

Strengthening Capacity for Agricultural
Research and Development in Africa

End-of-pilot phase Report

(1 January 2007 – 30 June 2010)

Submitted to

**Department for International Development (DFID)
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by Forum for Agricultural Research in Africa



Forum for Agricultural Research in Africa

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Programme particulars

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Name of Lead Institution and Director:	Forum for Agricultural Research in Africa (FARA) – Prof. Monty P. Jones
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LSPs/SP	RUFORUM, ANAFE, AGRHYMET & NRI
Countries Covered by Research:	Rwanda, Burundi, Sudan, Botswana, Lesotho, Zambia, Mali, Ghana, Democratic Republic of the Congo, The Gambia.

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Executive summary

Strengthening Capacity for Agricultural Research & Development in Africa (SCARDA) is a programme initiated in 2007 in response to the capacity needs identified in the report of the African NARS assessment study conducted in 2005. SCARDA is funded by DFID, coordinated by FARA and implemented based on the principle of subsidiarity in 12 focal institutions (FIs) spread out in 10 countries of the three Sub-Saharan SROs of ASARECA (3 FIs), CORAF/WECARD (4 FIs) and SADC/FANR (5 FIs).

An initial Inception Phase was commissioned in 2007 to enable scoping studies, institutional analyses, and elaboration of programme details. Details of the Inception Phase were published in a series of three reports (FARA 2008a, 2008b, 2008c). The main outcome of the Inception Phase was a detailed capacity strengthening programme (known as the SCARDA approach) and structures for its implementation.

The SCARDA approach is 'holistic' and differs from standard capacity development projects in that it embeds the capacity strengthening interventions in a change management process, which starts with a rigorous institutional analysis of target institutions, identifying their weaknesses and capacity strengthening needs. The programme was implemented over a 2 ½ - year duration beginning in March 2008 with the purpose of improving the capacity and performance of participating NARS in key areas of their agricultural research for development (AR4D) functions. It sought to achieve four outputs by the programme end date of 30 June 2010 viz.:

1. Agricultural research management systems and managerial competencies to conduct high quality research strengthened in participating NARS.

2. The capacity of participating NARS to undertake quality agricultural research for development strengthened.
3. The relevance of training programs in agricultural universities to current market demand established.
4. SCARDA approach for capacity strengthening is validated.

On Output 1, all of the FIs had elaborated capacity strengthening plans, benefited from training in agricultural research management (ARM), developed the change management action plans (CMAPs), and participated in organisational mentoring by the programme end date. In addition, FI employees attended training courses tailored to their needs in such areas as strategic planning, monitoring and evaluation, innovative systems approach and writing research proposals to win business. Mentoring of individual managers in the FIs was also introduced with over 100 managers participating. The approval rate for the ARM trainings and mentoring was well over 90% of the participants.

A total of 78 FI staff from the three sub-regions undertook MSc training in specialized disciplines under Output 2. By 30th June 2010, four students had been awarded their degrees and returned to the sponsoring organisation. All the remaining students are expected to complete their studies by November 2010. A number of short courses have also been delivered on such topics as farmers' participatory research (FPR), innovation systems approaches and integrated pest management (IPM). The delivery of technician training fell well short of target due to funding delays. Only 12% of technicians received training compared with the target of 30%. Personal mentoring of researchers was provided in only 4 of the FIs. Despite the shortfalls in training and mentoring numbers, those receiving this support applauded the results as indicated in the employee mid-point survey results.

Due to logistical reasons and inordinate implementation delays occasioned by erratic funding, the graduate demand studies (Output 3) in CORAF/WECARD and SADC/FANR were not completed by 30th June 2010. Nevertheless, ASARECA managed to complete the study and results were duly presented to the representative governance bodies for the network of universities in the sub-region.

Based on stakeholder presentations during the last programme-wide strategies and lesson-learning workshop and FI employee survey results, it was evident that the FIs strongly endorsed the SCARDA approach (Output 4). The participants at the above workshop were united in their conviction that SCARDA had brought about significant changes in how the FIs are operating and more especially in their interactions with other organisations in the NARS. All the FIs believe that SCARDA has stimulated reform efforts either at the national or organisational levels. Further, they believe that the programme is highly relevant (i.e., addressing crucial bottlenecks in their organizations) and offers the right mix of capacity strengthening instruments to address them – i.e., agricultural research management (ARM) courses, short courses to improve research and technical skills, and MSc-degree education. Moreover, the SCARDA approach tries to make sure that the trainees will actually use their newly acquired knowledge and skills in their work by instituting a mentoring scheme in each of the FIs.

Regarding programme purpose, SCARDA has been successful in putting in place some of the major building blocks on which agricultural research can be improved. Awareness of the issues

has been raised. Skills to tackle the challenges have started to be upgraded. Most importantly, change is being introduced through a structured and better informed process in which stakeholders are more actively engaged. The understandable limitation in this early phase is the proactive engagement of other key stakeholders in the NARS. Where a wider constituency has been involved such as in Lesotho, Congo and The Gambia, the project is influencing the structure of the NARS. However, in most countries the effect of SCARDA tends to be empowering individual FIs to start to take control of change and manage their own destinies.

It is to be expected that the various capacity strengthening activities by SCARDA will have some lasting impact and particularly so because of the 'embedded' approach to capacity strengthening (i.e., proper identification of capacity strengthening needs and post-training mentoring). The main post-implementation next steps may involve: follow-up on the CMAPs at the FIs to coach and monitor progress and consolidate the gains already made in SCARDA I; up-scaling of best practices; out-scaling of the SCARDA approach to other focal institutions across Africa; setting up of a depository of training materials for agricultural research management and agricultural research methods; and strengthening of the broker role of the SROs with regard to the demand and supply for capacity strengthening in agricultural R&D by mobilizing a greater number of potential service providers and developing a better understanding of their specific strengths and weaknesses. Subsequently, however, an organization should be able to enter the SCARDA program at any given time, formulate its own capacity strengthening needs, and implement the capacity strengthening activities at its own speed. Basically it means moving from a project approach to a more permanent program approach. In such an approach the SCARDA program will play an important role in bringing demand and supply for capacity strengthening together, secure the quality of services delivered, and cluster the demand in order to achieve economies of scale and scope.

Introduction

The origins and rationale of SCARDA

In 2005, FARA commissioned an assessment of the National Agricultural Research Systems (NARS) in sub-Saharan Africa to identify major areas of weakness and recommend appropriate intervention strategies. The study identified human and organizational capacity for designing, implementing and managing scientific research as the most critical weakness. This has limited the relevance and responsiveness of the NARS to agricultural development challenges of Africa. Similar findings had been documented in other reports by the Commission for Africa, the Inter-Academy Council and the United Nations Task Force on Hunger. All these reports highlighted the urgent need to strengthen Africa's human and institutional capacity for innovation and change in agriculture. The report of FARA's NARS study (FARA, 2006) recommended new approaches and initiatives to address these critical capacity deficiencies.

Consequently, FARA, in conjunction with members of the Forum and partner organizations, developed a proposal on a programme that was named 'Strengthening Capacity in Agricultural Research and Development in Africa (SCARDA)'. The proposed programme responded to the capacity deficiencies identified in the NARS assessment report in line with the objectives envisioned in Pillar IV of the Comprehensive Africa Agriculture Development Programme (CAADP), the AU-NEPAD's blueprint for agricultural development in Africa. Specifically, SCARDA sought to address CAADP's aim of strengthening capacity not only in the amount and quality of technical resources but also in research programme planning, systems management and governance.

The FARA-led proposal was submitted to UK's Department for International Development (DFID) in October 2006 for possible

funding. DFID approved the interim proposal with the provision that a detailed Implementation Plan was to be submitted at the end of an Inception phase. Subsequently, a detailed 30-month SCARDA Implementation Plan was submitted to DFID. The Plan was based on the programme outlined in the original proposal while building on the outcomes of activities conducted during the Inception Phase. The detailed Plan was approved by DFID, but certain ramifications of partner engagements still remained to be completed. Actual implementation of the programme started in March 2008, as opposed to the initially intended start date of 1st January 2008, with an end date of 30th June 2010. The overall budget of the programme (including Inception Phase) was Sterling £ 8.746 million.

Results areas and approach to implementation

The details of results areas and approach to implementing SCARDA were elaborated during the consultative Inception Phase. As a continental programme involving a variety of stakeholders, it was not always easy to reach consensus on every issue. As such, the goal, purpose and output statements below were arrived at – some of them well into the implementation phase of the programme - after a number of iterative consultations and reviews.

The goal of SCARDA was “to substantially and sustainably enhance the NARS contribution to poverty reduction in sub-Saharan Africa”. The purpose was “to improve the capacity and performance of participating NARS in key areas of their agricultural research for development (AR4D) functions”. Four key outputs of the programme were specified as follows:

1. Agricultural research management systems and managerial competencies to conduct high quality research strengthened in participating NARS.
2. The capacity of participating NARS to undertake quality agricultural research for development strengthened.
3. The relevance of training programs in agricultural universities to current market demand established.
4. SCARDA approach for capacity strengthening is validated.

What identifies the SCARDA Approach from standard capacity development projects is that it embedded the capacity strengthening interventions in a change management process, which starts with a rigorous institutional analysis of the focal institutions, identifying their weaknesses and capacity strengthening needs. The unveiled demand was then channelled to three different training modules offered by SCARDA, namely: (i) MSc level training in areas where the focal institutions were lacking capacity; (ii) research management training courses; and (iii) short professional skills up-grading courses (such as proposal writing, integrated pest management [IPM], and farmer participatory research [FPR]) to improve the capabilities of researchers and technicians. In order to ensure that the new skills and knowledge acquired by the trainees would actually be used, SCARDA employed two instruments: (i) a mentorship scheme whereby the MSc students and other trainees were mentored after the training events in order to help them achieve particular goals based on their newly acquired skills and knowledge; and (ii) a change management action plan (CMAP) formulated by the management trainees in consultation with the management of their respective FIs to improve the overall performance of the organization.

