



Brief on SCARDA

A Programme on
Strengthening Capacity for Agricultural
Research and Development in Africa

Contents

Introduction	1
Component 1. Strengthening competencies and capacity in agricultural research management	4
Component 2. Increased capacity for professional development in agricultural research and development	7

Acknowledgements

This programme has been enabled by a generous grant from the United Kingdom's Department for International Development (DFID).

Introduction

Following a decision of the FARA-SRO retreat in August 2003, FARA commissioned, in 2005, an assessment of national agricultural research systems (NARS) in Africa to identify major areas of weakness and to recommend strategies for their strengthening. The most important of these weaknesses identified were in respect of human and institutional capacity to initiate, design, implement and manage scientific research.

The assessment called for new approaches and innovative initiatives to address critical human and institutional capacity deficiencies in the African NARS. The response to this has resulted in a United Kingdom Department for International Development (DFID)-funded Programme for Strengthening Capacity for Agricultural Research and Development in Africa (SCARDA). The Programme is structured into two main components:

1. Strengthening competencies and capacity in agricultural research management.
2. Strengthening the capacity for professional development (of agricultural scientists and extension workers) in research and development.

The first component focuses on improving research management by equipping personnel involved in stewardship of research at all levels, with the needed skills through continuous training, mentoring and short-term attachments to institutions where they can update or gain new special skills.

The second component aims to enhance the depth and breadth of skills needed for NARS to conduct quality research that will assure impact to end users. It also aims to generate empirical information on the relationship between increased investment in strengthening agricultural research capacity; and agricultural productivity and profitability.

Both components will contribute towards strengthening the capacity of African institutions to build human and institutional capacity.

The Programme will be led by FARA and implemented in the three Sub-Saharan Africa subregions. The Subregional Research Organizations (SROs) will be responsible for the governance and operational oversight of the Programme within their respective geographical domains.

Overall governance and oversight will be the responsibility of the Programme Committee of FARA's Executive Committee, while overall management and coordination of the Programme will be the responsibility of FARA's Executive Secretary. Day-to-day coordination will be carried out by a Coordinator who will head the Programme's Coordination Unit, which will be based within the FARA Secretariat.

Programme activities under the two components will be implemented by the African Network for Agriculture, Agroforestry and Natural Resources Education (ANAPE), the Regional Universities Forum for capacity building in agriculture (RUFORUM), the International Food Policy Research Institute's (IFPRI), International Service for National Agricultural Research (ISNAR) and other African capacity strengthening institutions, which will be backstopped by Northern institutions, notably the Natural Resources Institute (NRI)/University of Greenwich.

The development and implementation of the Programme will span two phases:

1. A 6-month inception phase during which a detailed strategy, work plan and budget will be developed in a consultative fashion. During this phase, partnerships and operational structures and procedures for implementing the programme will also be established.
2. A 3-year implementation phase during which the Programme's work plans will be implemented. It is envisaged that the Programme will attract sufficient interest from other development partners and African governments to progress to a further implementation phase.

The outputs expected from the Programme will be confirmed after consultations with stakeholders during the inception phase. In the interim, the following are envisaged as the Programme's main outputs.

- A detailed articulation of the Programme and structures for its implementation in place at the end of an initial 6-month inception phase.
- Improved agricultural research management systems and competencies to conduct high quality research.
- Improvement in the capacities of NARS institutions, scientists and extension agents to fully discharge their mandates.
- Adoption of innovation systems that underpin R&D by African NARS.

The SCARDA Programme will generate four measurable outputs:

1. A detailed capacity-strengthening programme and structures for its implementation in place at the end of an initial 6-month inception phase.
2. Improved agricultural research management systems and competencies to conduct high quality research.
3. Improvement in the capacities of NARS institutions, scientists and extension agents to discharge their mandates fully (through appropriate post-graduate training, in-career professional development and mentoring).
4. Adoption of innovation systems as a paradigm that underpins research and development by African NARS.

The ultimate beneficiaries of the Programme will be the rural poor who rely on agriculture for their income, food security and livelihood. The improved institutional and human capacities are expected to result in better application of science and an enhanced uptake of its products, as well as enabling end users to become better engaged in innovations systems that offer prospects for better livelihoods. Significantly, the Programme will improve the competence of African capacity-strengthening institutions to build human and institutional capacity

The Programme will require an estimated US\$ 17 million to fund the delivery of its expected outputs.

