technical support role in the areas agreed upon, coordination or management of the CA-SARD project was not within its mandate. The contracting of ACT through an LOA has additionally weakened its capability to perform this task. This lack of

coordination through ACT was compensated by frequent visits of the LTU officer in charge to prepare for the III World Congress on CA. In the future these visits might become less frequent and thus the question about overall, regional and national management and coordination is to be addressed. Considering these circumstances, project management has been relatively successful, but the absence of a “champion” for the project has been felt.

4. Assessment of Results and Effectiveness

4.1 Effects and Impact

Despite the short lifetime of the project initial effects and impact can be observed.

Output 1 Farmers apply conservation agricultural practices

Farmers show considerable interest in the FFS groups initiated by the CA-SARD project. The number of FFS groups already exceeds the original targeted 50 groups: so far 72 groups have been formed (17 additional groups are interested to join). There are already incidences where groups have split and formed a FFS subgroup on their own.

Farmers who have practiced CA in the first season in their common FFS plot, have started to apply CA elements in their own fields in the second season. According to ACT¹⁵ “95% of the FFS members (households) applied at least one aspect/option of CA (cover crop, reduced tillage or rotation) in own private fields during the 2004-05 cropping season. The size of fields averaged 0.5 acres per household.” At present a monitoring exercise is underway for actual quantification of the extent of application in private plots.

One finding is that farmers spend less time for field preparation with the CA methods compared to usual farmer practice (quantification part of monitoring exercise).

The probably single most important issue for further adoption of CA practices is the issue of crop residues. Traditionally, these are used as animal feed, and in the meantime have almost acquired a status of cash crop. (Crop residues are being sold in the market.) CA practices compete with the use of residues as feed; while on an individual and largely experimental basis the crop residue issue can be managed, a large-scale adoption would most likely create problems for livestock owners.

Output 2 Owners of draught Animal Power (DAP) and tractors are able to offer hire services in CA practices to others

Due to delays with distribution and use of CA equipment only minor effects and impact can be observed with hiring out of DAP and tractor hire services.

In Kenya one large scale commercial farmer in Laikipia offers tractor hire services, demand for services is still low (no detailed figures available). In Tanzania tractor hire services have not been offered.

Nine trained DAP owners in Kenya have started to support their fellow FFS members during training sessions. Services are not yet on a commercial basis and they are only available to group members. In Tanzania fifteen DAP owners have offered planting services to FFS members in their groups. Each DAP owner prepared between 0.5 to 3 acre plots for at least

¹⁵ Status report prepared by ACT for the evaluation mission (11-05). In the field it could be observed that individual farmers have taken over elements of CA; however, a figure of 95% appears to be the high side.

20 households that tried direct planting in this (2004-05) season. This service was at no charge.

Output 3 Extension staff trained to organise, facilitate and provide on-going support to conservation agriculture farmer field schools (CA-FFS)

In both countries, each FFS group meet once a week for the FFS learning session and on several other occasions to work in the group field – facilitators/extension staff attend the weekly FFS learning meetings and provide technical input/support in the discussions. All FFS member farmers get regular and frequent access to CA extension service.

While some CA facilitators/ extension workers are exclusively working for the CA-SARD project, others perform various tasks. The CA-SARD training builds capacity among government extension staff, which improves overall extension services in the districts. The linkages and cooperation with the district superiors will help to spread the CA concept in combination with the FFS approach in the district and make the knowledge available to other programmes (e.g. KAPP¹⁶ in Kenya, PADEP¹⁷ in URT and others¹⁸). However, there is a need for refresher training of extension staff, and also the technical backstopping needs to be strengthened. It is likely that with a wider adoption of CA, more novel and complex problems will arise – this will be a challenge for technical subject matter specialists.

Output 4 Local manufacturing and retail sector able to supply tools and equipment suitable for conservation agricultural practices to farmers on a sustainable basis

Through discussion and training measures few private enterprises have developed interest in adaptation and manufacturing of CA equipment (Nandra Engineering in Moshi, Tanzania; and Ndume Ltd. of Gilgil, Holman Brothers of Nakuru, Triple W Engineering, Ekima Engineering Works and Magnum in Kenya). The private sector so far has invested some limited resources, and thus has shown willingness to share some of the risks of developing a market for CA equipment.

The trained local artisans (15 in Tanzania and 9 in Kenya) had their training focused more on maintenance and repair than manufacturing. Through the project an initial equipment order has been placed; in addition, limited requests for repair have been put forward by the FFS groups.

A number of private retailers have come forward to advertise/sell CA equipment: TFA Karatu, MUKPAR TZ Arusha, TFA Arusha, PANNAR Seed (T) Ltd, Agro-subra, Nko Agrovvet Karatu, Sumari Jacob shop, Kisongo, East African Seed Company, Kibo Seed.

A question for the future is the level of reliance on local artisans for manufacturing of implements, and the level to which CA machinery will need to be imported. Both issues should be studied with particular attention to economics as well as quality control and sustainability issues.

¹⁶ KAPP: Kenya Agricultural Productivity Programme; US\$ 40 million funded by World Bank for a three year phase (2004 – 2007). Project components: facilitation of policy and institutional reforms, support for extension policy reform, research system reform, farmer/client empowerment

¹⁷ PADEP: Participatory Agricultural Development and Empowerment Project (World Bank assistance) 2003 – 2008. The total project cost is estimated to be US\$ 70.6 million equivalent, of which IDA will finance US\$ 56.0 million. Beneficiaries will contribute 12.0 million, the government US\$ 2.6 million. The project has two main components (i). community agricultural development subprojects; (ii) capacity building and institutional strengthening. Under the first component community agricultural subprojects can be supported. FFS CA subprojects could qualify for support.

¹⁸ An additional projects of relevance to CA SARD in Tanzania could be the DFID funded “Soil Fertility Enhancement Project” (Muheza district)

Output 5 Knowledge networks for exchanging experiences established at local, national and regional levels

Strong links and networks have been established for the promotion of CA – at local regional but also international level. The III World Congress of CA has provided an excellent platform to formalize cooperation, beyond the cooperation that already exists with CIRAD, RELMA in ICRAF, UNEP-GEF and UNIDO). Opportunities for additional funding for CA promotion are currently followed up.

A joint UNIDO-FAO proposal for a regional project “Promotion of Economic Growth and Improved Livelihoods in Eastern Africa through Conservation Agriculture based Interventions in the Agricultural and Industrial Sectors” is under discussion. The project would build on the experience of the CA-SARD project¹⁹, but – according to the current proposal – five countries would participate (Eritrea, Ethiopia, Kenya, Tanzania and Uganda). The estimated budget requires approximately US\$ 5.5Mio. So far, donors still need to be identified.

Stronger regional links as well as regular information exchange with other CA-related initiatives would ensure a better uptake of CA in future policies and strategies; currently, the major development programmes in the agriculture sector of both countries make only implicit reference to CA.