In addition to these capacity strengthening efforts, the program aimed at producing (i) a demand study for agricultural science graduates in each of the three sub-regions (trying to influence the supply side of the labour market); and (ii) validate the SCARDA approach as creating a more lasting impact on the performance of agricultural research organizations in Africa compared to the traditional, more supply-driven and less holistic capacity strengthening approaches. Hence an important aspect of the SCARDA program was its process nature that involved sharing of experiences at sub-regional and regional levels across Africa through periodical lesson-learning and reflection, leading to a further fine-tuning of the approach. Ultimately, SCARDA was also a pilot programme whereby the gains and experiences from implementations at the focal institutions were supposed to inform future out- and up-scaling to other organizations.

SCARDA was implemented in 12 focal institutions (FIs) within their respective NARS in 10 African countries spread across the three sub-regions of Sub-Saharan Africa. A fundamental principle of SCARDA's design was that, while focusing primarily on FIs, the programme had an in-built opportunity for 'multiplier effect' and value-addition through inclusion of NARS organizations in geographical proximity to the FIs (known as satellite institutions) in the capacity strengthening activities. Engagement of the wider NARS constituents underscored the unfolding recognition of innovation systems approaches to national agricultural development. Gender issues were an integral part of SCARDA's approach requiring affirmative action to improve opportunities for women's careers in the NARS and to promote gender equity amongst research partners and beneficiaries.

The Programme was coordinated by the FARA Secretariat and implemented in accordance with the "subsidiarity principle" by the sub-regional organizations (SROs), viz.: ASARECA, CORAF/WECARD, and SADC-FANR. The implementing SROs were each supported by a lead service provider (LSP) namely: RUFORUM for ASARECA, AGHRYMET for CORAF/WECARD and ESAMI for SADC/FANR. The participating FIs were:

ASARECA: Institut des Sciences Agronomiques du Rwanda (ISAR, Rwanda), Institut des Sciences Agronomiques de Burundi (ISABU, Burundi), and Agricultural Research Corporation (ARC, Sudan).

CORAF/WECARD: Crops Research Institute (CRI, Ghana), Centre de Recherches Agronomiques de Loudima (CRAL, Congo), Institut d'Economie Rurale (IER, Mali), and National Agricultural Research Institute (NARI, Gambia).

SADC/FANR: Botswana College of Agriculture (BCA, Botswana), Department of Agricultural Research (DAR, Botswana), University of Zambia (UNZA, Zambia), National University of Lesotho (NUL, Lesotho), and Natural Resources Development College (NRDC, Zambia).

The programme also enlisted a number of service providers to facilitate in various aspects of implementation, including the Natural Resources Institute (NRI) of the University of Greenwich in the UK, which played an active backstopping role.

Outline of SCARDA achievements

Phase 1 - Inception

The SCARDA Inception Phase was launched on Monday 12 February 2007 followed shortly by an inaugural workshop in Accra that served to outline details of pertinent activities. During the Inception Phase, each of the SROs conducted participatory scoping studies with its national stakeholders to reconfirm and refine the priority capacity strengthening needs that would be supported by SCARDA, and recommended a programme of action.

The scoping studies were followed by sub-regional stakeholder workshops to validate the study findings. Serious weaknesses in agricultural research management in many national agricultural research institutes (NARIs), agricultural training colleges and university faculties of agriculture were confirmed in the results of the scoping studies. The deficiencies related to shortcomings in management systems and specific management competencies. Taken together, they severely constrained the ability of the institutions to meet the needs of their clients. Furthermore, serious limitations with partnership arrangements, particularly with public and private agricultural extension agencies and farmers' organizations were identified. The ability of research and development institutions to meet emerging challenges and to capitalize on new opportunities was also constrained by deficiencies in key skills such as biotechnology, biodiversity, biometry and seed systems. The capacity of researchers to meet the requirements of new ways of working with a wide range of stakeholders was limited by their lack of 'soft' and 'hard' systems skills that are required for effective functioning in multi-institutional innovation systems.

Similarly, there was a clear need among established professionals to develop their expertise in crucial areas such as gender analysis,

intellectual property rights and packaging research outputs for end users. A synthesis of the findings from the different sub-regional scoping studies was developed at a meeting of a core Working Group that prepared an Outline Programme-wide Implementation Plan. This Plan was reviewed and validated at a final Regional Inception Phase Review Workshop held in Accra on 27–29 August 2007.

During the final Inception Phase Review Workshop, the SCARDA stakeholders developed a comprehensive approach for SCARDA that was to be taken up by the FIs working closely with their innovation system partners to develop and implement specific packages of capacity strengthening activities. The capacity strengthening needs of each FI were identified through rigorous institutional analyses conducted by a team of specialists working with senior FI management and staff representatives. The output of the institutional analysis for each FI was an action plan addressing key capacity needs to be matched to the most suitable service providers to meet the specific requirements of the institution. The institutional analysis itself was an important capacity strengthening activity and helped equip the organizations with tools to review their future performance. One member of the analysis team continued to provide support to the institution by monitoring the progress of the activities and assisting with the change management process.

The main outcome of the Inception Phase was the elaboration of *“a detailed capacity strengthening programme and structures for its implementation”*. Additional outputs from the Inception Phase were electronic databases incorporating data on a wide range of research and development institutions, including key capacity needs; and a set of resource documents including synthesis reports of scoping studies conducted in the sub-regions, proceedings of stakeholder workshops, and five briefing papers on priority issues for the Programme.

The main lessons learned from the scoping studies were as follows:

- Deficiencies in agricultural research management and scientific quality in sub-Saharan Africa identified in the NARS Assessment (2006) and other recent studies were confirmed and priority capacity needs in each of the sub-regions were identified.
- There was a strong demand for capacity strengthening inputs which follow the approach proposed through the SCARDA programme.
- Key underlying needs were generic and there were opportunities for shared learning which clearly justified the added value of a continental capacity strengthening programme.
- One of the key identified deficiencies was the capacity to form strong multi-institutional partnerships between NARIs, universities, extension agencies, farmers’ organizations, private enterprise and other groups that are essential to bringing about the required change.
- Confirmation was provided that previous capacity development initiatives did not achieve the desired impact because they were fragmented and only addressed single issues.
- Successful models from elsewhere have shown that a comprehensive approach targeting key organizations and their development partners could be sustainable and provided a platform for out- and up-scaling.
- Experiential learning approaches were needed in order to ensure that newly acquired skills were applied suitably to benefit the institution as well as the individual.

- Interventions such as mentoring required a continuing commitment over a substantial time period to be effective.
- There was adequate capacity within Africa and among international organizations working in partnership with African organizations to deliver quality capacity strengthening services.
- The timely sharing of information and experiences among the core partners during the Inception Phase enhanced the efficiency of the scoping studies and reinforced the Programme's regional approach.

Phase 2 – SCARDA implementation

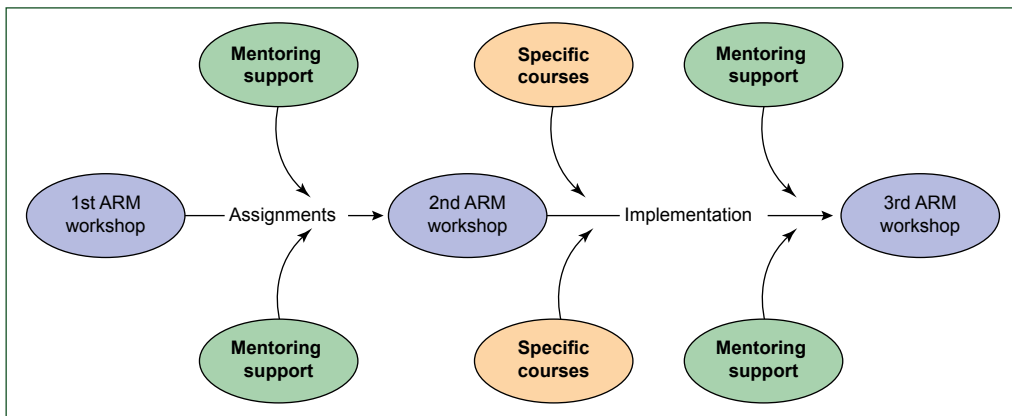
Achievements on outputs

The principal focus of SCARDA was to create an impact on the innovative capacity of selected agricultural research and teaching organizations in sub-Saharan Africa. In such organizations the main actors in the innovation system comprise the management, researchers and support staff or technicians. The holistic nature of SCARDA was in reference to enhancing capacity of the above tripartite innovation actors within the research organization, while encouraging positive contagion effects on the NARS. Especially, SCARDA sought to strengthen linkages between NARIs and universities and with their core partners across the value chains to ensure that capacity strengthening inputs addressed the holistic needs of the NARS. In the following account, achievements of the SCARDA approach in regard to the programme output statements are presented.

Output 1: Strengthening agricultural research management systems and managerial competencies to conduct high quality research

SCARDA had a generic agricultural research management (ARM) strategy. However, this was subject to interpretation by the service providers competitively engaged by the SROs to facilitate delivery of Output 1. The CORAF/WECARD pioneered domestication of the ARM strategy. The plan to strengthen ARM developed by the service provider involved a series of three workshops (to develop and review change management plans) fortified with mentorships and tailor-made

Figure 1: The ARM Change management strategy adopted in CORAF/WECARD



professional courses (Fig. 1). The in-built change management strategy was predicated on the following principles:

- a. Willingness to change is based upon the level of dissatisfaction with the status quo;
- b. Sufficient internal motivation is required for people to embark on a change journey;
- c. Strong and committed leadership is required to drive the change process.

