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NO SHORTCUTS TO PROGRESS: AN ASSESSMENT OF AGRICULTURAL RESEARCH PLANNING AND PRIORITY SETTING IN AFRICA

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BACKGROUND: Over the past decade National Agricultural Research Systems (NARS) in Africa have invested considerable financial and human resources in research planning exercises. African NARS have implemented research planning by translating general national development objectives into concrete priorities and action plans for agricultural research. These formal research planning exercises have addressed three basic issues with varying emphasis: (1) organizational restructuring; (2) institute- and program-level planning, including priority setting; and (3) NARS interaction with client groups.

The purpose of research planning is to accelerate agricultural transformation and economic growth through increasing the effectiveness of technology development and transfer. More effective technology development and transfer can increase the contribution of agricultural research to economic growth through (1) raising the probability of research success, i.e., the probability that the outcome of research activities will be an adopted technology or institutional innovation; (2) increasing research payoff by focusing on important commodities or commodities with strong linkages to other components of the food and fiber system; and (3) promoting more cost-effective research, e.g., through increased regional collaboration.

The success of research planning in achieving these goals depends not only on the effort that goes into creating the research plan documents, but on the internalization of the planning process itself, i.e., the extent to which the planning process changes the thinking and quality of participation of researchers, managers, clients, stakeholders, and policymakers. The full realization of these changes may take many years, but intermediate impacts can be monitored. At the political level, intermediate impacts will be reflected in the financial commitment from different sources to agricultural research, and actions by the government to relieve policy and infrastructure constraints to technology development and transfer both on and off the farm. At the organizational level, the intermediate impacts of the research planning process are evidenced by the creation of a more focused research organization, resource reallocation within the NARS to reflect identified priorities, and linkages with other national and international organizations and the private sector.¹

OBJECTIVES: The purposes of this paper are to trace the evolution of research planning in

¹This approach to research planning is elaborated in Boughton, Duncan, Eric Crawford, Julie Howard, James Oehmke, James Shaffer, and John Staatz. 1995. *A Strategic Approach to Agricultural Research Program Planning in Sub-Saharan Africa*. MSU IDWP No. 49. East Lansing: Michigan State University.



Africa over the past decade and to analyze its intermediate impacts. The specific objectives are to: (1) review the approaches and methods used to carry out research planning and priority setting activities; and (2) assess the experiences of selected countries in research planning and priority setting.

METHODOLOGY: A two-part approach is used to achieve these objectives. First, a general review of research planning and priority setting activities in Africa was undertaken based on published reports by National Agricultural Research Systems (NARS), the International Service for National Agricultural Research Systems (ISNAR), the Special Program for African Agricultural Research (SPAAR), the World Bank, and bilateral donor agencies. Second, a qualitative assessment of the planning experiences of seven countries in East and West Africa was drawn from case studies undertaken by MSU researchers in 1995-96. Researchers visited Kenya, Tanzania, Uganda, Cape Verde, Chad, Guinea Bissau and Mali. In each country the researchers reviewed NARS documents and interviewed research managers, researchers, other agricultural agency officials and donor agency personnel who had been involved in agricultural research planning exercises.

REVIEW OF RESEARCH MASTERPLANS AND PRIORITY SETTING EXERCISES IN AFRICA. In general, two types of research plans have been produced by NARS. A masterplan is a comprehensive, long-term plan (10-15 years) developed at the interministerial and research institute levels that includes the national agricultural research policy, planning for long-term programs, and strategies for human, physical and financial resource development. An implementation plan refers to a medium-term plan that sets out the details of activities and resources for implementing the masterplan over a shorter period (3-5 years) and is usually developed at the headquarters and experiment station levels.

An inventory of agricultural research planning in sub-Saharan Africa indicates that of a total of 37

countries for which data are available, 17 have already completed agricultural research plans and the remainder are in the process of preparing plans. The nature of these research plans varies considerably: some plans emphasize research programs rather than general system-building factors; others are difficult to classify as a masterplan or an implementation plan. However, the review clearly shows an evolving concept of research planning. The later plans cover the physical and financial resource development components in much greater depth than the early plans. Formal priority setting, which was absent in earlier plans, is an integral part of the research planning process in many of the later plans reviewed.

With the changing concept and content of research masterplans, research planning in Africa has become an increasingly resource-intensive activity. Most countries have relied on extensive financial and skilled manpower assistance from ISNAR, FAO and the World Bank in designing their research plans. ISNAR recently estimated that it takes 20 months on average to complete a masterplan. The Tanzanian masterplan cost an estimated US\$1.5 million and occupied 30 national scientists plus a number of expatriate consultants hired by donor organizations over 15 months. The tremendous cost of research planning may explain why only half of African countries surveyed by ISNAR in the early 1990s had gone on to prepare implementation plans following preparation of the masterplan document.

There has been a clear tendency of donors to assist the larger and more mature NARS in research planning activities. In principle, the smaller NARS in sub-Saharan Africa would benefit most from research planning exercises that help them take better advantage of regional research spillovers. Nonetheless, many smaller NARS have not even started research planning activities; in others, plans are still far from complete.