Output 6 Technical and operational support to the project including international and national procurement

The intensive and dedicated backstopping of the LTU (in particular through the officer in charge) and active participation of FAO headquarters in the III. World Congress of CA has given weight to the issue of conservation agriculture. However, this output should be considered as part of a regular management function, and not an objective of the project per se.

4.2 Sustainability and Environmental Impact of Results

It is yet too early to make any statement about sustainability or environmental impact of the practices introduced by the CA-SARD project.

The first batch of FFS groups has experimented with CA for one season, others are in the formation process. Two farm households visited during the stay had already practiced soil conservation and improvement under previous projects before joining the CA-SARD FFS groups (one farmer in Tanzania had started about 10 years ago). On their farms it is obvious, that soil fertility has improved, erosion problems have become less and that – according to them - yields have increased. This backs up scientific evidence that CA has a clear positive environmental impact when applied over a longer period of time²⁰.

Nothing can be said yet about sustainability of services, as they are currently fully financed by the project and carried out by the government extension workers. It remains an open question whether the Kenyan and Tanzanian governments will be willing and capable to finance the FFS approach from their own means or also lobby for external funds to continue with the approach (the Tanzania government has started to do so). There is a chance that both the FFS approach and “CA elements” can be incorporated in other ongoing programmes in Kenya and Tanzania and thus opportunities exist to sustain the services.

¹⁹ BTO report Josef Kienzle (LTU/AGST), 10/2005

²⁰ Farmers stated that about five years are necessary to get into CA and stabilise the system.

It is within the FFS approach that farmers themselves provide technical backstopping to other fellow farmers. As indicated earlier, it is too early to assess this development for CA-SARD. A larger number of farmers practising CA and more CA “best practices” would surely be necessary to make that a viable option.

Currently, private services are not offered on a cost recovery basis, neither for soil preparation nor for technical backstopping. The same applies for the provision of implements through the private sector. The project works on the assumption that the private sector will play an important role once sufficient training has been given and when enough demand has been created among the farmers.

4.3 Gender Equity in Project Implementation and Results

It has been a very explicit aim of the CA-SARD project to give men and women an equal chance to participate in CA activities. According to the project documentation, of the 1,707 farmers listed as FFS members, 51% are female. While in the field, the mission got the impression that both men and women are interested in the CA-SARD project and get involved in CA activities. With only one exception, women stated that practicing CA and handling of CA equipment is not a problem to them and culturally acceptable.

It can be said that the opportunity to learn and experiment with CA in the FFS is empowering farmers, both men and women. The exposure women get when participating in the FFS is surely positive.

Depending on the site and the cultural background of the prevailing tribe access to land/land tenure can be a constraint for women to practise CA. CA needs a longer term security to farm the land and make decision on how to do it. Without that it is difficult to bring about any of the CA benefits of improved soil fertility and finally higher yields. This applies to men and women alike, but is likely to affect women much more than men. In the farm household, women often depend on their husband’s permission to go ahead with CA, this permission can be withdrawn at a later stage and remains thus a risk to women.

It was beyond the scope of the mission to get a clear picture about the issue of land tenure or if CA has any significant positive or negative effect on the distribution of labour in relation to gender. A thorough analysis would be required to make a sound judgement. Based on the experiences through the field visit the mission team felt the requirement of gender equity has been adhered to.

4.4 Cost-effectiveness

The cost effectiveness of the project is at this stage hard to measure. If the first experimental results are taken as a yardstick, farmers’ production costs will go down with CA, while yields will rise. The question then is whether the envisaged wide-spread change can be brought about through existing institutions, and what additional investment would be needed. It is clear that the project will need to continue for a few more years in order to provide a sound technical basis for CA in both countries. If a project follow-up is accepted, a major element of it should be the development of a phasing out strategy (as a project), and the identification of possibilities for up-scaling CA by other initiatives, strategies and programmes.

4.5 Major Factors Affecting the Project Results

There are several factors influencing the project results in a positive or negative way; the main ones are highlighted in the following.

4.5.1 Factors affecting the project in a positive way

- **Conservation agriculture has been promoted** by a number of dedicated stakeholders in and outside FAO in **SSA for some time**. The CA-SARD project has managed to build on these experiences (e.g. FAO-TCP GTZ-ACT, RELMA) and to significantly add on them. Same applies for the FFS approach, which is used by a number of FAO projects both in Kenya and Tanzania. The level of awareness about CA and FFS has helped to speed up implementation.
- FAO national personal as well as government representatives have **previous experiences in CA** projects and make use of them.
- A set of very dedicated persons exists, coming from various donor organizations, national and international research institutes and also the host governments. There is a **common interest to promote CA in SSA** and thus a willingness to join hands and resources in the promotion of CA.
- The **promotion of the CA content with the FFS approach** has proven very successful and expansion is more likely with the current participatory group approach compared to pilot activities with individual farmers under previous projects.
- The **III. World Congress of CA has created tremendous awareness** and interest in CA among various stakeholders in but also beyond Kenya and Tanzania.

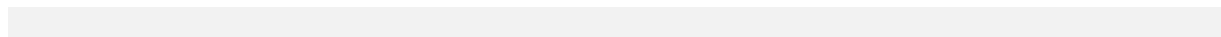
Factors affecting the project results in a negative way

- A partly **inconsistent project design** and (initial) administrative problems are seen as a draw back for the CA-SARD project. This caused delays in field implementation
- While the CA concept as such is fairly elaborated local adaptation is necessary. **There are too limited choices** (incl. technical backup) **for effective cover crop management**.
- The **dependency of the government extension structure** on external funds, the variety of tasks put to an individual extension worker and at the same time the need for very experienced and dedicated extension staff puts clear limits to the rapid dissemination of CA.
- The **demand for services** (technical backstopping, CA implements) provided by the private sector on economic terms is still **low**. Expectations by farmers to get services at subsidised prices (through grant to FFS) or free of charge weakens the position the private sector needs to play.
- Some **CA equipment is not yet fully adapted** to the local conditions (e.g. jab planter after rain)
- The **price for some of the CA equipment** (direct planter) is perceived too high for the small-scale farmers²¹.
- **Cumbersome registration procedures** and high fees to register as a group (requirement for FFS grant) are a burden to farmer groups.
- Sound **crop-livestock integration** is a major issue for the promotion and dissemination of CA. Unless the issue of “ownership and use” of crop residues/cover

²¹ On the other hand, staff members have indicated that the project receives requests from groups that want to buy the planters while they are not yet fully commercially available.

crops between crop farmers and livestock keepers is not solved, sustainable CA application is at risk.

- Adverse **weather conditions** (prolonged dry spells) have resulted in the failure of some CA FFS experiments and limited “lessons learnt”.



