

Integrated agricultural research for development: lessons learnt and best practices.

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Abstract

Changing the ways of doing business – business unusual – will require innovative approaches to building the required capacities in Integrated Agricultural Research for Development. This paper outlines ICRA's (International Centre for Development Oriented Research in Agriculture) continuing initiatives to develop, promote and nurture capacities in what ICRA has traditionally called Agricultural Research for Development (ARD) in response to changing demands and expectations placed upon agricultural and rural development professionals and institutions. The generic multi-stakeholder approach to rural innovation that integrates research into the broader development agenda of improved livelihoods, sustainable rural development and reduced poverty encompasses alternative research for development paradigms such as INRM and IAR4D, all aimed at improving the relevance, effectiveness and efficiency of agricultural research for development. The hands-on, pragmatic yet innovative approach to capacity development in ARD is outlined along with the Centre's current efforts to expand South-South-North partnerships involving educational as well as research and development institutions in response to the increasing demand for capacity development in IAR4D. This is illustrated with an on-going collaborative initiative with NARO and Makerere University in Uganda and efforts to expand the approach to other countries of the region and to build up a sub-regional, network for capacity building in IAR4D, well placed to respond to the needs of such Africa-wide programmes as the SSA-Challenge Programme are discussed.

Key Words: Capacity building, East Africa, innovation systems, problem-solving approaches

Agricultural Research for Development (ARD)

Globalisation, the information and communication revolution and other rapid changes that are taking place in the environment in which research for development (R&D) professionals and institutions operate are placing additional demands upon them. Today, professionals and institutions engaged in agriculture are called upon to contribute directly to resolving complex issues such as alleviating poverty and sustaining development. In response, the mandates of many organizations are changing and commonly becoming wider and different institutional arrangements that better respond to the complex needs of development are evolving. As a consequence, many practitioners are questioning the relevance of conventional scientific reductionism and the linear technology generation and transfer model/paradigm for agricultural research and extension still adhered to by many individuals and institutions. Alternative paradigms that aim to be more relevant, effective and efficient in the collective advancement and application of knowledge to the resolution of complex problems are thus, being developed and experimented with.

At ICRA we do not believe that one size fits all. We consider that while a reductionist and linear approach may remain effective for solving simple problems, alternative and more holistic and integrated approaches to innovation are required to resolve more complex issues. Thus, for example, in addition to making the products of research available, ICRA considers that for research to be effective and have an impact on development it must also focus on change processes and the ways in which science and technology engage with political, economic and social processes. This requires that the perspectives, experience and knowledge of a broad range of stakeholders be brought into play. This necessitates that today's and tomorrow's specialists learn to work together in interdisciplinary, multi-stakeholder and multi-institutional approaches and partnerships. The centre defines the processes for achieving such an integrated approach to planning and implementing agricultural research and development strategies and activities that respond to the needs of multiple stakeholders, that use participatory and systems approaches and that contribute to wider development objectives, as Agricultural Research for Development or simply ARD. These processes, by their nature, are only made effective through participatory approaches.

ARD and Farmer Participatory Research (FPR)

Very considerable advances have been made in refining participatory research approaches over the past two decades and many useful tools have been developed and made available. A number of these helped to replace “technology” with “people” at the heart of agricultural research for development. However, and while many consider farmer participatory research (FPR) as an alternative to linear research-extension models, it is only a tool to better engage two stakeholder groups and it does not address broader-scale stakeholder involvement or institutional issues that constrain broad adoption and impact. In other words, the framework remains too narrow and does not take on board a broad enough perspective and thus excludes available experiences and knowledge from contributing to well integrated solutions.

For the successful implementation of ARD, the composition of stakeholder teams and partnerships must be determined by the specifics of each complex problem to be tackled but certainly needs to be expanded from traditional groupings of researchers as the generators of new technologies, extensionists as the disseminators and farmers as the client recipients to more inclusive and equitable partnerships. Additional stakeholder groups will often include consumer representation, input and output marketing, agro-industry/business, banking/financing and credit, environmental groups, relevant civil society groups, policy makers and educationalists.

