

STRENGTHENING CAPACITY FOR AGRICULTURAL RESEARCH AND
DEVELOPMENT IN AFRICA (SCARDA)

Working Draft 1

**SCARDA Change Management Approaches Used in the
Project 'Strengthening Capacity For Agricultural
Research and Development In Africa' and the Lessons
Learned from their Application**



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Contents

Acronyms	4
Introduction	5
Review methods to assess the SCARDA change management process	5
Project outputs	6
Project approach	6
Project implementation	9
<i>Institutional analyses</i>	9
<i>Capacity strengthening for research management</i>	9
<i>CORAF/WECARD</i>	9
<i>Agriculture research management workshops</i>	10
<i>Short courses</i>	11
<i>Mentoring</i>	11
SADC-FANR	11
ASARECA	12
Review of outcomes	14
Lessons learned	16
References	20

Acronyms

AIS	Agricultural Innovation System
ANAFE	African Network for Agro-forestry and Education
AR4D	Agricultural Research for Development
ARC	Agricultural Research Council (of South Africa)
ARM	Agricultural Research Management
BCA	Botswana College of Agriculture
CAADP	Comprehensive Africa Agriculture Development Programme
CBO	Community Based Organisation
CCARDESA	Centre for Coordination of Agricultural Research and Development for Southern Africa
CMAP	Change Management Action Plan
DAR	Department of Agricultural Research
DFID	Department for International Development (UK)
DFS	Department of Field Services
DPPA	Department of Planning and Policy Analysis
DST	Department of Science and Technology
FANR	Food, Agriculture and Natural Resources programme of SADC
FARA	Forum for Agricultural Research in Africa
FI	Focal Institute
FPR	Farmer Participatory Research
IA	Institutional Analysis
ICART	Implementation and Coordination of Agricultural Research and Training (project under SADC-FANR)
LAC	Lesotho Agricultural College
LECCARD	Lesotho Centre for the Coordination of Agricultural Research and Development
LNWMGA	Lesotho National Wool and Mohair Growers Association
MAFS	Ministry of Agriculture and Food Security
MoU	Memorandum of Understanding
NARS	National Agricultural Research System
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organisation
NRI	Natural Resources Institute
NRM	Natural Resource Management
NUL	National University of Lesotho
NUL-FA	NUL Faculty of Agriculture
PS	Principal Secretary
RSDA	Rural Self-Help Development Association
RUFORUM	Regional Universities Forum for Capacity Building in Agriculture
SADC	Southern Africa Development Community
SCARDA	Strengthening Capacity for Agricultural Research and Development in Africa
SRO	Sub-Regional Organisation
SWOT	Strengths, Weaknesses, Opportunities and Threats method

SCARDA Change Management Approaches Used in the Project ‘Strengthening Capacity For Agricultural Research and Development In Africa’ and the Lessons Learned from their Application

Introduction

In 2005, the Forum for Agricultural Research for Africa (FARA) commissioned an assessment of the human and institutional capacity for research management in the National Agricultural Research Systems (NARS) in sub-Saharan Africa. The assessment identified significant weaknesses limiting relevance and responsiveness of NARS in agricultural development of Africa and recommended the need for new approaches and innovative initiatives to address these critical capacity deficiencies. The FARA review was consistent with other contemporaneous studies that identified the need for NARS to move away from a predominantly supply driven approach with minimal regard for the needs of end-users (e.g. farmers, agro-processors, traders) and to embrace approaches that fostered wider partnerships (e.g. Mbabu and Ochieng, 2006).

In order to respond to the need to strengthen agriculture research, FARA conceived the project¹ on *Strengthening Agricultural Research and Development in Africa* (SCARDA) with the purpose of strengthening ‘the human and institutional capacity to ensure that the NARS are better able to identify, generate and deliver research outputs’. A scoping study undertaken in a number of sub-Saharan countries at the beginning of the project confirmed that serious weaknesses in agricultural research management were prevalent in many national agricultural research institutes (NARIs), agricultural training colleges and faculties of agriculture (FARA, 2007). Deficiencies were identified at the organizational level in relation to shortcomings in management systems and specific management competencies, and at the individual level with lack of capacity of researchers to meet the requirements of new ways of working with a wide range of stakeholders.

In developing the SCARDA project proposal, significant emphasis was placed on resolving shortcomings in research management through a programme of capacity strengthening activities. This article reviews the approaches proposed by SCARDA to address capacity strengthening for research management, how implementation took place and the lessons learned from the implementation activities. It begins with an overview of the intended project outputs and approach to capacity strengthening, followed by the implementation processes as undertaken in each sub-regional organisation and finishes with the lessons learned.

