

AN APPROACH TO CAPACITY STRENGTHENING IN THE EMERGING AGRICULTURAL KNOWLEDGE SYSTEMS

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Abstract

Traditional capacity strengthening for agricultural research in Africa has been piecemeal, supply-driven and without due regard to the varied agricultural sector stakeholders and their interactions. Recently, a holistic approach to capacity strengthening taking cognizance of the multi-level nature of capacity within organizations and emerging agricultural knowledge frameworks was piloted by the Forum for Agricultural Research in Africa in ten sub-Saharan African countries. The key features of this approach, some anecdotal feedback on immediate outcomes and lessons learnt are presented in this article.

Agricultural Research Capacity Mix and Knowledge Frameworks

Agricultural research in Africa traditionally resided in government-supported organizations comprising universities and research stations. In this set up, the capacity mix for agricultural research included human (research scientists, technicians, and research students), infrastructural (equipment and laboratory space) organizational (administrative and governance structures) and institutional (culture, habits, and norms) capacities that combined to produce research packages for onward dissemination to farmers. This was a fairly academic and closed system in which research packages were produced with minimal interaction with other stakeholders in the sector and is commonly known as the linear model of agricultural technology transfer (Mouton and Bailey, 2005). Farmers were treated as passive recipients of technology, which they were expected to adopt without any regard to their compelling needs. With hindsight, it is now apparent that this top-down approach to research was a central reason Africa missed the bandwagon of the Green Revolution.

Currently, private sector and farmer-based research organizations are gaining increasing prominence, even in Africa, prompted by market-led innovations along the agricultural commodity value chains. The emergence of the value chain approach and recognition of the fact that effective agricultural research needs to engage the various actors in the sector has led to a progressive elaboration of the so-called agricultural knowledge frameworks. Frameworks provide grounding for anchoring development initiatives like capacity strengthening, and they may also serve as constructs for evaluating the impacts of such initiatives. According to Rivera (2006), four kinds of agricultural knowledge frameworks have evolved, almost sequentially, as follows: the national agricultural research institutes (NARI), the national agricultural research systems (NARS), the agricultural knowledge information systems for research and development (AKIS/RD), and, more recently, the agricultural innovation systems (AIS). Thorough discussions on these frameworks have been published

elsewhere by the World Bank. Suffice it to say here that they all embrace stakeholder engagement to varying degree, yet differ in subtle ways regarding emphasis on either knowledge generation or knowledge valorization (innovation).

The interaction dynamics among actors in the agricultural knowledge frameworks are necessarily non-linear and characterized by additional aspects of functional capacity mix (as opposed to the linear technology transfer model), thereby demanding a completely different approach to capacity strengthening. In this article, an approach to developing agricultural research capacity piloted by the Forum for Agricultural Research in Africa (FARA) is presented. The approach embraces current thinking in capacity development cycles and has potential applicability in other parts of the developing world and other sectors of national economies.

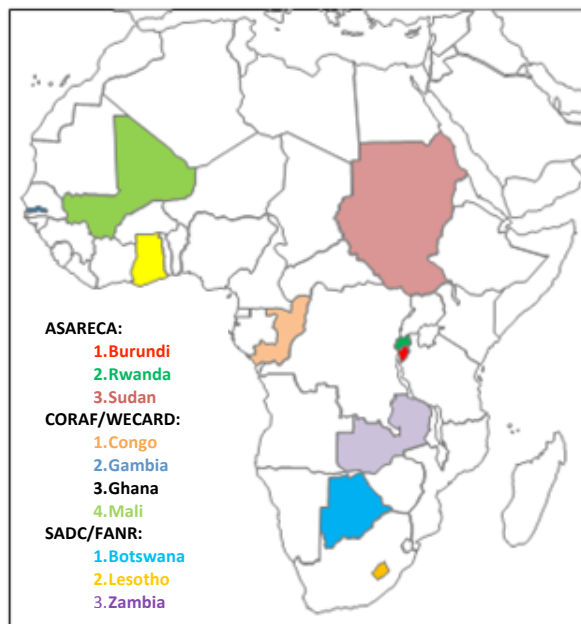
The SCARDA Approach to Agricultural Research Capacity Strengthening

Origins, structure and scope

In 2007, FARA, the apex body for coordinating agricultural research and development in Africa, launched the programme dubbed, “Strengthening Capacity for Agricultural Research & Development in Africa – SCARDA”. The programme was supported by the Department for International Development (DFID, UK) with the purpose of improving the capacity and performance of participating NARS in key areas of their agricultural research for development functions.