SCARDA was initiated by a workshop to plan the consultation processes that will be carried out during the Inception Phase.

The purpose of SCARDA Inaugural Planning Workshop was to:

- Sensitize participants on the SCARDA programme.
- Establish the Programme's governance procedures.
- Develop a common understanding of the envisaged inception phase activities and plan the consultation processes. This will involve consultations in the subregions, followed by regional workshops to exchange ideas and develop common approaches and sharing of resources where appropriate.

Component 1

Strengthening competencies and capacity in agricultural research management

SCARDA will support capacity-strengthening of NARS and SRO networks, programmes and projects including the Pilot Learning Teams (PLTs) of the Sub-Saharan Africa Challenge Programme (SSA- CP) by facilitating:

- The organisation and delivery of **subregional group training programmes** on identified priority subjects. These programmes will draw on experiences from specific case studies. They will be conducted through thematic workshops, and involve hands-on practical exposure. Selection of participants will give priority to strengthening the capacities of women scientists and the capacity of agricultural research institutions to address the needs of women farmers.
- **Post-training support** for up to 1 year after the training, the purpose being to consolidate the skills acquired through the group training (see above) and to mentor institutions and individuals in order to enhance appropriate application of their newly acquired skills. Providers of the training may also serve as post-training mentors.
- **Competitive fellowships** to support serving African NARS scientists, nominated by their organizations, to undertake post-doctoral internships, short-term technical visits and attachments for capacity strengthening.
- Instituting a **professional mentoring** scheme designed to improve the career experience and continued learning of new entrants into agricultural research. The mentors will be drawn from the senior staff of National Agricultural Research Institutions (NARIs), and where appropriate, National Research Institutes (NRIs) or other international institutions.

Sub-regional group training programmes and post-training support: The group training programmes and follow-on support will be focused on addressing the highest priority research management capacity needs of NARS. During the inception phase,

processes and criteria will be put in place to prioritise the topics for which training programmes will be developed and delivered. The NARS and SSA-CP assessments highlight the following as research management-related areas in which the capacity of African NARS requires strengthening:

- Agricultural research priority setting.
- Innovations Systems in agricultural research for development, including multi-disciplinary and multi-institutional collaborative research approaches.
- Human resources management.
- Scientific leadership.
- Partnership building and stakeholder analysis.
- Financial management for agricultural research.
- Monitoring and evaluation, learning and assessment of the impact of agricultural research; the use of impact assessment to guide research programmes.
- Research performance indicators and measurements.
- Intellectual property rights management.
- Agricultural project management and the project cycle.
- Research data capture and management.
- Agricultural productivity and marketing/trade policies and conventions; leveraging science to influence policy.
- Communication of agricultural research outcomes to stakeholders and target audiences; soliciting and capturing feedback to guide agricultural research priorities.
- Management of agricultural journals, technical bulletins and other publications; and preparation of scientific publications.
- Institutional governance, assurance of institutional accountability and change.
- Resource mobilization for agricultural projects/programmes.
- Agricultural value chains and their management.
- Negotiation
- Scaling up and scaling out of innovations/technologies.

The organization and structure of the courses will emphasize strengthening *institutions*, rather than individuals. The SROs and the SCARDA Coordination Unit will develop a procedure for identifying NARIs with specific deficiencies, engaging them in the design of the courses and nominating scientists and research managers to participate in them.

The selection of training and post-training support service providers will be managed by SROs with assistance from the SCARDA Coordination Unit.. The trainers/post-training service providers will be institutions that possess the relevant expertise and are adequately equipped to offer the required training. First preference for provision of these services will be given to African institutions in order to consolidate their capacity, and

where these institutions lack the capacity to provide the services, Northern Institutions will be invited to backstop the African Institutions or to provide the services on their own. Training and support in sourcing information from the internet and other global sources will be provided by linking the Programme to initiatives in the employment of information and communication technology (ICT) in agricultural research, led by the Regional Agricultural Information and Learning Systems (RAILS), Technical Centre for Agricultural and Rural Cooperation (CTA), and Association for Strengthening Agricultural Research in East and Central Africa's (ASARECA) Regional Agricultural Information Network (RAIN).

