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Is research for development a good investment? Reflections on lessons from the NBDC

Douglas J. Merrey

Consultant—science coordinator, Nile Basin Development Challenge; dougmerrey@gmail.com

Abstract: 'Integrated Research for Development' has been promoted as an approach to research and development in natural resources management that is most likely to lead to positive impacts. It has various acronyms, e.g. 'INRM' and 'R4D.' It was the underlying theory of the SSA Challenge Program, managed by FARA and implemented by CGIAR centres and African partners. R4D was a basis for the first phase of CPWF, though in a rudimentary form. It was adopted as the theoretical basis for CPWF phase II. All six basin challenges are based on R4D, including NBDC. All six BDCs promise significant outcomes leading ultimately to poverty reduction and environmental conservation through application of R4D. It is time for a critical review of the lessons learned from the investments in R4D, particularly as it is being adopted as the underlying theory of the new CGIAR Research Programs. This paper is an early contribution to this review. It examines the premises, promises and actual achievements to the extent possible, using the NBDC as a case study. It identifies critical lessons that should inform future R4D programs. The author draws on nearly 35 years of experience in applied water management research, including the CPWF from its early phase and what he has learned from his engagement with the NBDC, including recent work contributing to the NBDC Institutional History (future versions of this paper may include other co-authors, but the present version represents only the author's views). The paper briefly examines the roots of R4D in earlier incarnations of 'action research' and identifies what is 'new': the wide range of diverse partnerships involved in the research. In NBDC and most likely the other BDCs, such diversity brings important challenges that have only partially been solved, as well as new opportunities that have only partially been realized. Future R4D programs will be good investments only under certain conditions. These include effective partnerships; strong commitment from the demand side institutions, including their empowerment *vis-à-vis* the researchers; long-term commitment by funding agencies with periodic reviews to guide the direction of the program; strong links to existing development investment programs; and an excellent science foundation.

Media grab: R4D has a huge potential but this has yet to be realized.

Introduction

Funding for the centres supported by the CGIAR is almost entirely from the development budgets of donors. Donors therefore can reasonably ask for evidence that the research they support is leading to measurable and significant development outcomes. This was relatively easy for the older centres producing improved varieties of commodity crops. However, over time the CGIAR has incorporated more natural resource research centres, focusing on water, forests and aquatic systems. In addition, other centres have also branched out to include significant research on

natural resource systems. These centres have traditionally found it more difficult to demonstrate clear developmental outcomes. All of them point to examples of change that over time are likely to lead to positive impacts, but demonstrating the actual impact of their research on complex human and ecological factors is problematic. Everyone agrees that understanding the basic functioning and processes of, for example, agricultural ecosystems is critically important for identifying potential interventions; but this more basic science is a hard sell to development partners.

One solution pursued for several decades is use of research strategies that include either testing the outcomes of specific interventions (often proposed based on research), or studying interventions being implemented by development agencies or communities themselves to understand the underlying processes and outcomes. These research strategies are known by various terms: 'applied research,' 'action research,' 'integrated natural resources management research,' and most recently, 'Research for Development' (R4D). This paper attempts to review selected experiences specifically related to water management, in order to understand what the outcomes have been and what the lessons are for the future. This is important as R4D is the major underlying paradigm of the next phase of CGIAR research on water, land and environment, the 'WLE Program'.

Methods

The paper draws on the author's experience with 'action research' and more generally applied water management research, mostly during his 20 years at IWMI. In addition, it draws on lessons emerging from the CPWF program over the last decade and especially on the lessons emerging from the Nile Basin Development Challenge (NBDC), with which the author has been associated in various roles from the beginning. He is co-author of a paper still under development that is documenting the experiences, perceptions and lessons learned by researchers and other stakeholders involved in NBDC (Merrey et al. 2013).

Results and discussion

R4D has multiple roots, but one of the strongest is in the 'applied research' carried out by anthropologists beginning in the 1930s. This was research aimed at understanding the social and cultural roots of problems of interest to colonial administrators (or the Bureau of Indian Affairs in the USA). Some anthropologists and sociologists took this a step further in the 1950s to carrying out 'action research:' research intended to observe the processes and outcomes from introducing some kind of change in a community. By the mid- to late-1950s, much of this research came under intensive criticism as being 'colonial,' top–down and disempowering. Sociologists later developed what they called 'participatory action research' (PAR) (Whyte et al. 1989). The basic idea was to work with communities to support their own innovations and to use social science to document, share and learn from the processes and outcomes. CGIAR centres also adopted various versions of PAR from the 1980s. IWMI was a pioneer in using PAR techniques to promote improved management of irrigation schemes in Asia through institutional innovations (see Merrey 1997). Of course there was a wide range of applications and variants of PAR in many different fields by this time. The 'innovation platforms' (IPs) under NBDC are a specific application of PAR.