5. Conclusions and Recommendations

5.1 *General conclusions and recommendations*

5.1.1 The project has built a good foundation for CA in the selected districts, which can provide a basis for future CA efforts in Eastern Africa. The development objective of the CA-SARD project remains relevant, but its achievement needs more time and additional resources.

Recommendation: Elaborate a project proposal for a follow-up phase of preferably three years, and submit proposal to the German donor and/or other funding agencies. FAO and the countries themselves should make continuous efforts to secure local as well as donor funding, in order to keep the momentum created by the CA-SARD project and ensure that the level of CA practices attained in both countries can be raised further.

5.1.2 The project should proceed with the interventions initiated in the first phase, but with a slightly different notion. At present emphasis is on implementation in farmers' fields (farmer-extension interaction) and capacity building for the services and supply side. This needs to continue. A reflection on the promotion approach leading to a conceptual framework for CA promotion has not been adequately addressed yet. A concept for CA promotion, looking not only at "what" needs to be done at farmer level, but also at "how" (suitable approaches for the promotion) and "with whom" (institutional set up and strategic linkages) should feature more prominently in a follow up phase and allow a more strategic orientation.

Recommendation: Adjust interventions (outputs) in a follow up phase:

* Capacity building for manufacturers and service providers can be merged (combined output);

* Add: Elaboration of a concept to promote and disseminate CA in a sustainable way.

5.1.3 The current project areas offer sufficient opportunities to promote and consolidate CA activities. An expansion to new areas would dilute human as well as financial project resources, while concentration on existing areas could provide the opportunity to reach a critical mass of CA adopters. This critical mass is needed to generate sufficient demand for private, but economically viable service provision.

Recommendation: Implement the project in the already selected districts in Kenya and Tanzania in order to deepen and locally spread CA. As an option, the addition of two more (neighbouring) districts in Tanzania could be considered: this would raise the number of districts covered to five as in Kenya.

5.1.4 CA is not yet in the mainstream of agricultural strategies and concepts in KEN and URT, but seen as a one potential concept to foster sustainable agricultural development by ministry officials.

Recommendation: Continue to lobby for CA on political level and explore possibilities to integrate CA in national agricultural strategies and programmes.

5.2 *Project planning and set-up*

5.2.1 The project planning is over-ambitious and has shown some inconsistencies. The planning does not really reflect the challenges, which were to be expected by the project's implementation structure (e.g. availability and internal structure of service providers; interest of private sector in CA), constraints related to the target group (e.g. crop-livestock integration) or in general the pace of development possible in rural areas in Kenya and Tanzania. Indicators concentrated more on recording implementation than on recording possible changes.

Recommendation: Elaborate a more realistic planning with regard to the project's development and immediate objectives, indicators and assumptions, target group and prospects for sustainability.

5.2.2 Clearer responsibilities and more transparent management procedures (decision making) could make project implementation more efficient. Responsibilities and procedures need to be defined for government partners, local FAO staff, FAO country offices, FAO's regional office including also the LTU in FAO headquarters. A "champion" for regional coordination and overall management is still missing, but required.

Recommendation: Review internal project set-up and clarify tasks and responsibilities of project "units" during the planned workshop before the end of this first phase.

For the follow up phase: Agree on a regional "champion".

This champion could be an additional FAO CA-SARD project staff, but needs to be located either in Kenya or Tanzania. An amendment of the current ACT agreement could be an option. This would require both an amendment of tasks and mode of cooperation (not through a LoA).

5.2.3 Administrative bottlenecks - many of which occurred during the start-up phase of the project - delayed distribution of inputs and grants and thus implementation of field activities. Partly this is attributed to the unclear institutional responsibilities (e.g. regional splitting of project management – LTU/Rome, budget holder/Accra, FAO country offices). Special emphasis needs to be given to manageable procedures for field activities.

Recommendation: LTU together with the representatives in the FAO country offices and the national FAO implementation staff: find most suitable administrative procedure to disburse funds to the FFS schools without overburdening them.

5.2.4 The absence of a functional steering committee for the project in Tanzania and the mostly advisory role of the steering committee in Kenya neglects the dimension of guidance and political support, which is required to bring CA more into the mainstream of agricultural development.

Recommendation: Establish a national steering committee in Tanzania and clarify roles and responsibilities for steering committee in both countries. Try to convince influential stakeholders to participate actively in steering committee and promote CA.

5.2.5 Backstopping of good quality was provided through FAO headquarters staff, mainly the LTU. This backstopping has facilitated close links between FAO headquarters and the two pilot schemes. At the same time, the staff involved supported networking with other bi- and multilateral donors beyond the CA-SARD project. The intensive backstopping in the first phase was possible, because it could be combined with the preparation of the III World Congress on CA.

5.3 Dissemination approach

5.3.1 The experience of many development initiatives shows that farmers tend to look for tangible benefits first and value the opportunity to gain knowledge second. With the current procedure of direct provision of inputs to FFS groups there is a danger that the spirit of empowerment through learning and experimenting and the ownership over this process loses importance over the discussion about distribution and utilisation of equipment and supplies.

Recommendation: Stress knowledge interventions (expertise) as opposed to product/input interventions (equipment and supplies) in all field activities.

5.3.2 In the CA-SARD project CA promotion is disseminated through the FFS approach. The FFS approach has been very effective in Kenya and Tanzania. Despite these obvious advantages of the FFS also other participatory approaches (some less intensive) are used. The “package” of CA and FFS might limit the possibility to integrate CA (content only) into other ongoing rural development programmes in KEN and URT.

Recommendation: Allow also for separate CA and FFS promotion and thus allow others to integrate CA and/or the FFS concept wherever suitable.

5.3.3 CA can be practiced using low, medium and high levels of inputs (e.g. equipment, fertilisers, pesticides, herbicides). The use of herbicides is surely an option, but hand weeding might be equally effective. Decisions have to be left to the group and will depend on available resources.

The private sector is necessary to provide relevant services and implements, but the interest of the private sector is to increase sales and thus profit. This can cause conflicting interest with regard to the input levels necessary for CA.

In the process of CA integration it will be the role of the facilitators to support the FFS groups to select an adequate input level, without giving up the underlying concept of CA.

Recommendation: Encourage public-private sector interaction without predetermining high-input approaches.

5.3.4 The project is currently fully financing services as well as inputs for the participating farmers. While it is understood that this is required in a start-up phase, it is necessary to envisage a more sustainable and thus more replicable way to promote CA in the medium term.

Recommendation: Develop phasing-out strategy for input provision by the project.

5.3.5 Promotion of CA in other districts in Kenya and Tanzania and even beyond needs a sustainable “dissemination concept”. This is yet to be developed. It should comprise of how to best provide farmer groups with facilitation (FFS), technical advice and provision of implements for CA (see also 5.1.2) in a sustainable way.

Recommendation: Use sustainability as main criteria to elaborate and fine-tune “dissemination approach”.