Competitive fellowships aim to support practical experiential learning on research management-related topics rather than on attaining postgraduate qualifications, which is covered in Component 2. The SCARDA Coordinating Unit will establish linkages with African agriculture capacity building networks such as African Network for Agriculture, Agro-Forestry and Natural Resources Education (ANAFE) and Regional Universities Forum for capacity building in agriculture (RUFORUM), African universities, national, subregional, regional and international research organizations for the placement of NARS scientists. The institutions selected for these short-term attachments will be known centres of excellence in particular priority areas such as Biosciences east and central Africa (BecA), which would familiarize scientists with the best research management and support practices in their specific fields.

Mentoring will enhance the professional development of younger scientists and management staff, thereby ensuring that there will be qualified replacements for the imminent retirees, that is, replacing the missing generation of scientists¹.

Component 1 Outputs

The activities supported by this component will lead to Output 2 “improved agricultural research management systems and competencies to conduct high quality research” and contribute to Output 3 “improvement in the capacities of NARS institutions, scientists and extension agents to discharge their mandates, through appropriate postgraduate training, in-career professional development and mentoring” and Output 4 “adoption of innovation systems as a paradigm that underpins research and development by African NARS.”

1. Ståhl, M. and Hall, R., 2003. Is there a Missing Generation of Scientists in Africa? Presentation at 2nd FARA Plenary, 18 – 19 May 2003, International Foundation for Science (IFS), Stockholm, Sweden, pp 4.

Component 2

Increased capacity for professional development in agricultural research and development

The NARS Assessment identified specific disciplinary weaknesses and gaps in the skill bases of the national agricultural research and extension services, which need to be redressed to improve their effectiveness. A non-exhaustive list of important areas where NARS skill bases are deficient is presented in Table 1.

SCARDA will address the highest priorities among these, as determined by the SROs and their stakeholders, by providing funding to support MSc and PhD training at African universities. Candidates will also be eligible to apply for registration in Northern Universities for courses that are not available in African universities. The SCARDA Coordinator will develop a process and criteria for matching capacity strengthening needs with the appropriate teaching and training providers. The candidates for postgraduate training will be selected following established institutional procedures and criteria from among persons nominated by African NARS. The SROs and the SCARDA Coordinator will be involved in the final selection of candidates to ensure that they conform to SCARDA's criteria and identified priorities. In keeping with SCARDA's guiding principles, preference will be given to women and candidates from countries emerging from conflict where capacity strengthening needs are severest.

Where training deficiencies in particular subjects or skills are found to hinder the ability of postgraduate training schemes to get sufficiently well-qualified candidates, or which are constraining the ability of new entrants in agricultural research to function effectively, a novel partnership between African and non-African universities and research centres in Africa may be created to strengthen capacity to build the required capability. This will combine the strengths of African and non-African partner universities to renew and reinvigorate curricula and teaching and learning methods, approaches and tools. The Programme will also draw on the agricultural research community of CGIAR Centers and NARIs to produce locally relevant and up-to-date material for course content.

Table 1. Thematic areas in which skill bases of Sub-Saharan Africa NARS are deficient.

<ul style="list-style-type: none">a. Developing contextualized curricula.b. Systems analysis skills required for multi-institutional innovation systems approaches to address poverty and rural developmentc. Information technology.d. Information communication and management; knowledge managemente. Biotechnology.f. Agri-business.g. Risk and uncertainty assessment.h. Social sciences.i. Spatial (landscape and watershed scale) analyses	<ul style="list-style-type: none">j. Models for accelerating wide-scale uptake of agricultural innovationsk. Plant breeding including genome research.l. Animal breeding (including gene transfers for resistance).m. Agricultural engineering.n. Food science and technology.o. Weed science and management.p. Forestry and agro-forestry.q. Biometrics and research data management.r. Aquaculture and fisheries.s. Simulation modelling
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In this instance, an African university may be selected from among ANAFE's Regional Agricultural Forums for Training (RAFTs) members to lead the development of the component while a Northern University for example, Greenwich University, contributes to the partnership by developing the pedagogical aspects, and a CGIAR Center and its collaborating NARIs contribute by providing access to the appropriate research products including tools and methodologies. These would be tested and validated at the African university where the component is developed, and once validated, it would be disseminated to all other university members of the RAFTs. More detail on this approach is provided in Annex 6, which outlines FARA's programme for Building Africa's Scientific and Institutional Capacity (BASIC). Further, new entrants to agricultural research from graduate or postgraduate training will be eligible for inclusion in the professional mentoring scheme outlined in Component 1 above.

