



Program Brief: AAS-2013-25

Transformative Change in the CGIAR Research Program on Aquatic Agricultural Systems



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1. Introduction

The CGIAR Research Program on Aquatic Agricultural Systems (AAS) is increasingly using the language of transformation to describe its aims and approach to achieving lasting impact at scale. Clarity on what AAS means by “transformation” is important to ensure that use of the term is intentional and meaningful. AAS wants to avoid the risk befalling a number of terms used in the development field—i.e., empowerment and participation—which are applied by such a wide range of actors with divergent intent and ideology that the terms lose meaning. The aim of this brief is to articulate the program’s understanding of “transformation” through review of different definitions of the term in various disciplines and comparison with a definition of “development”. It then explores different areas in which AAS can foster transformation based on emergent learning among program leaders and articulation of the program’s scaling pathways. It ends with a section on how the AAS program intends to foster transformative change through a participatory action research approach.

2. What is transformation?

Transformation represents deep, enduring change in the form of something such that “what emerges is fundamentally different from what went before” (Brookfield 2012: 131; Gass 2010). The outcome of a transformative process may be either better or worse than the original form and the outcome must be assessed in relation to the social groups of interest. In other words, the outcomes of transformations are not inherently positive and there can be both winners and losers from the same transformative process. For example, a policy change can result in the introduction of a new structure for village-level water management. If this structure embeds and enforces clear rules around inclusiveness of the poor and women, it can be labeled a positive transformation for these groups, but negative for those groups previously maintaining an exclusive hold over these resources. Transformative changes may also have mixed results for the same group by positively affecting some dimensions of livelihoods and negatively affecting others. The new water management structure, for example, may lead to improved inclusion of the poor and women, but it may also increase their workloads.

Transformation for whom?

The aim of AAS to improve the livelihoods of poor and marginalized people dependent on aquatic agricultural resources commits it to fostering positive outcomes in the interest of this group. The program seeks to do this through direct engagement in focal areas (hubs¹) where poor people depend upon diverse livelihood strategies related to aquatic agricultural systems. This aim provides clear guidance to the use of “transformation” in terms of the direction of desired change and for which social groups.

The focus on positive change for the poor also highlights a connection between this use of “transformation” and definitions of development, with development as a field of practice and study understood as “deliberate action to bring about positive changes for humanity” (Johnson and Wilson 2009: 1). The two ideas differ, however, in the depth of change to which they commit. Commitment to transformation is a high standard to achieve in terms of depth and sustainability of change: it often relates to changes in the underlying institutions and practices that cause poverty, inequality, and risk, and that frame the capacity of people to manage change or to adapt (Pelling 2010; Kabeer 1999, 2012). Improvements achieved through development may reach this standard, but they may also be incremental, short term and accommodative of existing institutional structures and practices. Therefore, positive transformation in the interests of

the poor can be viewed as one subset of possible outcomes of development processes. It is also important to note that incremental accommodative changes at some scales may, over time, lead to transformative change at other scales (Pelling 2010).

Processes of both development and transformation involve purposeful, or intentional, action and, in each case, there is considerable debate about what constitutes “appropriate” action, by whom, to bring about desired “improvements” (Pieterse 2001). Emancipatory models of development² emphasize that empowerment and liberation are central to the process of development of and for the marginalized. Based on experiential learning theories, they argue that people learn best and are better able to make practical changes in their own lives through participation in the development process. Associated participatory (Chambers 1994; 1997; 2008), strength or asset based (Kretzmann & McNight 1993) and endogenous (High & Nemes 2007; Ray 1999; Haverkort et al. 2003) approaches to development provide theoretical understanding and tools that support active participation of the poor in development projects or programs. They recognize that development is a process that occurs organically through the engagement of people in their communities who define their own processes of transformation. For a program such as AAS that intends to foster development and transformation for the poor and marginalized, being cognizant of its external role is a necessary first step in defining how to engage appropriately.

Transformation of what?

