

Shared Experiences of an ASARECA Programme

Key Challenges for Institutions to Operationalise INRM from Ecoregional and NARS Perspectives

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Abstract

This paper highlights practical challenges and lessons arising from our attempts to operationalise the INRM approach over the last 6 years in East and Central Africa (ECA). The examples and lessons are drawn from experiences of implementers of the African Highlands Initiative (AHI), an ASARECA ecoregional programme operating in ECA, from other CGIAR ecoregional programmes¹, and from two national agricultural research institutes – the Ethiopian Agricultural Research Organization (EARO) and the Department of Research and Development (DRD) in Tanzania who help to implement the AHI programme. We feel that these experiences will provide “food for thought” on technical and institutional aspects relative to the formulation and implementation of the Sub-Saharan Africa Challenge Programme.

Background

Since the early 1990s, there has been growing concern that researchers should change their operational modes to better address major natural resource management issues and to balance the emphasis on increasing productivity with ensuring a sustainable natural resource base. Driving forces to change have been pragmatic:

- Research organisations have been challenged to improve adoption rates, particularly of NRM technologies and innovations, and to show impact, so as to ensure that enhanced productivity does not undermine the long-term productive potential of farms;
- Social, economic and policy issues related to improving natural resource management need to be addressed (e.g., communal resource management; local organisational and farmer capacity; policies impacting on local resource managers; handling potentially conflicting public-private interests in resource management; and the relationship of natural resource management to economic growth and risk);
- Some scientific advances have actually caused degradation of agrobiodiversity, contributed to the mining of nutrients, resulted in the emergence of new pests and diseases, and provided only a short-term ‘fix’ to the productivity needs. These are challenges that must be addressed by responsible research organisations, who promote good science and who have generated many natural resource management technologies.

GENESIS OF ECOREGIONAL PROGRAMMES AND INVOLVEMENT OF THE NARIS AND SROs

In 1994, the CGIAR decided to address a number of these shortcomings by promoting ecoregional programmes (ERPs) as a new mode of working across centres and through partnerships with national and other international research partners. The challenge was to “...build on CGIAR experience, recognising the need to: integrate resource management and productivity concerns; marry human and technical dimensions; adopt an integrated systems approach; and link policy formulation to technology development” (TAC 1992). Key cornerstones of the ecoregional approach were²:

- To address the sustainable improvement of productivity through the integration of natural resource management and productivity concerns;

¹ ISNAR (2001) *Meeting the Challenge of Ecoregional Research*, an international workshop on organizing and managing ecoregional programmes, Wageningen, The Netherlands, 26-28 March, 2001.

² The ecoregional approach is similar to the current definition of INRM (Ref. <http://www.inrm.cgiar.org>)

- To emphasise human decisions as causal factors that impact biophysical processes such as land degradation;
- To use multilevel hierarchical approaches, encompassing site-level to wider systems and recognising human decisions at different levels, from farm household to local, national and even global levels;
- to link research with externalities such as policy and development actors, incorporating these elements into the approach.

The Technical Advisory Committee (TAC) also noted some shortcomings in the CGIAR use of partnerships and clarification of complementary roles, in that there was: a lack of a clear global responsibility for strategic research on natural resource management; limited co-ordination of capacity building efforts, decentralisation and broadening agenda efforts; overburdening of weak and/or smaller national systems by attention from many international agricultural research centres; and limited interaction and voice of national agricultural research systems in CGIAR affairs. The CGIAR has taken various actions to address these concerns in the interim, and the implications for the ecoregional programme operations were:

- To emphasise the importance and complexity of the task of sustainably improving productivity, and the complementarity of institutional skills across international agricultural research centres, national agricultural research institutes, universities, non-governmental organisations and farmer organisations as a rationale for increasing partnerships;
- To remove duplication and overlap across the international agricultural research centres to place less burden on the national agricultural research institutes through better coordinated interactions;
- To highlight the role of the social sciences in understanding the social and policy dimensions of sustainable agricultural development, and the balance needed between social and biophysical sciences in ecoregional research;
- To pursue working relationships (e.g., multidisciplinary teams) that could enhance the examination of a number of resource management themes – such as soil-water relationships, soil fertility and plant protection; and
- To use a more holistic, systems approach as well as research for development.

