Increasing and Sustaining Productivity in African Agriculture: the National Agricultural Research Systems (NARS)

Background

At the FARA (Forum for Agricultural Research in Africa) meeting of March 2002 held in Maputo, Mozambique, the World Bank and European Union (EU) jointly presented a concept note outlining a new road map, that emerged through a consultative process, to enhance and sustain the institutional and financial base of agricultural technology systems in SSA. The concept advocates for: (i) a broadening and deepening of policy and institutional reforms to promote increased efficiency, accountability, institutional stability of public organizations engaged in technology development, transfer and application, (ii) a broadening of the institutional base for technology generation and delivery at national and sub-regional levels, above and beyond public institutions, (iii) a greater and more effective integration of the various level of operations from local to global, and (iv) broadening and securing the funding basis. The concept was endorsed and mainstreamed into the NEPAD and FARA Framework for Action.

A follow up meeting to discuss the operational modalities of enhancing and sustaining the funding of regional and sub-regional research activities and institutions was hosted by the European Union, on June 24-26, 2002. The meeting, which was attended by the Sub-Regional Organizations (SROs), Regional and Global Fora for agricultural research (FARA and GFAR), and a number of multilateral and bilateral donor institutions, focused primarily on the modalities of implementing competitive grants mechanisms (CFM) at the sub-regional research level. The meeting reached the following conclusions and recommendations:

a. The best practice paper, detailing the SROs’ hands-on experiences with competitive funding was endorsed as a basis for consensus building between and among government and donor institutions. Agreements were reached on the rationale, objectives, scope, and principles underlying the design and management of CFM, as well as on the roles and responsibilities of the involved parties,

b. The first generation of CFM will be built on the principle of “sinking funds” (later to evolve into an endowment or a trust fund) and will primarily focus on supporting technology development, with limited involvement in dissemination and capacity building,

c. An outline of a Manual of Procedures for the design and management of the CFM was endorsed. An SRO/FARA/GFAR working group was recommended to develop a complete manual. Once finalized, the Manual will serve as a common template, for the management and oversight of the CFM by all parties,

d. The next level of consultation and consensus building will focus on the national component of the new funding system.

In prelude to and preparation for the next round it was agreed that a concise Position/Issues Paper be prepared, to guide and support the consensus building process. The paper should:

1. outline the basic premises and assumptions on which we have been working,

2. highlight the current consensus on the diagnostic and solutions

3. highlight remaining gaps and outstanding issues on both the concept and operational processes.

4. propose an agenda for moving forward. A Task Force was then formed to follow up on these main decisions.

The purpose of this note is to initiate, in an interactive way, the preparation of such position/issues paper, and outline the rationale, objectives, preparatory process, inputs to and outputs expected from the next round of consultation.
Challenges: Basic premises and assumptions

Africa faces the daunting challenge of feeding her ever growing people and being an active player in world markets and economy. This challenge to be successfully addressed will require an unprecedented increase in the productivity of African agriculture within the next decade, through a massive and concerted effort that promotes much faster and effective processes to generate, access, disseminate, and apply technological solutions suited to the particular problems of African farming conditions. However, increasing agricultural productivity and global food production will not be enough. Africa will also need to attack the root cause of poverty and food security – the ability of the poorest segment of the population to access quality food, public and social services as well as market opportunities in order to have a healthy and productive life. This means focusing the effort also on policies promoting sustained and broad-based increases in incomes through the unflinching pursuit of policy and institutional reforms for liberalizing input and output markets, removing regulatory barriers to trade, strengthening property rights and the rule of law to foster private initiative, and improving the efficiency of public institutions and public expenditure programs. In addition, launching SSA agriculture on a strong and sustainable growth path will require massive investments in infrastructure to link producers to markets. This is an immense challenge that requires an equally immense level of commitment not only from African governments themselves, but of the international community as a whole. There is empirical evidence showing that a systematic application of appropriate agricultural knowledge and technologies, coupled with the above-mentioned enabling policies and market environment can lead to substantial productivity and market gains in SSA, comparable to world standards. However, despite few pockets of successes and an enormous untapped potential, there are little-felt impacts on agricultural growth attributable to the existing research and development infrastructure. The current institutional and policy setting within which research is operating, in particular at national level, is not conducive. An open and candid debate over the last decade has led to a genuine consensus on “what in and why the research system went wrong” and “how to fix it.”