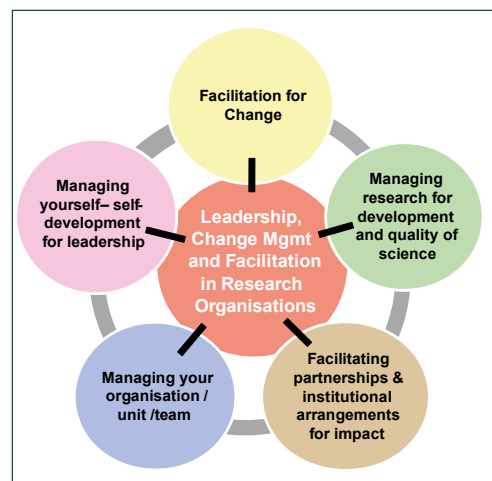
Activities to achieve the desired change included: 1) diagnosis and joint discovery of priorities for change, 2) managing the process of letting go the old ways, 3) sustaining the change momentum, 4) managing resistance, and 5) managing conflicts. This has since been dubbed the ‘transactional approach’, apparently due to its inherently fixative nature, and was also adopted in SADC/FANR.

By 30th June 2010, both CORAF/WECARD and SADC/FANR had managed to transact two of the envisaged three ARM workshops. The 1st workshop provided the basic ‘tools’ for ARM to stimulate interest and outline key issues to strengthen capacity. An integral aspect of the workshop was an introduction of the concept of change management action plans (CMAPs). Subsequently, the participants – comprising senior management staff of FIs – were able to develop draft CMAPs at the 2nd ARM workshop. The CMAPs provided the blueprint for effecting desired change at the FIs by putting theory gained from the ARM workshops into practice and consolidating lesson-learning. Implementation of CMAPs at FIs was supported by individual and institutional mentoring components through direct contacts and visits by the service providers. Regrettably, the 3rd ARM workshop, which was supposed to provide a final sub-regional platform for sharing experiences in implementing the CMAPs, could not be held by the programme end date.

In ASARECA, a variant plan was developed from the generic programme ARM strategy by the contracted service provider, PICO Team. PICO Team’s approach to ARM capacity strengthening was a combined and integrated implementation of change management and mentorship thrusts with an in-country focus (Fig. 2). This method is based on systemic competency development to effect institutional change and has been dubbed the ‘translational approach’. Generally, PICO Team’s systemic competency development for leadership and management has the following features:

1. Understanding the leadership and management challenges and the underlying causes
 - Understanding of the leadership and management challenges that face the organization or team
 - Unpacking the challenges to uncover the underlying causes – at organization/team (e.g. systems,

Figure 2: The ARM Change management strategy adopted in ASARECA



culture, skills and competences, etc) and individual (e.g. skills, competences, mindsets, attitudes) levels

2. Co-creation of the intervention strategy and plan
 - Working with the organization (those involved in the change process) to identify priority intervention areas
 - Working with the organization to develop intervention plans and actions
3. Facilitating the implementation of the intervention plans
4. Tracking progress in the intervention process and making required adjustments

The change management strategy at the level of focal institutions is anchored to specific 'change champions' while future sustainability is ensured by a mentorship engagement between the change champions and SCARDA-sponsored MSc student mentees from the focal institutions. The whole process is catalyzed by PICO's 'change agents'. Four sessions or workshops were initially planned for each country, targeting at least 30 top leaders in the FIs. But only two workshops were feasible before 30 June 2010, due to time and budgetary constraints. The overall objective of the workshops was to strengthen research management, leadership, and mentorship at the implementing FIs: ISAR, ISABU, and ARC. The expected impact was change in mindset and approach to people management as indicated by team dynamics and performance. The formation of peer learning groups and identification of change projects for each group was an interesting aspect of the PICO Team's ARM workshops. These change projects are akin to the CMAPs of the capacity strengthening model adopted in CORAF/WECARD and SADC/FANR. Sustainability of the change momentum at FIs will be based on the learning groups and projects.

Achievements in regard to the OVIs specified under Output 1 arising from implementations of the ARM strategies in the SROs are summarized in Table 1. All of the FIs elaborated capacity strengthening plans, benefited from training in agricultural research management (ARM), developed the CMAPs, and participated in organisational mentoring. In addition, FI employees attended training courses tailored to their needs in such areas as strategic planning, monitoring and evaluation, innovative systems approach and writing research proposals to win business. A total of 580 managers

Table 1: Summary of achievements on Output 1

Objectively Verifiable Output Indicator	Means of verification	Remarks
1.1: ARM capacity strengthening plans developed and fully implemented by all FIs by March 2010	Quarterly progress reports SROs	Achieved
1.2: 406 management staff trained (20% female, 30% under 45) by June 2010 (FI, management subject area, level of responsibility, gender, age group)	ARM trainers reports and SRO course attendance reports	Achieved
1.3: 50% of FI staff with management responsibility mentored by January 2010 (level, gender, age group)	Baseline staffing data & mentor reports.	Target achieved for 9 FIs out of 12.
1.4: At least two management tools developed and implemented in each FI by June 2010.	Institutional analysis reports. ARM CS plans from FI's and SROs. Quarterly reports (FARA, SROs, and FIs). Lessons reports.	Achieved
1.5: At least 70% of participants express satisfaction with ARM training and mentorship in each FI by May 2010.	Survey of trainee's / training evaluations	Achieved (96%)

attended SCARDA training events, far surpassing the log frame target of 406. Mentoring of individual managers in the FIs was also introduced with over 100 managers participating. The approval rate for the ARM trainings and mentoring was well over 90% of the participants.

Ultimately, anecdotal feedback from focal institutions, surveys, and performance measures will be used to gauge the impact of the SCARDA change management approach. Initial findings from such surveys indicate that new management techniques are being adopted in most of the FIs as summarized in Table 2. Additionally, reference is made to an increasing use of mentoring, the emphasis on leadership and team building, and increased performance management and communication. All of these new practices are framed within a better understanding of change management principles and practices.

Table 2: Examples of management tools developed by FIs

SUB-REGION	FI	TOOL DEVELOPED - 1	TOOL DEVELOPED - 2	TOOL DEVELOPED - 3
ASARECA				
	ARC	Mentor-mentee feedback	Performance management tools	SCARDA Info sharing platform
	ISABU	Mentor-mentee feedback	Performance management tools	SCARDA Info sharing platform
	ISAR	Mentor-mentee feedback	Performance management tools	SCARDA Info sharing platform
CORAF/ WECARD				
	CRI	Development & use of strategic management tools	Financial management tool	Human resources management tool
	NARI	Development & use of strategic management tools	Revenue generations and Performance management tools	NARI ICT unit and SCARDA Info sharing platform
	IER	Development & use of strategic management tools	Activity planning tool	Business winning
	CRAL	Flexibility, feedback	Performance management tools	Information on the sharing platform
SADC/FANR				
	BCA	National agricultural innovation systems working group; donor intelligence	Leadership and team work strategy; proposal writing tools	Team building techniques
	DAR	Logistics case study method as a planning tool	Conflict resolution tools e.g. speed dating techniques	PMT team building techniques
	UNZA	Client oriented research agenda	Strategic staff capacity development plan	Leadership and team work strategy
	NUL	Farmer participatory research pilot programme	Business plan for LECARD	Research for development; twinning agreement with ARC, South Africa
	NRDC	Client oriented research agenda	Strategic staff capacity development plan	Leadership and team work strategy

So far, the logical framework indicators reflect the emphasis of building reform processes and starting to capacitate research managers. It is too early though to claim visible evidence of strengthened research management systems either in terms of winning new business or actually putting in place new institutional arrangements at country level. Yet, it is fair to claim that the potential for strengthened research management is more likely as a result of SCARDA's interventions. At the NARS level, the developments in Lesotho (Box 1) and in The Congo are particularly impressive. The prospects for institutional reform across the NARS are feasible. At the FI level, there are clear indications that the internal management is taking charge of change. For example, CRI in Ghana is gearing up to compete in the market place. With the support of GIMPA, CRI has conducted a market survey of its products and services to develop its marketing plan and has outlined the directions for its advocacy plan. The CRI has already formalized protocols of cooperation with the nearby KNUST in Kumasi and a private seed company. Financial management procedures at the Institute have also been considerably improved especially by reducing the bureaucratic approval process from 13 to 9 steps.

The progress achieved to date in regard to strengthening agricultural research management is laudable given the short period in which SCARDA was effectively implemented. But the achievements, especially at organisational level, will need to be nurtured in the future. Clear mechanisms need to be adduced for sustaining the developments at organizational and national levels to safeguard against vulnerability to external shocks; the most likely being funding constraints. Early and continued efforts to embed the new processes may reduce the impact of threats in the future beyond SCARDA.

Box 1: Building the NARS in Lesotho through SCARDA

The National University of Lesotho (NUL) was proposed by SADC-FANR as the FI to participate in SCARDA. NUL is the only University in Lesotho. The Faculty of Agriculture (FOA) of the NUL is a well-organized and respected research and capacity building organization around which the capacities of other NARS institutions under the Ministry of Agriculture & Food Security (MAFS) can be built. Building capacity of NUL FOA to build capacities of other NARS institutions will strengthen all R&D institutions in Lesotho, including civil and private organizations. NUL FOA has good facilities and linkages. Through SCARDA ARM workshops, a Lesotho NARS Change Management Action Plan was elaborated. Initially, a Support Unit for Training, Research and Development (SUTRAD) was envisaged as an organ of the NUL to support training and other initiatives. However, SCARDA has successfully broadened minds and it was realized that a Centre that serves the NARS as a whole is what would best serve Lesotho. The name of the proposed centre is Lesotho Centre for Agricultural Research for Development (LCAR4D). It will have the following core functions:

1. *Coordinate research, dissemination of information and outreach across the Lesotho NARS*
2. *Establish and operationalise a think tank for agricultural policy development, lobbying and advocacy*
3. *Create a platform for the development of partnerships, linkages and networking locally, regionally and internationally*
4. *Mobilization of resources for the promotion of agricultural research in Lesotho (e.g. financial, technical etc)*

A strategic plan for the Centre was formulated with SCARDA support, the future implementation of which – as embodied in the development plans of NUL and MAFS – will immortalize the gains from SCARDA implementation in Lesotho.