Ecoregional programmes were launched in 1994 with a twenty-year horizon through 2010 (TAC 1994) to equip the national agricultural research institutes with the research and institutional models to play that role. TAC saw the national agricultural research institutes as the ultimate managers of research on natural resource management. Thus, the view was that ecoregional programmes would: implement an INRM research agenda constructed on the basis of broad issues in specific ecological and geopolitical regions, embark on new ways of doing science, and employ new kinds of organisational arrangements. This was a relatively tall order and later it was apparent that finding ways to change institutions, including institutional arrangements, was an important consideration given that most participating organisations were accustomed to using a markedly different approach to doing research.

In the case of AHI, ASARECA took early ownership and the national agricultural research institutes from Ethiopia, Kenya, Uganda, Tanzania and Madagascar expressed early interest and have jointly worked on developing the programme since inception. Other ASARECA countries with highlands have also requested inputs into developing INRM programmes (DR Congo, Eritrea, Rwanda and Burundi). It was not until 2000 that ASARECA and others involved in AHI realised the important institutional dimensions of this INRM programme, and made institutionalisation of INRM an explicit part of AHI's agenda.

The INRM approach has evolved from the earlier TAC thinking. It is useful for solving certain types of complex real-world problems, taking into account the dimensions of livelihoods, environmental services, agricultural productivity, and agroecosystem resilience – social, natural, physical, human, and financial capital. Some new dimensions include the necessity:

- To explicitly involve and build the capacity of resource managers and users recognising that change and development requires specific adaptations that they need to make themselves (e.g. noting the importance of local ownership of the development and change processes);
- To increase the level of dialogue and deliberation among stakeholders and improve the interaction of research within the system;

- To deal with high levels of uncertainty, non-linearity, and time lags, involving multiple scales of interaction and response, with multiple stakeholders who have contrasting objectives and activities; and
- To incorporate and facilitate social learning processes for various actors and their organisations, including community and research entities.

LESSONS ON OPERATIONALISING INRM

We learned that, in order to operationalise integrated natural resource management, it is necessary to: find focus and set agendas, organise the research, develop researcher and organisational capacity, plan for INRM, integrate disciplines and strategic/applied R&D, gain partnership experience, and create enabling conditions. The main lessons are indicated in point form below.

Finding focus and setting agendas

1. A key challenge was to bring together diverse perspectives³ of ‘unequal’ institutions that had limited experience in setting up an integrated programme with a focused, but broadened agenda.
2. Evolution and iteration has been required to build consensus of many diverse perspectives and interests⁴;
3. A conceptual framework and strategic plan to explain the overall intent of the programme must be developed, but flexibility to update and refine these is important;
4. Investment of time and process must be made to look beyond institutional boundaries and concept development. Facilitation or coordination for this is important, otherwise, the programme may be fractured into multiple and de-linked pieces that have limited relationship and where the value from integration cannot be realised. Results and impact will just not add up;
5. The ‘ecoregion’ provided a focus – a geographic area with relatively similar sociopolitical and biophysical contexts where common problems and opportunities arise and hypothesised solutions may make an impact. An ecoregional focus has assisted in making cross-site syntheses, in visualising the strategic outputs, and provides a common background for sharing purposes;
6. Defining the ‘regional’ dimension was difficult and required iterative development, leadership, and good research skills. Initially it was easier and more attractive to do ‘business as usual’ – following local and disciplinary interests;
7. Choosing problems and opportunities that were of local, national and international relevance, defined from perspectives of food security, sustainable agricultural production, and/or poverty eradication, was challenging – e.g., balancing local relevance with higher-level concerns. AHI decided to use bottom-up problem identification, and successfully amalgamated this regionally to see similarities and differences, rather than using a more top-down ranking of priorities;
8. A start-up phase, where learning could lead to adjustments in orientation and operations, was critical in many cases.

ORGANISING THE RESEARCH

Some experiences and lessons from organizing research are summarized below:

1. A key challenge has been to engage and satisfy institutional interests while trying to move into new ‘strategic’ research areas where there was less initial interest and capacity.
2. There were divergent points of view regarding research site choice: to choose landscape ‘hot spots’ that represented large ‘recommendation’ domains using spatial analysis tools, or to choose sites that had an institutional history, strong interest and feasible logistics.
3. Considerations of scaling up and strategic contributions that sites had to offer came later. These should have been anticipated earlier on.

³ International, regional, national and local perspectives, as well as specific institutional agendas (livestock, commodities, agroforestry, soils, policies, etc), had to be integrated to address the key issues.