The focus of transformative action (or the “form” that is transformed) varies across fields of study. Foci relevant to the AAS program, with its interest in socio-ecological change in complex systems, are drawn from natural resource management, sociology and gender studies, and transformative learning. In the field of natural resource management and resilience, transformative processes tend to focus on the internal structures of linked social and ecological systems—aspects of the biophysical, social or economic nature of the system—in response to the undesirability or untenability of wider system conditions in order to create a new viable system (Walker et al. 2004, Gunderson & Holling 2002). Social transformation involves a significant shift in how society is organized, such that “all existing social patterns are questioned and many are reconfigured” (Castles 2008). Gender transformative change sits within social transformation, with structural inequalities of power being questioned and fundamentally altered such that more gender equitable outcomes result (Kabeer 1994; 1999). In the field of transformative learning, the focus of transformation is people’s assumptions, beliefs and ways of understanding the world around them (Brookfield 2000, 2012; Kegan 2000). Deep changes are fostered through processes of critical reflection and action, often triggered by exposure to different knowledge and experience and through debate (Kreber 2012; Brookfield 2000; Johnson and Wilson 2009).

Pelling’s (2010) work on climate change adaptation brings these three strands together in a useful way that AAS can build upon in its understanding of transformative change. He defines adaptation as “the process through which an actor is able to reflect upon and enact change in those practices and underlying institutions that generate root and proximate causes of risk, frame capacity to cope and further rounds of adaptation to climate change” (Pelling 2010: 21). His multi-scale nested framework of adaptation as resilience, transition and transformation draws from systems, social learning and political economy literature to argue for a focus on the socio-political nature of adaptation and the need to move beyond accommodating existing sources of risk and inequality to transforming the social institutions and political regimes that create and maintain vulnerability. Critical

¹ In AAS, hubs are defined as geographic locations providing a focus for innovation, learning and impact through action research.

² Such as those developed by Paulo Freire (1986, 1992) and Orlando Fals-Borda (2006).

consciousness is central to this shift. His synthesis emphasizes the characteristics of depth and durability of change that distinguish transformative change while focusing attention on the process of transformation and the participation of actors rather than on the outcomes.

These understandings of the transformation process inform how and in what areas the AAS program will support transformative change in the interests of the poor and marginalized living in aquatic agricultural systems. But before discussing this, it is useful to highlight some core characteristics of transformation that differentiate it from less deep and complex change processes.³ Many of these characteristics correspond well with language used to describe the AAS approach⁴, which emphasizes the program's intent to foster learning and embed agricultural research in development processes to achieve development outcomes and impact.

- The process and outcomes of transformative change are **emergent**, reflecting the complex and dynamic nature of the systems in which people create their livelihoods. While AAS will work toward defined outcomes at the program and system levels (i.e., Intermediate Development Outcomes and CGIAR System Level Outcomes), which transformations are associated with achieving those outcomes and how to foster them in each hub cannot be prescribed. Part of the undesirability of prescribing outcomes relates to how current mental models—our own and those of partners and stakeholders—may limit understanding of the outcomes that can be achieved. These mental models themselves may need to transform in order to expand ideas of what it is possible or desirable for certain social groups to achieve.
- Transformation is **multi-level**, with transformations at one level (i.e., organizations) often leading to or dependent on transformations at other levels (i.e., in mind sets of people making up that organization). For example, new models of inclusiveness in community governance structures may depend on changes in rules set outside of the community and transformations in mind sets of rule makers, as well as changes in mental models among community members about who is able to participate and the value of this inclusiveness.
- Transformative change is **holistic** in that it involves engaging with people's mind sets, beliefs and behaviors and the social systems and structures shaping them. It requires **multi-disciplinary** approaches that enable teams to work with a range of different approaches and methodologies.
- Because transformative change tends to be holistic, multi-disciplinary and multi-level, few actors or agencies have the capacities and networks to independently foster transformative change. Nor can external actors (such as researchers) impose transformation from the outside. Therefore, achieving transformative change **depends on partnerships**, particularly with those individuals or groups that a program aims to benefit. Getting partnerships "right" may depend on transforming rules, practices and mind sets within organizations.
- Transformative change as described in the gender and some of the transformative learning literature involves **addressing unequal power relations** as these relations shape people's mind sets, values and wider social norms and rules that influence resource allocations and opportunities. Cycles of critical reflection and action are central to identifying the existence and effects of power in people's lives and the strategic means to effect change in the interests of the poor and marginalized (See section 4 on participatory action research).