INTERMEDIATE IMPACTS. Except for some small NARS, many countries have already



completed, are in the process of completing or are planning to undertake research planning. Some of the intermediate impacts of the research planning process in the case study countries include:

Increased transparency in the formulation and implementation of the research agenda.

Research planning efforts have enabled policy-makers and managers to take and implement a number of key decisions which would have been politically difficult in the absence of consensus-based recommendations. For example, Malian research managers were able to close down research on unpromising commodities (e.g., tobacco, tea, sugarcane). They were also able to make major changes in program structure (e.g., creating the subsector economics program and making natural resource management a transversal program cutting across all commodities).

Resource reallocation within the NARS to reflect identified priorities.

The countries examined have generally made significant progress in physical rehabilitation of their research facilities. Some have also undergone major organizational restructuring. In Mali, the network of research stations was reduced from 36 to 20 experimental stations and substations. Following the planning process, the groundnut, cowpea and maize programs were strengthened, the desertification laboratory was closed and human resources were rechanneled to the forestry and livestock programs.

In other countries (e.g., Tanzania), the closure of stations has been a sensitive political issue. Instead of outright closure, the emphasis is now on transferring the stations to other agencies or converting them into income-generating facilities, e.g., seed multiplication centers.

The lag in developing cost-effective methods for translating national-level priorities into program- and project-level priorities and action plans has delayed resource reallocation at the program and sub-program levels in Tanzania and Uganda. Even in countries where a comprehensive

program-level priority-setting exercise has been undertaken (e.g., Kenya), the reallocation of program resources in response to the identified priorities has also been delayed, in part due to human resource rigidities and the difficulty of reshaping established medium- and long-term research programs, including donor-funded activities.

Institution of monitoring and evaluation processes to increase research accountability.

The planning process has increased awareness of the need to improve the relevance of research and research quality. Within the context of multi-year implementation plans, NARS in Uganda and Mali have instituted an annual process of research programming and review to evaluate the previous year's research results and determine the research agenda for the following year. In Mali and Tanzania, regional technical committees comprised of researchers, clients and stakeholders (including NGOs, extension services and producer organizations) participate in these regular research reviews. NARS in Kenya, Tanzania, Uganda and Mali have all undertaken ex-post or ex-ante research impact assessments over the last several years.

Diversified sources of research financing.

In Kenya and Tanzania, groups of research users (e.g., tea, coffee, sugar and tobacco producers) are now directly financing research programs related to their commodities. Research stations in these countries are also beginning to charge for services such as artificial insemination and the production of breeder seed. In general, however, NARS have continued to depend heavily on donor financing following structural adjustment and research planning. In Tanzania, real government contributions to research declined by 50% from 1989-95. More than two-thirds of the Ugandan National Agricultural Research Organization's (NARO) budget is financed by donors.

ISSUES EMERGING FROM COUNTRY EXPERIENCES.

Beyond these intermediate impacts of research planning, several lessons and



issues are emerging from a decade of experience with research planning in sub-Saharan Africa:

Research planning: a felt need or a *sine qua non* for external funding? In many countries, the demand for planning and priority setting has been externally rather than internally driven. National masterplans and priority setting activities have developed into a *sine qua non* for African governments if they are to obtain badly needed donor assistance for their agricultural research systems. In several of the case study countries (e.g., Mali, Tanzania, Uganda, Kenya) the decision to begin a masterplanning exercise was motivated by the prospect of obtaining a loan from the World Bank or the prospect of losing funding from other donors.

If research planning is primarily perceived as a donor requirement rather than a felt need of the countries themselves, the chances that the research planning process can result in a fundamental change of the research system's role vis-a-vis domestic research clients are much diminished. Research planning carried out in response to donor pressure may perpetuate the incentives for agricultural officials in African countries to consider donor agencies as the primary "client" and respond to donor strategies for NARS development instead of investing time and effort in winning support from domestic clients and stakeholders.

The magnitude of the resources involved raises questions about the financial and political sustainability of the planning process and its viability, especially for small NARS. In several case study countries, researchers and managers questioned the amount of resources spent on planning while actual research activities ground to a halt because of the lack of operational funds.

Involvement of research clients and stakeholders in planning: inadequate but increasing. Although the planning process has been successful in encouraging the participation of different levels of management and research personnel in research planning and priority setting, it has not adequately involved groups of

research clients and stakeholders. Eliciting effective participation from farmer and other stakeholder organizations has been difficult. Many groups are new or have been suppressed in the past. But the trend is clearly towards increasing the involvement of these groups in priority setting, and the decentralization of research planning and management in a number of countries (e.g., Tanzania, Kenya, Mali) has provided greater opportunities for effective and sustained participation by research clients.

Research planning needs in small NARS. Research planning has tended to lag behind in the smaller countries, but planning is possibly even more important in these countries in order to establish external and internal linkages that will facilitate rapid acquisition and transfer of technology from the outside world. The political, organizational and financial uncertainties make it very difficult to generate the internal momentum and consensus for long-term exercises such as research planning (e.g., Cape Verde and Guinea Bissau). External support for research planning is generally lacking with the exception of the major (generally sole) donor stakeholder. International centers tend to focus their efforts on larger countries with more capable systems where they see higher payoffs to their investments.