⁴ AHI found regional planning workshops, where there was a high level of cross-institutional sharing, continual involvement over time of the same people, and that conceptual growth and practical experience needed iterative development over time.

4. Where new research methods must be progressively developed over time and where capacity building and institutional change is a key programme target, there is a need to stay in the 'invested' sites so as to build 'social capital' (of researchers and community groups) and the capacity of the 'change' team.
5. Teamwork requires different planning, implementation and reward mechanisms that are not usually institutionalised. EARO and DRD identified the reward and M&E structures as key areas for review.
6. Careful organisation is required to accommodate various stakeholders and those involved in levels of research (site, national and regional), and associated stakeholders.
7. ASARECA and AHI realised that learning how to manage institutional change and capacity building are necessary components of the AHI programme in order to develop and use the INRM approach.
8. There is now a strong realization by those active in the AHI program that research needs to be much better integrated into development processes so as to inform these processes, and the EARO and DRD cases indicated that institutional linkage arrangements to do so need to be revisited.
9. It is not easy for people in public funded research organisations to adopt new, expanded roles because they work in a broader organisational context, where the role expectations from others are historical and not easy to change (feedback from researchers).
10. Implementers of AHI have been using an output, outcome, and impact orientation in their planning and implementation. Given the challenges of adopting NRM technologies and arrangements, the outcomes, i.e., finding ways to achieve changes in behaviour, have become forefront in the activities. This has led the NARI research team scientists to have a heightened interest in developing facilitation skills to influence empowerment.

DEVELOPING RESEARCHER AND ORGANISATIONAL CAPACITY

Key challenges have been: to develop and practice new methods and approaches where there is limited competence, to face challenges from senior, non-practising researchers and sceptics who have limited understanding, and to match expectations for quick, high-quality results with the time required to develop competence. Some key lessons and principles for developing researcher and organizational capacity follow:

1. Iterative concept development (necessary for implementing INRM) should link to practical application, e.g., it should be grounded in experience. These two important ingredients built and positively changed the AHI research group, and were important in advancing knowledge and the agenda. This requires good leadership and facilitation;
2. Capacity limitations in areas beyond technology development have had a major influence on agenda development, and the speed and quality of implementation. Institutions are realising the need for new disciplinary and skill areas; e.g., for example, EARO said it needs sociologists, anthropologists, ecologists, systems agronomists, facilitators and enterprise development specialists, as well as skills in process monitoring and documentation, participatory research, and improved analysis and synthesis skills;
3. AHI found that regional training workshops were useful but insufficient to develop new skill areas and concepts, and to put these into practice. It is now using a 'mentoring' system to develop competencies – with strong practical field follow-up;
4. AHI, EARO and DRD have identified multiple success factors for managing an INRM approach for effective R&D. The joint development and application of an assessment process has shown managers and practitioners that there are some deficit areas in the current implementation of research. This has led to reform and capacity building plans;
5. EARO and DRD assessed their INRM research quality. The analysis at both NARIs showed that better links for learning need to be institutionalised so as to identify and share the 'best practices' from project 'islands', and so that managers and researchers share experiences and concerns in dialogue and feedback sessions;
6. Assessment of research quality against a vision of desired outcome and impacts proved helpful for building understanding and to appreciate the usefulness of the multiple dimensions of the INRM approach;
7. 'Pilot' sites and teams are useful for: building competence in INRM of individuals through practical experience; providing examples of INRM concepts in practice and their local impact; and providing a working example of INRM to interested institutions;

8. Use of action research to gain insight into the 'how to' areas for INRM (collective action, group management, innovation systems management, enterprise development chain management) calls for improved skills in facilitation, observation, documentation, qualitative data management, and combined qualitative and quantitative data analysis;
9. Values and principles for operating effective research have assisted those involved in AHI, EARO and DRD to clarify the researchers' role, responsibilities and relationship to the clients – making the research process more accountable in human terms and opening the door for dialogue with clients, which allows a more equitable control of the research process.