The Consensus

The current consensus is twofold:

On the diagnostic

The Technology Challenge. The main trait of the African agricultural sector is its diversity. Across the continent, within countries or even within individual farms, a wide range of crops is usually grown, often inter-cropped and mixed with livestock production. These complex cropping systems, in particular for food production, exploit a diversity of climates and soils to buffer production from pest and climatic risks. African research and extension systems have struggled to adapt well-entrenched top-down models focused on controlling the plant growth conditions of a few selected crops to the needs of African farmers which require a much deeper understanding of farming systems and the development of a menu of possible techniques and technologies adapted to local conditions.

The policy challenge. A technology generation and transfer strategy, to be effective, must therefore be part of an overall agricultural growth- and poverty alleviation strategy. To have an impact on overall productivity and incomes, technological innovations must be adopted by the farmers, in response to financial incentives. The driving force for an agricultural growth strategy is linking farmers to markets. This in turn requires appropriate economic policies and institutions, linking producers to markets through the development of the communication and information infrastructure, input and output markets and qualified human capacities. Typically, countries
which have pursued liberal economic policies grow faster. Agricultural research can be expected to contribute more to growth and poverty alleviation in countries with liberalized markets and good infrastructure.

The institutional challenge Most of the technology systems in Africa are still largely dominated by the public sector. Many of them are young, and thus lack experience and human and material resources strength. Others are too small in size to be effective. The management style is generally top heavy, with a one-way flow of communication leaving little room for stakeholders’ involvement in planning and decision-making processes. Linkages within the system remain weak or non-existent, thereby hindering the effectiveness in technology design and delivery. For example, a significant gap is known to exist between:
- public research, higher education and extension institutions;
- research and industry, (particularly in accessing and developing advanced technologies) within countries;
- research, extension and local producer and consumer groups and;
- public and private institutions across countries.

Thus these public services remain isolated and disconnected from their natural constituencies, strategic partners and therefore, from potential sources of political support. Consequently, they lack the political base needed to gain recognition and adequate and sustained financial support. The system is accountable in many cases, only to the resource providers and not to its primary beneficiaries. Therefore, the system’s management is riddled with inefficiency and void of appropriate tools/mechanism to encourage productivity. Very few countries have been able to develop a relatively integrated and functional National Agricultural Research and Development System (NARS).

The funding patterns are distorted and unsustainable, mainly due to:
- very poor linkages between inputs, outputs and performances;
- its highly donor-dependent nature of the funding arrangements; and
- its fragmented and project oriented structure and,
- inefficiency and poor performance.

Despite progress made in reforming the funding system, there are still very few competitive grants schemes and little or no provision for: (i) adequate and stable financing of core services; (ii) flexible financing for specific, demand-driven services to local, national, and regional stakeholder groups; (iii) co-financing by the private sector and producer groups; and (iv) financing of cross-country programs and activities.

The problem of the African technology system is compounded with the reality of the HIV/AIDS epidemic and its toll on staff size and staff skill mix. The human resources development of the system is severely constrained with the erosion of salaries and benefits and a general decline in operational resources resulting in a chronic brain drain, poor attendance, low morale and reduced productivity.

On the solution side

Vision and long-term objectives.

The African agricultural research community has laid out a vision (shared by its scientific and development partners) defining the role and contribution of agricultural research and development in addressing the continent’s development challenges. These include: (i) improving household and national food security; (ii) increasing incomes for the rural people; (iii) improving access to food for urban poor; (iv) increased foreign exchange earnings; (v) assisting in the development of local agro-industries and markets; and (vi) improving
conservation of natural resource base. The vision calls for achieving sustained and science-led productivity gains driven by a six percent annual agricultural growth rate through year 2020. By the target date, it is envisaged that the region would achieve the following:

- Establish dynamic agricultural markets among nations and between regions;
- Become a net exporter of agricultural products;
- Improve food availability and affordability along with equitable distribution of wealth;
- become a strategic player in agricultural science and technology development; and
- Build a culture of sustainable use of the natural resource base.

This vision was adopted by the NEPAD political process and mainstreamed within its program development effort.

Road map toward institutional and financial sustainability

Over the past decade, open and candid consultations have helped to build a solid meeting of minds on what it takes to achieve institutional and financial sustainability.

The basic principles and foundation for institutional sustainability lay on the building of a broad and powerful coalition of stakeholders in support of the technology system, either willing to directly provide resources or to exert influence for the necessary resources to be provided. In turn, mobilizing this broad support will require that: (i) stakeholders participate effectively in the definition of research priorities and in the governance of the system; (ii) research results be relevant to the stakeholders’ main concerns and constraints and research programs be carried out with efficiency and transparency.

Concretely, the main elements of improved system’s sustainability, globally or for its different levels—international, sub-regional and national can be summarized as follows:

- End-users’ participation in strategic priority setting and governance structure.
- Accountability of research institutions based on systematic M&E linked to strategic planning, results and implementation efficiency.