Review methods to assess the SCARDA change management process

This review of project implementation and lessons learned used information gathered from published reports and grey literature generated by:

- SCARDA project activities e.g. planning meetings, training and lesson learning workshops, institutional analysis;
- consultants hired by DFID to review project progress and completion;
- consultants hired to assess outcomes at the following selected National Agriculture Research Institutes (NARIs), after the finish of SCARDA.

This was accepted for funding by the Department for International Development and ran from 2008 to 2011.

In the latter, a case study approach was adopted to assess the outcomes of the change management processes employed in three (out of twelve) participating research institutes, namely:

- o Faculty of Agriculture, National University of Lesotho (NUL-FA);
- o National Agricultural Research Institute (NARI), Gambia;
- o Agricultural Research Corporation (ARC), Sudan.

The consultants used a range of evaluation methodologies including document review, interviews, testimonials, groups discussions and participatory workshops (using methods such as time line analysis, most significant change method,) to assess the challenges faced in implementing the project and the benefits accrued.

Project Outputs

The Project, coordinated by the FARA Secretariat, was implemented in accordance with the “subsidiarity principle” by three sub-regional organizations (SROs): Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), Conseil Ouest et Centre Africain pour Recherche et le Développement Agricole/West and Central African Council for Agricultural Research and Development (CORAF/WECARD) and the Southern African Development Community - Food, Agriculture and Natural Resources Directorate (SADC-FANR). The implementing SROs were each supported by a lead service provider (LSP) and other service providers (SPs) all competitively engaged to deliver on specific and tailor-made capacity strengthening activities: backstopping support was provided by the Natural Resources Institute of the University of Greenwich, United Kingdom.

The project had four outputs (Figure 1), with Output 1 focusing on capacity strengthening to improve research management, with Output 2 aiming to deliver short courses that could include topics to enhance skills in improving research capacity and improving research skills through MSc studentships.

Project Approach

The devolved management approach mandated each SRO with the responsibility to undertake their own planning and implementation of capacity strengthening activities which targeted selected national agricultural research institutes (NARIs), hereafter called focal institutes (FIs), in each of the three sub-regions (Table 1).

A key aspect in selecting the FIs was their own appreciation of their role in the SCARDA process in relation to:

- commitment to institutional change;
- ability to conduct a capacity strengthening programme;
- provision of time of participating staff;
- capacity to host regional courses;
- willingness to share experiences and participate in lesson-learning regional platforms.

At the outset of the project, a key project document, the SCARDA Inception Report (FARA, 2007), was produced to guide the SROs in developing their capacity-strengthening programme for research management. As a starting point it identified the following key approaches (Figure 2):

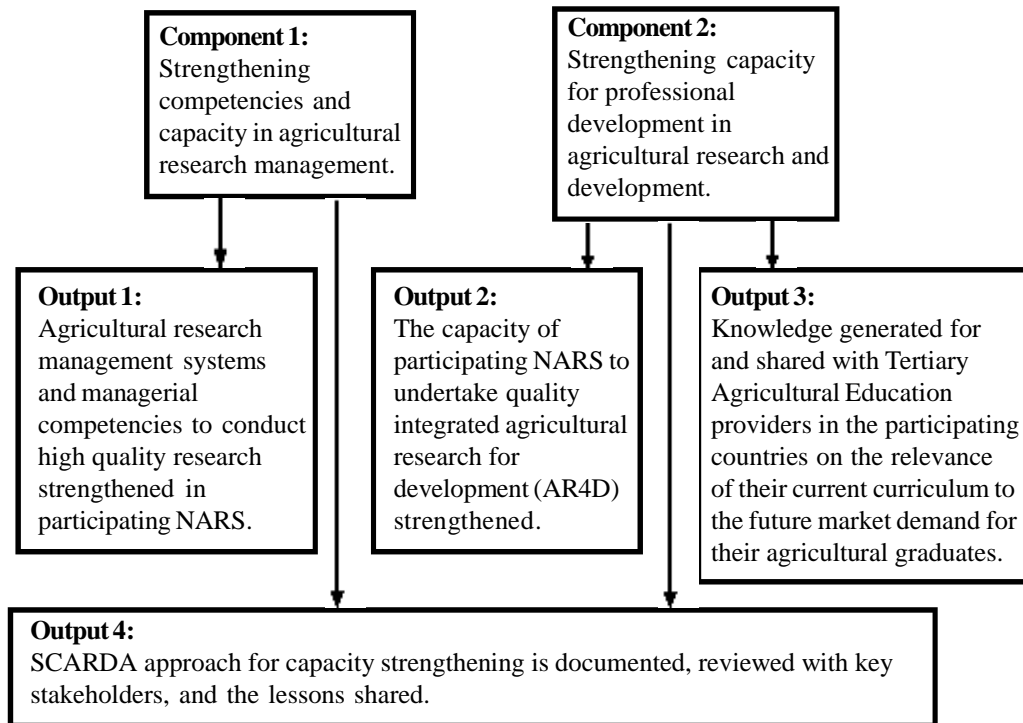
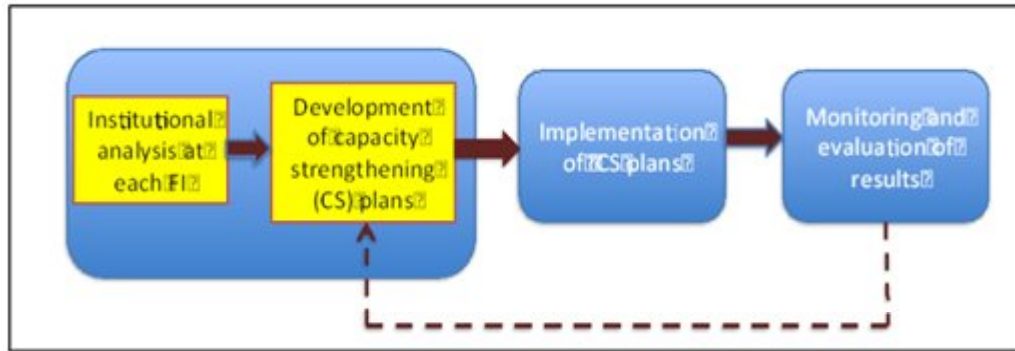