Output 2: Strengthening the capacity of participating NARS to undertake quality agricultural research for development

Central to the innovative potential of an organization is the ability of researchers to determine the research agenda responsive to national agricultural development needs. A second requirement is the capacity of the researchers to conduct quality research. These capabilities are hinged to intuition, sharpened by pertinent training and nurtured by supportive research micro-environment (particularly management policies, terms of service, infrastructure and technical support) within the organization. SCARDA aspired to strengthen the ability to undertake quality agricultural research of FIs by MSc training of junior researchers and professional training of senior researchers and technicians. Achievements in regard to the OVIs specified under Output 2 are summarized in the Table 3.

The main component of this output is the MSc training of a total of 78 researchers from the three sub-regions in specialized disciplines. By 30th June 2010, four students had been awarded their degrees and returned to the sponsoring organisation. All the remaining students are expected to complete their studies by November 2010. A number of short courses have also been delivered on such topics as farmers' participatory research (FPR), innovation systems approaches and integrated pest management (IPM). The target was 25% of research staff being trained in one subject area. Actual performance was slightly down at 22% but considerably more research staff from the satellite institutions attended the SCARDA courses (a total of

Table 3: Summary of achievements on Output 2

Objectively verifiable output indicator	Means of verification	Remarks
2.1: Capacity strengthening plan on quality agricultural research in all FIs developed and implemented by March 2010.	Quarterly progress reports (FARA, SROs, and FIs)	Achieved
2.2: By June 2010, 4 MSc candidates completed and others due to finish by Oct 2010 (subject area, level, gender, age group)	University and LSP MSc progress reports to student's FIs and SROs	Fully Achieved
2.3: 50% of FI research scientists mentored (level, gender, age group) by May 2010.	Baseline staffing data & mentor's reports	Target achieved for 4 out of 12 FIs.
2.4: 25% of FI research staff and 10 SI research staff (20% female) per country trained in at least one subject area by March 2010.	Baseline staffing data & trainer's reports and SRO course attendance records	Partially achieved – 6 out 12 FIs have trained more than 25% of their research staff; only in two countries (Botswana and Lesotho) more than 10 SI research staff participated in the training.
2.5: 30% of FI technicians trained in at least one subject area (level, gender, age group) by May 2010	Baseline staffing data & trainer's reports and SRO course attendance records	Achieved for ASARECA, but not for CORAF/WECARD or SADC/FANR.
2.6: At least 70% of participants express satisfaction with training and mentorship in the identified competence areas by May 2010	Student feedback to SRO and FI, reported in quarterly reports. Trainer's reports, training evaluation reports. End of project participant satisfaction survey.	Achieved (95%)

91 staff compared with a target of 10). The delivery of technician training fell well short of target due to funding delays. Only 12% of technicians received training compared with the target of 30%. Personal mentoring of researchers was provided in only 4 of the FIs. Despite the shortfalls in training and mentoring numbers, those receiving this support applauded the results as indicated in the employee mid-point survey results.

A critical step in SCARDA's impact pathway is the manner of re-integration of the returning students back into their organisations. Here is the confluence where the expertise gained from the MSc training, the mentoring on the student, and the institutional change management strategy will merge to determine whether the youthful enthusiasm of the returning scholars will soon suffer intellectual atrophy (as is common with African scholars returning from overseas training eventually leading to human capital flight) or nurture into an organizational asset that will bring about the much-needed innovations to transform Africa's agriculture. It is instructive that the administrators at the focal institutions ensure that what SCARDA has planted in these budding researchers will bring forth tangible benefits at organizational and national levels in the future. Key things to be done include sustaining the mentoring engagements and full implementation of the CMAPs to ensure an enabling institutional environment for productive research. In addition, the nature of their work should ensure that they are being deployed in the priority research areas that justified their nomination for MSc training.

In reality, the success in accomplishing Output 2 is more about building the human capacity which has the potential for undertaking quality research. It is too early to judge whether better research would be done. But it is reasonable to assume that the 78 MSc graduates are more likely to stimulate higher quality research. Furthermore their presence in the organisations may help win research contracts and thereby strengthen the viability of the organisations. The evolving improvements in research management and improved support capacity of the technicians will facilitate quality research within the FIs.

Output 3: Establishing the relevance of training programs in agricultural universities to current market demand

Until the mid-nineties, graduates from African tertiary agricultural and training institutions were meant to fill jobs principally in government agencies. It is understandable that the prevailing curriculum was geared towards this focus. However, the labour market for agricultural professionals has considerably diversified over the years due to changes in donor focus, increasing regional and global agricultural trade, developments in information and communication technologies, novel agro-technologies, and challenges in regard to global warming and climate change. For agricultural education and training institutions to be more consciously integrated into national innovation systems for agriculture, they must be demand-responsive (Saint, 2005). This entails changes in curriculum and management adjustments needed to provide the education and services required by a changing agricultural sector and the transformation of rural space. SCARDA commissioned graduate tracer studies in all the implementing sub-regions in order to inform possible areas for curricula change by the agricultural education and training institutions. Achievements in regard to the OVIs specified under Output 3 are summarized in the Table 4.

Table 4: Summary of achievements on Output 3

Objectively verifiable output indicator	Means of verification	Comments
3.1 Study approach and methodology developed and agreed upon by each SRO by May 2009.	SRO quarterly reports & study inception report (if available)	Only partially achieved within given time limit (1 out of 3).
3.2 [Study completed and] results and recommendations reviewed and adopted by SROs by March 2010.	SRO quarterly reports & minutes from SRO meetings	Partially achieved (1 out of 3)
3.3 Results and recommendations tabled and discussed by the governance bodies of the network of universities (by 30 th June 2010)	SRO quarterly reports & feedback from governance bodies	Partially achieved (1 out of 3)

Due to logistical reasons and inordinate implementation delays occasioned by erratic funding, the tracer studies in CORAF/WE CARD and SADC/FANR were not completed by 30th June 2010. Nevertheless, ASARECA managed to complete the study and results were duly presented to the representative governance bodies for the network of universities in the sub-region. The extent to which the target universities had adopted the results of the demand study could not be ascertained by the programme's closure date as this was beyond the scope of stipulated activities under Output 3. However, RUFORUM, the LSP for ASARECA, had taken particular interest and will most likely leverage own resources to independently gauge the degree of impact of this SCARDA thrust upon her network universities. Any follow-up to the SCARDA approach - beyond DFID's funding - will endeavour to complete the tracer studies in CORAF/WE CARD and SADC/FANR and utilise the results thereof to benefit agricultural education and training institutions in the sub-regions.

Output 4: SCARDA approach for capacity strengthening is validated

Innovative elements of the SCARDA approach include (i) continuous consultation with partners, (ii) a paradigm shift in capacity strengthening from a "service provided" through the project to "a facilitated and supported process" enabled by the project, and (iii) enhancing cooperation through learning platforms. The programme sought to validate this approach as creating a more lasting impact on the performance of agricultural research organizations in Africa compared to the traditional, more supply-driven and less holistic capacity strengthening approaches. Achievements in regard to the OVIs specified under Output 4 are summarized in the Table 5.

At the 2nd SCARDA Programme-wide Strategies and Lesson-learning (PSL 2) Workshop held in April 2010, there was absolute consensus that the SCARDA approach is *"a shift from viewing capacity strengthening as a service provided to seeing it as a facilitated and supported process of change for whole organisational and institutional strengthening through the provision of tailor-made capacity strengthening packages based on processes of:*

- *Well-grounded institutional analysis, to understand gaps, internal and external factors*
- *Targeting to meet specific needs*
- *Wide stakeholder involvement at regional, sub-regional and national levels, actors of the agricultural innovation system*

Table 5: Summary of achievements on Output 4

Objectively Verifiable Output Indicator	Means of verification	Comments
4.1 SCARDA implementation plan responding to MTR and incorporating project wide issues developed and agreed by end of May 2009	PSL workshop report. Revised work plan submitted to DFID.	Achieved
4.2 MTR recommended measures to strengthen project management and improve rate of implementation in place by July 2009 and functional to end of project.	Quarterly reports (FARA, SROs, LSPs, FIs). Minutes from management meetings.	Achieved
4.3 Communication strategy and plan developed by end of May 2009 and functional to end of project	Communication strategy and plan documents. Quarterly reports (FARA, SROs, LSPs, FIs).	Achieved
4.4 Project performance management strategy and plan developed and adopted by partners by end of June 2009 and functional to end of project	Performance management strategy and plan documents. Quarterly reports (FARA, SROs, LSPs, FIs).	Achieved
4.5 Lessons and best practices derived from SCARDA approach documented and shared with key stakeholders by end of May 2010.	Lessons sections of management meeting minutes, quarterly and annual reports, website and e-group usage reports. Workshop reports. Strategy documents on up-scaling. Case studies and policy briefs.	Lessons & best practices consolidated at the 2 nd Programme-wide Strategies & Lesson-learning Workshop by 31 st March 2010; Lessons & best practices shared by 30 th July 2010.