SCARDA was necessitated by the findings of a report on the African NARS assessment study commissioned by FARA in 2005 that revealed serious lack of continental agricultural research capacity.

The design of the programme was informed by the need for balanced strengthening of the capacity mix in agricultural research organizations and the prevailing consensus in development cycles that effective capacity development interventions must recognize the need for ownership, endogenous processes, transformational change, and multi-stakeholder involvement (OECD, 2006).



The programme was coordinated by FARA and implemented, based on the principle of subsidiarity, by the three sub-regional organizations of Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), West and Central African Council for Agricultural Research & Development (CORAF/WECARD) and the Food, Agriculture and Natural Resources Directorate of the Southern Africa Development Community

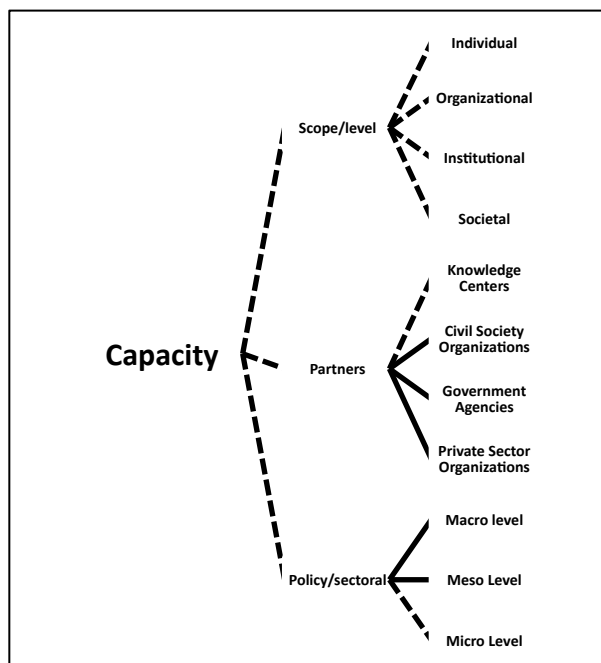
(SADC/FANR). A total of 12 target or focal organizations (research institutes and agricultural colleges

and universities) spread out in 10 countries of Sub Saharan Africa (Fig. 1) were selected for SCARDA intervention.

SCARDA was implemented both as a pilot (to be up- and out-scaled to other agricultural research organizations in the future depending on its success) and process (constant lesson learning to allow for necessary adjustments in subsequent implementation of activities) programme. The basic theoretical framework was the NARS (at least in the initial stages) with the AIS concept gaining significant ground in the latter stages of the project specifically in the SADC/FANR (now the Coordination Centre for Agricultural Research & Development in Southern Africa - CCARDESA) sub region.

The SCARDA Approach

SCARDA set out to strengthen research management systems and managerial competencies of the participating agricultural research and training organizations as well as the capacity to undertake quality integrated research with other research organizations within the NARS. The relevant elements of capacity included in the programme are illustrated by the dotted lines in Fig. 2. Thus, SCARDA attempted a ‘holistic’ approach to agricultural research capacity strengthening with distinguishing features as follows:



attempted a ‘holistic’ approach to agricultural research capacity strengthening with distinguishing features as follows:

- a. Participatory institutional analysis of the focal organizations that revealed the capacity needs and informed the design of the project
- b. A combination of tailor-made individual trainings (i.e. technician courses and postgraduate training at MSc level) in identified capacity deficit areas and modular packages of refresher trainings for established research professionals
- c. Organizational change effected through implementation of self-developed change management action plans (CMAPs) based on either ‘attitudinal and mind set changes’ or strengthening of ‘managerial

and technical skills competencies’

Figure 2: Capacity components addressed by SCARDA

- d. Inclusive and participatory approach within the organizations that helped build understanding and established a sense of ownership and managerial buy-in in

mapping out the change pathway

- e. Individual and organizational mentoring and the use of team based approaches to solving problems and moving forward
- f. Lesson learning, through the learning platforms at organizational, sub-regional and continental levels, which afforded ‘space’ for reflection and inclusion of emerging ideas in programme implementation

