



Research and Extension for Agricultural Transformation

Background and Context

Agricultural research and extension contribute to CAADP Malabo Declaration Commitment 3 (ending hunger by 2025) and Commitment 4 (halving poverty by 2025 through inclusive agricultural growth and transformation) by driving growth, innovation, production and productivity. Agricultural research and development, in particular, have been shown to produce some of the highest returns of any agricultural investment¹.

Agricultural research and development lead to improved production and productivity through development and adoption of improved crop varieties, improved livestock breeds and better natural-resource management practices. Broadly speaking, research and development (R&D) can be said to transform agriculture as a consequence of (i) the productivity impact, which optimises the efficient use of resources, (ii) the livelihood impact, which determines whether gains of increased productivity benefit the majority, and (iii) the environmental impact, which determines whether the gains achieved by the other two impact indicators can be sustained. The benefits of additional income generated from agricultural research are passed on to producers through higher profits and to consumers in the form of lower prices. Investment in agricultural research is, therefore, key to economic growth, since the benefits produced are widely and more equitably distributed.

Main Challenges Facing Agricultural Research and Extension

One of the main challenges to agricultural research and extension in Africa is the lack of sufficient and sustained levels of funding. Most African countries, for instance, do not meet the AU-recommended minimum spend of 1% of agricultural GDP on agricultural research for development

KEY MESSAGES

Agricultural research and extension can yield high returns and can therefore contribute significantly to food security. African governments should therefore increase funding to research and extension in order to strengthen human capacity, research infrastructure, facilities and institutional frameworks. Principal programmatic focus should be the development and scaling up of technologies and innovations, integrated capacity strengthening, knowledge management and gender mainstreaming. The main policy issues that need to be addressed include anchoring agricultural research and extension policies into the national multi-sectoral integrated food security frameworks and strengthening policy and institutional frameworks so as to enhance formal and informal linkages between researchers, extension workers and farmers.

(FAO, 1990; Beinstema and Stads, 2011). Consequently, Africa is still highly dependent on donor funding for agricultural R&D, which stands at 30% of national budget on average (Akinbamijo, 2015).

Added to the insufficiency of funding are the challenges of human capacity and institutional weaknesses. Currently, for example, there are indications that, in most African countries, the agricultural research cadre is not growing in tandem with the population, student numbers or economic growth. The available capacity is, therefore, not adequate to meet the goal of increasing agricultural productivity by 6%, as stipulated under CAADP (Beintema and Stads,

¹ Overall evidence from a broad range of research shows that returns from investments in agricultural research is two to three times higher than from other agricultural and non-agricultural investments.

2011; Babu et al, 2011). Such human capacity challenges are compounded by the inadequacy of research facilities and infrastructure for conducting cutting edge, innovative research. Where facilities *are* available, they are often underutilised due to insufficient technical expertise.

At the same time, meanwhile, many African countries suffer a lack of functional and cost-effective institutional frameworks through which to deliver technology and / or extension services to farmers. This problem is primarily a result of weak integration of the agricultural research, extension and training institutions. Added to this is the fact that the bureaucratic nature of extension management and personnel procedures make it difficult for extension agents to respond flexibly to local demands (Feder et al., 2010). As a result, public agricultural research extension systems are generally declining, with trends leaning toward the privatisation of extension services.

Other inherent challenges faced are the limited interactions of researchers with extension services and farmers – such as insufficient consultations with farmers in the development of research agenda – and weak mainstreaming of gender. The latter is caused by a lack of awareness, alignment, planning and execution of agricultural research and development (ARD) activities along the informal structural set-up of African smallholder agriculture, under which norms, beliefs and practices are gendered in the same way in which the society is gendered. Mainstreaming gender in ARD is further constrained by the low appreciation of the relevance of gender among many ARD organisations, and thus limited access to agricultural research and extension services by women farmers (Manyire and Apekey, 2013) (see also Knowledge Note: Women’s Empowerment).

