RESEARCH PROGRAM ON
Aquatic
Agricultural
CGIAR | Systems

AAS External Evaluation Management Response

1. Introduction

The external evaluation of the CGIAR Research Program on Aquatic Agricultural Systems (AAS) has provided an important opportunity to review progress, examine ongoing challenges and identify steps to address these. This management response details our analysis of the evaluation's recommendations and provides the action plan that we will pursue in response to these recommendations. We welcome the opportunity to provide this response and thank the Independent Evaluation Arrangement (IEA) and the Evaluation Panel for their engagement with the program.

Preparation of the management response involved AAS management, the Program Oversight Panel (POP), and the WorldFish Board of Trustees. The response is submitted by the Board Chair and Director General of WorldFish as lead Center for the program.

2. Overall response to the evaluation

AAS welcomes the evaluation report. The evaluation process has been stimulating, helpful and thought provoking, and we are pleased to fully accept 9 of the 10 recommendations. We note the evaluation's many positive findings and helpful critique of key challenges, and we look forward to building upon these as we move forward with implementation in 2015–16, as well as with the development of the second phase of CGIAR research programs, which will begin in 2017.

Among the evaluation's positive findings we welcome in particular the overall conclusion that *"aquatic agricultural systems present issues of sufficient importance and relevance to justify investment by the CGIAR."* Together with the evaluation's emphasis on the importance of fish and CGIAR's comparative advantage, we have found the evaluation to be particularly useful in focusing thinking around the contribution of fish and aquatic agricultural systems to the new CGIAR Strategy and Results Framework. We highlight the estimated 136 million poor people who depend on aquatic systems for their livelihoods, and the 1 billion rural and urban poor who depend on fish for their main source of animal protein. We welcome the opportunity that the evaluation's insights give us to strengthen our research focus and approach with a view to generating improved development outcomes for these people.

3. Response to recommendations

We provide below our detailed response to the 10 recommendations provided by the evaluation. We have followed the IEA convention of *"accepted fully, partially or rejected"* to characterize our response, accepting nine fully and rejecting one. We strongly agree with what we understand to be the overall intent of each of the fully accepted recommendations, and we are working to progress the program in these directions. The one rejected recommendation concerns the governance of the

program, for which the POP has provided a detailed response. For all recommendations, we are grateful to the evaluation for having highlighted these issues and for the reflection this has prompted. Where the evaluation report has highlighted specific implications of the recommendations, we have commented upon these. We are grateful for this detailed analysis and summarize how we are engaging with these key issues in plans for 2015–16 and as the CGIAR research program portfolio evolves towards 2017. Specific steps being taken are identified in the action plan.

RECOMMENDATION 10.[1] Building on CGIAR's comparative advantage

"… that bold steps be taken by the CGIAR and AAS to move in the direction of View 3. The CGIAR should justify further investment in aquatic agricultural systems more on the grounds of some comparative advantage, and to do this the focus needs to be much more about fish." View 3 is illustrated in Figure 4.1 (page 80) of the evaluation report and concerns *"the CGIAR's existing competences around fish and aquaculture being seen as providing an important and possibly unique platform from which to generate broadly relevant knowledge, explore methodological innovation, including more integrated and contextual research approaches, and contribute to positive development outcomes."*

Accepted fully. We agree with this recommendation's focus on the importance of building upon CGIAR's comparative advantage in aquatic systems and embracing methodological innovation within this focus. We welcome the evaluation's commentary that this research has allowed AAS to generate high-quality international public goods (IPGs), and we agree that this objective should receive greater focus as the program proceeds.

The evaluation identifies six specific implications of Recommendation 10:
1. *"Strengthen and nuance the conceptualization of aquatic agricultural systems so that there is a more coherent and compelling justification for geographic hubs. One option would be to have a strong programmatic focus on integrated aquaculture-agriculture systems where the linkages between aquaculture and agriculture are clearly specified and central to the research agenda;*
2. *"Use the AAS paradox to strengthen the strategic aspects of the research program;*
3. *"Shift the focus away from [participatory action research (PAR)] as the core research methodology, implemented largely in parallel with other approaches as it now is, towards a transdisciplinary mixed-methods approach. Continuing work around PAR should then take an explicit research stance, and ask if, where, when, with whom, in relation to what kind of problems or technologies, and why, it is or can be useful;*
4. *"Significantly increase the proportion of PhD-level researchers working at field level, and reinvigorate an ethos of field-based research among senior scientists;*
5. *"Significantly strengthen the capabilities for systems research;*
6. *"Move towards a truly collaborative, multi-center research program."*