Pluralism in provision of services and introduction of competition through incentive schemes

- Country ownership fully exercised in the design and management of programs/projects.
- An institutional environment capable of building, attracting and retaining a cadre of skilled and motivated human resources.
- Enhanced capacity and authority of technology users to shape the “demand” for technology through their effective participation in all stages of the technology generation, transfer and adoption process.
- Demonstrated capacity of research and technology institutions to deliver useful technologies to users.
- Systematic strategic planning and M&E to draw lessons for more innovations.

Two specific set of objectives have been agreed upon in achieving financial sustainability

1. The first set focuses on increasing the volume of investments at the both the country, sub-regional/regional and international levels:

⇒ At the country level, increasing the volume of investments would be achieved through:
• Diversified sources of funding via cost-sharing with stakeholders/end-users
  - Competitive funding mechanisms and schemes to increase contract research for private sector and producer organizations;
  - improved commodity levies and cesses to support both core and non-core functions;
  - increased government contribution from domestic general tax and non tax revenues, including HIPC; given the public good nature of most of research and extension activities
  - establishment of a Multi-Country and Multi-donor credit/grant lines for national agricultural research; and
  - establishment of effective national competitive funds.

⇒ at sub-regional, and regional levels through:
  - increased country contributions over time;
  - establishment of competitive research funds; and
  - establishment of institutional framework and program management policies that would allow the utilization of R & D funds to purchase or access demand-driven R & D services from centers of excellence by the users of research results.

⇒ at international levels through:
  - increased co-financing by the private sector and governments;
  - increased international public financing; and
  - gradual increase of regional contributions

2. The second objective is to ensure a better balance in resource flow in order to strengthen the weak links of the R&D system and improve its overall efficiency.

1. The Unfinished Agenda

Building from the shared vision and working within the agreed global framework for action, considerable efficiency gains can be achieved by (i) designing an overall agricultural research strategy for the continent and more detailed operational strategies for each agro-ecological sub-regions; (ii) defining clear lines of responsibilities and collaboration between NARSs, the sub-regional research institutions and the IC system; and (iii) aligning, for the system as a whole and its three different components (national, subregional and regional/international), processes and resources with their central objective and operational strategies.

Improving NARSs efficiency and sustainability. Many NARSs have started to restructure their research infrastructure, managerial and governance systems to become more responsive to end-users and improve their financial and accounting systems. A growing number of semiautonomous or autonomous research institutions (Kenya Agriculture Research Institute, National Agricultural Research Organization of Uganda, Senegal Institute for Agricultural Research, National Center for Agricultural Research of Cote d’Ivoire) have end-users on their governance bodies. In many countries, R&D outreach programs empowering farmers and their organizations in technology generation and delivery, are being piloted. The move away from the top-down, supply driven publicly-financed model in favor of more open and client-driven systems has also allowed some NARSs to improve financial sustainability through cost recovery. Competitive research mechanisms and contractual research with partial cost recovery from users have also be introduced in many NARSs. In Kenya, Uganda, South Africa, Zimbabwe, Malawi and Tanzania, among others, private firms are conducting or funding research on commercial crops.

These reforms must be deepened. In addition, major efforts are still required in most NARSs to improve the planning and the quality of research programs; improve internal management;
rationalize the utilization of the physical and human capital assets and develop a cadre of competent and stable scientists. This will require the following reforms:

- Developing the capacity for a demand-driven priority-setting and linking resource allocation to priority research programs;
- Developing information technology to link NARS to internal and external scientific information networks;
- Introducing systematic scientific and technical external reviews and evaluation;
- Severing NARSs from civil service policies and procedures and introducing a performance-based human resource incentive and management system; and
- Establishing Internal Management Information Systems, as well as Monitoring and Evaluation Systems, to track internal efficiency, outputs and impact.
- Developing the detailed operational procedures for agreed new funding system that would be: (i) coordinated and supported by a consortium of donors and governments; (ii) championed by a core group of funding agencies and countries; and (iii) viewed and accepted as an implementing instrument of the NEPAD and, (iv) consistent and supportive of the CGIAR reform agenda.

4. Outstanding issues and provisional Agenda for the new Round of Consultation.

Because of the great variety in country situations and actors involved supporting technology generation and application, the number of issues to address and their level of complexity increases, as the consultative process moves toward addressing the national component of the new funding system. There is a set of issues related to the objectives of and expected outputs from the program that will support the national component of the new funding, its structure and management, eligibility criteria, and the roles and responsibilities of various players to be involved in and/or benefit from it.