5.4 Farmer Field Schools

5.4.1 Once FFS groups have undergone a full cropping cycle, the participants graduate and continue on their own. In contrast to FFS dealing with specific – often short cycle crops - CA requires more than one cycle. In particular the issue of crop rotation can otherwise not be fully covered. In the project there is as yet no definition/concept for FFS graduation, and what support would still be required after graduation.

Recommendation: Develop follow-up strategy for FFS groups after first cycle and/or graduation.

5.4.2 The use of the FFS grant money is not fully understood by farmers. The current procedure of direct service and input supply by the project staff/ facilitators has fuelled this misunderstanding. Due to the administrative bottlenecks with distribution of implements and funds, the project staff acted in a pragmatic way and assured that field activities could go on. However, farmers received inputs and services as “additional” benefits with no relation to the grant.

Recommendation: Clarify the current and future utilization of FFS grants with farmers as soon as possible and make procedures transparent.

5.4.3 All FFS need to formally register and open a bank account to participate in the programme and receive the grant. While in Kenya the registration of FFS is ongoing without problems, in Tanzania registration takes time and costs for registration are very high. In particular the distance to the next bank or post office, where money can be disbursed is seen as a problem. The administrative requirements (registration and bank account) will restrict the full participation of farmers.

Recommendation: Assess current FFS administrative requirements and adapt them to local conditions.

5.5 Capacity building

5.5.1 Facilitation and sound technical backstopping is required to spread CA and the FFS concept among farmers. Government extension agents will remain the most important service delivery structure to provide these services and get the promotion of CA started. In addition to the extension agents, farmer themselves can – after graduation from the FFS - become facilitators.

Recommendation: Continue to build up “critical mass” of facilitators (sufficient number with good capacity) to provide technical backstopping at field level. The use of local expertise in addressing some of these issues needs to be optimized to ensure sustainability of introduced interventions.

5.5.2 Training of extension agents has taken place, but might not be sufficient to provide substantial backstopping to solve site specific problems (e.g. weed management, pest and disease management in cover crops) or to further develop CA technology (e.g. choice of cover crops, crop rotation, suitable management practices).

Recommendation: Provide for follow up training/ refresher courses of extension staff and/ or farmer trainers and establish competent but also fast technical backstopping.

5.5.3 In addition to training courses for extension agent and/or core farmers a backstopping system for extension agents is required. This system should be able to provide guidance on issues arising from the field, which can not be solved on local level by the extension agents. Currently technical backstopping arrangements for FFS facilitators are not formalized and not always responsive.

Recommendation: Provide for effective backstopping arrangements for facilitators/ extension agents and monitor efficiency.

5.6 CA technical issues

5.6.1 Crop-livestock integration is seen as the biggest challenge for the CA-SARD project in areas with free grazing livestock and/or periodical fodder shortages. After harvest, crop residues are traditionally used as fodder (available for free or sold), or fields are used for grazing. In the CA concept permanent soil cover is a core element and residues or cover crops are needed for that. The cover is also essential to cope with weeds.

There is thus a clear conflict – either within the farming system or between crop farmers and livestock keepers. This issue can put limits to the expansion of CA. It has already caused conflicts in the villages between crop farmers and livestock keepers, and if CA is to expand, these conflicts might deepen.

Recommendation: Openly address crop-livestock integration in the communities and try to negotiate procedures for crop-livestock integration. There is a need for support beyond the FFS groups on community level.

5.6.2 Demand for CA equipment and private CA services (e.g. DAP) is still limited. With the present demand it is difficult to predict if the private sector will be able to provide equipment

and services entirely under market conditions and at the same time affordable to the target group.

Recommendation: Continue to encourage private sector involvement by supporting demand from the farmers' side, but envisage already a phasing-out strategy for this support in a possible follow up phase.

5.6.3 The CA-SARD project has so far promoted a limited number of cover crops and cropping patterns in the FFS groups. They have been selected based on existing experience and initial preferences of farmers. The current choice is seen as a starting point, but more choice is necessary to encourage farmers to buy in the CA concept and especially the cover crop issue. Interest in cover crops will rise when they can fulfil functions other than soil coverage (e.g. income, food, feed).

Recommendation: Widen choice of cover crops and cropping patterns promoted by CA-SARD. Closer collaboration with KARI and SARI but also other research units should be explored and complemented when necessary by consultancies.

5.6.4 The CA equipment currently tested by the FFS, has shown certain weaknesses under local conditions. (e.g. jab planter does not work under wet conditions, some parts wear out fast and can not be replaced locally). Further adaptation is needed. In addition the cost for equipment is still an issue among farmer groups

Recommendation: Use functionality under local conditions as well as affordability by the target group as main criteria for further adaptation of CA equipment.

5.6.5 There is a need for more reference and extension material in the field. The project has developed a very comprehensive manual for CA in English, simple leaflets or posters in Kiswahili could be derived from that.

Recommendation: Elaborate reference/ extension material in Kiswahili.

5.6 Linkages and networking

5.6.1 The exchange between KEN and URT stakeholders in the project has been limited. Stakeholders have mainly met around the III CA World Congress, but linkages – to assess project implementation - have not been regular or formalised. In-country expertise of CA has so far been underutilized. A possible follow-up phase could benefit from the identification of national and regional backstopping services.

Recommendation: Formalize a more regular regional exchange between the Tanzanian and Kenyan project stakeholders.

5.6.2 Awareness of CA and the CA project has been boosted by the III World Congress on Conservation Agriculture held in Kenya in October 2005. This event was organized with substantial inputs from the project. The Congress has provided a good base for political, but also financial support from a variety of stakeholders.

Recommendation: Build on the current momentum on political level in KEN and URT and continue to follow up international stakeholders willing to support CA financially.

5.6.3 The local government is the most important stakeholder to promote CA in the communities. While in Kenya the Ministry can still guide extension staff, in Tanzania the extension staff is under the local government. Important decisions in the communities will be taken by the local governments, therefore there is a need to get full local government support for CA promotion.

Recommendation: Forge links with (national, district, local) government structures for CA promotion (Kenya and Tanzania).

5.6.4 Large rural development programmes are underway in Kenya and Tanzania. These programmes are designed to react on demand coming from the communities and are fairly open with regard to technical content and also approaches to disseminate the content. This offers opportunities to integrate CA as a concept and disseminate it with government support, using available resources. Synergies are obvious.

Recommendation: Align CA-SARD with input-supply programmes (such as PADEP in URT, KAPP in KEN).

6. Lessons Learned

Few statements are made here with regards to lessons learned, all have been mentioned earlier in the report.