- *A 'do, learn, reflect and improve' process*
- *Doing things in a different manner*
- *Application of new knowledge for greater impact*
- *Provision of tools and approaches which empowers the partner organisations to apply their particular needs".*

The particular features of the SCARDA approach that received the greatest plaudits include:

- The institutional analyses that informed the design of the project and provided a starting point for the design of the CMAPs. The inclusive and participative approach helped build understanding and established a sense of ownership in mapping out the way forward
- The combination of training with organisational development; the introduction to change management issues and techniques
- The mentoring and the use of team based approaches to solving problems and moving forward
- The lesson learning, through the learning platforms, and the 'space' for reflection. The more open and frequent communication across the project.

Based on the PSL 2 workshop presentations and the survey results, one can conclude that the FIs strongly endorse the SCARDA approach. The participants at the above workshop were united in their conviction that SCARDA had brought about significant changes in how the FIs are operating and more especially in their interactions with other organisations in the NARS. All the FIs believe that SCARDA has stimulated reform efforts either at the national or organisational levels. Further,

they believe that the programme is highly relevant (i.e., addressing crucial bottlenecks in their organizations) and offers the right mix of capacity strengthening instruments to address them – i.e., agricultural research management (ARM) courses, short courses to improve research and technical skills, and MSc-degree education. Moreover, the SCARDA approach tries to make sure that the trainees will actually use their newly acquired knowledge and skills in their work by instituting a mentoring scheme in each of the FIs.

Achievements on programme purpose and potential impacts

SCARDA's purpose is to improve the capacity and performance of participating NARS in key areas of their agricultural research for development functions. The project has been successful in putting in place some of the major building blocks on which agricultural research can be improved. Awareness of the issues has been raised. Skills to tackle the challenges have started to be upgraded. Most importantly, change is being introduced through a structured and better informed process in which stakeholders are more actively engaged. The understandable limitation in this early phase is the proactive engagement of other key stakeholders in the NARS. Where a wider constituency has been involved such as in Lesotho, Congo and The Gambia, the project is influencing the structure of the NARS. However, in most countries the effect of SCARDA tends to be empowering individual FIs to start to take control of change and manage their own destinies.

From the stakeholder surveys, it is evident that FIs are improving their performance in relation to strengthening their structure, business processes and ways of working. They acknowledge that key weaknesses are starting to be addressed. There is a substantial body of evidence to illustrate the range of achievements that are being delivered through SCARDA assistance. Certainly there is more effective communication between, and engagement with, the other organisations in the NARS. As one respondent to the M&E survey commented, *"It made me realise the partnership platform is very important for the future of NRDC, and that other stakeholders have an interest in our organization. We solicited for interest from outsiders and a lot of agencies are interested to work together with NRDC."* (NRDC, Zambia). Another informant observed *"Planning within each of the components of the NARS takes into account the relevance of the other stakeholders – get invited to their planning workshops, and we are now on talking terms, it was difficult before."* (School of Agricultural Sciences, UNZA, Zambia).

Two areas where progress did not reach the expected levels are in relation to mainstreaming social inclusion issues, such as gender and HIV/AIDS, and the engagement of the tertiary education organisations in adjusting their curricula to market demands. Only gender has featured in the SCARDA approach in terms of target quotas for participating in the training events. The target of 30%, though met in some training events, was not met across the board. The extent to which the results of graduate demand study in ASARECA had been taken up by the universities and colleges is not certain. No specific activity was indicated in the programme to ascertain the uptake pathway after conducting the study and disseminating the findings. Although there was general commitment from stakeholders, the period available for full scale implementation of the programme was limited. A summary of SCARDA's achievement of Purpose OVs is given in Table 6:

Table 6: Summary of outcomes and potential impacts

Purpose performance indicator	Means of verification	Comments
1. Focal institutions can identify benefits (expected and actual) arising from specific SCARDA initiated change management interventions by June 2010.	SCARDA learning workshop reports, mid and end of project surveys – using recall	Survey results are sufficiently positive to expect a considerable chance of achieving this purpose performance indicator.
2. Examples of positive change, improved performance and improved NARS relationships in all participating NARS by June 2010.	SCARDA learning workshop reports, mid and end of project surveys – using recall	Evidence somewhat mixed – baseline survey suggests rather limited progress on the status of: (a) strategic planning; and (b) planning, monitoring and evaluation (PM&E). When asked in an open way for impact on the organization a far more positive picture emerges. Also the employee survey is positive about the impact of SCARDA on the performance of the focal institutions. Regarding improved NARS relationships, the employee survey indicates that there is already some impact and the expectation is that this will be further enhanced
3. In at least 30% of the participating NARS, key stakeholders are satisfied that their linkages with FIs arising from SCARDA interventions have improved by June 2010.	SCARDA learning workshop reports, mid and end of project surveys – using recall	From the perspective of the FIs, considerable progress has already been accomplished regarding improved linkages with key stakeholders and there is ample confidence that this will improve further in the future. No survey has been undertaken to get the perspective from the stakeholders.
4. Participating organizations are implementing SCARDA related measures to mainstream gender, HIV/AIDS, pro-poor and other social inclusion issues by June 2010.	SCARDA learning workshop reports, mid and end of project surveys – using recall. FI annual reports.	Some three-quarters of the respondents to the employee survey believe that their organization is working on this. Statistics regarding female participation in SCARDA capacity strengthening activities indicates that female participation targets have been met to a considerable extent, although there are some exceptions – most of them in the CORAF region.
5. Use of graduate demand study by at least 70% of target Tertiary Education Institutions by June 2010.	SCARDA learning workshop reports, mid and end of project surveys – using recall. FI annual reports.	Not achieved. Only one study completed and presented to the relevant authorities. Time was too short to measure outcome/purpose as defined by the logframe.
6. Endorsement of SCARDA approach by all SRO Boards and 90% of NARS senior management by June 2010.	Minutes of SRO board meetings, interviews/dialogue with NARS management, FI annual reports	The mid-point employee survey reveals a strong confidence among employees that their management will support the SCARDA approach to capacity strengthening also after completion of the project.

At present, it is far too early to assess further development of the impact pathway of the SCARDA programme in terms of achieving its 'goal' and 'super goal'. The targets formulated for these phases of the impact pathway are five to ten years down the line and require a whole range of assumptions to be met. However, there are many examples of positive change, improved performance and improved NARS relationships at the FI level as indicated in Table 7.

Table 7: Examples of positive change, increased performance and improved linkages

SRO	FI	Examples of positive change	Examples of increased performance	Examples of increased NARS relations
ASARECA				
	ARC	Increased access to agric info from other networks on grants, training opportunities, new tech and other research info; shortened procurement process; timely release of funds; new strategic plan	Better engagement with farmers by FI staff	Better linkages amongst NARS & other agric networks, better cooperation through sharing of info & learning in agric research & innovation (SCARDA Info Sharing Platform)
	ISABU	Staff oriented to engage more effectively with complex institutional change process currently underway; shortened procurement process; timely release of funds, MSc training	More responsiveness to ongoing government initiated organizational change	Better linkages amongst NARS & other agric networks, better cooperation through sharing of info & learning in agric research & innovation (SCARDA Info Sharing Platform)
	ISAR	Staff oriented to engage more effectively with complex institutional change process currently underway; shortened procurement process; timely release of funds; MSc training; research decentralized into new geographical 'zones' as core implementers of research (and extension); improved relations between senior and junior staff.	Better internal communication and stronger emphasis on team work; cultivation of a mentoring culture	Better linkages amongst NARS & other agric networks, better cooperation through sharing of info & learning in agric research & innovation (SCARDA Info Sharing Platform); (ISAR) and the crop and livestock extension services are being brought under one umbrella organization
CORAF/WECARD				
	CRI	Simplification of the procurement process leading to efficiency; MSc training	Better proposal writing	Increased linkages between participating NARS
	NARI	Change in mentality and attitudes (hearts & minds). Management more responsive, more transparent, more accountability encourage without losing objectivity	Trust and commitment built resulting to high motivation, stronger business orientation and motivation off the desire for improvement	Built synergies: linkages with partners and university much stronger due to realization that we are partners and not rivals in development

SRO	FI	Examples of positive change	Examples of increased performance	Examples of increased NARS relations
	IER	A passion for scientific publication in order to better promote research results and build research and finance capacity; Enhanced perception of the role of negotiation and advocacy in improving the Institute's performance	Improved scientific writing; Managers from agricultural research are better equipped to lead negotiations and advocacy for research.	Partnership opportunity between national research systems institutions for the publication of results and the quest for funds
	CRAL	Improved methodologies: more flexibility, increased participation in the work and ongoing change process, increased interest in MSC and technicians' training MSc training; in the Congo, the local government has reinforced policies to reform the various agricultural research centres into a NARI.	Improved relations with the Ministry of Research regarding the ongoing institutional change process	More relations with and increased understanding of agricultural training institutes, users of results developed during meetings or workshops organized during SCARDA's implementation Research centers initially independent are now cooperating to form a NARI
SADC/FANR				
	BCA	Responsiveness to collaboration; MSc training; importance of other NARS stakeholders in research and teaching highly appreciated	Increased understanding of partnership building with farming community and methods for conducting FPR; team work among staff is developing	Linkages among the NARS stakeholders getting strengthened
	DAR	Espoused the value of partnerships; Change in mindsets as evidenced by a new way of thinking or doing things e.g. team work	Integrated approach towards research activities; involvement of stakeholders and collaborators (inclusiveness)	Consistently seeking partners/ collaborators in order to solve problems afflicting the agricultural sector; better linkages with BCA as evidenced by the number of activities jointly undertaken by the two institutions and satellite institutions
	UNZA	MSc training; realization of change management plan (CMAP), places training in the context of change	Broadened understanding of how to build partnerships with the farming community; working in teams to address change challenges	Partnership with other agricultural institutions in Zambia e.g. NRDC, MACO, ZARI made easier.
	NUL	New willingness to collaborate with other organizations for relevant research; establishment of LUCARD	Increased understanding of partnership building with farming community and methods for conducting FPR	Working with researchers, government and farmers on indigenous chicken project under the SCARDA initiated FPR

Table 7 continued

SRO	FI	Examples of positive change	Examples of increased performance	Examples of increased NARS relations
	NRDC	MSc training in various disciplines. Formation of the NRDC-stakeholder partnership platforms	Stakeholders have started getting involved more in the activities of the college; staff have started becoming assertive and proactive rather than wait for things to happen	Better linkages have developed. The college activities have become more responsive to the needs of the users; there is better relationship among stakeholders

Three additional areas of achievements, not directly linked to the log frame indicators, are worthy of note:

1. Strengthened management systems within FARA – following the MTR, SCARDA adopted new processes and procedures for work planning, budgeting, approvals and reporting in the latter half of 2009. This approach has inspired changes in the management of FARA's other time-bound programmes. As a result, the management systems within FARA became more structured, more inclusive and reinforced the measures to enhance the overall governance arrangements.
2. Established infrastructure for delivery and lesson learning across SROs and lead service providers – mainly through programme-wide adoption of the project management team (PMT) concept and lesson-learning workshops
3. Increased confidence of the FIs in taking charge of change – as a result of implementation of change management plans.

