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## Abstract

The CGIAR Research Program on Aquatic Agricultural Systems (AAS) is pursuing a Research in Development approach that emphasizes the importance of embedding research in the development context. Reflecting this emphasis the six elements of this approach are a commitment to people and place, participatory action research, gender transformative research, learning and networking, partnerships, and capacity building. It is through the careful pursuit of these six elements that we believe that the program will achieve the development outcomes we aspire to, and do so at scale.

## Introduction

The CGIAR Research Program on Aquatic Agricultural Systems (AAS) aims to help reduce rural poverty and hunger by harnessing the full development potential of aquatic agricultural systems. We seek to achieve this by pursuing an innovative approach to agricultural research in these systems. We call our approach **Research in Development** (RinD) to emphasize that agricultural research needs to be *embedded in* the development context and adds value through leveraging potential for innovation and change. This approach builds upon learning from a number of programs<sup>1</sup> that have sought to extend the linear model of production, adoption and adaptation of agricultural technologies, and develop research methodologies and approaches to engage effectively with the realities rural people face. Through careful investment in demand driven cutting-edge research, high quality partnerships, knowledge management and capacity development, we aim to extend this earlier work and achieve development outcomes at scale. The present paper describes the approach we use to doing this.

## Our strategic focus: Intermediate Development Outcomes

The CGIAR Strategy and Results Framework sets out the CGIAR's ambition to achieve greater impacts on poverty, food security, nutrition and health, and environmental sustainability. To pursue this ambition a set of 16 long term CGIAR Research Programs (CRPs) have been developed and are now being implemented. As we move forward with the CRPs the Consortium has begun working with the CRP leaders to develop a results-based performance management system for the portfolio of CRPs. This system will be based upon measureable Intermediate Development Outcomes (IDOs) and assessments made to determine whether our investments are contributing to achieving these to a significant degree.

Work to develop these IDOs is now underway within each CRP, and cross-CRP collaboration and learning is being facilitated by the Consortium Office. While this is still work in progress we have found that AAS aligns well with the early drafts of the common IDOs (April 2013). For AAS we have recognized three levels of IDO: (i) material development outcomes that will result from AAS interventions and the work of our partners; (ii) instrumental development outcomes that will enable these material outcomes; and (iii) environmental outcomes. The IDOs provide the strategic focus for the program's work. The program approach described here is designed to deliver these outcomes and do so at scale.

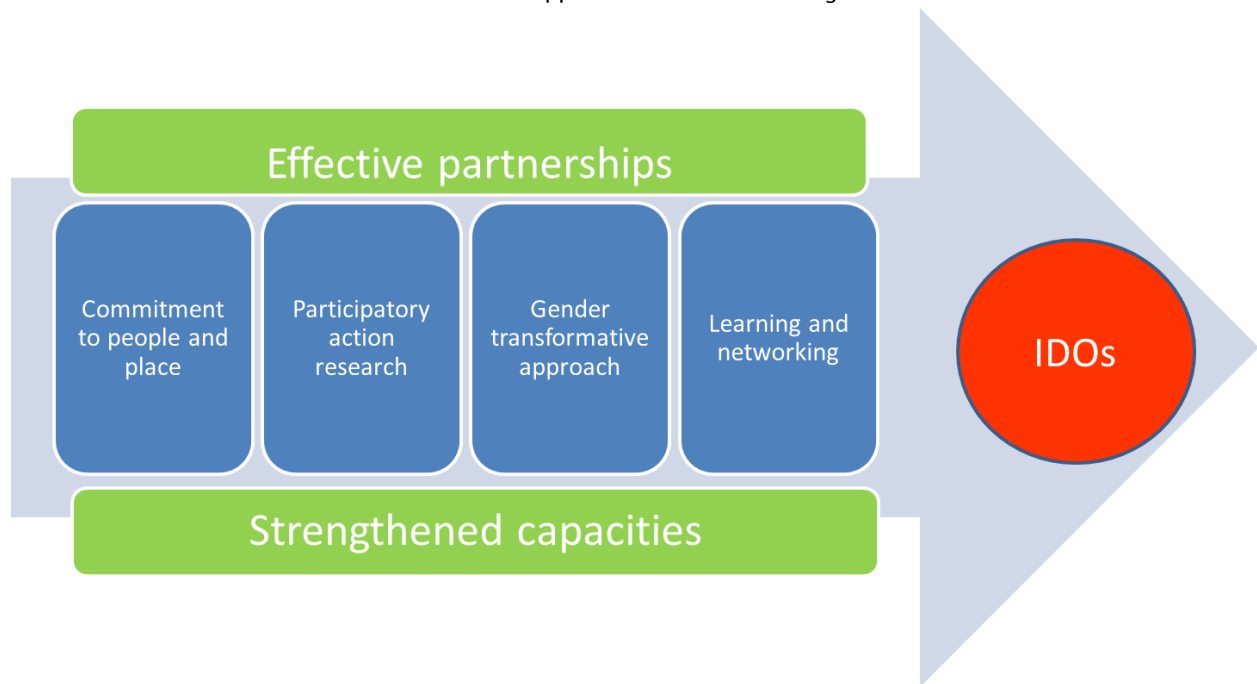
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<sup>1</sup> Examples from within the CGIAR include the African Highlands Initiative, the Program on Participatory Research and Gender Analysis, the Sub-Saharan Africa Challenge Program and the Institutional Learning and Change Initiative.