We welcome this detailed advice and will draw upon it as we move forward, recognizing a distinction between steps that can be taken to strengthen AAS implementation during the current extension phase (2015–16) and those that it will be more appropriate to draw upon in designing and implementing the next phase of

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[1] We start our response to the recommendations with Recommendation 10, as this is presented as "the Primary Recommendation" of the evaluation team (page 80). It is also presented as the first and "primary" recommendation in the Executive Summary of the report (page xv). The wording in the Executive Summary differs slightly from the main text; we have used the wording of the main text, as this is the primary document.

the CGIAR research programs from 2017 onwards. We note, however, that our actions in 2015 in some key areas are constrained by the sharply reduced budget available to AAS this year (61% of the W1-2 budget for the 2015–16 extension proposal and 81% of W1-2 as approved in the February 2015 FinPlan). These constraints are reflected in the action plan.

Aquatic agricultural systems. The program's choice of geographic hubs has been designed to reflect the challenges and opportunities of the three major aquatic systems upon which we focus; i.e. Asia's mega deltas, island systems in Southeast Asia and the Pacific, and African inland waters. Within these systems, we have focused on countries and locations with particularly high levels of rural poverty. We will sustain this focus in 2015, continuing to work in four geographic hubs:[2] (i) the Southern Polder Zone of Bangladesh, which is representative of the challenges facing aquatic agricultural systems in Asia's mega deltas; (ii) the Tonle Sap in Cambodia, which is representative of the challenges facing the freshwater systems in Asia's mega deltas; (iii) the Barotse floodplain, which is representative of the challenges facing Africa's inland water systems; and (iv) Solomon Islands, which is representative of the challenges facing island systems in Southeast Asia and the Pacific. Within each of these representative hubs, stakeholder consultations have identified a more specific development challenge that is now the focus of program research. The communities where the program focuses have in turn been chosen because they are representative of this challenge. For example, in Bangladesh the hub development challenge concerns improved farming and resource management practices in the face of changing salinity, and focal communities have been chosen to lie along a salinity gradient in four different polders within the Southern Polder Zone. This structured selection of focal countries, hubs and communities provides a key framework for focusing the program's research, and in turn for comparative learning across hubs and communities and for generating broadly applicable knowledge. In 2015–16, particular emphasis will be placed on Bangladesh and Zambia in view of the importance of South Asia and Africa in CGIAR's Strategy and Results Framework.

Looking ahead to 2017, we have found the evaluation's comments on aquatic agricultural systems to be thought-provoking and agree that some (potentially significant) reconceptualizing of aquatic agricultural systems will be beneficial, in particular in order to increase contributions to the CGIAR's new Strategy and Results Framework. To this end, the program's strategic priorities for 2015 (as reported to the WorldFish Board of Trustees in November 2014) include a review of the importance of aquatic agricultural systems. We will draw upon the conclusions of this review as we work with other Centers and CGIAR research programs in developing the CGIAR research program portfolio for 2017 onwards. The review includes specific consideration of the role of aquatic agricultural systems in contributing to the Sustainable Development Goals and in turn to the three system-level outcomes identified in the Strategy and Results Framework. While this analysis is still underway and our assessment of its implications needs to be completed, early indications suggest that it will lead to greater focus on the importance of aquatic agricultural systems for improved food and nutrition security. Such rebalancing will have significant implications for the program's focus on both capture fisheries and aquaculture. In pursuing this course, we will build upon learning generated through the first phase of the program, from commentary

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[2]   This represents a reduction from the five hubs specified in the 2015–16 Extension Proposal. The program has stopped work in the Philippines hub as one of the steps being taken to adjust to the reduced funding available in 2015.

received from the Independent Science and Partnership Council (ISPC), and from the external evaluation.

Strategic research. We welcome the evaluation's emphasis on strategic research and agree that the program's strategic output should increase. This will include further development of key synthesis products that bring together cross-hub learning, while also pursuing research that will help address emerging issues in each of the major aquatic agricultural systems that are the focus of the program. Some of the strategic research outputs that will be produced in 2015 and that illustrate this approach are provided under our response to Recommendation 6 (Box 1).