*what needs to be done, by who how and when*

The stated original objectives are “financial support to national institutions would be based on an increased commitment from: (i) local and national stakeholders to finance agricultural research directly through users fees or contracting research as well as indirectly through the national budgets, and (ii) donor community through the establishment of a Multi-Country Funding Facility to support and accelerate capacity building and technology development and transfer. The resources needed to support this Funding Facility would come from both loans and grants.”

*Indeed there is a need to:*

1. Clarify: (a) what we collectively want to achieve in the short, medium and long terms? (b) if achieving greater efficiency and impact through institutional and financial “sustainability” is the driving objective, then what would be the nature, content, and scope of the underlying program? Will the program be all embracing and include beyond technology generation concerns on technology application? (Advisory services and institutional and financial supports to end-users for technology adoption are cases in point). (c) Will the program be built on the principle of a “menu a la carte”, covering the broad range of components/steps of the road to “sustainability”? and (d) What approaches to institutional capacity assessment and demonstrations of performance could be put in place to assure funders that technology institutions can reliably produce desired results.

2. Clarify what would be the nature of the funding instrument(s) that support the program. The assumptions made are (a) the level of financial resources will increase, (b)
a better balance of fund flows between the various components will be achieved and (c) the principle of a “basket funding mechanism”, coordinated by governments will be introduced. How realistic are these assumptions?

3. We need to further clarify that the new funding system (and the anticipated increased funding) will not replace all traditional bilateral funding. We may also need to reflect on the fact that continued existence of bilateral funding mechanisms that may not necessarily conform with the standard rules, regulations and criteria envisaged in this "basket funding mechanism", and yet do contribute to the financing of technology systems in Africa. Accordingly, we also need to come to some degree of understanding on what will be the best approach or route to get the resource providers to distinguish between what they would like to commit themselves to support this mechanism from what they provide with or without it.

4. Clarify how on practical and realist terms, government funding can be increased and secured (through policy and budget instruments!), users fees can be effectively promoted as well as increased private sector financial contribution (with the assumption that the establishment of enabling environment needed to attract these critical players will take some time).

5. Discuss what it takes to make donor support effective and sustained???
   Willingness to:
   • commit for a long-term support
   • pull resources together or to fund a distinct component of an agreed and coordinated long-term Research Program,
   • adopt common planning, monitoring, reporting and auditing procedures.

6. agree on eligibility criteria for country programs
   • Existence of an agricultural technology generation and transfer strategy fully incorporated in the country’s rural development strategy, which (i) is pro-poor and growth oriented; (ii) is demand-driven and pluralistic in the provision of services; and (iii) promotes sub-regional collaboration and cost recovery from end-users
   • Government commitment to (i) provide the required budgetary support in a timely fashion; (ii) support the financial and managerial autonomy of the public agricultural technology generation and transfer institutions, including the introduction of efficient performance-based human resource management systems
   • NARS commitment to institutional reform that promote (as need arise) (a) a decentralized program and resource management (b) costs sharing (w/ users share rising over time), (c) common funding mechanism (funds pooled in Government System), and competitive performance contracts

7. clarify and articulate the relationship between the national and sub-regional and international components of the new funding system.

**Building on ongoing or planned programs/initiatives**

Learning from country experiences?

In Africa: Kenya, Tanzania, Uganda, Ethiopia, Senegal, Cote d’Ivoire, Ghana, South Africa, Zambia

Looking beyond Africa

Learning from donor experiences?

Selected bilateral: Canada, USA, France, UK, Switzerland, Netherlands
Selected Multilateral: African Development Bank, European Union, the World Bank

Building on new funding opportunities:

NEPAD Initiative; US Initiative to End Hunger in Africa (IEHA); World Bank’s Multi-Country Agricultural Productivity Program (MAPP) for Africa (list to be completed)

Proposed next steps

1. Review and validation of this position paper by the Task Force (TF) established by the “Brussels” meeting through email and a formal meeting. A ideal venue for the meeting could be the forthcoming CGIAR General Assembly in Manila (likely to be attended by most of the TF members),

2. Preparation of a draft program document that will build on/from the guidance from the Task Force, the “EU ARD chapeau” prepared after Brussels, lessons learnt and emerging opportunities by January 31, 2003

3. Pre-review and validation of the draft program document by all stakeholders through an intense consultative process led by FARA and the SROs by March 31, 2003. The draft program document should include indicative country or cross-country activities, M&E procedures, impact indicators, etc,

4. Formal validation and agreement on the operational modalities at the FARA General Assembly in May 2003

5. Design and implementation of country specific activities starting June 2003