- The promotion of CA is a long-term undertaking and has to be embedded in an overall strategy for sustainable rural development. It is beyond the scope of an isolated (short-term) project to achieve sustainable impact with regard to CA promotion and adoption, even when restricted to few pilot areas.
- CA should not be seen as an isolated technical intervention, which will be taken up easily by farmers. The successful adoption and dissemination of CA among small-scale farmers will depend on a general vision how to proceed with agricultural activities in rural communities. It requires a behavioural change in the farm household, but also beyond that in the farming community (sustainable management of natural resources, crop-livestock integration).
- Successful CA needs motivated farmers, willing to experiment with, adapt and adopt CA, but also service and implement providers to assist them and to provide them with relevant inputs. Before a critical mass of demand for services and input on economic terms is not reached, any service system is highly vulnerable and in need of subsidies. While this might have to be accepted in a transition phase, a clear phasing out strategy for public support is required from the very beginning.
- CA promotion needs a variety of stakeholders on various levels to join in and support CA. Coordinated efforts, documenting and analyse existing and emerging “best practices” are necessary to create the interest. This can be done as demonstrated in the III World Congress on CA.
- A strategic promotion of CA needs well established (and well documented) CA success stories in farming communities – a critical mass of CA practice. At the same time a conceptual framework, how to best promote CA on a larger scale in a given area with whom, using which approaches and at what costs is required to move CA beyond individual to regional success.

Annexes

Annex 1 Terms of Reference

Terms of Reference for Joint Evaluation Mission by The Federal Republic of Germany (GTZ), FAO and the Governments of Kenya and the United Republic of Tanzania of Project GCP/RAF/390/GER “Conservation Agriculture for Sustainable Agriculture and Rural Development (SARD) and Food Security in Southern and Eastern Africa”

1. Background

Conservation agriculture (CA) has evolved as a term which represents an inter-acting and complimentary set of agricultural practices and concepts. Despite regional differences in the mix and emphasis of the different specific components making up CA practices and which depend on agro climatic zones, availability of farm power options, farming systems types, inputs, skills, etc., the three basic principles which are always present are:

- minimal soil disturbance (no-tillage/reduced tillage)
- permanent soil cover (cover crops) and associated
- suitable and diversified crop rotations/associations

While these three individual technologies are well known, it is their combination and the management of the combination that leads to new synergetic effects resulting in CA becoming more than just the sum of the individual practices.

Why conservation agriculture for SARD?

In addition to fostering environmental sustainability through soil and water conservation, conservation agriculture can contribute to the social and economic pillars of SARD through:

- reducing the workload and time spent for agricultural production therefore enabling livelihood diversification and business development and freeing time for other activities such as education, family care, community development and political empowerment.
- stabilizing crop yields, especially through reducing drought sensitivity and dependence upon price-fluctuating purchased fertilizer inputs.
- increasing production and agricultural earnings.
- enhancing crop biodiversity and diversifying food intakes.
- Fostering the development of secure livelihoods for other rural actors such as rural artisans and small entrepreneurs.

The project history, objectives, and major concepts and outputs

CA pilot activities contributed to the decision to start-up the regional CA-SARD project in Kenya and Tanzania. Among those were:

- The GTZ funded African Conservation Tillage Network with its pilot sites in Tanzania
- The former GTZ funded Tanzania Farmers Service Centre (TFSC) project
- IFAD/FAO executed studies on labour saving technologies for vulnerable households with focus CA technologies (Kenya, Tanzania), funding Japanese grant through IFAD
- FAO TCP/KEN/2904 ‘Piloting CA for improved livelihoods in six districts in Kenya
- FAO has lot’s of experience with the farmer field school concept (FFS); especially in Bukoba/Tanzania and Siaya, Bungoma, Nakuru in Western Kenya

First discussions between the donor and technical officers took place in September 2003. In October 2004 one FAO/SARD officer made a presentation to the Council of Sustainable Development of the German Government in Berlin. At this meeting it was formally agreed to support the CA-SARD project idea. In December 2004 a full project proposal was send to the

German Government through FAO/TCAP. This proposal was approved in January 2004. From January – May 2004 the FAO proposal was discussed and counter signed by the Governments of Kenya and Tanzania. The regional project launch workshop was conducted in June 2004 in Arusha. The project field work started in July 2004 with a formal budget revision. The current project time frame of this two year project is June 2004 – May 2006.

The approved project budget is €900,000 for two years for two countries. The budget holder is FAORAF (Accra). There are one FAO employed national coordinator and one FAO employed assistant coordinator in Kenya as well as one FAO employed national facilitator and assistant facilitator in Tanzania. The services of the regional management, monitoring, evaluation, reporting as well as technical training of CA are contracted through Letters of Agreement (LOA) with the African Conservation Tillage Network (ACT). The project is operational in three districts in Tanzania (Karatu, Arumeru and Bukoba) and five districts in Kenya (Siaya, Bungoma, Mbere, Nakuru and Laikipia). In each of the districts there are field teams. In total approx. 70 CA farmer field schools are operational.

The **development objective** of the “Conservation Agriculture for Sustainable Agriculture and Rural Development (CA for SARD)” project is stated as following:

- To improve food security and rural livelihoods and build a foundation for the expansion of conservation agriculture (CA) to contribute to sustainable agriculture and rural development (SARD).

The **immediate project objective** is stated as

- The adoption of profitable conservation agriculture practices by small farmers in at least five districts in two countries (meaning: in at least three districts of Tanzania and Kenya). The project intended to build on ongoing CA pilot activities in both target countries.

The project has six **major outputs** with activities. Those outputs were partly slightly re-formulated by the stakeholder – launch workshop in Arusha in June 2004. They therefore differ slightly from the phrasing of the original outputs of the project document. The project outputs are as following:

1. Farmers experimenting and learning about conservation agriculture practices
2. Owners of draught animal power (DAP) and tractors are able to offer hire-services in conservation agriculture practices to others
3. Extension staff and farmer organizations are able to apply participatory extension approaches in conservation agriculture development.
4. Improved capacity among local manufacturing and retail sector for supply of conservation agriculture inputs and tools
5. Knowledge and experiences exchange systems established at local, national and regional level
6. Technical and operational support to the project including national and international procurement (of equipment and implements suitable for conservation agriculture)

The German Ministry of Agriculture and Consumer Protection (BMVEL) has provided the funds in order to implement a field oriented programme that should contribute to the SARD initiative. The project is also endorsed by the high level German Council for Sustainable Development.

Within FAO, the Agricultural and Food Engineering Technologies Service (AGST) of the Agricultural Support Systems Division (AGS), Agricultural Department is Lead Technical Unit of the CA-SARD project. The FAO Regional Office for Africa has been nominated to be the budget holder of this project. The ownership and responsibility for the national project activities rests with the FAO country offices in Nairobi and Dar Es Salaam.

Major problems identified by management

- The project management suffers a little due to the regional splitting of the project management in to three parts: LTU/Rome, Budget holder/Accra, country offices for implementation responsibility in their countries
- At local level it has been appearing to be a challenge to organize the FFS groups support through a newly introduced direct grant system
- International procurement of CA equipment and clearing procedures appeared to be more time consuming than expected
- The contracting of ACT as regional management unit of the project through an LOA and not through a strong staffing contract might have made the regional management function weaker than if it had been done through the national offices of FAO.
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2. Purpose of the Evaluation

The evaluation is intended to make recommendations for necessary changes in the overall design and orientation of the project. If possible and warranted by the findings of the evaluation team, it is intended to make recommendations as regarding a future project phase including project objectives and major outputs and a possible increase of participating countries.