This synthesis research is helping to provide an important source of information that we are drawing upon to focus the program, including reconsideration of the aquatic agricultural systems "paradox" as a device for framing the program. While emphasis on the congruence of high poverty rates and high productive potential in aquatic agricultural systems has proved useful in drawing attention to the importance of these systems and the challenges and opportunities they present, our research to date has raised more specific questions concerning *inter alia* sustainable intensification, social-ecological resilience, and food and nutrition security that we believe provide a more effective framework for research designed to contribute to the achievement of development outcomes. These issues are increasingly reflected in the program's synthesis research output (see Box 1) and will help guide the program's engagement in the next portfolio of CGIAR research programs being designed to start in 2017. Variation in poverty rates, agro-ecological potential and markets, however, does provide an analytical device for undertaking future, cross-hub comparative work, which could explore the determinants and responses under the paradox. We will also draw upon the review of aquatic agricultural systems that is currently underway to assess how the paradox and/or other perspectives might help frame strategic research on fish and aquatic systems in the new round of CGIAR research programs from 2017 onwards.

Participatory action research. The program uses participatory approaches to engage with stakeholders and identify, pursue and revisit collective research and development agendas as a component of the research in development (RinD) approach. Through these participatory approaches, we seek to help actors assert greater control over research agendas, outputs and outcomes, as well as their associated livelihood choices and outcomes. Our emphasis on participation should therefore be seen as a core engagement methodology that complements the gender-transformative and institutional change elements of the program.

In embracing the use of participatory approaches, we agree with the evaluation's view that where we pursue participatory action research (PAR), this should, where appropriate, be combined with other approaches so as to pursue transdisciplinary, mixed-methods approaches. To this end, the research initiatives designed to address the development challenges identified collectively in each hub use interdisciplinary and mixed-methods approaches that engage with appropriate stakeholders across scales.

We welcome the evaluation's suggestion to explore and demonstrate the added value of using PAR within the RinD approach. PAR is not frequently subject to comparative analysis in a development context, so designing the research to do so requires methodological innovation. This work is being carried forward under the program's research to test the RinD approach. (See also our response to Recommendation 1.)

PhD-level researchers. We welcome the evaluation's emphasis on deployment of PhD-level researchers for field-level research. However, achieving the right balance of field time versus time focused on cross-hub analysis, learning and writing is an ongoing challenge. We discuss this challenge further under Recommendation 2.

Systems research capability. We agree with the evaluation's emphasis on the importance of strengthening approaches to systems research within AAS and CGIAR. A robust approach to systems research will be a core requirement for the second phase of CGIAR research programs beginning in 2017. We note that this emphasis has been welcomed by donors, and we look forward to contributing to designing and implementing this approach across CGIAR research programs. We look forward to building on the investments made by the systems CGIAR research programs and others to strengthen systems research in CGIAR. This commitment has involved strengthening engagement with the wider community of farming systems research. (See our response to Recommendation 1.)

In pursuing our approach to systems research, we recognize that there are different dimensions to systems research and different interpretations of what is meant by "systems." The AAS approach to systems research has built on learning from several decades of farming systems research. (See, for example, Darnhofer et al.[3]) The approach has evolved from an initial focus on descriptions of biotechnical relations focused on farms to include a broader and more dynamic view of the system, with a special focus on people within institutional and ecological landscapes and increased emphasis on participatory research with farmers. This shift towards participatory approaches to improving livelihoods lies at the core of the RinD approach that the AAS program is testing.

Our synthesis research does not aspire to exhaustively understand all linkages or combinations of options available to improve livelihoods in specific aquatic agro-ecologies. Rather, we work with partners and stakeholders to identify and test options or combinations of options that stakeholders agree collectively to pursue, that are identified as having high potential in the context of emerging and long-term trends, and where we can bring to bear the specific strengths of CGIAR and our research and development partners. This approach recognizes that different options may be more suitable for different socioeconomic groups in each community, including among the resource-poor and marginalized, and that careful, disaggregated socioeconomic analysis of opportunities is required.