Figure 1. SCARDA Project Outputs.

Table 1. Agricultural research institutes participating in SCARDA

CORAF/WECARD	ASARECA	SADC-FANR
Institut d’Economie Rurale (IER), Mali	Institut des Sciences Agronomiques du Rwanda (ISAR)	University of Zambia (UNZA) - School of Agricultural Sciences
Crops Research Institute (CRI), Ghana	Institut des Sciences Agronomiques du Burundi (ISABU)	Natural Resources Development College (NRDC), Zambia
National Agricultural Research Institute (NARI), The Gambia	Agricultural Research Corporation (ARC), Sudan	National University of Lesotho (NUL)
Centre de Recherches Agronomiques de Loudima (CRAL), Congo-Brazzaville		Department of Agricultural Research (DAR), Botswana Botswana College of Agriculture (BCA)



Source: Adapted from FARA (2007). Inception Report. Volume 1.

Figure 2. Capacity strengthening processes for research management

- weaknesses in agricultural research and development systems are to be addressed as **change management processes** through **targeted capacity strengthening interventions at the institutional level**, provided these are carefully planned and are holistic in nature, and not piecemeal in approach;
- **organisational development and change** – not just maintenance and replacement of capacity;
- the first critical stage is **Institutional Analysis** to understand the existing operations of the Focal Institutes and identify organisational and individual capacity strengthening needs;
- following on from the institutional analysis and other planning meetings at the SRO level, a **capacity strengthening plan(s)** should be developed;
- the institutional analysis and capacity strengthening planning is done in a participatory manner which **empowers the Focal Institution to develop, implement, monitor and evaluate its own capacity strengthening programme** and which will improve its performance in a pre-determined and measurable way;
- **regional learning** approach with core training and planning activities bringing together the FIs from the target countries in a learning process and with staggered learning and re-appraisal workshops, interspersed with practice and supported with mentoring.

In particular, the change management process in the Focal Institutions needed to address the following elements:

- awareness of why the change is needed;
- desire to support and participate in the change;
- knowledge of how to change;
- ability to implement new skills and behaviours;
- reinforcement to sustain the change.

The ethos guiding the SCARDA project was to move away from a traditional ‘blue-print’ project with a clearly defined set of activities at the outset, to more of a ‘process’ project with a clear overall purpose (capacity strengthening), but with specific activities to be further defined, during implementation, at the local level. Finally, a key element of change management in each SRO is the need for capacity strengthening for both men and women scientists in gender analysis and to inculcate institutional changes that will ensure that women have equitable career opportunities.

Project implementation

Institutional analyses

A key element to achieving the success of the SCARDA approach was predicated on the quality of the institutional analysis and the keenness of the FI to introduce change. Therefore, the institutional analysis had to:

- have full buy-in of all senior managers and engage all of the staff of the FI;
- create local ownership of the project;
- be grounded in real management challenges;
- primethe FI for change to raise the chance of impact.

More detailed outcomes of the institutional analyses are presented in a review (Chancellor *et al.*, 2011) but results confirmed the level of challenges in addressing the inherent weakness in research management in all of the FIs.

It also revealed the tremendous desire, at all levels, for change and a realization that, *in extremis*, the very future of research organisations is at stake if change does not occur. One of the key issues arising from the institutional analysis in enhancing the research capacity of the Institute was the need to identify the appropriate mix of training, mentoring and influencing institutional management structures to ensure that long-lasting change takes place.