## Our Approach

The agricultural systems we work in are home to large numbers of poor people who use diverse livelihoods strategies to meet the specific challenges and opportunities in each. Embracing this local diversity our specific research agenda in each place is developed through a scoping, diagnosis and design process that engages with communities and other stakeholders to reflect the realities of each location and embed our research in the local context. Consequently we pay as much attention to the quality of our research process as we do to our research outputs. This in turn requires a significant shift in skillsets and mindsets.

To engage consistently and foster learning across diverse locations we have developed a program approach consisting of six key elements. Four of these concern the way we do our research (commitment to people and place, participatory action research, gender transformative approach, and learning and networking), and two concern critical investments in the partnerships and capacities needed. It is through the careful pursuit of these six elements that we believe that the program will deliver the IDOs we seek and do so at scale. This approach is summarized in Figure 1 and described below.



**Figure 1.** The AAS Approach to RinD

### The way we do our research

We believe that the quality of our research process will help determine the quality of our research outputs. Reflecting this emphasis the four central elements of our approach concern the way we do research.

#### 1. Commitment to People and Place

We start from the premise that the poor possess the potential to transform their lives, and that effective research and development investments are those that help realize this potential. In turn we believe that the engine that will drive this transformation is social, institutional and technological innovation<sup>2</sup>. Reflecting this vision our research takes a strength-based approach to working with the poor and vulnerable, one that starts by recognizing the strengths each household and community possess, and builds upon these as we pursue a research agenda designed to seize the opportunities and meet the challenges in each location. Delivering this approach requires careful attention to the quality of

<sup>2</sup> Innovation is the process by which social actors create value from knowledge ICRA, 2012

engagement with communities and other stakeholders. We make a commitment to sustain that engagement beyond the short term horizon that characterizes conventional research and development projects.

Commitment to people brings with it a commitment to the places where they live and the aquatic agricultural systems they depend upon. We believe that it is the sustained engagement with people, their institutions and the systems they use, that will generate the improvement in livelihood outcomes we seek. Reflecting this approach we work in geographic hubs that provide a focus for innovation, learning and impact through participatory action research with stakeholders. In each hub we work with partners, communities and other stakeholders to identify the key development challenge they face relating to aquatic agricultural systems, and co-design a program framework to focus our interventions. For example, in the Southern Polder Zone of Bangladesh, where changes in sea level and water flow drive a very dynamic farming environment, the program will foster adoption of more productive, diversified and resilient practices and technologies that improve use of resources and adaptive capacity. Similarly in the Barotse hub of Zambia, where seasonal inundation of the Zambezi floodplain frames livelihoods and limits options for agriculture, the program will pursue technologies and management practices that make more effective use of the agricultural potential and natural resources of the system.