ARD, INRM and IAR4D

The shortcomings of narrowly focused FPR and similar approaches have been recognised by numerous groups and notably by many working in the management of natural resources and ecosystems. In response to the complex demands of managing agro-ecosystems, and in recognition of the fact that agriculture depends on and affects the natural resource base and competes and interferes with other sectors using the same natural resources, natural resources specialists experienced the need to broaden their agendas. For example, over time the CGIAR has shifted its primary focus away from single commodity programmes to more comprehensive integrated natural resource management perspectives. The term integrated natural resource management (INRM), when first used by the CGIAR/TAC in 1997 referred to responsible and broad-based management of the land, water, forest and biological resources base – including genes – needed to sustain agricultural productivity. Since then, the understanding of the term has continued to evolve and the CGIAR’s inter-centre working group on INRM now considers it an approach to research that aims at improving livelihoods, agro-ecosystem resilience, agricultural productivity and environmental services to augment social, physical, human and financial capital, which it does by helping solve complex real world problems (CGIAR 2002).

The acknowledgement that new ways of doing business are needed to collectively raise the impact achieved by research for development is nowhere more apparent than in Sub-Saharan Africa where food insecurity and poverty continue to expand. A new and alternative paradigm for agricultural research for development has thus been proposed as the umbrella under which the CGIAR Challenge Programme for Sub-Saharan Africa should be managed and implemented. The adopted paradigm, Integrated Agricultural Research for Development or IAR4D, encompasses individual, team and institutional capacity building, market-driven approaches, natural resources management, knowledge management, policy and people-centred research. The approaches advocated by IAR4D draw heavily on the concepts and methods promoted by the INRM paradigm.

Differences between broad-based participatory research approaches, INRM, IAR4D and perhaps other approaches to improving the relevance, effectiveness and efficiency of agricultural research for development can be identified and exploited by attempting to link the different approaches to different situations and degrees of complexity in the problems to be tackled. They thus provide individuals, teams, institutions and partnerships with alternative paradigms and new ways of doing business – business unusual.

ICRA collectively refers to these approaches as ARD and considers that an understanding and application of these will contribute to the needed move away from prescriptive, top-down, linear thinking and will help move research findings off the shelf and increase development impact. ICRA also considers that ARD approaches should have a dominant place in the culture of all institutions involved in rural research and development if they are to work together in relevant partnerships. The understanding and adoption of ARD approaches is expected to contribute significantly to institutional change and development processes and increase the capability of individuals, teams, institutions and partnerships for making effective and efficient contributions to knowledge-based societies.

Building Capacity in ARD

ICRA was established in 1981 on the initiative of European Members of the CGIAR who recognised that, to contribute to more effective Agricultural Research for Development that is both relevant and responsive to the needs of resource poor farmers and other inter-related stakeholders, R&D institutions and their practitioners require skills over and above those acquired through formal and commonly disciplinary orientated education and training. It now has a strong reputation of organizing and delivering learning opportunities focussing on developing knowledge, skills and attitudes needed to integrate the contributions of different disciplines, institutions and stakeholders into the analysis of complex rural development problems and into

the design, implementation and institutionalisation of action plans to address such problems.

ICRA sees capacity building and development as a process that requires much more than simply training of individuals. As the success of change processes often hinges on attitudes and organizational cultures, so training individuals in specific skills often fails to have significant impact on its own. An ideal capacity development programme works at an organisational level over a longer period to help bring about changes in structures, systems, values and incentives. Part of such a programme will undoubtedly include the need to develop even higher levels of specialisation but along side of this is also the critical need to build the capacity of specialists to work together to resolve real world complex issues.

All of ICRA's learning programmes are designed to guide interdisciplinary and inter-institutional, multi-stakeholders teams through a process of solving a jointly identified complex problem that cannot be effectively addressed without collective action of all concerned. The ARD approach provides the Centre and its partners with a framework and set of procedures around which to arrange, in a logical manner, the many learning modules and tools used in these capacity development programmes. Rather than simply making a miscellaneous collection of tools randomly available in an open toolbox through skills enhancement programmes, these tools and skills are arranged around the progressive application of a generic ARD framework such that participants in learning events link tools with processes and, in doing so, adopt alternative approaches to solving their real-world problems. This is illustrated by the layout of current learning materials, available on the ICRA website (www.icra-edu.org) and on CD-ROM, showing how the "ARD framework/procedure" guides learners through the generic steps of a complex problem-solving process, and links steps to the "learning modules" (Figure 1). ICRA's learning programmes do not use instructional approaches but are entirely based on experiential or discovery learning. The learning in these programmes is achieved through a combination of individual assignments (from CD, web or paper), trainer-facilitated teamwork to apply the problem-solving ARD-procedure on a case study in a series of workshops in the class room, guided field exercises, and professional teamwork in a real-world problem-solving process. This professional teamwork is the climax of the ICRA experiential learning programmes