NARS and donor frustration with one another. NARS feel that they often get mixed signals from the donors. In Tanzania and Kenya, for example, some donors were disappointed that the commodities they funded were not ranked very highly during the priority setting exercise, and pressed to have these rankings reevaluated. An important part of research restructuring is moving from administratively cumbersome projects supported by individual donors to broader programs controlled by the NARS and funded through consolidated funding mechanisms (CFM). Yet, in general, donors have been reluctant to relinquish control over the management of their funds because they are not confident of NARS financial control or proposal review mechanisms, or because the CFMs would make it more difficult to show direct impact from



their investments to stakeholders in the developed countries.

Emerging issues in priority-setting methodology. Several issues are emerging that raise questions about the relevance and value of formal priority-setting exercises as conducted to date. First, priority-setting methods give inadequate attention to off-farm food-system constraints to productivity improvement. Hence the resulting priority ranking is oriented towards research programs that focus on farm-level constraints.

Second, socioeconomic analysis continues to play a very limited role in the priority-setting exercises. Agricultural scientists recognize that socioeconomic constraints are a significant barrier to technology adoption, but do not see them as a subject that could be addressed in their research. More fundamentally, in many NARS the role of social scientists continues to be viewed primarily as that of ex-post evaluation of technologies developed rather than contributing to the basic definition of what problems need to be addressed.

Third, research priorities in most countries are set within the existing commodities and research themes. There is therefore little scope to allocate resources to new commodities and research themes, which may have been neglected in the past due to historical/political reasons, but may be important in raising overall food system productivity.

Fourth, research priority setting has given little consideration to potential spill-ins from international and other national programs.

CONCLUSIONS AND RECOMMENDATIONS: The general overview and country case studies indicate that **significant progress has been made by African countries in agricultural research planning and priority setting.** The planning process has been useful in helping agricultural research managers begin to streamline their research programs and physical infrastructure to more sustainable levels,

and to identify key areas needing more work in the future. Although progress has been made, the review suggests that the implementation and institutionalization of these research planning exercises remains weak. But in countries that already have a solid masterplan, rather than continuing to refine masterplans, implementation plans, and priority-setting exercises, it would be better to focus scarce resources on resolving the fundamental problems that constrain research plan implementation and, more broadly, research productivity.

There are several issues that need to be addressed in the future. First, **increasing agricultural research effectiveness requires high-quality, motivated human capital, and timely access to resources.** Despite the completion of research plans, many NARS still face problems of low salaries, dismal conditions of service for their researchers, and continued shortages of operational funds. Increasing research productivity will require raising the level of researcher salaries in general, and linking regular evaluation and peer reviews to career progression.

Second, improving research effectiveness and financial sustainability are integrally related to the development of better linkages with domestic clients and stakeholder groups. The consolidation of domestic support will depend on **the relevance of research to client-identified agricultural problems.** It will be important for managers to create incentives for researchers to work more closely with research clients to develop and implement problem-focused program plans. Researchers also need to perceive and proactively link with an expanded list of clients and stakeholders for agricultural research, including farmers but also input producers, marketing agents, processors, representatives from government agricultural and finance agencies and university researchers. It is important for researchers to frame their work within the context of the broader system because bottlenecks and opportunities that critically affect adoption of technology and the impact of



research can occur anywhere within the commodity system.

Creating the conditions for effective participation by clients will help ensure that research and extension agendas will be market-responsive and driven by client demands. Beyond this, networks of private sector clients and stakeholders constitute a potentially powerful coalition. These networks can offer a source of direct funding for research and extension services or lobby government representatives for funding of research and extension activities that they perceive as directly relevant to their needs. Just as important, these groups can identify and facilitate the implementation of institutional and policy innovations critical for technology adoption.

Third, in addition to creating linkages at the national level, stronger linkages at the regional level are an important key to improving the cost-effectiveness of research. Regional agricultural research organizations such as INSAH, CORAF, ASARECA, and SACCAR are increasingly active in facilitating cross-country research in West, East and Southern Africa, and national-level research plans need to explicitly incorporate regional research spillovers and priorities.

Finally, marketing and policy analysis capacity within NARS needs to be built to support the development of more effective linkages with clients and stakeholders at the national and regional levels. In several of the countries reviewed (e.g., Mali, Tanzania, Kenya, Uganda) currency devaluations, the removal of input subsidies, and trade liberalization have radically affected farmer incentives to produce different commodities and adopt fertilizer. NARS need to have the capacity to understand how policy changes will affect farm-level technology use and regional production patterns, and to use analysis to proactively influence the formation of agricultural policy that affects research impact and agricultural productivity.

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MSU Bulletin Office
10-B Agriculture Hall
Michigan State University
East Lansing, Michigan 48824-1039

This paper is also forthcoming as an SD Publication Series technical paper. It can be obtained through USAID's development information system (CDIE).

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