Capacity strengthening for research management

As highlighted above, the subsidiarity principle adopted by SCARDA meant that each SRO was free to develop its own approach to capacity strengthening for research management. The following highlights the approaches taken in each of the SROs.

CORAF/WECARD

Based on the findings of the FI institutional analyses and stakeholder planning meetings, CORAF initiated a change management process (Figure 3) that encompassed a blended programme of capacity strengthening workshops, short courses and mentoring.

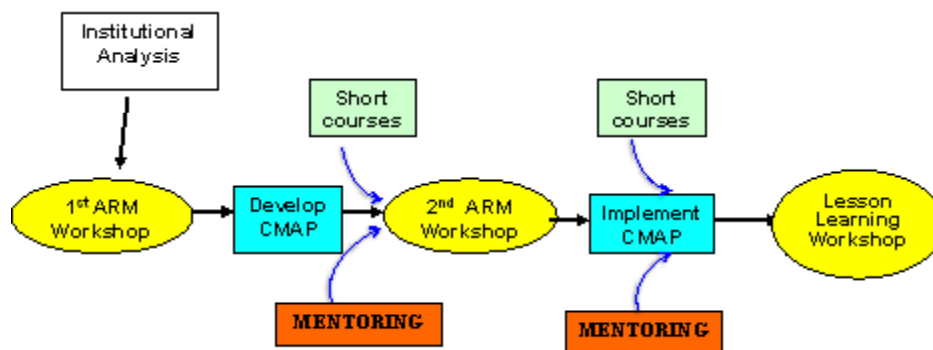


Figure 3. Capacity strengthening in research management

Agriculture research management workshops

Two regional agriculture research management (ARM1 and 2) workshops were convened and attended by a change management team from each of the FIs. The FI teams of four staff members included senior managers, up to director level.

ARM 1 workshop introduced the concepts of managing a research organisation and its staff, and included overviews of the following topics:

- Identifying and managing change;
- Applying different approaches and models to research management;
- Applying relevant skills and techniques to planning in agricultural research;
- Business winning;
- Managing institute finances, budgets and procurement activities;
- Managing people and leadership;
- Organisational performance management;
- Communicating effectively within and outside the research organisation.

In addition, the participants were asked to identify and discuss key areas for institutional capacity strengthening in research management, and were introduced to the concept of putting these into Change Management Action Plans (CMAPs) for their respective FI.

Prior to the second ARM, each FI team discussed the CMAPs to staff within their own institutes with support from external mentoring. The second workshop was in reality more of a write-shop in which the same participants from ARM1 came together to discuss, refine and complete their CMAPs. This included identification of the goals of their plans and their respective capacity strengthening needs (e.g. short courses, mentoring) and budgetary requirements to support the implementation of the CMAPs, e.g. hiring local service providers to deliver training and mentoring. The regional nature of the workshop provided a favourable environment for wider sharing of ideas and issues and an opportunity for peer review of the CMAPs.

The capacity strengthening activities (e.g. short courses – see below) of the CMAPs were integrated with other aspects of the SCARDA project including a range of formal training (MSc and short/medium courses) for researchers and technicians to boost the quality of science (Output 2), and scoping studies to assess the supply and demand for agricultural graduates (Output 3).

The final ARM workshop brought together key participants from each of the FIs to:

- document the range of activities that were undertaken by each organization beginning with the institutional analysis through to the development and implementation of the CMAPs;
- review the approaches and lessons learned from the activities undertaken;
- map the way forward:
 - to assess key lessons learned from the ‘SCARDA’ process that have been or will in future become part of FI organizational plans and processes;
 - to make recommendations that would aid capacity strengthening of research and research management at the regional level – what are the key messages that could be delivered to third parties e.g. non-participating NARIs in other countries, donors or regional organisations.

Short courses

A number of short courses (typically five days duration) were run by local and international service providers at the FI level in a range of subject areas including proposal writing, marketing and public relations, advocacy, strategic planning and advocacy, project monitoring and evaluation, change management and institutional reform. Although targeted for staff at each FI, staff from other parts of the national agriculture research system attended the courses.

Mentoring

Local and international organisations were contracted to provide mentoring support in order to advise, orientate and assist the FI management team and staff in their change management process. The specific objectives of the mentoring were to:

- i) Establish a clear understanding of what constitutes mentoring.
- ii) Determine the reciprocal roles of the mentor and mentee.
- iii) Define the focus of the mentoring support.
- iv) Fine-tune CMAPs to reflect coherence with organizational goals.
- v) Identify capacity gaps and required mentoring support.
- vi) Enhance the change management capacity of participants.

In addition to general support (both at the individual and organisational level) to the change management process, mentoring support was also centred on a key theme identified by the FI, such as procurement of funds.