The originality of the ICRA programmes lies in their non-conventional nature as shown by:

- The learning though hands-on, professional experience involving trainees, partner research and development organisations and other stakeholders in designing a jointly 'owned' plan of action addressing their shared problem

- The orientation on the processes needed to address complex rural problems rather than on the technicalities of the problems and solutions
- The breadth of the range of topics covered
- The integration of this broad range of topics into a pragmatic step-by-step problem-solving procedure (ARD-procedure/framework) that can be used to address a wide range of complex rural problems.

The skills passed on in the ICRA learning programmes include:

- Establishing, managing and working in interdisciplinary, inter-institutional and multiple-stakeholder problem solving teams
- Engaging the ultimate clients and other involved stakeholders in the ARD processes
- Seeking and using complementarities between local indigenous knowledge and more formal research based knowledge
- Applying a broad systems approach and thinking
- Using modern ICT
- Prioritising R&D options on the basis of multiple stakeholder criteria
- Translating research results into products that meet client's needs and have an impact on the livelihoods of resource poor farmers and through them sustainable rural development.

ICRA, for more than two decades, has provided learning programmes in ARD thinking and approaches in English and French from its bases in Wageningen and Montpellier with field work undertaken jointly with partner organisations in the South. Making extensive use of lessons learned from participants' experience, the content and structure of these annual 28-week "core" learning programmes is constantly adapted to changing insights and needs. Hence, the programmes combine the strengths of a time-tested formula with the ability to adapt to a constantly changing environment. The 13-week fieldwork of these core programmes is implemented in the South by interdisciplinary teams of participants. The teams work with research or development organisations with whom ICRA has a long-term partnership aimed at developing capacity to implement ARD approaches and building up a critical mass of professionals conversant with these alternative approaches. The partner organisations and other stakeholders identify the complex problems that the teams are asked to address and the teams are partly composed of professionals of the partner organisations. In this way, professionals learn through hands-on experience to work in interdisciplinary, multi-institutional teams with a broad range of stakeholders to address defined problems, negotiate, plan and implement solutions and generate the knowledge needed through mutual learning. The resulting action plans are then followed-up by these professionals, their institutions and other stakeholders involved.