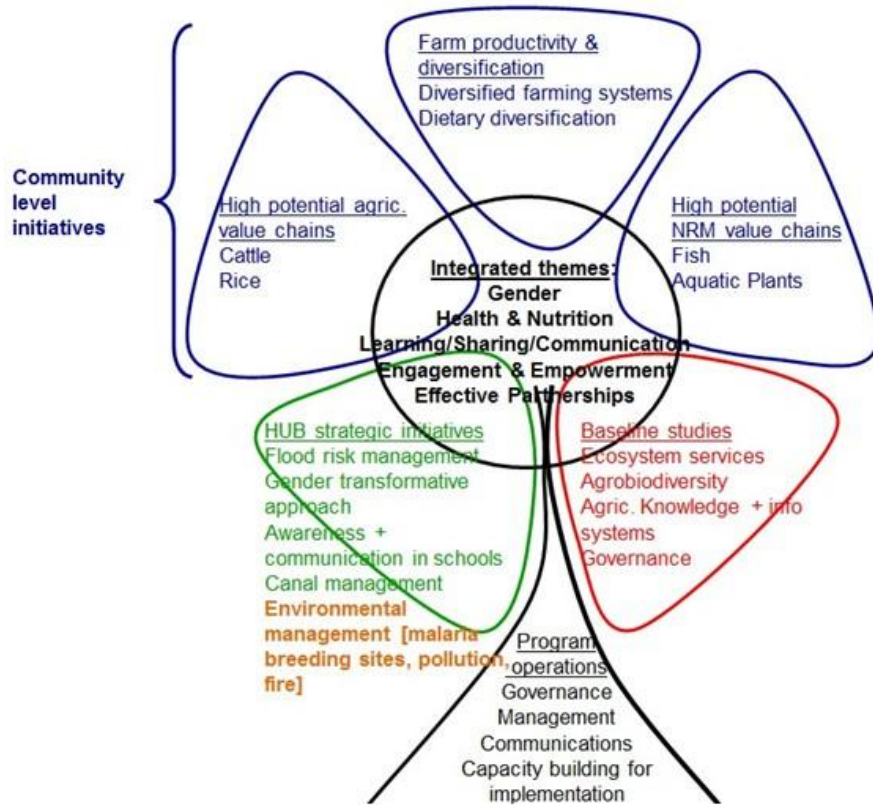
To pursue the hub development challenges in each location we work initially with a limited number of communities<sup>3</sup> forming a strong base from which to scale out innovations and associated outcomes. Through our engagement and collaboration with stakeholders at multiple scales within hubs, the program seeks to strengthen networks and weave these into more effective communities of knowledge and learning. In doing so the coalitions for addressing current and ongoing development challenges and fostering social learning are strengthened, together with the enabling environment for sustained innovation.

## **2. Participatory Action Research**

Building on our belief in people's capacity to innovate and change their own lives, we engage stakeholders in the hubs (fishers and farmers, NGOs, government institutions, and others as required) to become co-researchers with our research partners (national research institutes, CGIAR centers, universities and others). The first step in this process is the identification of hub research priorities. Through an extensive process of dialogue and engagement with stakeholders a research agenda is designed to address the hub development challenge. Fig 2 illustrates the research agenda to address the hub development challenge in the Barotse hub as an example. In each hub a similar program design forms the basis for the research.

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<sup>3</sup> Defined as a grouping of people living in a collective space that is small enough to implement an action plan involving work on the ground – in most hubs these are termed villages.



**Figure 2.** The research agenda in the Barotse Floodplain, as agreed by stakeholders in the hub design workshop (October 2012).

To pursue this research agenda we use a participatory action research<sup>4</sup>, with a focus on experiential learning and empowerment of stakeholders, and iterative processes of planning, acting and reflecting. Multi-stakeholder coalitions are formed around common concerns at nested levels (e.g. within communities, and with development and research institutions) and use participatory action research to address their concerns and learn through the process. Research on agricultural technologies and other expert-led scientific inquiry play an important role in providing input to the participatory action research process to address development concerns and harness opportunities to achieve common goals. The full range of research conducted through the program, and the science it draws upon, is described in the program’s science handbook. Currently under development, the handbook expands on the six research themes identified in the program’s initial proposal. These are summarized in Box 1.