- g. Encouragement of spillover and contagion effects on other satellite organizations within the NARS and establishment of collaborative linkages
- h. Open and frequent communication across the project

As a result, the stakeholders and partners were able to define the SCARDA approach as “a shift in capacity strengthening from supply-driven & service-provided to facilitated & supported process of holistic organizational change through targeted intervention with the following attributes:

- Well-grounded institutional analysis to understand gaps and influence of internal and external factors
- Targeting to meet specific needs or capacity constraint areas
- Wide stakeholder involvement at regional, sub-regional and national levels, and actors of the agricultural innovation system
- 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 organizations to apply their particular needs”.

Examples of Immediate Outcomes

Restructuring the Congolese NARI

The Republic of Congo was targeted for intervention under SCARDA as a post-conflict country of CORAF/WECARD sub-region (Fig. 1). For several decades, Congo invested in developing a national research and technology base to spur socio-economic development. These efforts led to the formation of agencies like Délégation Générale à la Recherche Scientifique et Technologique (DGRST) to ensure coordination and implementation of all national research activities. However, the social unrest that engulfed the country in the 1990s led to extensive destruction of agricultural infrastructure and considerable human capital flight.

Before SCARDA’s intervention in 2007, there were ten agricultural and forestry research centres under one line ministry but differing in their legal status, mission, and strategic focus (FARA, 2008). The existing NARS was poorly staffed with about 150 scientists, 100 research technicians, about 50 research assistants and very few senior scientists. There was also inadequate funding with the government only managing to commit a paltry annual investment of 0.2% of the country’s GDP to funding research.

An institutional analysis (IA) conducted under SCARDA prioritized the need to reform the operational framework of the Congolese agricultural research system by creating a single national agricultural research institute (NARI) out of the disparate agricultural and forestry research stations. Through the SCARDA thrust on strengthening agricultural research management systems, the participating focal institution, Centre de Recherches Agronomiques de Loudima (CRAL) under the DGRST, developed change management action plans (CMAPs) to spearhead the desired change process. The CMAPs were meant to support merger of the existing agricultural and forestry research centres into a single research body; develop a strategic plan and an operational plan for the single research agency;

streamline the legal status and mandate; facilitate resource pooling; and improve managerial performance and quality of research outputs. SCARDA change agents facilitated development of the CMAPs and their implementation through subsequent follow-up organizational mentoring visits. Apart from the CMAPs, specific short-term training needs identified in the institutional analysis (e.g. advocacy & resource mobilization; bankable proposal writing for business winning, strategic planning & programming; gender & diversity analysis; and monitoring & evaluation techniques) were concomitantly executed to strengthen the professional and managerial competencies of senior staff of CRAL.

By the programme end date, there was considerable buy-in of the SCARDA-instigated change process by high-level Congolese government officials. In fact, the Office of the Minister for Scientific Research and Technical Innovation constituted a team to finalize drafting of documents for re-organization of the disparate research centers into the Agricultural and Forestry Research Institute (AFRI) of Congo. A strategy to raise awareness and lobby public authorities to facilitate the adoption of the legal instruments of the new AFRI had also been developed and implemented. In addition, a work chart to update and/or develop a draft strategic plan and a draft long and medium term plans for the AFRI had been developed and adopted. A total of 6 MSc students were trained in specific capacity-constraint areas of specialization (e.g. biotechnology, postharvest processing, and integrated pest management), 3 technicians were also trained in IPM techniques, and over 22 senior researchers and managers were trained in various professional and managerial areas. The organizational restructuring and technical training thrusts implemented under SCARDA will go a long way in improving the research programming and innovative capacity of the Congolese NARS. An aspect of immediate change outcome already attested to by one CRAL employee is thus: “SCARDA has also improved the working methods. Before, people were working in a closed manner and not engaging openly with others”.