PLANNING FOR INRM

Key challenges have been to balance interests, to balance top-down and bottom-up planning, and to move into a process management mode:

1. Planning needs to be flexible, iterative and dynamic, given INRM programme complexity and multiple stakeholder views. It is a challenge to find ways to reduce transaction costs, but also to see whether the benefits outweigh the transaction costs over time;
2. Conventional planning using log frame formats is not helpful for INRM research, where process, action research (where iterative learning and adjustment must take place) and empirical research (that is strategically inserted), need a flexible and dynamic but output-oriented planning frame;
3. It is important to include some 'outsiders' in the planning and budgeting processes to diffuse 'agenda seekers', power relationship problems, and suspected vested interests;
4. Planning needs to be cyclical and renewed by incorporating feedback from users and policy changes so that direction can be influenced;
5. Weak demand results in weak agendas. Initial investment must therefore be made to develop the capacity of the demand side;
6. INRM must have multiple inputs and be programmed in an integrated way to deal with complex issues. However, partners often want to (or have to) remain committed to their mandate and find it difficult to branch out into domains beyond the mandate. Thus, some parts of the plans are more difficult to accomplish;
7. In start-up phases, some ecoregional programmes placed too much emphasis on characterisation, at the expense of focusing on strategic problem issues.

INTEGRATING DISCIPLINES AND INTEGRATING STRATEGIC AND APPLIED R&D

This has been one of the largest challenges for AHI, and where contribution will probably be greatest if we succeed. Experience suggests:

1. There are still large deficits in tackling the social and policy dimensions of INRM and integrating these with biophysical and economic dimensions at the various levels;
2. 'Reductionist' treatment of the elements in the system is insufficient to improve field, farm and landscape systems, therefore we need 'systems' specialists and new approaches. These are hard to find and operationalise, given the current orientation of most research institutions;
3. Creating an integrated agenda that can be operationalised has been difficult when partners have a commodity bias in interests/expertise, and where organisation of research is along commodity lines. Integration has been easier to achieve in national agricultural research systems that take a regional or zonal approach for organising staff and resources;
4. Integration (and partnerships) needs to be managed, and requires an approach development in itself;
5. AHI's programme was positively influenced by major evaluations and stakeholder consultations because these provided significant contributions towards directing it into new avenues, and for negotiating partnership and agenda issues;
6. Participatory approaches and action research is often seen by hard-core scientists as non-scientific development work; yet quality science can be brought to bear on these processes. This divide often deters 'modellers' from working together with bottom-up, more social processes. A change in mind-set is needed;

7. Many organisations have been slow to realise that method, approach and process development are part and parcel of the scientific process, and make direct contributions to improve development and innovation processes and overcome adoption bottlenecks.

GAINING PARTNERSHIP EXPERIENCE

A key challenge was that ‘partnership’ at the onset was a loosely used word, and there was limited thoughtful planning or management for starting, monitoring and maintaining different types of partnerships. Some experiences in building and sustaining partnerships are summarized here:

1. Generally, the ecoregional programmes have been very successful in bringing together and managing partners from a much broader range of organizations than ever before. Partners are successfully involved in some degree of decision-making at various levels of the programme;
2. Non-governmental organisations, development partners and the private sector were not explicitly invited to the table at first. Now, most ecoregional programmes explicitly involve these entities;
3. Initial engagement by research entities in the ecoregional programmes was driven to a large extent by funding expectations, with the intention of doing more of the same, rather than venturing into the new INRM domain. When it became clear that funds were limited and the agenda was progressive, there were many dropouts;
4. Some organisations sustained their engagement because of strong agenda intersection, as a result of timing in their organisational history, and they were interested in enduring the longer processes that led to institutional engagement, due to good leadership and a build-up of trust. Benefits have to outweigh perceived costs to encourage participation;
5. If funds were available to initially ‘oil’ partnerships, the more mature partnerships lasted through harder funding times because initial intellectual products and working together were compelling;
6. Partnership-building elements and skills were underestimated in the beginning. It is a complex process that requires efficient management and time investment to ensure that partners are carefully assessed, mutual benefits are identified, roles and responsibilities are clearly defined, and mechanisms for conflict resolution are in place;
7. Partnership and team management training in AHI greatly assisted in raising awareness that these two areas require input and leadership, and are not just ‘words on paper’. National agricultural research institutes, international agricultural research centres and ASARECA are now interested in explicitly managing partnerships;
8. Tension developed over relative costs and the contributions made from national and international partners. Fund allocation caused stress and competition between the high cost and low cost partners.
9. The funding environment continues to promote competition and not integration and partnership, as have leadership styles.