3. Scope of the Evaluation

The mission will assess the:

- a) Relevance of the project to development priorities and needs of the partner countries.
- b) Clarity, and realism of the project's development and immediate objectives, including specification of targets and identification of beneficiaries and prospects for sustainability.
- c) Quality, clarity and adequacy of project design including:
 - clarity and logical consistency between, inputs, activities, outputs and progress towards achievement of objectives (quality, quantity and time-frame);
 - realism and clarity in the specification of prior obligations and prerequisites (assumptions and risks);
 - realism and clarity of external institutional relationships, and in the managerial and institutional framework for implementation and the work plan;
 - likely cost-effectiveness of the project design.
- d) Efficiency and adequacy of project implementation including: availability of funds as compared with budget for both the donor and national component; the quality and timeliness of input delivery by both FAO and the Government; managerial and work efficiency; implementation difficulties; adequacy of monitoring and reporting; the extent of national support and commitment and the quality and quantity of administrative and technical support by FAO.
- e) Project results, including an assessment of outputs produced to date (quantity and quality as compared with workplan and progress towards achieving the immediate objectives). The mission will especially review, the status and quality of work on:
 - The degree of learning about CA practices among participating FFS/farmers;
 - The degree of farmer services for implement and farm power hiring;
 - The role of extension staff;
 - The private sector involvement especially its potential for CA equipment manufacture;
 - The extent of knowledge management around CA;
 - Gender-related aspects of the project.
 - The prospects for sustaining the project's results by the beneficiaries and the host institutions after the termination of the project.
- f) The cost-effectiveness of the project

Based on the above analysis the mission will draw specific conclusions and make proposals for any necessary further action by the Governments of Kenya and the United Republic of Tanzania, FAO or GTZ to ensure sustainable development, including any need for additional assistance and activities of the project prior to its completion. The mission will draw attention to any lessons of general interest.

4- Composition of the Mission

The mission will comprise:

- Team leader, specialist in agronomy and conservation agriculture, farmer extension methodologies (FFS), M&E, with experience in private/public partnership issues, project management and implementation (GTZ/Germany)
- Specialist in evaluation from the FAO Evaluation Service;
- Representatives of the Governments of Kenya and the United Republic of Tanzania, who will participate in the mission while in their respective countries and contribute to the final report.

All mission members should have no previous direct involvement with the project either with regard to its formulation, implementation or backstopping. They should preferably have experience of evaluation.

5. Timetable and Itinerary of the Mission

Briefings beforehand in Germany by Kurt Steiner in Germany and through Helga Stamm-Berg, SustainNet / GTZ-headquarters

Tentative mission schedule as proposed by the donor: 23 October – 04 November 2005.

Preliminary meeting in Rome, FAO, 21 October 2005.

So. 23.10.	Arrival in Nairobi, Kenya
Mo. 24.10.	Meetings in Nairobi (FAO, ACT, MoA, Kenya NPC, ICRAF) – may be held at Kenya Agricultural Research Institute; Other interested donors (?)
Tue 25.10.	Field trip in Kenya (Nakuru, Laikipia), return to Nairobi on 27 th p.m.;
Wed. 26.10.	Field trip in Kenya (see above)
Thur. 27.10.	Wrap-up meeting on Kenya component, afternoon drive to Arusha (project vehicle), meeting with SARI on arrival;
Fr. 28.10.	Field trip to Karatu
Sa. 29.10.	Field trip to Arumeru
So. 30.10.	Internal mission discussion/report writing/ additional project documents
Mo. 31.10.	Private sector (manufacturer, Moshi) ½ day , preliminary meeting in Arusha on Tanzania component
Tu. 1.11.	Flight to Dar es Salaam Briefing FAO Dar es Salaam Meeting MoA, MAFS (NPC) and relevant donors in Tanzania (?)
Wed. 2.11.	Preparation of mission aide-memoire, findings and recommendations
Thu. 3.11.	Preparation of mission aide-memoire, findings and recommendations distribution to project partners in p.m. of 3. November
Fr. 4.11.	Final wrap-up meeting in DSM, mission departs

6. Consultations

The mission will maintain close liaison with the Representatives of the donor and FAO and the concerned national agencies, as well as with national and international project staff. Although the mission should feel free to discuss with the authorities concerned anything relevant to its assignment, it is not authorized to make any commitments on behalf of the Government, the donor, or FAO.

7. Reporting

The mission is fully responsible for its independent report which may not necessarily reflect the views of the Government, the donor or FAO. The report will be written in conformity with the headings shown below:

The report will be completed, to the extent possible, in the country and the findings and recommendations fully discussed with all concerned parties and wherever possible consensus achieved.

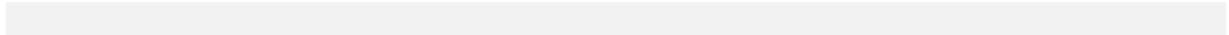
The mission will also complete the FAO Project Evaluation Questionnaire.

The mission leader bears responsibility for finalization of the report, which will be submitted to FAO within four weeks of mission completion. FAO will submit the report to the Governments of Kenya and the United Republic of Tanzania and GTZ, together with its comments.

Project Evaluation Outline

- I. Executive Summary (Main Findings and Recommendations)**
- II. Introduction**
- III. Background and Context**
- IV. Assessment of Project Objectives and Design**
 - A. Justification
 - B. Objectives
 - C. Project Design
- V. Assessment of Project Implementation, Efficiency and Management**
 - A. Project Budget and Expenditure
 - B. Activities and Outputs
 - C. Government Support
 - D. Project Management
 - E. Technical and Operational Backstopping
- VI. Assessment of Results and Effectiveness**
 - A. Effects and Impact
 - B. Sustainability and Environmental Impact of Results
 - C. Gender Equity in Project Implementation and Results
 - D. Cost-effectiveness
 - E. Major Factors Affecting the Project Results
- VII. Conclusions and Recommendations**
 - A. Conclusions
 - B. Recommendations
- VIII. Lessons Learned**

Annexes

1. Terms of Reference
 2. List of places visited and key persons met by the mission
 3. List of documents and other reference materials consulted by the mission
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Annex 2 Itinerary and persons met

Thursday, 20 October 2005 (Ms. Jacobi and Mr. Bultemeier)