The concepts of PAR and applied research were carried further in the late 1990s by integrating its principles with those of integrated natural resources management and integrated research for development (Sayer and Campbell 2004) and more recently with the concept of 'innovation systems.' This movement basically places PAR within a firm agro-ecology systems perspective and in the case of innovation systems, a broader institutional framework. R4D is therefore an important development because of this broad ecosystems perspective and because it also escapes the confines of social science to become an integrating interdisciplinary paradigm for doing research. R4D was pioneered by the sub-Saharan Africa (SSA) Challenge Program and has now been carried to a more explicitly developed form in the current phase of CPWF (including NBDC specifically).

It is interesting to note that the 'institutional history' study of NBDC has found a wide divergence of views as to what constitutes R4D. The CPWF management considers R4D to include the full participation of all stakeholders, integrating notions of power, relations among people, institutions and partners and how those dynamics evolve; and making research relevant by transforming its focus to contributing to real development outcomes. This reflects this author's understanding of R4D as well. Based on our interviews, NBDC researchers largely hold narrower concepts: research that somehow will in future be relevant to development; though some mentioned elements such as 'research into action' (Merrey et al. 2013).

Consistent with the other basins, NBDC adopted a specific ambitious goal or 'development challenge,[1] and went through a consultative process to refine this challenge, develop a 'theory of change' that sets out a possible roadmap to use research to address the challenge, identified specific partners and designed the research projects. It has placed strong emphasis on partnerships, communication, consultation and learning from experience; and used a host of media and methodologies to achieve its goals. The 'institutional history' exercise currently underway is an attempt to document the program's implementation processes and how it has changed and adapted over time as lessons have been learned. This paper does not attempt to replicate the many insights emerging from that study. Rather, it draws on this and other personal experiences to offer a few observations and to suggest some lessons learned as a basis for offering conclusions and recommendations for the future.

First, NBDC (and the CPWF in general) have raised expectations to a degree that may have been counter-productive. The goals and objectives were over-ambitious given the limited time and resources; this may have led to some disappointment at not achieving these, as revealed in the interviews for the institutional history. This disappointment has probably obscured the real positive outputs and outcomes achieved and the strong foundation for future work. Three years and about USD 1.3 million/year, especially given international researcher costs, are completely inadequate to develop and test innovations, validate them and achieve impacts in terms of uptake: changes in attitudes, knowledge and behaviour as anticipated in the NBDC theory of change.[2]

Second, it is clear that NBDC has been only partially successful in getting the full buy-in and shared understanding of the many researchers involved in the program, most of whom come from more traditional science backgrounds. The interviews make it clear that while some have fully bought in (usually those with a social science background), others worry that it dilutes the science quality. In principle, quality science is critical to the credibility and therefore success of R4D; there ought not to be any such tradeoff, but perhaps this aspect was not as well managed as it might have been.

Third, NBDC has been insufficiently demand-driven despite efforts to consult and involve stakeholders. This has two dimensions: a) NBDC was not well-integrated with existing SLM/RWM[3] investment programs. This seems to have been a missed opportunity to directly influence large on-going investments. b) Further, NBDC has been driven by international researchers who indeed have reached out to the 'consumers' and national researchers and tried to accommodate their interests—but it is still externally driven. There is a dilemma here. Would the consumers—SLM program managers—have asked for R4D as understood by the CPWF? Or would they have preferred more traditional research, for example, testing physical innovations? Researchers come with their own ideas about innovations and needs, while implementers are understandably driven by practical short-term needs. There needs to be a balance: researchers have an important role in driving innovative projects; they also need to ensure that their ideas are well-integrated with local expectations. There is no easy answer to this; but it is important to note that recently demand has been expressed for establishing a continuing program to promote innovation and capacity building.

A possible way forward, partially reflected in the IPs, is to design the program in a way that empowers the clients to identify and implement possible innovations, with the researchers acting as consultants, coaches and process documenters. The IPs are based on this approach at the local level. The gap appears to be that higher level officials have not been directly engaged in the same process: identifying and testing possible innovations themselves, facilitated

1. It is to 'improve the resilience of rural livelihoods in the Ethiopian highlands through a landscape approach to rainwater management.'

2. Sayer and Campbell 2004 point out that a long-term commitment to the manager-researcher partnership and full engagement of the researchers are critical to successful R4D.