The Programme will also partner with institutions such as the International Food Policy Research Institute's (IFPRI) International Service for National Agricultural Research (ISNAR) and NRI, which have been testing the concept of 'blended learning', which involves a mix of electronic learning and classroom/laboratory teaching. Although setup costs for blended learning are relatively high, it works out to be cost effective once the programmes are up and running, and reach out to large numbers of students. Blended learning also allows professional staff already in employment to integrate academic development with their employment responsibilities. In testing blended learning, the Programme will also partner with initiatives such as FARA's RAILS, which aims to improve information communication infrastructure systems in NARS.

Under this component, the Programme will use its monitoring data and secondary information to undertake an empirical verification of the relationship between increased investments in human and institutional capacity strengthening and improvements in agricultural productivity and returns. This exercise will be carried out for two principal reasons: (i) to identify conditions required to assure high returns on investments in capacity strengthening of African NARS; and (ii) to support evidence-based advocacy for increased investments in capacity strengthening of these NARS.

Component 2 Outputs

The activities supported by this component will lead to Output 3 “improvement in the capacities of NARS institutions, scientists and extension agents to discharge their mandates, through appropriate post graduate training, in-career professional development and mentoring” and Output 4 “adoption of innovation systems as a paradigm that underpins research and development by African NARS.” It will also contribute to Output 2 “improved agricultural research management systems and competencies to conduct high quality research.”

About FARA

FARA is the Forum for Agricultural Research in Africa, the apex organization bringing together and forming coalitions of major stakeholders in agricultural research and development in Africa.

The **vision** of FARA is for African agriculture to become vibrant and competitive in the international market, growing at a rate of at least 6% per annum by the year 2020.

The **mission** of FARA is to enhance and add value to the effectiveness and efficiency of agricultural research systems in Africa that will contribute to agricultural development, economic growth and sustainable use of natural resources. FARA complements the innovative activities of national, international and sub-regional research institutions to deliver more responsive and effective services to its stakeholders. It plays advocacy and coordination roles for agricultural research for development.

FARA is the technical arm of the African Union Commission (AUC) on rural economy and agricultural development and the lead agency of the AU's New Partnership for Africa's Development (NEPAD) to implement the fourth pillar of Comprehensive African Agricultural Development Programme (CAADP), involving agricultural research, technology dissemination and uptake. FARA identified five requirements to enhance continental impact on livelihoods and economic development:

- A framework for reform and investment in agricultural research and harmonization of actions and actors of ARD in Africa, i.e., the Framework for African Agricultural Productivity (FAAP).
- A new innovation systems approach to agricultural research for development, i.e., The Sub-Saharan Africa Challenge Programme (SSA CP).
- Address the priority weaknesses in capacity building that constrain the effectiveness of Sub Saharan Africa NARS, i.e., Strengthening Capacity of Agricultural Research for Development in Africa (SCARDA) such as:
 - The human capacity to implement, internalise and upscale new approaches to researchers, change agents, processors, marketers, and not the least, policy makers, i.e., Building African Scientific and Institutional Capacities (BASIC).
- Immediate applications that can make a difference and restore credibility in agricultural development, i.e., Disseminating New Agricultural Technologies in Africa (DONATA).
- African stakeholders better able to learn and contribute to global knowledge exchange on agricultural science & development, i.e., Regional Agricultural Information and Learning Systems (RAILS).

These programs respond to FARA's primary functions, which are advocacy of the role of agricultural research, promotion of functional partnerships, and accelerating sharing and exchange of knowledge.

FARA major donors are The African Development Bank, The Canadian International Development Agency, European Commission, the Governments of the Netherlands, United Kingdom, Italy, Ireland, Germany and France, the Consultative Group on International Agricultural Research, the Rockefeller Foundation, Bill and Melinda Gates Foundation, the World Bank, and the United States of America Agency for International Development.