SADC-FANR

SADC-FANR followed the same approach as the CORAF/WECARD sub region in addressing capacity strengthening for research management (Figure 1). This arose because the SCARDASADC programme manager attended the first ARM work in CORAF/WECARD. Senior managers (including Deans, institute directors, programme managers) of the FIs attended the ARM and lesson learning workshops. An additional workshop was held for wider dissemination to SADC representatives (attended by Directors of agricultural research institutes and Deans of Faculties and Colleges of Agriculture from thirteen SADC Member States). In this workshop, the participants highlighted the importance of the innovation approach for partnerships in research and development.

Although, the topics in the ARM workshops were similar to that in CORAF/WECARD, the supporting short courses and mentoring were adapted to the needs of each FI as identified in their institutional analyses. The short courses addressed farmer participatory research, innovations systems, change management, communications, partnership strategies, project monitoring and evaluation, and gender mainstreaming.

Of particular note was the emphasis placed by the FIs on receiving training courses in partnerships (farmer participatory research and innovation systems), which produced a significant change in how the FIs approached research management (further discussed below)

ASARECA

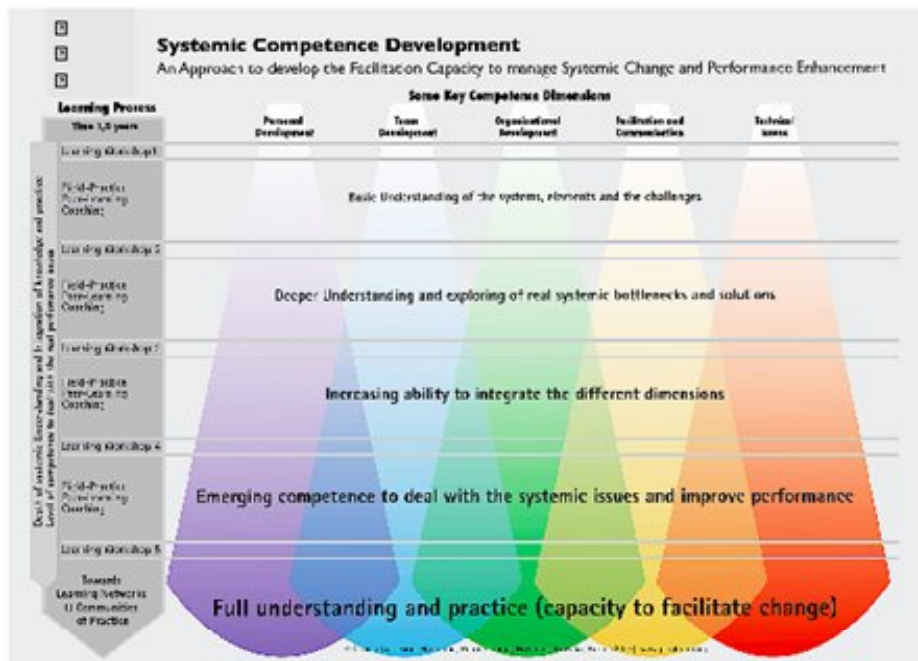
Recognising the challenges of identification of service providers and timely delivery of project activities, ASARECA adopted the approach of selecting one service provider to deliver a programme of capacity strengthening for agricultural research management.

The contracted service provider proposed a comprehensive agricultural research management capacity development initiative that addressed priority areas identified in the institutional analyses (Figure 4). Their approach of systemic competency development embraces the principle of change management through engaging people in learning processes in how to perform their jobs better. The capacity strengthening activities would entail a series of five workshops that covered the following competency areas for research managers:

- the foundation competence: facilitation for change;
- managing research for development and quality science;
- facilitating partnerships and impact;
- managing organizations / units / teams; and
- managing self – self-development for leadership.

Implementation of the programme would take the following form :

1. Design workshops aimed at defining participants, identifying capacity needs, profiling of current human resources and of the institutional architecture. The approach would be to work towards strengthening not just the target individuals, but also the teams and organization of which they are part.



Source: PICO (2010). Final technical report.

Figure 4. Schematic presentation of capacity strengthening process in the ASARECA region.

2. The information collected from the design workshops would be used to design the capacity building programmes for each FI.
3. A joint learning workshop would be conducted for all the identified 'trainees', which would be the platform for training on leadership and management concepts and approaches.
4. Subsequent to the design workshop, there would be a series of face-to-face sessions with trainees at their home organizations, allowing interactions with supervisors and senior managers.
5. The establishment of peer learning groups would be facilitated. These are small, local groups that would meet on a regular basis to reflect systematically on the outcomes, difficulties and challenges faced during implementation of what they have learnt.
6. In addition to the mentoring and coaching sessions with the target individuals, time would be spent working with the senior managers of the host organizations facilitating the development of organizational systems that aim to enhance functionality, efficiency and effectiveness, paying special attention to the creation of organizational culture that catalyses and promotes learning and provides space for independent thinking and growth.
7. Feedback sessions with senior managers through both face-to-face and electronic and aim to ensure a continuing enabling work environment for staff growth as well as identification of new developments in the work environment as well as opportunities and challenges, both internal and external, for the trainee, the team and the organization.
8. Towards the end of the project, a joint workshop to consolidate learning would be held, attended by both trainees and managers of their organizations.