Multicenter research. We agree with the evaluation team's view that the work of AAS will be strengthened through "truly collaborative, multi-center research." How to achieve this goal is a key challenge, not only for AAS, but for the entire CGIAR research program portfolio, and we believe that effective solutions need to involve both collaboration between Centers within specific CGIAR research programs and collaboration among CGIAR research programs. To this end, Bioversity, the International Water Management Institute (IWMI) and WorldFish are strengthening multicenter engagement in 2015–16 through joint leadership of AAS science themes and through engagement of other Centers on specific research topics, such as the International Livestock Research Institute (ILRI) for nutrition and health. Looking ahead to 2017, the program does not envisage an increase in the number of managing Centers given concerns regarding dispersion of Center investments across multiple CGIAR research programs, but does envisage increased engagement of Center science capacity on specific research questions and

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[3] Darnhofer I, Gibbon D and Dedieu B, eds. 2012. *Farming Systems Research in the 21st Century: The New Dynamic.* Dordrecht: Springer.

increased collaboration across CGIAR research programs. This cooperation will build on the learning generated through the very positive collaboration with the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), the CGIAR Research Program on Agriculture for Nutrition and Health (A4NH), and the CGIAR Research Program on Livestock and Fish (L&F) in 2011–14. Collaboration across programs is a key dimension of the new portfolio of candidate CGIAR research programs for 2017 onwards.

RECOMMENDATION 1. Strengthening research strategy and design
"AAS should strengthen its research strategy and design by:
- *Taking an explicit research stance vis-à-vis RinD, comparing and contrasting it with other approaches and collecting data that will make it possible to identify its comparative advantages;*
- *Re-focusing research questions on the AAS paradox;*
- *More effectively engaging with, benefitting from and contributing to existing bodies of experience and scholarship around agricultural systems and the methods used to study and improve them."*

Accepted fully. We agree fully with the importance of strengthening the program's research strategy. An important step in this direction is the clearer articulation of the program's three overarching research questions as set out in the extension proposal 2015–16:
1. What agricultural research and development technologies deliver significant positive change in aquatic agricultural systems, particularly in the interests of the poor and marginalized?
2. How, and in what situations, does the AAS RinD approach foster enduring and equitable change in livelihoods of the poor and marginalized in aquatic agricultural systems - and how are these changes different from those produced by other approaches?
3. Do the AAS scaling pathways lead to impact at scale, and how can the program most effectively harness learning to support scaling?

In pursuing this research agenda, the program has sought to use both deductive and inductive reasoning and research designs. Deductive reasoning underpins our technological and natural science, directed primarily at overarching research question 1, while an inductive approach, more common in the social sciences, has been used by the program in our research with communities and farmers addressing overarching research question 2. We agree with the evaluation's observation that these approaches have largely been pursued in parallel so far, and that it is essential that these approaches be more fully integrated. We see this as a key priority for the forthcoming stages of the research and thank the evaluation team for having underlined the timeliness and importance of the research integration challenge.

Similarly, we agree fully with the importance of engaging with wider experience and scholarship around agricultural systems and the methods used to study and improve these. As noted in our response to Recommendation 10, the program is working closely with the other systems CGIAR research programs to align efforts in this regard, including exploring how best to develop effective partnerships with research institutes (e.g. University of Wageningen, French Agricultural Research Centre for International Development [CIRAD]) and networks (e.g. Prolinnova, International Farming Systems Association), including by convening events at key fora such as the CGIAR systems conference in Ibadan, Nigeria, in March 2015. This investment in developing aligned systems research within CGIAR will be a

central focus of the new portfolio of CGIAR research programs and flagships being developed for 2017.

Our response regarding the aquatic agricultural systems paradox is provided under Recommendation 10.

RECOMMENDATION 2. Strengthening research capacity

"AAS management should re-think its approach to staffing and to the allocation of human resources by:

- *Basing more experienced senior researchers in the hubs. This would allow them to take the lead in designing and implementing research.*
- *Undertaking a detailed analysis of the factors that constrain the hiring and retention of qualified research staff, particularly in the hubs. If these factors cannot be overcome directly, alternative models, including shared staff and partnerships, should be explored. There is already some important experience with these models within the program.*
- *Ensuring a critical mass of research capacity to a level that would justify expenditure in relation to any given hub–theme combination. If the program faces resource limitations, consolidation and prioritization over hubs and themes will be essential.*

Until these concerns are addressed, the evaluation team recommends that no expansion into new hubs or research themes should be contemplated."