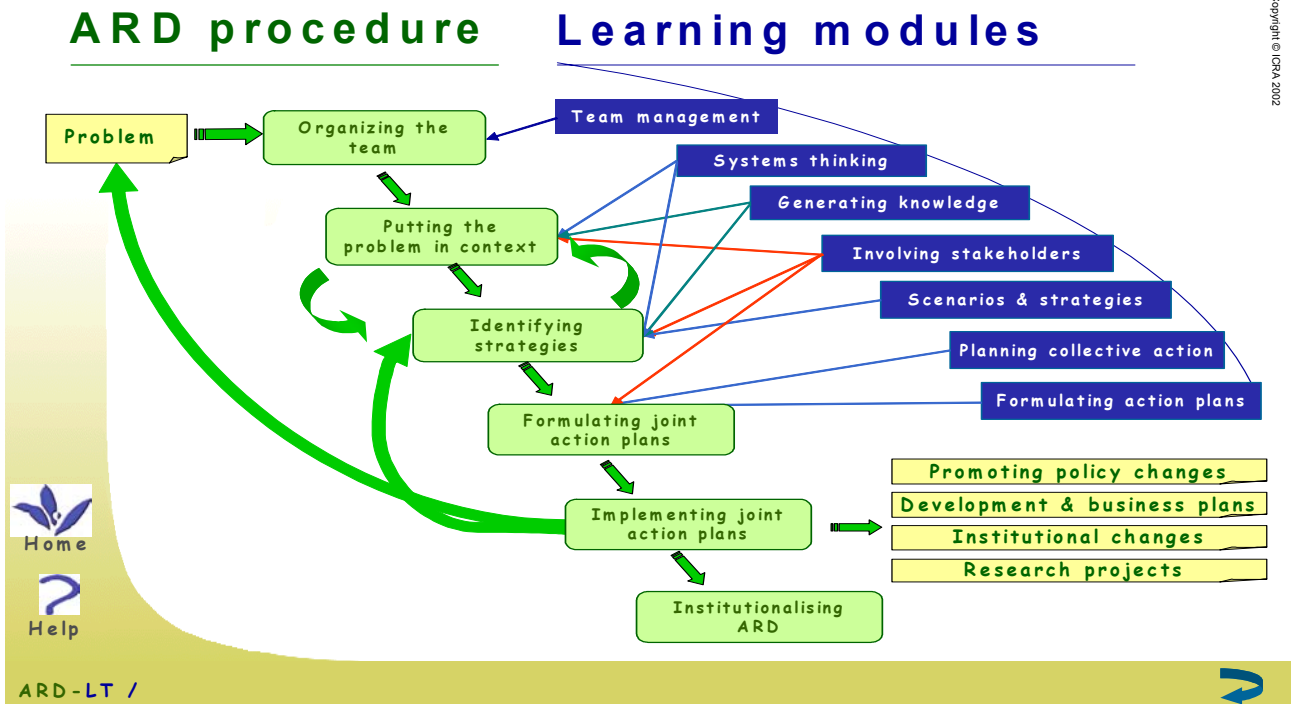


Fig. 1 Layout of ICRA learning materials (ICRA, 2003; CGIAR, 2002)

In addition to these “core” learning programmes, ICRA has also developed a capacity to deliver similar or more tailor-made learning experiences at the regional (Latin America) or national level (Ethiopia, Mexico, Venezuela) in partnership with research and educational institutions in the South. To successfully implement these programmes, ICRA, as a small centre, has to obtain inputs from and operate in partnership with others, both in the North and in the South. ICRA depends upon effective partnerships; they are its life blood. It engages in partnerships with diverse organisations including research, extension, universities, NGOs and farmer organisations and their respective partners for the conduct of field studies and through longer term relationships for the maintenance of the required critical mass of expertise in ARD approaches.

Meeting increased demands for capacity development in ARD

The demand for this type of capacity development continues to expand. ICRA receives many more applications for participation in its core learning programmes and requests to provide tailor-made learning programmes in the South than its capacity to deliver. To help satisfy this demand, the Centre has developed a Global Partnership Strategy. This aims at making more effective use of its limited resources through expanding capacity development partnerships and networks with research, development and particularly

education organisations in the South (both public and private) and with continued support from strategic alliances and collaborative arrangements with organisations in the North.

To become sustainable, all such capacity development partnerships need to have strong educational partners as these are the organizations that, in partnership with R&D organisations will, in the short run, deliver tailor-made, ARD learning programmes responsive to the needs of partner research and development institutions and professionals and, in the medium and long-run, supply the new generation of human resources into the other partner institutions. Involving Universities and Agricultural Colleges will also contribute to sharpening the relevance of tertiary educational institutions to the needs of rural development partners and to narrowing the gap between them and research and development institutions.

Examples of partnership initiatives currently being fostered by ICRA include: for Anglophone West Africa pilot activities based with KNUST in Ghana and with the University of Abomey-Calavi in Benin in Francophone West Africa; with NARO and Makerere University, Uganda and KARI and Edgerton and Kenyatta Universities in Kenya in the ASARECA sub-region of Sub-Saharan Africa; with ARC in the Republic of South Africa in Southern Africa; with CATIE in Central America and FORAGRO and INICIAR in Latin America; while partnerships with IPGRI and FAO have a more global orientation.

The rate of evolution of these partnership efforts for capacity building in ARD is likely to be different and difficult to predict and strong commitment by all partners is required to sustain and institutionalise them. ICRA will continue to provide learning programmes from Wageningen and Montpellier, but these are being progressively and continually adapted in response to identified needs of developing and supporting the above mentioned emerging partnership “hubs” in the South. This includes adaptation to a new clientele consisting of inter-institutional teams of “capacity builders” rather than the current clientele of individual research and development professionals.