Following on from the institutional analysis in the region, the first design workshops on detailed needs assessments were undertaken at ISAR, ISABU and ARC in 2009. This was followed by only two of the five learning workshops at each of the three organizations between November 2009 and February 2011 because of a shortage of time. The key topics covered in the workshops were working in a team, communication, business winning, working with farmers, management skills, monitoring and evaluation, scientific writing. A number of management tools were introduced, including:

- Feedback; principles and rules;
- Motivation, principles and practice;
- Situational management framework;
- Mentoring & Coaching framework;
- Personality styles/drivers and how these influence how we work;
- Time management framework.

A final regional workshop was held in which managers from all three institutions were brought together for sharing lessons and to develop further their management and leadership skills.

Mentoring

In ASARECA, a potentially more sustainable approach to mentoring was developed by having training sessions in mentoring in order to embed the process and skills in the FIs. The concepts of mentoring and coaching were introduced in all three FIs during the training workshops, accompanied by the development of strategies for integrating a mentoring and coaching culture in the organizations. Peer learning groups were formed for mentoring and coaching in the FIs. In all the FIs, mentees identified mentors, the pairs were trained (through mentoring orientation workshops held in all FIs) and a long-term mentoring program was launched.

Review of outcomes

The consultant hired by DFID to undertake a final review of the project reported that the FIs had benefited from training in agricultural research management, from support in developing their Change Management Action Plans, and from mentoring. A total of 580 FI staff had attended training courses, tailored to their needs, to enhance their research management skills in areas such as strategic planning, monitoring and evaluation, and writing research proposals to secure funding. Mentoring of individual staff in the FIs has been introduced with over 100 managers and other staff participating. There is an indication of an increasing use of mentoring in the FIs, and greater emphasis on leadership and team building, performance management and communication. All of these new practices are framed within a better understanding of change management principles and practices. The approval rate for research management training and mentoring was well over 90% of the participants.

The particular features of the SCARDA approach that received the greatest approval 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 final review reported that the project had been successful in putting in place some of the major building blocks on which agricultural research could be improved. Awareness of the issues has been raised and 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. However, it recognised that a further programme of capacity strengthening support is required, not only to build upon and re-enforce the successes gained by the FIs through SCARDA, but to scale up to include other parts of the national agricultural research system to achieve wider developmental impact.

Looking at case study reports, it was apparent that a range of analytical tools, and approaches were used or introduced during both the institutional analysis and change management training processes (see Table 2 for feedback from SADC participants). The whole process was deemed by these participants in SADC to be both inclusive and participatory, with a range of NARS stakeholders invited to each event.

A review of exit questionnaires from a range of research management workshops and short courses showed a high level of satisfaction at the individual participant level with the events held. This finding was backed up by case studies, which produced a number of testimonies that illustrated the skills gained at the personal level and how they would be used:

Team Building workshop. *"I learnt how to relate to people. I am applying the skills acquired in policy formulation and lobbying for funding as the Acting Director of Research and Graduate studies at NUL." Prof W.O. Odenya (NUL-FA).*

Agricultural Innovation Systems training course. *"We learnt skills on stakeholder mapping and analysis including conducting institutional/organizational needs assessments. These skills are essential to guide demand driven research to promote the*

Table 2: Inventory of tools, concepts and approaches introduced by SCARDA through Institutional Analysis and Change Management processes

Analytical tools	Approaches for research management
Participatory Rural Appraisal Monitoring and Evaluation Stakeholder analysis Stakeholder mapping Value chain analysis Institutional analysis (together with scoping study) Timelines Force Field Analysis Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis Capacity needs analysis	Farmer Participatory Research Agricultural Innovation Systems Mentoring Value chains Working with the community Change management Team building and sustaining partnerships in research

Source: Anon. (2011b). Case study report for Lesotho

development of the agricultural sector.” Ms Matsikoane Motloli & Ms Rethabile Nchee (DAR).

Change Management workshops.”The concept of partnerships among NARS was introduced through SCARDA and led to the launch of the Lesotho Journal and Society of Agricultural Sciences as platforms for sharing information among stakeholders involved in AR4D.” Dr S.F. Moete (NUL-FA)

At the organisation level, participants viewed one of the key outcomes of the research management training is their increased understanding of the role of linkages and partnerships:

“The most significant change has been on networking and partnerships. This has led to promoting consultation and communication between the office of the Minister, Principal Secretary and the Dean of the Faculty of Agriculture on issues related to agricultural policy. This has occurred as a result of SCARDA training workshops, such as the ARM, Team building and leadership skills.” Nick Mokhothu (NUL-FA).