Briefing meeting with relevant FAO units, FAO, Rome

Shivaji Pandey	Director, Agricultural Support Systems Division (AGS), Agricultural Department (AG), FAO
Gavin Wall	Chief, Agricultural and Food Engineering Technologies Service (AGST), AGS Division, AG Department, FAO
Lawrence Clarke	Senior Officer of farm power group of AGST
Theodor Friedrich	Senior Agricultural Engineer, farm power group, AGST
Josef Kienzle	Agricultural Engineer (Institutional and Technical Support)
Paola Termine	Sustainable Agriculture and Rural Development (SARD) Officer; attended the meeting on behalf of Eve Crowely (SARD task manager on behalf of FAO for UN); she is from the Rural Institutions and Participation Service (SDAR) of the Sustainable Development Department (SD), FAO
Sally Bunning	Technical Officer, Land and Plant Nutrition and Management Service (AGLL), Land and Water Development Division (AGL) of AG department
Gabriel Rugalema	Senior Officer, Population and Development Service (SDWP), HIV/Aids focal point unit of FAO, SD Department, FAO
Caroline von Gayl	Donor Liaison/resources mobilisation officer, Field Programme Development Service (TCAP), Policy Assistance Division (TCA), Technical Cooperation Department (TC), FAO

Sunday, 23 October 2005 (Petra Jacobi and Bernd Bultemeier)

p.m. Meeting (logistics) with Pascal Kaumbutho, CA-SARD Coordinator, Kenya in Norfolk Hotel

Monday, 24 October 2005

a.m. Briefing FAO office, Nairobi

Ms. Augusta N. Abate	Assistant FAO Representative Kenya (Programme)
Mr. Mungai	FAO, Head of Administration

a.m. Meeting with Kenyan review team member

John K. Mungai	Deputy Director Project Management Division , MoA Kenya
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a.m. Briefing Ministry of Agriculture, Nairobi

John K.A. Cheluget, OGW	Director Land and Crops Management
Tom O. Bonyo	Senior Deputy Director of Agriculture, Horticulture Division
Charles Mwanda	Deputy Director Land Development/ CA- SARD
Pascal Kaumbutho	CA- SARD Coordinator

a.m./p.m. Briefing Meeting with Kenyan project team and collaborators

p.m. Meeting with donor representatives/collaborators

Soren Damgaard-Larsen	Development Specialist CA and Soil Health, RELMA in ICRAF
Dr. Denis Depommier	Regional Director for Eastern and Southern Africa, CIRAD
Frank Place	Economist and Leader of Land an People Theme. ICRAF
Mohamed Sessay	UNEP, Division of GEF coordination, Kenya

p.m. Departure for Kisumu, night in Kisumu

Tuesday, 25 October 2005

Mr. Pascal Kaumbutho (CA-SARD) and Mr Charles Mwanda (MoA/ CA- SARD) accompanied the review mission while in Kenya.

a.m. Introductory meeting with district staff, Siaya

a.m. Joint meeting with various FFS farmers and facilitators in Siaya

Name of farmer	FFS/Position	Name of farmer	FFS/Position
1. Samuel Opade	Chamzuchi FFS	19. Alois Ndaga Weya	Bahati FFS
2. Edwin Otieno	Chamzuchi FFS	20. Agustino Qwimo Oloo	Wuoroya FFS
3. Lilian L. Onjango	Tumaini FFS	21. John Oluodi	Wuoroya FFS
4. Beatrice R. Owino	Tumaini FFS	22. Jane Alieno Oliocho	Wuoroya FFS
5. Nancy M. Amagove	Bahati FFS	23. Celestine A. Ogola	Onazo FFS
6. John Oloo Ondie	Nyalgunga Umbrema FFS	24. Enock Otieno Ogola	Kinda FFS
7. Seline Awiti Ouma	Onala FFS	25. Maurice Siromba Ogora	Kinda FFS
8. Gabriel Odhiambo Otieno	Luenda FFS	26. Jane Awino Ochuobho	Mariwa FFS
9. Amos Odhiambo Onyango	Dhier FFS	27. Jerusa Schiene Alieya	Mariwa FFS
10. Aloyce Oloo Odindo	Mariwa FFS	28. Wilfrida Awuor	Chamluchi FFS
11. Janies Olwana	Chamluchi FFS	29. Caleb Dhyango	Luanda FFS
12. Alan Victor	Bahati FFS	30. Dumas Mbudo	Luanda FFS
13. Alphonce Othim Ochieng	Dhier FFS	31. Monica Adipi Omehno	Luanda FFS
14. Benta Juma Omondi	Nyalgunga FFS	32. Philip O. Obuya	District facilitator
15. Joyce J. Wanyoni	Nyalgunga FFS	33. Aineah Omondi Kanyango	Facilitator
16. Lucy Awuor	Nyalgunga FFS	34. Kennedy Otieno	Facilitator
17. Bernad Ochieng	Nyalgunga FFS	35. Robert Migele	Facilitator
18. Lillah Akinyi Rabuogi	Nyalgunga FFS		

a.m. Visit individual CA farmers

Celestine Ogola and Gaudensia Alieno

Visit Tumaini FFS group

Name of farmer	Position	Name of farmer	Position
1. Betty Otieno	Chairperson of group	11. Betty Owimo	FFS member
2. Crispin Otieno	FFS member	12. Anne Mewya	FFS member
3. Edwina A Obwanda	FFS member	13. Susan Oluoch	FFS member
4. Berta Odipo	FFS member	14. Seline Owira	FFS member
5. William Owako	FFS member	15. Antoline Odero	FFS member
6. Jane Obwanda	FFS member	16. Gabriel Aloo	FFS member
7. Berta Sira	FFS member	17. Maurice Otiemo	FFS member
8. arcis Otamgo	FFS member	18. Tobias Owuor	FFS member
9. arcis Omowdi	FFS member	19. arcisca Otiewo	FFS member
10. Cherophine Ouma	FFS member	20. Turfena Odongo	FFS member

p.m. Meeting with selected farmer representatives, facilitators and collaborators
SWOT analysis, evening in Webuye guesthouse

Janet Sitiene	Divisional Agricultural Extension Officer
Maurice S Fwuti	CA-SARD facilitator
Kennedy W. Makudih	District Coordinator CA-SARD

Joab Atte Okada Product Promoter – Western Kenya, Bayer
 Peter W. Wepokuhu CA-SARD facilitator
 Lucas Malina Farmer representative
 Jimmy Wanyonyi Jimmy Wanyonyi Lugulu FFS
 Hendick Wakochwe CA-SARD facilitator
 Albert Wensonga Kenya Agricultural Commodity Exchange (KACE)

Wednesday, 26 October 2005

a.m. Mukuyuni & Tumaini FFS Meeting Bungoma, Demonstration of equipment/ field day