Facilitating adoption of innovation systems and farmer participatory research approaches in Lesotho

Lesotho - a small, hilly and landlocked enclave within the Republic of South Africa - was chosen for SCARDA intervention due to the potential to develop and strengthen the national agricultural research system. Agriculture accounts for about 7% of the GDP, but over 85% of the resident population especially in rural areas derive their livelihood from agriculture and related services. A scoping study and subsequent institutional analysis identified two main areas for intervention, namely: the establishment of structures and linkages premised on the national innovation systems framework to promote participatory multi-stakeholder interaction, and farmer participatory research (FPR) to stimulate and respond to the demand side of agricultural research.

The National University of Lesotho (NUL) was the SCARDA focal institution in Lesotho. NUL is the only University in Lesotho and its Faculty of Agriculture (FOA) is a well-organized and respected research and capacity building organization around which the capacities of other NARS organizations under the Ministry of Agriculture & Food Security (MAFS) could be built. Strengthening capacity of NUL/FOA to develop capacities of other NARS institutions will benefit all R&D institutions in Lesotho, including civil and private organizations. Through SCARDA's agricultural research management thrust, a Lesotho NARS Change Management Action Plan was elaborated with the main objective of forming an organ of

the NUL to support capacity development and transformation of the Lesotho NARS. This eventually led to formation of the Lesotho Centre for Agricultural Research for Development (LECARD) with 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, and 4) mobilization of financial and technical resources for the promotion of agricultural research in Lesotho. An immediate outcome of this development can be surmised in the words of one NUL employee thus: “In the past, NUL has been inward-looking and has had limited research capacity. The creation of the new LECARD provides a mechanism for a coordinated approach at the national level to address demand-led researchable issues”.

In addition, the FPR initiative enabled implementation of a project on indigenous chickens by a local farmer group in collaboration with NUL, NGOs, and MAFS that has impacted positively on the livelihood of the farmers. Moreover, prompted by lessons learnt from SCARDA’s agricultural research management workshops, NUL/FOA has initiated proactive dialogue with key ministries, NGOs and other institutions in the agricultural sector in the Kingdom of Lesotho in order to explore how it could help catalyze realization of development visions of the respective institutions. In one of the agricultural innovation systems workshop sponsored by SCARDA, key stakeholders in the agricultural sector in Lesotho met with NUL/FOA staff and engaged in a serious process of stakeholder mapping and institutional interactions to identifying weaknesses and gaps in potential areas for collaboration. Each institution came out of the workshop with an advanced draft strategy for engagement with other institutions. As attested to by one stakeholder, “SCARDA has lead to creation of the use of indigenous knowledge sharing platforms to solve problems through innovation systems. SCARDA has also initiated the alignment of strategic plans for National University of Lesotho with that of the Ministry of Agriculture. This has brought about stronger collaboration”.

Key Lessons and Concluding Remarks

Prior institutional (or more correctly organizational) analysis is critical to the success of the SCARDA approach. A solid institutional analysis of the focal institution helps identify the capacity strengthening needs, resulting in a capacity strengthening strategy and plan. Such an analysis should be participatory and widely shared by staff and external stakeholders. Recognizing that capacity strengthening is a change process, priming a target organization for change and elaboration of change management action plans will enhance the chance of impact. The success of SCARDA change management strategy is hinged on sustained organizational mentorships and implementation of CMAPs or change projects. Getting the various authorities and key stakeholders on board is also crucial to the ultimate success of the 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.

At the organizational level, SCARDA strengthened the human, organizational and institutional aspects of the capacity mix that will go a long way in improving the quality of research outputs from the 12 focal organizations. Further, there was evident buy-in and integration of the SCARDA change management concepts in the over-arching organizational strategies. With regard to engaging the

other actors of the NARS, SCARDA established organizational linkages with satellite institutions for future collaborations. SCARDA facilitated the formation of national agricultural research institute (NARI) in the Congo, a national innovation platform in Lesotho known as the Lesotho Center for the Coordination of Agricultural Research and Development (LECCARD) and strengthened innovation systems and capacity through cross-organizational and cross-border collaboration. At the national level, SCARDA has helped to place the issue of cross-institutional collaboration on the agenda; in particular, the collaboration between government agencies, research organizations and universities has been improved in all the three participating sub-regions. More information on SCARDA is available online at the FARA website: <http://www.fara-africa.org/our-projects/scarda/publications>.

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