Accepted fully. We welcome the evaluation's focus on the challenge of recruiting, retaining and deploying science capacity across the program, and agree fully with the recommendation's intent to focus upon strengthening research capacity in program hubs. Achieving this improved capacity is already a priority focus for the program and an ongoing challenge, in particular where it concerns locating senior researchers in remote or otherwise challenging locations. As the evaluation has noted, the program is already pursuing several different models to help address this issue, and we will continue to pursue those approaches that have proved successful, in particular sharing staff and research partnerships. We are also taking steps to locate more staff in focal countries, and we are exploring with more mobile staff (those without dependents) options for sharing time between key program locations. These measures are also being combined with sustained investment in developing the research capacity of more junior CGIAR and partner staff located in hubs. We recognize, however, that this will need to remain a key management focus in 2015–16.

In this context, we note that development of effective research partnerships with non-CGIAR research institutes is a key dimension of our science resourcing strategy, including national research systems and internationally recognized centers of expertise. The evaluation report highlights several key areas where we have pursued this approach, and we will continue to develop these partnerships in 2015–16.

We also agree with the importance of striving to deploy a critical mass of research capacity in key locations and research themes, and that this is a critical consideration when developing budgets and managing resource constraints. For example, in managing the reductions in W1-2 funding in 2015, the program has taken a very targeted approach, reducing the number of geographical hubs where we work from five to four, and reducing funding in three themes in order to ensure essential funding for those hubs and themes that we believe will generate most significant outputs and outcomes in 2015–16.

RECOMMENDATION 3. Revising the rollout process

"The evaluation team suggests that any continuation or extension of the roll-out process would benefit from: (1) allowing for experimenting with different approaches to community engagement and priority setting in ways that allow results to be compared; (2) ensuring that adequate time and resources are available to conduct in-depth, critical reviews of the relevant research-based literature and experience; (3) ensuring a much greater level of direct involvement by senior researchers; and (4) striving toward the development of an explicit and robust systems perspective using an interdisciplinary research approach."

Accepted fully. We agree that the program should (i) take full opportunity to experiment with and compare different approaches to community engagement; (ii) conduct literature review as a key step in hub design; (iii) involve senior researchers in hub-level activity; and (iv) seek to develop a robust, interdisciplinary systems research approach. We are explicitly pursuing opportunities to experiment with community engagement as we pursue overarching research question 2 (*How, and in what situations, does the AAS RinD approach foster enduring and equitable change in livelihoods of the resource-poor and marginalized in aquatic agricultural systems—and how are these changes different from those produced by other approaches?*), and we are exploring bilaterally funded opportunities to expand this engagement. Similarly, we conducted substantial literature reviews during hub design, and this process will continue. We have not yet, however, published as much of this analysis as we would like, which reflects the challenges of securing and deploying research capacity that were highlighted in the report and that we are working to address. One dimension of our approach to this challenge in the short term involves drawing upon these literature reviews as we publish results from hub and strategic research. Our approach to managing engagement of senior researchers and systems research is addressed under Recommendations 2 and 1 respectively.

RECOMMENDATION 4. Increasing alignment of AAS activities

"The decision to associate bilateral projects with AAS should be based primarily on their potential to further the AAS research agenda. In the design and implementation of all bilateral projects, maximum synergies with W1/W2-funded work should be sought. In particular, AAS management should seek to use bilaterally-funded projects to experiment with different approaches to community involvement and participatory technology development on a larger scale than is currently possible."

Accepted fully. We agree fully that bilaterally funded projects should be pursued in order to further the AAS research agenda, and that maximum synergies with W1-2 funded research should be sought. This is indeed one of the aims of the hub rollout process, the specific process of identifying a hub development challenge (to provide a coherent focus for future bilateral and W1-2 research development), and the detailed design of research initiatives to address this challenge. By thus identifying key opportunities for increasing research and development investments in each hub, the program has provided a focus for using W1-2 funds and bilateral funding. This approach allows improved targeting of bilateral projects in our focal hubs and so helps address a key intent of the CGIAR research programs; i.e. to integrate bilateral and W1-2 funding. As the evaluation notes, this integration also provides the opportunity to use bilaterally funded projects to experiment with different approaches to community involvement and participatory technology development.

RECOMMENDATION 5. Partnership and capacity-building strategies

"AAS management should undertake a strategic review of both the program's partnership and capacity development activities. Potential partners could be assessed more critically. More emphasis could be placed on partnering with research organizations in the South, including institutes and universities, as a cost-effective way of bringing expertise into the program, particularly where it has been difficult to recruit experienced staff. A senior staff member could be given responsibility for partnerships and capacity development."