Recommendations for Anchoring Agricultural Research and Extension within NAIPs

Each National Agricultural Investment Plan (NAIP) should stipulate specific agricultural research and extension policy and programming interventions. The specific programmes and policies chosen for prioritisation within NAIPS will vary from country to country; depending on the developmental needs, country capacities, resource availability and stakeholder input. Suggested below, however, are some general priority areas that may be considered when developing a NAIP.

Specific policy and programming recommendations

- ▶ Efforts to increase and sustain food production and poverty reduction in Africa call for integrated capacity strengthening in agricultural research and extension. This includes strengthening the capacity of research scientists to effectively deliver quality research outputs, building the capacity of extension and advisory services to enhance technology delivery, adoption and scale-up, and strengthening institutional frameworks as well as research infrastructure and facilities. Such integrated capacity strengthening also requires creation of the enabling environment and incentives to increase staff retention, in addition to ‘retooling’ them in order to ensure they stay abreast of technological developments.
- ▶ The development and scaling up of technologies, innovations, policies and programmes are needed in order to enhance the development and scaling up of agricultural research and extension technologies,





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innovations and management practices (TIMPs) for priority commodities. The development of TIMPs should be multi-disciplinary and comprehensive, therefore technological development and scaling up initiatives will require enabling environments in policy, markets, institutional capacities, culture, gender, partnerships and learning in which they are able to thrive.

- ▶ Policy advocacy is needed for articulation and anchoring of agricultural research and extension policies into the national multi-sectoral integrated food security frameworks. Market analysis is also needed, in order to assess the supply and demand of agricultural technologies. This should include participatory market research, opportunity identification (in terms of inputs, outputs, credit markets and seed systems), market development, marketing system innovations and establishment of credit, input and output market linkages. Institutional arrangements to enhance functional linkages between agricultural research institutes, extension, policy makers and farmers are also needed for the development, dissemination and adoption of technologies. Last, policy and institutional frameworks to promote formal and informal linkages between research, extension and farmers, especially at the field level, are also necessary.

- ▶ The growing importance of agricultural knowledge, together with the advancement of information and communication technology (ICT), have contributed to the development of agricultural knowledge management systems that provide the sector with the requisite knowledge. Policies and institutional frameworks are therefore needed in order to guide the generation, acquisition, documentation and sharing of knowledge among agricultural research and extension stakeholders. Knowledge management should include integrating indigenous knowledge into formal systems, thereby enhancing the collaboration between research, extension workers and farmers.

Gender mainstreaming recommendations

The challenges facing both women and young people in agricultural research and extension include limited access to productive resources such as land, water, inputs, technology, information and research opportunities, as well as limited access to extension services and credit. As a result, women and young people are not well represented in decision-making processes and so they lack voice. In most African countries, traditional systems bestow land ownership to the family head, which is, almost invariably, the senior male of the household. This restricts the ability of youth access to land on which they can invest. For married

women, whereas they may have access to productive land from their husbands, they often do not have control over its usage due to the overwhelmingly patriarchal systems (Njenga et al, 2015). Agricultural research and extension, therefore, requires the building of consensus about gender mainstreaming, followed by building competency and capacity on the issue. Of critical importance is the commitment to integrating gender within agricultural research and extension frameworks by allocating budgets concomitantly.



How Agricultural Research and Extension are Measured in the Biennial Review

Malabo Commitment	Commitment Performance Category	Objectives	Indicator	Target value
Ending Hunger by 2025	3.1 Access to Agriculture inputs and technologies	Promote utilization of cost-effective & quality agricultural inputs, irrigation, mechanization, and agrochemicals for crops, fisheries, livestock and forestry to boost agricultural productivity.	3.1iv- Proportion of farmers having access to Agricultural Advisory Services	100%
			3.1v Total Agricultural Research Spending as a share of AgGDP	1%

Further Information

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