CREATING ENABLING CONDITIONS

This was a key challenge for the ecoregional programmes, where lack of clarity and limited investment were major barriers. Experiences suggest:

1. Governance mechanisms need to be clear. The CGIAR did not think this through for the ecoregional programmes. There was confusion over the degree of ownership, decision-making powers and governance role of the convenor and their board of trustees;
2. A steering committee with well thought-out membership, and with a co-ordination or facilitation unit, has been the most common ecoregional programme governance structure. Some steering committees became too large, so the issue became how to get fair representation. To do this, structures have been developed to allow for operation and stakeholder input at different levels (consortia, countries, benchmark sites);
3. There was an assumption that everyone came to the table as equal contributors, which is not the case. It is important to recognise the unequal-ness of partners;
4. The ecoregional programmes learned that different stages of decision-making require different roles, e.g., consultation, decision-making on priorities and resources allocated, follow-up by management, M&E, etc;

5. Good facilitation, co-ordination and leadership were **key** ingredients. Broad experience, wide technical expertise, experience in the research and development arenas, and strong vision are required. This was the case at regional, national and site levels of operation;
6. As funding went up and down, programmes did not shrink and expand readily: Funding levels promised 39 percent and gave 8 percent – some felt that this killed the ecoregional programmes before they got off the ground;
7. No learning culture was set up between and within the programmes until recently for AHI. If this need had been recognised and invested in, we feel that faster progress would have been made; and
8. Communicating the mission and impacts of the ecoregional programmes has been universally difficult and the publishing record has been generally poor. Analysis revealed that this was due to under-investment and limited planning in this area, very demanding and stretched work schedules of the co-ordinators, and limited investment or interest in producing synthesis products.

PAYOFFS: ADVANCES IN INSTITUTIONAL AND TECHNICAL DIMENSIONS

The payoffs from using the INRM approach and organisational model are multiple:

1. There are many successful cases where science and farmer knowledge have been successfully linked, resulting in new technologies and management practices, particularly in integrated soil fertility management;
2. The concept of ‘linked technologies’, where multiple options were experimented with by farmer interest groups with inputs from a multi-disciplinary team, led to improvements in soil conservation, fertility management and food and income for various social strata;
3. Exploration of traditional knowledge and means of managing NRM is uncovering collective action pathways that can be supported in future;
4. Improved partnership arrangements and co-ordination have emerged around solving major problems identified by farmer communities;
5. By working directly with communities, researchers have gained personal insights into poverty dimensions and the limited adoption of improved technologies – leading them to change their research methods and hypotheses;
6. By working in a multidisciplinary team that includes development agents, researchers coming from a single-disciplinary perspective have realised the limits of their discipline, and that combined expertise and technologies go farther in solving systems problems, and they have been exposed to development perspectives that have been taken up in their research agenda;
7. Farmer assessment, knowledge and feedback on technologies have positively influenced the technology development process and the research agendas;
8. We can show where action research is contributing to development processes, improved analytical skills of farmers, and catalysed dialogue between the actors involved in the development process;
9. A number of research managers and researchers have realised the need for cultural and organisational change and for the processes that enable this to happen to be understood so that they can be managed;
10. Process research and knowledge management structures are being designed and developed as a response to need for science quality as well as flexibility;
11. We have ventured into new research domains and partnerships that would not have been tackled through single organizational structures;
12. Integration of social and policy dimensions is indeed starting to occur;
13. Appreciation of and operationalization of improved farmer participation has materialized and is having positive benefits to all parties, as witnessed by improved capacity levels (for technical innovation and organizational management).

Challenges aside, the emerging so-called ‘organisation model for INRM’ described above, conforms to a number of the principles of an ‘adhocracy’ – which is an organisational type that has potential for flexibility and learning. It is characterised by the production of complex outputs that demand sophisticated innovation by combinations of experts deployed in teams, and where co-ordination is achieved, less by direct supervision, performance controls and rules, than by selective decentralisation. The power to make decisions is decentralised in uneven ways and devolves to the person or level that is most likely to have the expertise

needed to deal with the issue at hand. It allows for patterns of working together that emerge in a self-organising way; management creates a climate where a variety of strategies can grow (Ashby 2001).

A learning organisation as defined by Senge (1990) mentions: a willingness to take risks and experiment, decentralised decision-making, systems for sharing learning and putting into practice, frequent use of cross-functional work teams, daily opportunities to learn from experience, a culture of feedback and disclosure, and collective vision building. This may be a model worth considering for research organisations and partnerships in the future.

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