“Practical example with implementation of constructive feedback between my staff, this positively reflected in their outputs and their improved skills and creating competitive and friendly working environment. Feedback is also adopted by myself as the Director of Land and water research Centre through timely reporting to the DG.” Programme Director (ARC).

“The most significant change introduced by the project has been the involvement/ interaction with farmers in the development of extension materials for farmers. This approach is fundamental for technology uptake by farmers.” Matsikoane and Letuka Mohapi (Department of Field Services, Lesotho).

“I have acquired knowledge and skills to involve communities in conducting research aimed at addressing farming problems through the FPR training. I have also acquired skills in proposal writing for donor funding from a SCARDA short course on proposal writing.” Puseletso Likoetla (Lesotho Agricultural College).

Of particular note are the positive outcomes from other non-FI organisations in the SADC-FANR region, which appears to be a result of their emphasis on training in approaches to partnerships in research. Further analysis of the case study reports and other sources of information endorsed the above testimonials in demonstrating positive changes at the organisational level (Table 3). These changes became evident during SCARDA and have continued after the end of the project as shown.

In addition to FI staff benefiting from participating in ARM workshops and short courses, the early career researchers who were sponsored by SCARDA to undertake MSc programmes also increased both their research and professional skills (Box 1).

Box 1. Testimonial from Habonayo Gloriose (ISABU, Burundi) on the personal and organizational benefits from her SCARDA-sponsored MSc Training

The training has impacted a lot on my professional career. I have gained confidence and improved my research planning and research conduct as well as report writing and presentations. During the training, I attended learning and mentoring workshops where I got new knowledge's in coaching and mentoring concepts as well as knowledge in leadership management. In fact, collaboration and communication with my boss and colleagues has improved. In addition, researchers now elaborate projects together and after implementation, data collection and analysis, we are going to publish the results.

My training has been profitable to my research institute and overall to my country. I use my knowledge to elaborate research projects which are multidisciplinary and inter-regional. Researchers from different programmes and components sit together and develop projects to submit to donors. The Belgium Government has funded one project to improve the livelihood of farmers. The training has also been helpful to my colleagues' research through the sharing of knowledge.

I would like to suggest that the training programme is continued so that our institute and our country can advance.

One area that appeared to under-reported were gains made in capacity strengthening for both men and women scientists in gender analysis and institutional changes to improve women's position in the FIs. Data had been gathered on women's participation in SCARDA and this has been the subject of further analysis in a review undertaken by Forsythe and Martin (2011).

Lessons learned

SCARDA has initiated the transformation of the NARS, but as this is still in progress and gains are fragile and continued support is required for further consolidation at the FIs and beyond.

Whilst agreeing with the subsidiarity principle for managing the project, FI stakeholders viewed the project as complex, with long lines of communication and funding (DFID – FARA – SROs – FIs – NARS partners). This was further compounded by the project suffering from a high level of bureaucracy (e.g. the complex tendering processes for service providers). It will be important to institute transparent and effective communication and administrative procedures to ensure the efficient and timely execution of any future large Africa-wide and multi-stakeholder capacity strengthening project.

Table 3. Change outcomes at the organisational level from research management training

Country/FI	NARI change	Progress beyond SCARDA	Sources of information
Botswana DAR BCA	<p>Joint planning to strengthen farmer participatory research.</p> <p>Formation of innovation platform for smallholder goat keepers.</p>	Innovation platform progressed with formation of national small stock federation and budget/ policy support from Ministry of Agriculture	Anon. (2010a) Hillocks and Orchard (2011)
Lesotho NUL-FA	<p>Establishment of the Lesotho Centre for Coordination of Agricultural Research and Development (LECCARD). Launch of the Lesotho Journal of Agricultural Sciences and the Society.</p>	<p>Adoption of the LECCARD Strategic Business Plan by NARS.</p> <p>Action plan for the establishment of the LECCARD board.</p>	Mokhuto <i>et al.</i> (2011)
Zambia NRDC ZUL	<p>Use of new ideas in changing teaching curricula.</p> <p>Formation of partnerships to develop cassava innovation platform.</p>	<p>Students are using value chain analysis in research topics</p> <p>Cassava Sector Strategy Steering Committee to develop cassava innovation platform</p>	Anon. (2010b) Hillocks and Orchard (2011)
Congo CFRAL	Office of the Minister for Scientific Research and Technical Innovation formed a team to re-organize whole of NARS to create Agricultural and Forestry Research Institute (AFRI)	A draft medium and long term strategic plan for AFRI developed and adopted	Ojijo (2011)