<sup>4</sup> Defined as “a participatory process of inquiry which seeks to answer questions around real life concerns to improve the wellbeing of those engaged. It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities” (Reason & Bradbury, 2008,p.4)

**Box 1.** The AAS Research Agenda

The specific research questions pursued through the program are determined through participatory processes at both hub and community scale. These questions and the research agenda that emerges from them have been grouped together under six research themes.

1. Sustainable Increases in System Productivity – addresses questions regarding the productivity or yield gaps experienced in each hub. To do so we pursue participatory production and adaptation of appropriate technologies, combining the strengths of CGIAR and international partners.
2. Equitable Access to Markets – focuses on understanding how to improve benefits to low income actors along agricultural and natural resource value chains, using a participatory and gendered approach.
3. Socio-ecological Resilience and Adaptive Capacity – combines environmental and social systems research with action for social change to support improved adaptive capacity and resilience of aquatic agricultural systems.
4. Gender Equality –integrates gender within all other research themes while also studying gender norms and roles so as to support a process of transformation for more sustained and equitable impact in aquatic agricultural systems.
5. Policies and Institutions to Empower Aquatic Agricultural Systems User – focuses on understanding how policies and institutions across scales impact on aquatic agricultural systems and supporting improved arrangements through action research involving the key stakeholders.
6. Knowledge Sharing and Learning – uses participatory action research to foster program learning and support social learning with stakeholders as we monitor our progress along impact pathways. The research will contribute to an understanding of how agricultural research supports development outcomes and impact. This theme is an integral part of our scaling and performance management strategy.

By learning across locations the program aims to harness the results of research in specific locations to generate a body of international public goods that can be drawn upon by other groups working in other aquatic agricultural systems in other countries and regions, and more broadly in other complex farming and natural resource management systems.

Taking a participatory action research approach to the program means that careful attention needs to be given to who is participating, and to fostering the equal opportunities for engagement that are needed for social change. Achieving both these outcomes requires the development and effective use of good facilitation skills across scales. Equal attention needs to be given to documenting the research process in ways that meet the needs of various stakeholders, taking care to ensure that we document the social change process and record collective learning for quality research outputs.

### **3. Gender Transformative Approach**

The program's approach to gender builds on the hypothesis that sustainable and deeper impact from agricultural research is best achieved when the investments in strengthening the capacity of women and the marginalized to participate in agricultural innovations is coupled with efforts to transform regressive gender and social relations. This means moving beyond simply including men and women as stakeholder groups, to understanding the gender norms and power relations within the particular social and cultural context of the program's hubs and improving social relations. In turn these improvements will support innovation capacities amongst poor women and men and bring substantial benefit to these groups.

We will foster transformative change and enable more equitable social relations through three integrated pathways: (i) by engaging with poor and marginalized men, women and youth directly in participatory action research across scales (within households, communities and hub stakeholders) and creating safe spaces and opportunities for engaging in critical reflection to enable them to expand their life choices and control of decision-making; (ii) working with partners to test new approaches to overcoming socioeconomic and institutional constraints that limit the participation of poor men and women in agricultural innovation processes, and (iii) through our practice systematically learning how to support development of organizational capacities and cultures to embrace transformative approaches for wider impact.

#### **4. Learning and Networking to Achieve Impact at Scale**

Achieving impact at scale requires innovative approaches to implementation and evaluation. Our program theory of change identifies three pathways to achieve development outcomes and impact within and beyond our hubs: (i) scaling up and out of innovations and associated outcomes in communities and hubs, (ii) fostering social-ecological transformation in the hubs through social learning and network weaving, and (iii) building upon learning from our research to influence agricultural development policy and practice. The three pathways are nested and build upon each other. Participatory development of theories of change across levels (community visions, planning of research initiatives within hubs, hub development challenges and program level impact pathways) provide us with a nested view of how the program aims to contribute to development outcomes and impact. Reflecting on the validity of the assumptions on which these theories are based through PAR is the way the program carries out research to build understanding, evidence and theory around how to embed research in development processes in different contexts.