Perhaps most significant of all has been SCARDA's influence on the FIs. At the PSL 2 workshop, participants from the FIs were asked to identify the most significant change that has resulted from their involvement in SCARDA. Box 2 below illustrates the diversity of the responses.

<p>Box 2: Most significant changes</p> <p>NARI, Gambia <i>"Increased collaboration, working as colleagues, partners not rivals in development"</i></p> <p>IER, Mali <i>"Come together to draft joint proposals, more collaborative, not competing but sharing experiences"</i></p> <p>NUL <i>"Using indigenous knowledge and innovation systems to solve farmers' problems"</i></p> <p>UNZA <i>"Change is being managed"</i></p> <p>DAR, Botswana <i>"Critical partners working jointly, problems can be solved"</i></p> <p>BCA <i>"Realisation that we can't do everything on our own – we need partners"</i></p>

It is evident from these replies that SCARDA, in addition to providing some management tools and skills upgrading, has had a more profound effect in empowering managers and in increasing their confidence in tackling the complex problems that they are facing.

Implementation challenges

The implementation of SCARDA has faced several challenges in addition to the complexities of working across so many countries and involving a wide range of stakeholders. The main challenges included: an over ambitious project design especially with regard to the expected end of project achievements; the time required to formalise the working relationships between FARA, the SROs and the lead service providers; adoption of the subsidiarity principle; unpredictable funding; and inadequate monitoring and evaluation.

Project design and implementation structure

Logical framework matrix

The mid-term review (MTR) report observed that “...the original design, as captured in the project logical framework, was overly ambitious. Three years is far too short a period to transform the capacity of research management and the quality of scientific research”. The design, through the OVIs, expected that by the end of the project there would be visible and measurable improvements in the management and delivery of research. By the time of the MTR it was clear that these targets would not be achieved. The response was to keep to the design, in terms of scope and approaches, but to adjust expectations downwards in terms of what might be delivered by the end of the project. Consequently, OVIs were reframed to capture the adoption of new processes and hoped-for changes in stakeholders’ perceptions of the way forward. Even then, some misgivings in regard to the relevance of certain output OVIs persisted. Specifically, the post-MTR OVIs for Output 4 did not exactly support proof of validity of the SCARDA approach.

Implementation structure

The management structure adopted by SCARDA was perceived in some quarters as overly complex, involving too many layers and actors (FARA-SRO-LSP-SP-FI), having unclear command lines, and hence hindering a smooth implementation of the program. Moreover, the value-added roles of some agencies in the implementation structure were not wholly appreciated. Some partners were not wholly convinced about the concept of a lead service provider (LSP), seemingly because: (a) it turned out to be difficult to find LSPs with the right set of capabilities; and (b) the functions contracted out to the LSPs (identification of potential service providers, monitoring the delivery of services and quality control) are quite essential to the success of the program. Therefore, by contracting these out, there could be complications regarding control over the implementation of the program. The preferred option was that the SROs assume these functions themselves, but this depended on their willingness to invest in the necessary implementation capacity.

Inclusion of LSPs in the SCARDA implementation structure was necessitated by the probable lack of capacity at the SROs. Under SCARDA, the role of an LSP was conceived as follows:

- Technical backstopping when necessary – for example, AGHRYMET conducting technician trainings in CORAF/WECARD; or ANAFE conducting graduate demand studies in SADC/FANR
- Logistical overlay – for example, in helping placement of SCARDA MSc students in sub-regional universities as was the case for RUFORUM in ASARECA, ANAFE in SADC/FANR and AGHRYMET in CORAF/WECARD
- Quality assurance – for example, RUFORUM undertaking quality assurance for every stage of the graduate demand study conducted in ASARECA as well as the change management workshops and professional courses in the SRO.

The value-added role of an LSP was well appreciated by some SROs, particularly in ASARECA. Granted that the LSP added to the already tortuous project command line, it is prudent to consider the potential gains from having the long chain especially regarding SCARDA's aspiration to develop partnerships and strategic alliances. In a way, the LSP concept was an avenue to build the NARS and made partnerships official, allowing more that could be accomplished.

Establishing formal working relationships

Each of the principal agencies (FARA, 3 SROs and 2 LSPs) signed formal agreements with their partners. Negotiation of these agreements took longer than expected between FARA and SADC/FANR, partly because SADC/FANR is not exactly an SRO. The final arrangements with FARA were completed in October 2008. SADC/FANR in turn completed engagement agreements with ANAFE, its LSP, only in June 2009 – 1 ½ years down the programme implementation timeline!

Recruitment of other service providers was also not without challenges. Indeed, implementation of technician training and graduate demand/tracer studies in CORAF/WECARD was still in abeyance by programme end date chiefly due to lack of service providers. Some service providers indicated a vacillating commitment to the contracts. For example, ESAMI, the service provider contracted by SADC/FANR to facilitate ARM trainings reneged on its obligation to facilitate activities in the 4th Quarter, January – March, 2010, and the sub-region had to fall back on support by NRI. This did not help SCARDA's desire to engage and develop the capacity of regional service providers.

Subsidiarity

The delays in mobilising the project partners posed a dilemma for FARA in terms of judging how hard to push the SROs for decisive action especially during late 2008 and early 2009. FARA was careful not to be seen to be trying to impose new arrangements and deadlines and was endeavouring to weave the SCARDA requirements within the business processes of the SROs. Unfortunately, the project design had failed to complete an organisational assessment of the 3 SROs (and indeed of FARA) and so the potential blockages and constraints were not identified. So the process of establishing the SCARDA network took its own time to evolve.

One reason for delay in SCARDA implementation was the complex task of creating formal working relationships between such a large number of organisations including FARA, 3 SROs, 12 FIs (across 10 countries), 3 lead service providers plus a range of service providers. There was the added complexity of FARA's choice of the subsidiarity principle in its relationships with the SROs and FIs, which at the moment appeared to be the only viable means of engaging the implementing partners on a continent-wide programme. Under the subsidiarity principle, delegation of authority was readily acceptable, but the practice of responsibility posed a formidable challenge. For example, exercising coordination authority by the FARA Secretariat often stood the risk of being misconstrued by the implementing partners for micro-management. Such distorted application or over-zealous interpretation of subsidiarity was apparent – for example – in regard to submission of progress reports and observance of the programme's communication strategy.

Funding

The unpredictability of funding flows proved to be the most disruptive factor in SCARDA implementation. The situation was compounded, at least in the eyes of some of the SROs, by the funds being routed through FARA. Their preference was a direct funding allocation from DFID to the SROs. Although FARA promptly transmitted available funds to the SROs, there was an issue about perception. The issue was put paid in December 2009 when the donor commenced direct routing of funds to SROs. Following the principle of subsidiarity, the design of any future projects similar to SCARDA needs to align the funding mechanism as close as possible to where the money is spent but conducive with acceptable fiduciary risk.

Monitoring and evaluation

Monitoring and evaluation was too detailed/complex and not well understood. Clear management system right from on-set helps smooth implementation. Despite the concerted efforts since the second half of 2009, M&E was not implemented by the key stakeholders in a systematic manner. SCARDA was dependent on NRI to design and implement the survey tools required to populate the indicators and to analyse the results. So the concerns are twofold: firstly, the limited transfer of skills from the NRI consultants to the SCARDA participants; and secondly, the narrow range of the M&E systems with its emphasis on survey tools rather than building on M&E systems within the SROs and/or the FIs. In hindsight, the introduction of a SCARDA M&E, in the context of existing, weak M&E systems in NARS, was overly ambitious. Perhaps for the future, establishing M&E capability should be an objective in its own right. In SCARDA it was an ancillary task which failed to receive sufficient attention on a timely basis.

Lessons learned and best practices

The SCARDA approach

The SCARDA approach was validated at the PSL 2 workshop based on cogent anecdotal and survey feedback in proof of particular achievements and benefits already evident at FIs. The definition and key features of the approach have been furnished above. Of critical significance in the approach is institutional (or more correctly organizational) analysis. A solid institutional analysis of the focal institution is an important first step towards identification of the capacity strengthening needs, resulting in a capacity strengthening strategy and plan. Ideally, such an analysis should be participatory and widely shared by staff and external stakeholders.