Country/FI	NARI change	Progress beyond SCARDA	Sources of information
Gambia NARI	Business winning team formed. New organisational systems introduced covering human resource management systems, procedures and practices; accounting practices, project financing and business winning.	Two out of five proposals written in 2011 were successful. Increased partnerships in NARS e.g. joint research between NARI and agro-business enterprise to manufacture rice seeder and thresher	Anon. (2011)
Sudan ARC	The establishment of peer learning groups with action plans in key areas of interest. The creation of mentor-mentee groups.	Research partnerships developed in Kordufan region. ARC hosted a meeting of universities and public private research organisations to discuss coordination efforts	Pico (2010). DFID review report
ISABU	Change management teams formed and trained to guide institutes strategic planning process		Pico (2010).
ISAR	Revision to programme and project planning templates	Planning Director has reported more effective participation from colleagues in both planning and reporting	DFID review

Institutional Analysis and Change Management processes were found to be important in raising understanding across the NARS of the limitations in agricultural management within the context of national agricultural research systems and in identifying ways to address weaknesses and limitations.

All of the participants and reviewers of SCARDA considered institutional analysis a key step in the project process towards delivering capacity strengthening. The rigor and breadth (with participation of all staff and external stakeholders) of this analysis very much determined key aspects of the subsequent CMAPs formulated by the FI and the relevance of the developed capacity strengthening strategy and programme. Another observation is that the institutional analysis should not have been a one-off activity but part of a more current/continuous process associated with annual organisational evaluation and planning activities. There was also a need to maintain momentum between the institutional analysis and the planning processes, which was lacking in some FIS and hampered the smooth execution of subsequent programme activities. In some countries, the participants indicated that the original institutional analysis had been rushed and did not provide enough time for the senior managers of the FIs to reflect on identified activities and align them to the needs of other NARS organizations involved in research and development.

The implementation of change management tools such as institutional analysis and CMAPs by the FIs required commitment and involvement by senior management of the FIs, as well as higher levels of authority (Ministry of Agriculture, Ministry of Higher Education, Ministry of S&T, etc.). This entailed a great deal of sensitizing the key decision makers in relation to the project goal and the objectives of the CMAP and getting them on board to support the FIs. Success with the implementation of the CMAP depended heavily on involvement and buy-in from managers at the most senior level.

The CMAPs were seen as an important approach to formulating capacity strengthening into a project-type process to identify and manage the training in research management to be undertaken by the FIs. It also helped to provide a focus for identifying and co-ordinating further training needs (through short courses) and the type of mentoring required. In this way SCARDA capacity strengthening was seen as a fully integrated process rather than a piecemeal series of training activities. This observation points to another issue and that is whether capacity strengthening is a one-off project-driven intervention or a more permanent function of an organization. If the latter, it will be necessary for FIs to consider regularly updating the institutional analysis and the capacity-strengthening strategy as part of their annual planning cycle. The SCARDA approach aimed to ensure that the FIs introduced a more permanent culture of regular updating their institutional analysis and capacity strengthening strategy, but there was no evidence to suggest that this was universally adopted. However, some FIs, such the CRI (Ghana) and NUL-FA (Lesotho) had, at the outset, aligned their CMAPs to their organisation's strategic plan.

In terms of topics used to enhance research management, SCARDA introduced innovation systems thinking as a new paradigm to research management, which emphasizes bringing together all stakeholder that collectively demand and supply knowledge for research and development. Senior managers attending lesson-learning workshops held in CORAF and SADC appreciated the potential offered by the innovation system approach in making research more relevant and demand. Indeed in the SADC region, the FIs had been active in taking this approach forward after the end of SCARDA, with the setting up of innovation platforms for cassava (Zambia) and goats (Botswana). The latter received support from the Ministry of Agriculture to facilitate the development of the innovation platform to support resource poor goat owners. This highlights the need for policy makers to be made aware of new approaches and their potential for delivering research and development. Notwithstanding the enthusiasm by the FIs to take forward the innovation platform approach, it is apparent that further capacity strengthening is required to consolidate this first step, particularly in the area of training facilitators.

The lesson learning workshops and various reviews clearly identified the benefits to individuals of the training provided through SCARDA. However, for significant and institutional change there is a need for long-term institutionalization of the various aspects covered by SCARDA such as strategic planning, performance management and mentoring. Furthermore, there was recognition from external reviewers that the SCARDA approach had the potential to deliver significant change in research management but a longer project time-scale is required.

SCARDA highlighted the potential taken by an 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 research organisation and their staff 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. It is therefore important for governments and donors to look more widely at the resource base and infrastructure of the agriculture research

and extension systems to ensure they are fit for purpose and can benefit from future capacity strengthening support.

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