³ Characteristics were derived from Williams 2010 and Gass 2010 as well as from Park et al 2011; Johnson and Wilson 2009; Kabeer 1999; WorldFish 2012; Brookfield 2012, 2000; Mejiuni 2012; Kreber 2012.

⁴ See Dugan, Apgar & Douthwaite 2013.

Box 1. What is AAS seeking to transform? Views from the Program Leadership Team.

Mind sets, attitudes and roles

- Attitudes and ability to be self-motivated and self-powerful
- Attitudes of individuals using and depending on AAS
- Attitudes of the target poor & vulnerable towards improving their well being
- Accepted roles and responsibilities of household members vis a vis AAS
- Attitudes, behaviors, cultural barriers to gender equity
- Relationships among men, women, boys, girls
- Attitudes of rich versus poor
- Assumptions regarding power
- Power relations, culture
- Individual empowerment to assume new roles in household and community
- Values, attitudes and social interactions, especially for poor and marginalized groups

Agro-ecological characteristics of AAS

- Attention and focus on AAS environments as productive systems
- Changing from flat fields and ponds to something else
- AAS input/output systems in terms of responsiveness to the impact group
- Relationships and mind sets about the environment and the use of natural resources

Partnerships

- Ways of working between and among stakeholders
- Attitudes of different stakeholder partnerships (e.g., CG center, community, other development partners)
- The way research and the development community work together
- Hub level development partner relationships

Innovation capacity

- Capacity for innovation: technical, social, institutional
- The innovation capacity and enabling environment in/ of the system
- Conditions for sustainable innovation by poor and vulnerable

Governance systems

- National and provincial governance systems to enable peoples' goals and visions of the future (including gender)
- Accountability of governments, investors, development organizations towards AAS communities

Livelihoods and opportunities

- Livelihoods of people in the hubs
- Children's potential opportunities and lives

3. Potential areas to foster transformation through AAS

Turning more specifically to AAS, this section assesses the different areas in which AAS aims to foster transformative change. It builds on a consensus emerging from discussions held during the January 2013 meeting of the Program Leadership Team (PLT) on transformative change and the program's scaling pathways.

In January 2013, PLT members were asked in a group exercise to list the areas in which they thought AAS had the potential to support transformation. Box 1 provides the clustered PLT

members' responses to that question. The program has further defined three nested scaling pathways which are described in Box 2 and illustrated in Figure 1⁵. Synthesis of the two provides insights into the emerging consensus for program focus and actions towards facilitating transformative change.

PLT responses grouped as "partnerships" and "business as usual" relate to scaling pathway 3 (see Box 2 and Figure 1) and the need to critically question how agricultural research and practice is designed and implemented by WorldFish as well as by AAS partners and the CGIAR overall. The process of questioning and acting to change "business as usual" encompasses, for example, moving Research in Development, Participatory Action Research and Gender Transformative Approaches⁶ (all part of the AAS approach) into normal operating practice. It also includes attention to power relations within partner relationships.

Pathways 1 and 2 relate to the program's effects on the wider enabling environment at the hub level or beyond, which should (but may not currently) enable all individuals, households, communities, or other organizations and groups to learn from and adapt to changing circumstances and to share their learning.⁷ By supporting more transparent, accessible and equitable economic, political, agro-ecological and social institutional environments the AAS program is expected to release existing constraints on how poor and marginalized actors can participate in their own development, enabling scale up and out of successful innovations as well as the expansion of quality networks and their related actions for transformative change.

Box 2. Three nested AAS scaling pathways (see Figure 1).