Accepted fully. We welcome the evaluation's emphasis on well-focused quality partnerships and the importance of keeping under review the strategic dimension of this work and our capacity development activities. We agree in particular with the importance of partnering with research organizations in the South, including research institutes and universities. Indeed, we believe that quality partnerships, including a wide range of both research and development institutions, are one of the strengths of AAS. However, we also believe that working through effective partnerships in which CGIAR institutions and research and development partners work to most effectively pursue their respective value-addition towards a mutually agreed research agenda is a significant challenge. To help achieve this goal and move more consistently beyond merely transactional partnerships, the program is currently working through an assessment of partnerships across the program and an identification of actions required to strengthen partnerships. As part of this work, a partnership framework has been developed, and this is now being used to guide how effective partnerships are convened and sustained, as well as how investments to strengthen partnerships are made. This will be updated to capture learning from the Results-Based Management pilot pursued in 2014 and 2015 and case studies emerging from each hub, and will anchor our ongoing commitment to high-quality partnerships. While a senior staff member is leading the development and deployment of this partnership framework, we also believe it is important that development and management of quality partnerships be embraced broadly across the program.

An assessment of implementation capacities in geographical hubs was undertaken in 2014, with a particular focus on RinD. Tailored capacity development plans to address key capacity gaps amongst CGIAR and research and development partners will now be pursued, informed by the specific research focus in each hub in 2015-16. A similar assessment will be completed in 2015 by global science teams to identify science capacity required to increase strategic research and to identify where global science partnerships can be strengthened in order to help address these capacity gaps.

RECOMMENDATION 6. Potential to generate broadly relevant knowledge

"AAS research management should take more active steps to ensure that research activities in the hubs are conceived and planned in ways that will allow widely relevant knowledge, including IPGs, to be generated so as to ensure that Impact Pathway 3 can function. Specifically, stronger engagement with the relevant literature, comparative research designs, and more detailed analysis of the other contexts within which the research may be relevant are recommended."

Accepted fully. We welcome this recommendation and its encouragement of research design that will generate IPGs and other widely relevant knowledge. We note that in citing the high quality of journal article publications in several themes (e.g. productivity, resilience, gender, governance), the evaluation recognized

important examples where the program has drawn from research in hubs, including comparative research across hubs, to generate significant IPGs. We believe, however, that this needs to happen more consistently across the full spectrum of our research, and the program leadership has taken steps to prioritize this goal, including a set of strategic science outputs in 2015 that emphasize synthesis across multiple countries and framing of lessons and approaches in the context of global debates on development policy and practice. Some of these 2015 strategic outputs are listed in Box 1.

Box 1. AAS strategic science outputs 2015
Priority journal articles to be submitted in 2015 include the following:

- Governing small-scale fisheries: Diversity, welfare and institutional scale
- Applying the Social-Ecological Systems Framework to the diagnosis of aquatic agricultural systems
- How can aquaculture production increase while maintaining or reducing the ecological footprint?: Evidence from life-cycle assessment studies in Bangladesh and Indonesia (with L&F)
- Increasing productivity and improving livelihoods in aquatic agricultural systems: A review of interventions
- Fish in the context of the sustainable intensification dialogue
- A food systems approach to nutritional security in the Pacific region (with CCAFS)
- Creating space to address governance challenges in community-based action research
- Gender norms, agency and innovation: Evidence from aquatic agricultural systems (with L&F)
- Applying a research-in-development approach in complex agro-ecosystems: A synthesis of early experience
- Development of an outcome evidencing method and early evidence of progress along AAS scaling pathways
- Livelihood, food security and nutritional contributions of aquatic agricultural systems in regional agri-food systems: Key risks and future opportunities.

RECOMMENDATION 7. Strengthened governance
"In order to fulfill its oversight role, and thus provide AAS with a more robust governance structure, the position of the POP must be significantly strengthened in relation to both the program management and WorldFish. Its links to the BoT of WorldFish need to be reinforced. Given the ongoing discussions about [CGIAR research program] governance, it is not for the evaluation team to detail how this should happen, but stronger and more independent oversight is essential."

The following response has been provided by the AAS Program Oversight Panel (POP) and endorsed by the WorldFish Board of Trustees.

Rejected. The POP has concerns regarding this recommendation relating to the functioning of the POP. Specifically, the POP questions the analysis on which the recommendation is based. The POP suggests that the review panel has not fully understood the functioning and role of the POP or its relationship with program management and the WorldFish Board of Trustees. The POP therefore considers some of the conclusions on which this recommendation is based to be invalid.