The success of SCARDA change management strategy is hinged on sustained implementation of CMAPs or change projects. Getting the various authorities and key stakeholders on board is essential for the ultimate success of the CMAPs or change projects. The introduction of CMAPs or change plans into the FIs requires a great deal of commitment and involvement by the management of the FIs as well as higher levels of authority (i.e., Ministry of Agriculture, Ministry of Higher Education, Ministry of S&T, etc.). This entails a great deal of sensitizing key decision makers regarding the objective of the CMAP or change plans and getting them on board. The FI management and line ministries should understand and endorse the implications of the CMAP. This is a process that takes time and requires sustained mentoring, even some degree of advocacy. Success of the change management also depends on the willingness of staff to change and how management communicates difficult changes with staff. It is too early to assess the post-training elements of the SCARDA approach, i.e., the CMAPs and mentoring activities. More time is needed to watch how these instruments work out in practice.

Limited progress seems to have been made regarding institutionalizing the learning processes as part of the SCARDA approach. A concept note for process documentation was developed in September 2009, with the idea of workshops which would simultaneously train interested FI staff in this method, and also document processes and results in the FIs. Funds were not availed for the planned workshops due to funding delays. Instead, NRI staff members who were providing technical support to the FIs undertook a one day exercise with each FI between March and April of 2010 in order to capture “storylines” relating to the engagement of the FIs with SCARDA. Although this ad hoc solution generated the necessary information, it failed to institutionalize the learning process

A crucial first step of the SCARDA approach towards capacity strengthening is an institutional analysis of the FI. The rigor of this analysis very much determines the relevance of the capacity strengthening strategy as well as the CMAP formulated by the FI. In some countries, the original institutional analysis had been rushed, which caused problems later on. Broad participation of staff and external stakeholders in the institutional analysis helps to improve its relevance and ownership. Another observation is that the institutional analysis should be more current or continuous. The latter observation points to another issue as to whether capacity strengthening is a one-off intervention or a more permanent function of an organization. SCARDA's objective was the latter. In this case, one has to start thinking in terms of regularly updating the institutional analysis and the capacity strengthening strategy.

MSc training

In many African countries, the market for highly-qualified and specialized personnel is still underdeveloped. Hence the practice of upgrading the academic qualifications of staff while under contract of the research organization. The current SCARDA program only offered opportunities for MSc-level education. Several FIs, however, have indicated that they also need upgrading of their staff to PhD-level. Because of the short duration of the current SCARDA program (2.5 years), such a facility was not included but should be considered in a possible follow up of the SCARDA program.

One of the tasks of the SCARDA program has been to identify the best study programs in each of the sub-regions that match with the demand for MSc training. In many instances, the selected MSc programs were outside the country. This has not always been appreciated by the local universities. There is clearly a trade-off between offering the most adequate MSc training and local capacity building of universities. Also a unique feature of the MSc training component of the SCARDA program is that: (a) students are advised to select a research topic that is of relevance to the research program of their institute (and if logistically possible implement it at their institute); and (b) students should have two thesis supervisors, one of the university and one of their own institute. The latter arrangement did not always work out because of resource and time constraints. One suggestion, for example, would be to provide funding for university lecturers to visit the research organizations of their students in order to get a better understanding and appreciation of local needs, conditions and constraints.

In the end, very few MSc students studying abroad conducted their research at their home institute. This is mainly because there is not sufficient time in a regular MSc program for such

an arrangement. If this model is to be pursued, the length of the study program needs to be extended. Further, student scholarships were not always sufficient to cover the living and other costs to be incurred by the MSc students. More realistic budgeting is needed as well as a facility for emergency situations. The students very much appreciated the fact that the SCARDA program provided them with a lap top computer.

Adoption of Change

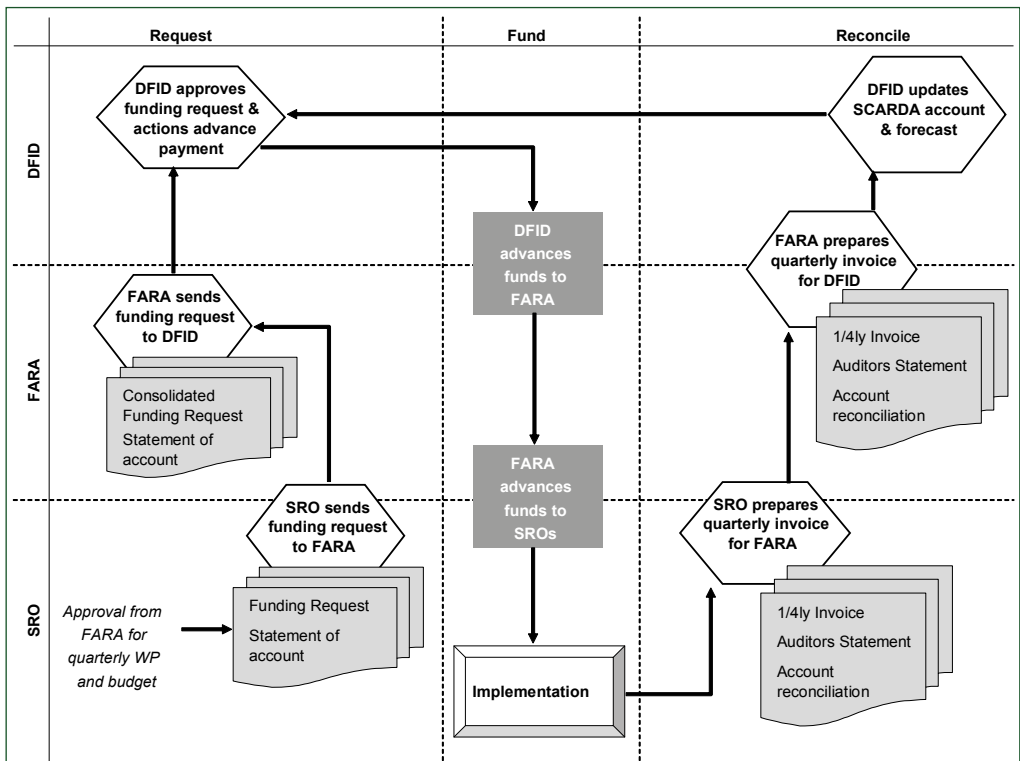
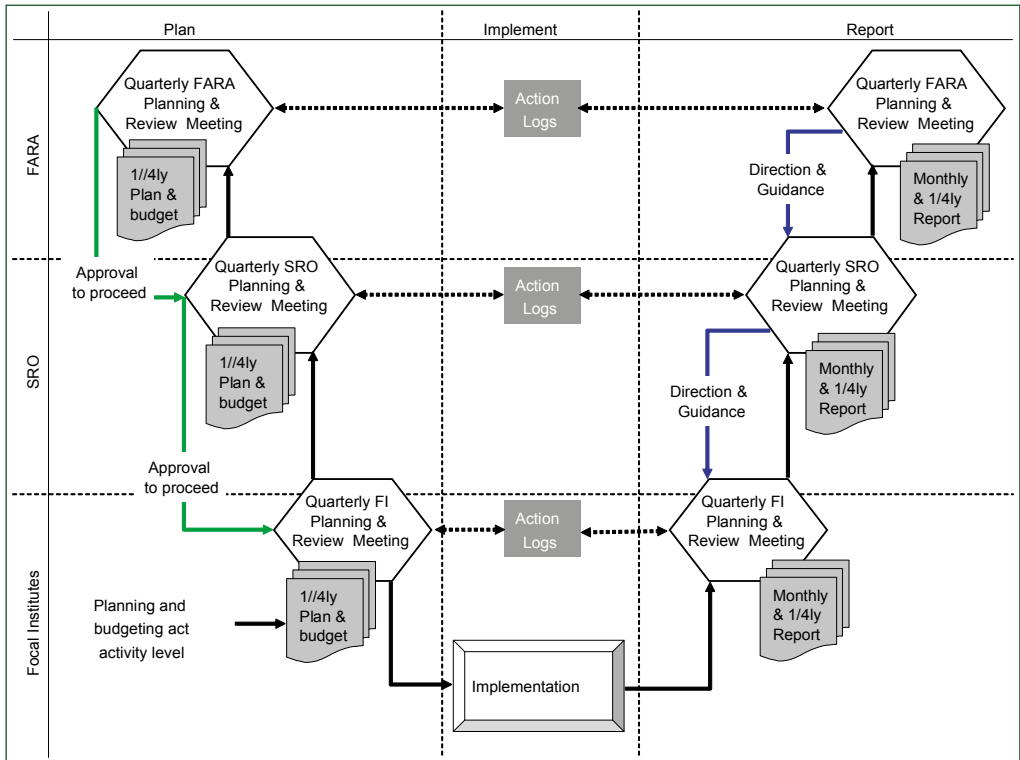
One of the observations that can be distilled from the employee mid-point surveys is that the impact of the research management training in terms of management changes being introduced differs importantly across the FIs. Despite having received the same training, some FIs have advanced a lot more with their CMAPs than others. Apparently, the success of the SCARDA approach hinges squarely on the quality of the institutional analysis and the keenness of an FI to introduce change. Priming an institute for change is a critical factor to raise the chance of impact.

Institutional Strengthening

There was strengthening of innovation capacity through cross-institutional and cross-border collaboration. At the national level, stakeholder analysis has helped to place the issue of cross-institutional collaboration on the agenda. In particular the collaboration between research organizations and universities has been improved because of SCARDA, particularly in the SADC/FANR. Sub-regional ARM courses, lesson-learning workshops and PMTs have been useful in establishing contacts across borders. However, for such linkages to be more functional there is need to formalize instruments of engagements through, for example, MoUs and contracts.

Management Innovations

In response to the MTR recommendations, a management system was devised 'to give teeth' to subsidiarity. The system, comprising of interlinked operational and financial components, is based on a quarterly cycle of planning and reporting at the three SCARDA management levels: FIs, SROs and FARA. A number of operational gains resulted from installation of the SCARDA Management System. Below is a diagrammatic representation of the operational management, planning and reporting system (left) and the associated financial system (right). In addition, creation of Project Management Teams was a good strategy; but it came late in some regions.