The first pathway is the familiar research to development outcomes pathway. Through direct engagement with selected communities in hubs, the program will use participatory action research to foster innovations of all kinds (technological, institutional etc.) that will bring benefits. Spreading from farmer to farmer and community to community, the innovations and their associated outcomes will be scaled out to reach others. The second pathway builds on the first and focuses on facilitating a transformative change process through tackling a collective hub development challenge. Network weaving will support broader, stronger and more equitable links between individuals, communities and stakeholders, supporting actions that can lead to transformative change in the aquatic agricultural system and bringing benefits to many more. The third pathway involves using the evidence from the first two pathways on how the AAS approach to agricultural research can support development outcomes and impact to shift the dominant paradigm on agricultural research for development so as to reach millions of poor.

The attention paid by the AAS program to fostering an equitable social enabling environment as a means of supporting people's innovation and adaptive capacity sets it apart from many mainstream agricultural research programs. While an increasing number of agricultural research programs are beginning to acknowledge the influence of the social context

on innovation and adaptive capacity, few (if any) seek to foster change in the elements of social context that constrain the potential of poor and marginalized people to achieve their goals. This consequently limits the ability of these programs to achieve impact at scale because existing social inequalities may keep significant portions of the population—e.g., women, ethnic minorities, or poor people—from participating in or benefiting fully from development efforts (Mosse 2007; Copestake 2007; Hickey and du Toit 2007; Kabeer 2000; Wood 2004). Not addressing the barriers created by existing norms and attitudes also limits the enduring nature of development outcomes. By not addressing the underlying causes of poverty and gender inequality, for example, projects may produce superficial changes in the participation of women or other marginalized groups in an economic activity that return to "normal" post-project. Alternatively, projects may produce unintended and potentially harmful outcomes because the interests and incentives of the poor or women were not understood and addressed. Box 3 provides an example of the latter.

The AAS program approach recognizes that inclusive and equitable social systems are central to achieving lasting impact at scale on the conditions for adaptation, innovation and learning. It also acknowledges that fostering transformation towards such systems will occur in different ways in different places and through actions both integrated with and complementary to efforts to improve and transform market, bio-physical and/or governance systems. Social change is therefore important in its own right to support poor and marginalized members of AAS communities in securing their livelihoods through expanding the range and quality of opportunities recognized as available to them. It is also important to ensuring that changes at the policy level, in market operations, or in natural resource management are equitable and inclusive.⁸

Therefore, underlying AAS scaling pathways is an understanding that poverty and inequality are caused in part by unequal power relations that shape how society operates and the range and quality of opportunities available to different social groups, e.g., by gender, class, race, ethnicity or caste (Mosse 2007; Kabeer 2000; Wood 2004). Action must address more than the symptoms of poverty and social inequality (i.e., lack of access to resources, markets, etc.) and critically question and address the norms, attitudes and institutionalized rules and practices creating and maintaining both. This critical reflection and action process should engage not only the poor and marginalized, but also elites at multiple levels because there is no guarantee that those in privileged positions will be willing to change if they stand to lose (Johnson and Wilson 2009). Purposeful engagement and action with those benefiting from existing social inequalities is needed in order to identify incentives and arguments that can shift their mindsets and transform their relationships with the poor and marginalized. In some cases win-win solutions may be identified where all groups benefit. However, in other cases the transformation process may be conflictual.

As noted previously, AAS cannot prescribe what these transformation processes and actions will look like, nor can it pre-determine the outcomes. The critical questions then become: what are these actions, who identifies them and through what processes?

⁵ See Douthwaite et al. 2013 for further information on the AAS pathways and use of theory of change.

⁶ Gender transformative approaches refer to a particular way of integrating gender, and other forms of social difference, into research and practice. These approaches aim to analyze and address both the visible differences between groups in the range and quality of choices they have around access to resources, technologies, or livelihood activities as well as the underlying norms and power relations causing the disparities.