First, Section 3.8.1.1 states that the POP *"played only an advisory role and not the oversight role foreseen in the ToR."* The distinction between an advisory and oversight role is a gray area. Moreover, oversight is an interrogative process in relation to the central role of management in program design. The POP has taken

on a formal oversight role by reviewing budget, financial and program matters and making recommendations to the Board of Trustees. On matters pertaining to strategic discussions about the overall design of the research program, the POP has deliberately adopted an inclusive and collaborative approach in engaging with the AAS management team. The POP considers collaborative work that sets out to reach consensus with senior management to be the most productive way to deliver oversight for a complex, international program such as AAS, especially a program that is focused on delivering development outcomes in regions characterized by high rates of rural poverty.

Second, the report posits that the agenda of the POP is set by AAS management and that this has resulted in disempowerment of the POP and a tendency for the POP to not fully engage with critical strategic issues. Again, we disagree. The management team and POP chair draw up the initial agenda for the POP meetings, as is general practice for boards. Additionally and invariably, members of the POP are encouraged to add to the agenda and identify priorities for the meetings. The POP has been clear on what it would like to see on the agenda and the nature of documentation to support the agenda discussion. There is a clear working consensus between management and the POP on priority issues to be discussed in the POP meetings.

Third, the report states that *"the WorldFish Board does not itself provide independent oversight."* This is correct, but it is the conscious consequence of a governance structure that confers the independent oversight role to the POP. The board, however, retains final fiduciary responsibility for the program. The POP would argue that this conforms to the model for CGIAR research program governance that has evolved as a response to the IEA review of CGIAR research program governance. Moreover, the chair of the WorldFish Board has attended a number of POP meetings to ensure that there is an effective level of oversight on the AAS program and that this delegation of responsibility is effective.

Fourth, the report states, *"As a result, the governance of AAS has essentially been left in the hands of WorldFish and AAS management."* Again, the report fails to distinguish between the governance role of the POP and the role of management in the design and implementation of the AAS program. For the reasons given above, we believe this reflects a serious misunderstanding of the governance of the program.

In view of these misunderstandings, we do not believe that the recommendation is well founded and we believe that it fails to reflect the role of independent oversight as provided by the POP. We believe that the governance arrangements for AAS are conceptually sound and deliver appropriate interaction between AAS management, the independent oversight body, and the Board of Trustees of the lead Center.

Notwithstanding the commentary above, the recommendation did cause the POP to reflect deeply on its function and its interaction with management. While we are broadly satisfied with our role and mandate, we did identify one area for improvement. We have concluded that the POP has tended to be mainly responsive to the Board of Trustees rather than taking initiative commensurate with our mandate. We now see the advantage of the POP becoming more proactive in reporting on AAS to the Board of Trustees as a means of further strengthening AAS governance. The POP is grateful to the evaluation team for the occasion provided to review our role.

RECOMMENDATION 8. Clarification of roles

"The management of AAS and WorldFish should clarify the roles, responsibilities and reporting relations of WorldFish staff relative to AAS staff, and in particular as they relate to scientific management. The proposed AAS Science Director should be encouraged to spend considerable time in the hubs."

Accepted fully. We agree that clarity of roles, responsibilities and reporting relations is essential for effective program management. An important aspect of this clarity is recognition that it is Centers, not programs, that hire staff, and that a key challenge lies in securing dedicated engagement from many staff in the face of multiple competing demands, including from more than one CGIAR research program in which they may be engaged. Our assessment is that overall this balance has worked well in the first years of the program, and that managing these relationships will require renewed investment from senior leadership in the managing Centers as the program moves ahead.

We also agree with the specific recommendation regarding the AAS Science Director. We note, however, that because of budget reductions and uncertainties regarding the future portfolio of CGIAR research programs, this hire has had to be deferred.

RECOMMENDATION 9. Management information

"A functional research management information system should be established. This system should make it possible for AAS management to monitor and assess key program indicators such as the distribution of resources and the research outputs produced by hubs and themes."