Partnerships for Capacity Building in IAR4D in East Africa An example of one such collaborative initiative can be found here in Uganda. As application of many of the principles of the new National Agricultural Research Policy and the five research themes adopted by NARO are embedded in ARD approaches and as the stated capacity development needs and strategies of NARO and Makerere University match very well with the Global Partnership strategy of ICRA, the three organizations agreed to embark on a joint collaborative initiative: Learning Together for Change in Integrated Agricultural Research for Development (IAR4D) in Uganda

The current situation in Uganda provides the opportunity to build upon past links between NARO, Makerere University, ICRA and others and to expand the derived benefits for all partners. The on-going collaborative initiative has been designed so as to help satisfy the immediate short term needs of NARO scientists while at the same time further exposing staff of Makerere University to alternative approaches to providing learning opportunities in IAR4D. The latter should enhance the capacity of the University to integrate approaches to IAR4D into the curricula of their educational programmes. The initiative offers new opportunities for establishing learning programmes and mainstreaming the IAR4D approaches, methods and tools for agricultural research for development into both research and educational organisations.

The overall goal of the Collaborative Initiative is: “To enhance the capacity for effective, efficient and relevant agricultural research for development in Uganda” and its purpose is: “To strengthen human and institutional capacity to undertake Integrated Agricultural Research for Development (IAR4D) as a new way of doing business, initially in Uganda and later on a sub-regional level in association with ASARECA”.

The initiative is being implemented in three phases. The first phase focuses on enhancing the capacities of targeted teams to apply IAR4D approaches to resolving real and high priority complex problems through the provision of both residential and on-the-job learning programmes that are well integrated with ongoing work activities and obligations. The second phase will, through the collective implementation of the work plans produced, focus more on mainstreaming IAR4D within NARO and other committed

stakeholders and on institutionalising the capability to supply learning events by Makerere University in response to the needs of both current and future staff and employers in the rural development sector. A platform to facilitate the continuing interaction between key stakeholders involved in the resolution of complex rural development problems and the promotion of market-oriented agriculture will be institutionalised.

The third phase will focus on expanding the initiative to the sub-region. The approach has the strong support of ASARECA and its Committee of Directors. In Kenya, preliminary and enthusiastic discussions have been held with KARI and Edgerton and Kenyatta Universities. The concept of sending a group of professionals, representing and with the backing of different stakeholder organizations, to participate in future ICRA Anglophone programmes together with the possibility that such a group of participants undertake a field study in Uganda where they could additionally observe and learn from the on-going collaborative initiative there to introduce IAR4D thinking into the institutional change processes and to embed it in the various participating organizations is being explored. Similar approaches could then be extended to other countries of the sub-region and between which experiences in nurturing IAR4D capacities could be shared and exploited so as to establish a strong, interactive, partnership capability in capacity building in IAR4D across the sub-region.

Support to the Sub-Saharan Africa Challenge Programme

Immediate access to such capacity building partnerships in IAR4D will greatly facilitate the implementation of the Sub-Saharan Africa Challenge Programme (SSA-CP) “Building Sustainable Livelihoods through Integrated Agricultural Research for Development – Securing the Future for Africa’s Children” (FARA, 2003).

By applying the IAR4D approach, the SSA-CP intends to produce options for smallholders to intensify the use of their limited resources for increased food security and competitiveness of agro-enterprises without jeopardising the assets on which the future of farming for them and their children depends. A key feature of the SSA-CP is that it will be implemented through Pilot Learning Teams and partnerships with stakeholders that will be composed based on identified entry points – developing more efficient markets, sustainably managing natural resources while intensifying their use, intensifying subsistence-oriented smallholder farming systems and developing enabling policies. The selected Pilot Learning Teams will be able to call on the capabilities of the above discussed and emerging IAR4D capacity building partnerships to develop their capacities in innovative approaches to resolving complex problems through hands-on action learning.

Conclusion

On-going changes in the institutional and operating environments within Uganda, the ASARECA sub-region and in much of Africa are creating an increased demand for enhanced individual, team, institutional and multi-stakeholder partnership capabilities in exploiting specialised knowledge to help resolve complex development issues such as poverty reduction and sustainable rural development through the application of ARD and other alternative approaches/paradigms designed to improve the relevance, effectiveness and efficiency of research and development work. Based on the experiential learning approaches applied in its programmes in Wageningen and Montpellier, ICRA and partners are exploring modes through which interactive partnerships between educational organisations and research, development and other components of evolving NARSs can enhance the needed capacities and experience to support and sustain changing the ways of doing business in research and development in Sub-Saharan Africa. This is not business as usual and together partners can learn to evaluate, adapt and build capacities in alternative paradigms for promoting and generating more relevant, effective and efficient R&D.

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