Name of farmer	FFS/Position	Name of farmer	FFS/Position
1. Makudiu W.	District Facilitator	28. Jackson Kisiangani	Tumaini FFS
2. Hendriek Wahochwe	Facilitator	29. Grace Waunyonya	Tumaini FFS
3. Livingstone A. Omuka	Mukuyuni FFS	30. Prolus Busuta	Mukuyuni FFS
4. Kennedy Mbilala	Mukuyuni FFS	31. William Wafula	Visiting farmer
5. Christopher Simiyu	Tumaini FFS	32. Jonatta Chelongo	Visiting farmer
6. Paul W. Wosula	Chairman Mukuyuni FFS	33. Rose Waliaka	Tumaini FFS
7. Joseph M Wekesa	Tumaini FFS	34. Ester Midera	Tumaini FFS
8. Gideli Ojago	Mukuyuni FFS	35. Gladys Wanyonyi	Mukuyuni FFS
9. Paul Manyonga	Tumaini FFS	36. H. Olmuka	Mukuyuni FFS
10. Michael Barasa	Ass. Sec. Tumaini	37. Eline Lusamamba	Tumaini FFS
11. Patrik Kalibo	Tumaini FFS	38. John Makongwe	Visiting farmer
12. Linet Simiyu	Mukuyuni FFS	39. Mongesa Mukuwama	Visiting farmer
13. Rosemary Ometuru	Mukuyuni FFS	40. Mark M. Baiusa	Mukuyuni FFS
14. Dianah Agoi	Mukuyuni FFS	41. Maurice Ekuropa	Mukuyuni FFS
15. Elisabeth Sasita	Facilitator	42. Florence Mitaro	Visiting farmer
16. Amosi Wafula	Visiting farmer	43. Tom Omotto	Visiting farmer
17. Benson Lusweti	Visiting farmer	44. Robert W. Kundu	Tumaini Secretary
18. Samy Wekela	Mukuyuni FFS	45. Mary Wafula	Tumaini FFS
19. Tadayo Muchidi	Driver	46. Johnson Mandu	Visiting farmer
20. Policarp Khayetha	Driver	47. Dentyne J. Simiyu	Visiting farmer
21. Francis Juma	Village leader	48. Grace Khisa	Tumaini FFS
22. Magret Oasengi	Treasurer Tumaini FFS	49. Titus Osango	Director Link Africa
23. Philip B. Kasikasi	Visiting farmer	50. Christine Makata	Tumaini FFS
24. Alphonse Wanjala	Chairman Tumaini FFS	51. Eliud W. Wata	Mukuyuni FFS
25. Lydia Lusaka	Visiting farmer	52. Violet Wanenda	Visiting farmer
26. Meresia Adhiombo	Tumaini FFS	53. Aggrey Omido	Tumaini FFS
27. Evelyne Kisangani	Tumaini FFS		

a.m. Visit KACE marketing information point

Ms. Pamela Kenya Agricultural Commodity Exchange (KACE), site office

a.m. Joint FFS meeting with various groups - Nasikhololo

Name of farmer	FFS/Position	Name of farmer	FFS/Position
1. Josephine Mukhwana	Matulo FFS	31. Richard Khaemba	Savanah FFS
2. Grace Khaemba	Matulo FFS	32. Edward Kilwake	Lugulu FFS
3. Elisabeth Mukoto	Matulo FFS	33. James L. Wafula	Lugulu FFS
4. Jane Khalayi	Matulo FFS	34. Jimmy Wanyonyi	Lugulu FFS
5. Judith Munyekenye	Matulo FFS	35. Nelson Makohha	Mahanga
6. Samuel Sitati Mukoto	Matulo FFS	36. Dona Seena	Lugulu FFS
7. Justus Namukana	Matulo FFS	37. Peter Wamalwa	Nasikhololo FFS
8. Japhter Wekesa	Matulo FFS	38. Joel Wamalwa	Nasikhololo FFS
9. Moses Sitati	Matulo FFS	39. Gibson Ngome	Savanah FFS
10. Gideon B. Sirayu	Matulo FFS	40. Charles Wanyonyi	Savanah FFS
11. Patrik Masinde	Nasikhololo FFS	41. Zippurah Nanyala	Savanah FFS

Friday, 28 October 2005

Visit KINARA FFS Group: Tloma Village, Karatu District

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| 1. Eliaza Zakaria (Secretary) | 2. Melkiori Edward | 3. Devota Josephat |
| 4. Joseph Fisso | 5. Safari Awaki | 6. Elizabeth Filex |
| 7. Anthoni Filex | 8. Josephine Emmanuel | 9. Faustin Lallo |
| 10. Tuta Charles | 11. Wilmina Lendwa | 12. Issa juma |
| 13. Yohana Baha | 14. Gwaatema Gwatu | 15. Katherine John |
| 16. Paulina Safari | 17. Teresia Nada | 18. Lidya Erasto |

Visit to JUHUDI NA KAZI FFS Group: Ayalabe village, Karatu District

Name of farmer	Position	Name of farmer	Position
1. Daudi Isaay	Secretary	8. John Hayshi	FFS member
2. Bernadeta Alois	Ass. Chairman	9. George Gwandu	FFS member
3. Laurian Langwen	Secretary	10. Kristafa Jacob	FFS member
4. Lucy Stephen	Ass. Secretary	11. Reginald Umbe	FFS member
5. Mary Lohay	Tressure/accountant	12. Elizabeth Sebastian	FFS member
6. Isaya Boga	FFS member	13. Tarsila Visenti	FFS member
7. Magdalena Layda	FFS member	14. Teresia John	FFS member

p.m. Visit individual farmers family, CA adopters in Karatu District

Maria Erro, Renatha Tlatla, Remana Tlatla, Daniel Tlatla, Diana Tlatla

Return to Arusha

Sunday, 30 October 2005

Review team, internal discussion

Monday, 31 October 2005

a.m. Briefing meeting in Arumeru district

a.m. Facilitators/extension officers met in Arumeru District

Deusdedit Rugangila	District facilitator/DALDO Arumeru District
Mariam Semlowe	Eotulelo & Upendo Nyuki FFSs
Charles Leseyo	Ekenywa & Ilkiushiri FFSs
Sefu Mlaki	Kilimo & Amani FFSs
Lucy Mungi	Enyoito & Osotwa FFSs
Catherine Maguzu	Vukani & Matonyok FFSs

a.m. KILIMO FFS Group: Olomitu village Arumeru District

Name of farmer	Position	Name of farmer	Position
1. Martini Kuneyan	Treasurer	2. Yusline Jusawa	Member
3. Magdalena Samwel	Secretary	4. Nesian Loimtie	Member
5. Elias Lesendu	Chairperson	6. George Longidare	Deputy chairperson
7. Sara Martini	Member	8. Dorosea Petro	Member
9. Naftal Petro	Member	10. Robson Kuneyan	Member
11. Betres Robson	Member	12. Vailet Leskar	Member
13. Jeska Richard	Member	14. Monika Loi	Member
15. Rejina John	Member		

Annex 3 Documents and reference material consulted by the mission

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Triomphe, B. (2005): Trip to Kenya and Tanzania – Observations and suggestions for the way forward with case studies on conservation agriculture. Internal project document CIRAD.