Post-implementation outlook

Sustainability

It is to be expected that the various capacity strengthening activities by SCARDA will have some lasting impact and particularly so because of the ‘embedded’ approach to capacity strengthening (i.e., proper identification of capacity strengthening needs and post-training mentoring). However, the ultimate impact of the capacity strengthening depends strongly on the environment within which researchers and technicians have to operate. For example, if the funding situation of research organizations continues to be problematic, it will be difficult for researchers and technicians to fully exploit their newly acquired knowledge and skills.

An even greater sustainability problem arises with regard to the change management process. The time it takes for such a process to settle in is at least 5 to 10 years if not longer. The CMAPs are just the beginning of such a process. Without further assistance, there is a high risk that the implementation of the CMAPs by the FIs will wind down rapidly after the closure of the current SCARDA program. A more continuous coaching and monitoring of these CMAPs is required, including opportunities for additional capacity strengthening in agricultural research management (e.g. for new capacity strengthening needs arising during the change process).

Next steps

Some suggested post-implementation courses of action are as follows:

- a. Follow-up on the CMAPs at the FIs to coach and monitor progress and consolidate the gains already made in SCARDA I. The relevant change agents in the three SROs

namely GIMPA (CORAF/WECARD), PICO Team (ASARECA) and ESAMI/NRI (SADC/FANR) will engage independently with the SROs and FIs in organizational mentoring to sustain implementation of the CMAPs. Real change can only occur with complete implementation of the change strategies in the CMAPs.

- b. Up-scaling of best practices:
 - i. Two approaches to ARM capacity strengthening are being used within SCARDA program, namely 'transactional' (the dominant approach in Western and Southern Africa) and 'transformational' (the dominant approach in Eastern Africa). These two labels represent a hefty debate in the change management literature regarding how to induce lasting organizational change. Nevertheless, it will be important for the SCARDA program to position itself somewhere in this debate and express this position when tendering for ARM capacity strengthening services in the future. For example, a convergence of the two approaches and process development of the unified approach will greatly facilitate future ARM capacity strengthening across the continent.
 - ii. In applying and mainstreaming crosscutting strategies on monitoring and evaluation, communication, gender, and mentoring. This would take advantage of the past investment in establishing the Program-Wide Technical Working Groups to determine how the lessons learnt can be taken on board in continental and regional projects.
 - iii. In establishing learning platforms for determining and implementing institution-wide capacity strengthening.
- c. Out-scaling of the SCARDA approach to other focal institutions across Africa. At the 2nd SCARDA Programme-wide Strategies & Lesson-learning Workshop (PSL 2) held in April 2010, the stakeholders recommended the following SCARDA thrusts for out-scaling to other institutions:
 - i. *Demand studies* - Review and validate the findings of the demand studies across the three sub-regions (findings and recommendations as well as content). Based on the review, carry out the demand study in a larger number of countries to widen the coverage and take into account different conditions.
 - ii. *Institutional analysis and research management* - Out-scaling for enhanced ownership and wider reach. Institutional analysis should be done in other research organisations, followed by research management training. Multiplier effects can be achieved by using course/workshop participants to act as resource persons. Support should be sought for this 'Training of Trainers' approach.
 - iii. *Tailor-made professional training* – to support continued development in areas where organizations may lack key technical capacities. This should be coupled with the development of soft skills.
 - iv. *Mentoring* - Up-scaling within organizations; for example, to support succession planning. This may involve formalising and institutionalising informal relationships that often already exist. Out-scaling the mentoring process (extending to other organizations) based on an analysis of experience gained in the project. Developing a network of organizational mentors would best serve this purpose. Appendix I gives a shared understanding of SCARDA mentorships.

- d. Setting up of a depository of training materials for agricultural research management and agricultural research methods. Knowledge hubs hosted by the FARA Secretariat and SROs may serve this purpose.
- e. Strengthening of the broker role of the SROs with regard to the demand and supply for capacity strengthening in agricultural R&D by mobilizing a greater number of potential service providers and developing a better understanding of their specific strengths and weaknesses.

From a project to a more permanent program approach

The current SCARDA program tried to mould the capacity strengthening of the 12 FIs into the same process and implement that process more-or-less within the same timeframe. This was important in order to validate the SCARDA approach. Subsequently, however, an organization should be able to enter the SCARDA program at any given time, formulate its own capacity strengthening needs, and implement the capacity strengthening activities at its own speed. Basically it means moving from a project approach to a more permanent program approach. In such an approach the SCARDA program will play an important role in bringing demand and supply for capacity strengthening together, secure the quality of services delivered, and cluster the demand in order to achieve economies of scale and scope. It will be unlikely that the SCARDA program can service all the demand for capacity strengthening and therefore will have to set: (a) clear selection criteria for organizations to enter the program; (b) the maximum volume of resources that can be made available per intervention; and (c) the length of enrolment in the program.

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Appendix

Mentorships

Shared understanding on mentoring

Mentoring as a concept has varied dimensions in its approaches and processes. However one can distinguish between individual and structural/organizational mentoring.

Individual mentorship

This is an informal mentor – mentee relationship, working together upon agreed set goals. It depends on strong trust, and open discussion of issues on a voluntary basis. There has to be mutual benefit to the mentor and the mentee. Skills are acquired easily in the individual mentoring process.

Structural mentoring

Support change of the organization and it is based on change management plans being pursued by the organization. Experiences in the regions indicate that ASARECA mentoring process has become relatively important to the change management programmes in the FIs.

Lessons from ASARECA region on mentoring

In ASARECA, during the learning workshops with the FIs, mentoring was introduced as one of the core issues in the management of organizations. The workshop discussions explored the following: supervision, mentoring and coaching. In the process, participants focused on mentoring and how it impacts on the organizational culture. Most of the SCARDA students are part of the leadership and management workshops. The idea is that when they go back to their home countries they should be able to fit into the system and pursue their career. Some of the activities that are carried out during the mentoring workshops are: development of a road map of what they will do, what a mentee should expect, qualities of good mentors, ability to listen to each other, signing contracts between mentors and mentees, and setting goals to guide the mentorship process.

Shared understanding on mentoring issues

At the SCARDA PSL 2 workshop, participants shared their perspectives on the concept and approaches to mentoring as summarized below:

- The need to adopt mechanisms to effectively integrate individual mentoring into organizational mentoring to facilitate implementation of change management
- Budgetary constraints that impede successful mentoring.
- The need to develop change management plans for organizational mentoring.
- Importance of good relationship between the mentor and mentee as fundamental in the mentoring process.
- The need to formalize relationships.
- The need for clearly defined roles among the mentor and mentee.
- The need for training and support in adopting mentoring approaches.
- The critical role that ownership plays in the mentoring process.
- The need to distil lessons learnt in mentorship engagements.
- The importance of distinguishing between supervision, mentoring, and coaching.
- The importance of the what, how, why and where in mentoring.
- The need for visionary leadership in achieving organizational mentoring.
- The need to define the roles of the service providers (i.e. as change agents) in the mentoring process.
- Culture should be taken into account in the process of mentoring.

Acronyms and abbreviations

AGRHYMET	Centre Regional de Formation et d'Application en Agrométéorologie et Hydrologie Opérationnelle, Niger
ANAFE	African Network for Agriculture, Agroforestry and Natural Resources Education
ARC	Agricultural Research Corporation, Sudan
AR4D	Agricultural Research for Development
ARI	Agricultural Research Institute
ARM	Agricultural Research Management
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
AU	African Union
CMAP	Change Management Action Plan
CORAF/WECARD	Conseil ouest et centre Africain pour la recherche et le développement agricole /West and Central African Council for Agricultural Research and Development
CRAL	Centre de Recherche Agronomique de Loudima, Congo
CS	Capacity Strengthening
CTA	Technical Centre for Agricultural and Rural Cooperation, The Netherlands
DFID	Department for International Development, UK
D-Groups	Discussion Groups
ECA	East and Central Africa
ESAMI	Eastern and Southern African Management Institute, Tanzania
FARA	Forum for Agricultural Research in Africa
FI	Focal Institution
FPR	Farmer Participatory Research
FPR4D	Farmer Participatory Research for Development
GCARD	Global Conference on Agricultural Research & Development
GIMPA	Ghana Institute of Management and Public Administration
IAR4D	Integrated Agricultural Research for Development
IER	Institut d'Economie Rurale, Mali
IPM	Integrated Pest Management
ISABU	Institut des Sciences Agronomiques du Burundi
ISAR	Institut des Sciences Agronomiques du Rwanda
JKUAT	Jomo Kenyatta University of Agriculture & Technology, Kenya
KNUST	Kwame Nkrumah University of Science & Technology, Ghana
LSP	Lead Service Provider
M&E	Monitoring & Evaluation
MTR	Mid-Term Review
NaCCRI	National Crops Resources Research Institute, Uganda
NARI	National Agricultural Research Institute, Gambia
NARS	National Agricultural Research System

NEPAD	New Partnership for Africa's Development
NRDC	Natural Resources Development College, Zambia
NRI	Natural Resources Institute, UK
NUL	National University of Lesotho
OVI	Objectively Verifiable Indicator
PICO	People, Innovation and Change in Organizations
PMT	Project Management Team
PSL	Programme-wide Strategies & Lesson-learning
RUFORUM	Regional Universities Forum for Capacity Building in Agriculture
R&D	Research & Development
SADC/FANR	Southern African Development Community/Food, Agriculture and Natural Resources Directorate
SCARDA	Strengthening Capacity for Agricultural Research & Development
SI	Satellite Institution
SP	Service Provider
SRO	Sub-Regional Organization
SUTRAD	Support Unit for Teaching, Research and Agricultural Development
UNZA	University of Zambia
UoG	University of Greenwich, UK