3. Sustainable land management; rainwater management.

by the researchers. IWMI in the past tried this approach, for example, in Pakistan (water users associations) and in Sri Lanka (institutional arrangements for management of major schemes). The results were mixed but broadly and demonstrably positive, especially in the case of Sri Lanka.[4]

This direct involvement of researchers, playing activist roles as coaches, consultants and facilitators, challenges widely held notions regarding the appropriate role of researchers. Traditionally, researchers believe they should remain objective observers and measurers of phenomena, but should not become embedded in the system under study. This is an epistemological issue beyond the scope of this paper: we recognize the issue, acknowledge its importance and accept that researchers playing activist roles could make future replication of innovations at scale problematic. Nevertheless, the value of the mutual learning process may over-ride this problem at least in the early stages of system innovation processes.

Finally, NBDC has included a much wider and more diverse set of partners than is traditionally found in research projects. The list of international, regional, national and local partners involved in some way in the NBDC program is quite long. Many do indeed play important roles, even if some are more active than others. This has certainly added value, by bringing new perspectives through inclusion of stakeholders previously excluded from SLM applied research. Diversity can promote innovation through creative interactions and generating new perspectives, as well as opening new pathways to implementation. But diversity also has to be managed and space must be created to fully understand and benefit from these new perspectives. NBDC sought to achieve this by using platforms such as IPs, the national SLM platform, periodic stakeholder workshops and the program steering committee. Whether NBDC has found the right formula for maximizing the advantages of including a larger number of partners with diverse interests remains an open question.

Recommendations

Based on this brief review, we offer four recommendations. These are: 1) effective partnerships including empowered demand-side institutions; 2) strong linkages to existing development investment programs; 3) long-term commitment by funding agencies as well as scientists; and 4) a foundation in excellent science.

NBDC has developed partnerships with a variety of institutions and as far as we know, the partners value this relationship. 'Effective' can mean many things, but for R4D we highlight two specific characteristics. First, there needs to be a strong commitment from the demand side institutions; second, this commitment must include their empowerment *vis-à-vis* the researchers. This means the partners must have a strong voice from the earliest stages in designing research programs. In the end they must have an equal voice with the research institutions. Therefore it is critical to invest time and effort in dialogue and establishing and documenting shared understandings, responsibilities and implementation processes.

Related to the first recommendation, where feasible the R4D program should be firmly linked to existing investment programs. Ideally, the implementation and research components ought to be developed together. However, this is not always feasible. Nevertheless, a strong linkage to existing programs, in which the research addresses priority issues affecting that program, has a far greater likelihood of having real outcomes and impacts. It is also a way to 'leverage' investments: co-investment in implementation and an R4D program is likely to achieve synergies and enhance the returns on both investments.

Another critical requirement for successful R4D in complex agro-ecosystems—missing in the case of NBDC—is a strong long-term commitment by the funding agency, combined with adequate resources to enable key scientists to concentrate most of their energies on the program. We define 'long-term' as being a minimum of a decade and preferably two. We recognize this is very difficult for most funding agencies, but it is not impossible. Of course, periodic reviews and course corrections will be essential. The CPWF was originally designed as a 15-year program with three phases, meant to build on each other. Unfortunately, phase 2 only partly built on phase 1 and has been cut

4. For Sri Lanka see Merrey 1997: 97 and Uphoff 1992.

short as part of the CGIAR reform process. Phase 2 will therefore be closer to three than five years in duration. This is simply not a realistic time frame for such an ambitious program. In addition, the limited budget essentially forces CGIAR centres to allocate too little of their senior scientists' time to this one program. In nearly all cases, they have multiple project commitments and are often pressured to give their attention to other matters. Concentration and full engagement of the researcher is not possible. Multi-tasking is not an efficient use of time for most people.

Finally, as indeed has been emphasized by the CPWF and by the NBDC researchers we interviewed, excellent science is a critical foundation for effective and credible R4D. Excellence is not sufficient by itself but it is necessary. NBDC has carried out excellent research, as will emerge from this Science Workshop. Indeed, we will see that this is far better than many had realized. Which may suggest the problem: NBDC scientists have not been as quick to publish their results in international journals as may be desirable. This largely reflects the inadequate time scientists are able to commit to this program.

In conclusion, NBDC has been an extremely important learning opportunity for all of those involved in the program. In spite of the impediments, it has produced impressive outputs and there is growing evidence for positive outcomes as well. Building on past work in Ethiopia and elsewhere, it has significantly advanced our knowledge of what is required to sustainably 'improve the resilience of rural livelihoods in the Ethiopian highlands through a landscape approach to rainwater management.'

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