In pursuing these three pathways we have adopted monitoring and evaluation methodologies that use participatory processes to foster learning and networking. For each impact pathway and level of scale, the program is working with stakeholders to pursue desired changes through participatory action research. At the scale of each hub, stakeholders are working to address the hub development challenge by pursuing activities that will bring benefits to multiple communities and scales, while at the scale of communities women and men are addressing the challenge by pursuing the community visions they have developed. By bringing researchers and development actors together around these common challenges and learning together about what does and does not work, we aim to build stronger social and institutional relationships. By working in this way the program is building more effective, inclusive and sustainable social networks that can foster innovation capacity over time<sup>5</sup>. The transformative potential of improved networks lies in the depth, quality and inclusiveness of engagement of key stakeholders as much as greater connectedness and access to new ideas and information. Strengthened networks are social capital that can help people transform their lives and the agricultural systems they depend upon. Engagement in national and global coalitions enables the program to share learning and influence the ways in which agricultural research is carried out in other systems, countries and regions, and so bring benefits to many more.

#### **Additional investments needed to achieve outcomes**

To achieve impact in our hubs and achieve our intermediate development outcomes the program complements innovation in how we do research, with innovation in partnerships and capacity development.

##### **i. Partnerships**

If our research is to add value to, and support, development processes we need to work effectively with the multitude of actors who are engaged in research and development at multiple scales – locally, nationally, regionally and globally. At each of these levels we are working to involve core institutions with mandates and capacities for supporting agricultural research and innovation, such as government institutions, CGIAR centers and NGOs. We are also engaging partners in the implementation of the work in the hubs as they align with the development goals of stakeholders and approach of the program.

In developing these partnerships we need to build upon each other's strengths and foster synergies rather than working separately. Establishing, building, and maintaining strong partnerships requires that we pay attention to the quality of our conversations with, and engagement of partners in, all parts of the program cycle – from design to planning, implementing and learning. We recognize that inherent tensions in building and supporting partnerships exist and we will manage them through agreeing common challenges, visions of success, the pathways to achieve them, and a commitment to sharing and learning together.

Beyond partnerships for program success at hub and national levels lie the global coalitions across research and policy development that we engage with through wider networking. Building and maintaining a strong global coalition – through our networking strategy and using the convening power of the CGIAR – we will ensure that our learning is shared and has impact across multiple scales.

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<sup>5</sup> Krebs, V. and Holley, J. (2004) 'Building sustainable communities through social network development'. *The Nonprofit Quarterly*, Spring Issue

## **ii. Capacity Building**

The RinD approach builds on past investments by the CGIAR and partners, to embrace new ways of working with communities in complex agricultural systems. This innovative approach requires development of both new skillsets and mindsets, and this in turn requires the program to make significant investments in capacity building. This work focuses on two dimensions of capacity, first the “technical” skill sets to do RinD, and second the personal skill sets required to engage effectively with communities and partners in new ways.

- a. Technical skill sets to implement RinD. Our implementing partners and program teams in hubs and at national and global levels include research, development and policy partners who come with different skillsets and backgrounds. Together these multi-stakeholder teams will be supported through training, coaching and on-the-job capacity building to work together in areas of expertise needed for implementation, such as research methodologies, facilitation skills and managing multi-stakeholder processes. Specific capacity development initiatives are already underway developing technical skills in community engagement, participatory action research, innovation and learning, and the gender transformative approach. This will be sustained and expanded to address other areas of agricultural and rural innovations capacity as needed.
  
- b. Developing the personal skill sets needed for RinD. Underpinning the capacity of the CGIAR and partners to implement research within a development context is the capacity to be different. As professionals we develop our own ways of working. Some of these ways of working and engaging help us use research to leverage development outcomes and impact, while others may prove to be barriers. Certain aspects of the program’s work, and in particular the transformative and strength-based approach to community engagement will require our researchers and partners to engage differently, and in turn will require a shift in mind sets to achieve this. To this end we will strengthen capacity to support reflective practice and self-awareness towards improving our ability to work in a development context. Similarly we will invest in strengthening the leadership and management capacity of CGIAR and partners staff to deliver RinD.

## **Implementation and learning**

With our emphasis on research, the program is paying careful attention to learning as we implement. To this end a yearly review process is being used to harness experience from implementing this approach in each hub. We draw upon this learning to adjust our work as needed and this will in turn be reflected in future amendments to this working paper.