⁷ PLT members' identification of innovation capacities, livelihoods, agro-ecological characteristics of AAS, governance and accountability structures, and attitudes as areas of transformation provides a connection to pathways 1 and 2 as all of these issues relate to or depend upon shifts in the enabling environment.

⁸ The PLT responses to the transformation exercise categorized under mindsets, attitudes and roles reflect this understanding of the role of social change in achieving program outcomes.

4. Participatory Action Research

Pursuing an empowerment agenda for development outcomes and transformative change requires broadening the view of research as the driver of the change process through delivery of technological solutions to also seeing research as a tool for supporting people who depend upon aquatic agricultural systems (particularly the most marginalized) in their own transformational development process. Building on emancipatory development and experiential learning theories⁹, Participatory Action Research (PAR) uses iterative action and reflection cycles, engaging participants in their own process of learning by reflecting on their own actions to improve their lives. As Reason and Bradbury (2008, p. 4) state, PAR

“... 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.”

Key characteristics of PAR¹⁰ are its dynamic and continuous nature which allows real time feedback and adaptation to support the

Box 3. Gender, incentives and program outcomes in Papua New Guinea.

In Papua New Guinea, smallholder production of oil palm for export became a source of intra-household conflict affecting program outcomes for participating farm households. Marketing agencies contracted only men to produce the fruit, even though the men relied significantly on their wives’ and children’s labor inputs. Such joint activity is normally supported by implicit contracts within the household around the use of the resulting income for family needs. However, in this case, men did not fulfill these contracts by either remunerating their wives for their labor contributions or ensuring that women had a say in how the income was spent in the family. The uncertain economic returns from their contributions to oil palm production led many women to direct their labor to food production or other income-earning activities where the returns were more certain. This shift in labor allocation negatively affected oil palm production and family incomes. The marketing agency thus responded to this situation by setting up a parallel system of payment to women for the collection of loose palm fruit, providing them with access to their own income and an incentive to continue to provide their labor to the joint enterprise.

As a complement to this approach, the agency also could have worked with its contracted households to strengthen the implicit intra-household contracts and encourage more intra-household cooperation. Lack of mutual cooperation may have led to additional problems, as there is evidence of women losing control over the harvest cards through which their payments are calculated and transferred.

See Koczberski 2007 and Rava 2012 for details of the program.

change process and its participatory and action-oriented focus that builds participant ownership of the process.

In the AAS program, PAR is one of the key elements of the Research in Development (RinD) approach (Dugan, Apgar & Douthwaite 2013) and is the main vehicle for fostering transformative and developmental change for the poor and marginalized in aquatic agricultural systems. Through participatory planning and implementation of the program with key stakeholders, a facilitated process of moving through cycles of action to address key development challenges and reflection to harness learning will enable engagement and change from within¹¹. Appropriate actions and appropriate participation of the necessary stakeholders are defined based on the particular needs of the poor and marginalized within each focal area. In order to address the underlying systemic and structural issues of inequality and poverty, PAR in AAS will build on transformative (Kegan 2000; Brookfield 2000, 2012) and “double loop” learning (Argyris & Schon 1978) theories and practice to critically address underlying assumptions and mental models. This focus on reaching depth through PAR enables a process for fostering more lasting and equitable change through attention to the social context and the deeper structural dynamics that are barriers to development.



Figure 1. The three AAS scaling pathways.

⁹ As developed by Lewin (1952) and Kolb (1983).

¹⁰ See, for example, Barcal (2006); McTaggart, 1991; Reason and Bradbury (2008).

¹¹ See the AAS program brief on PAR (in press) for further details on the PAR design.

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With communities, changing lives

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The CGIAR Research Program on Aquatic Agricultural Systems is a multi-year research initiative launched in July 2011. It is designed to pursue community-based approaches to agricultural research and development that target the poorest and most vulnerable rural households in aquatic agricultural systems. Led by WorldFish, a member of the CGIAR Consortium, the program is partnering with diverse organizations working at local, national and global levels to help achieve impacts at scale. For more information, visit aas.cgiar.org.

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