Accepted fully. We agree fully with the intent of this recommendation: that program management systems need to be improved. To do so, we are focusing upon strengthening systems and processes. Among the steps taken to strengthen systems, we have established a web-based intranet that serves as an information management portal hosting the documentation about program planning and reporting. This portal combines with the continuing advances in utilizing the project manager platform in the WorldFish enterprise management system (One Corporate System or OCS) to link budgets with activities and outputs, adding a capability for real-time monitoring for budget owners and program managers. Management system documentation includes annual activity planning, progress reporting and uploading of verifiable indicators of outputs. Outputs are archived in WorldFish servers and archival complies with CGIAR open access and open data (OA/OD) policy. Research data is appropriately documented and placed in the WorldFish or other Center research data management system for eventual designation as open access. AAS will continue to utilize the WorldFish OCS platform for budgeting and financial monitoring as this platform becomes fully operational.

Steps to improve management processes include adapting our existing annual planning and reporting cycle to organize around a new initiative-focused research structure. This includes a cycle of program-wide research design planning with accompanying activity plans. This design and activity planning approach has facilitated prioritization in management of recent budget reductions. The program management team monitors output delivery and identifies appropriate follow-up in case of any forecast delays.

4. Action plan

Evaluation recommendation	Management response to the recommendation	Management follow-up			
		Action to be taken	**Who is responsible for action**	**Timeframe**	**Is additional funding required to implement recommendation?**
10. Building on CGIAR's comparative advantage	Accepted fully	Give greater prominence to CGIAR's comparative advantage in aquatic systems, especially fish	AAS Director + program leadership	2015–16	No
		Conduct a review of the importance of aquatic agricultural systems	AAS Director	2015	No
		Draw on results of review to position AAS in 2015–16	AAS Director + program leadership	2015–16	No
		Draw upon results of review in designing a new CGIAR research program focused on fish agro-food systems	AAS Director + program leadership	2015	No
		Increase output from the program's strategic research	AAS Director + research theme leaders	2015–16	No. However, the degree to which increase is possible will be constrained by funding levels.
		Pursue interdisciplinary and mixed-methods approaches in hub research	Research theme leaders	2015–16	No
		Increase the number of PhD researchers	Research theme + country program leaders	2015–16	Yes. The significant reductions in funding for 2015–16 will limit scope to hire new research staff.
		Support development of more coherent approach to systems research in new CGIAR research program portfolio	Program leadership	2015–16	No
		Strengthen systems research capability	Research theme leaders	2015–16	Yes, given current funding shortfalls
		Continue joint leadership of selected research themes	Research theme leaders	2015–16	No
		Engage other Centers in selected research themes	Research theme leaders	2015–16	No
		Increase collaboration across programs in next phase of CGIAR research programs	Research theme leaders	2015–16 (for design) 2017 (for implementation)	No

1. Strengthening research strategy and design	Accepted fully	Take explicit research stance vis-à-vis RinD	Knowledge sharing and learning (KS&L) + gender theme leaders	2015–16	No
		Strengthen engagement with existing bodies of system research	Program Director + research theme leaders	2015–16	No
2. Strengthening research capacity	Accepted fully	Review options for basing more senior staff in focal countries and hubs	AAS Director + program leadership	2015	Yes, if absolute numbers to be increased
		Identify alternative models for engaging senior researchers in hubs	AAS Director + program leadership	2015	Yes, if expanded partnerships required
		Review allocation of funding to hubs and themes to ensure critical mass is available	AAS Director + program leadership	2015	No. However, with reduced funding in 2015 not all hubs and themes will be maintained at 2014 levels.
3. Revising the rollout process	Accepted fully	Identify and pursue opportunities to experiment with community engagement	KS&L + gender theme leaders	2015	No
		Draw upon literature reviews conducted during hub design as we write hub and strategic science outputs	Country program leaders + research theme leaders	2015–16	No
4. Increasing alignment of AAS activities	Accepted fully	Develop bilateral projects to build synergies with W1-2-funded research	Research theme + country program leaders	2015–16	Yes – bilateral funding
		Use bilateral funding to experiment with community engagement	Country program leaders	2015–16	No
5. Partnership and capacity-building strategies	Accepted fully	Assess, adapt and strengthen current partnerships, and identify strategically important new partnerships	Program leadership	2015–16	No – subject to funding requirements of partners
		Support use of adoption of the refreshed partnership framework	Program leadership	2015–16	No
		Implement measures to address hub-level capacity gaps identified in 2014	Country program leaders + research theme leaders	2015	Yes, if the measures are to be implemented in full
		Assess global science capacity needs	Theme leaders	2015	No
6. Potential to generate broadly relevant knowledge	Accepted fully	Deliver agreed set of strategic outputs, drawing on learning across hubs, that deliver broadly relevant knowledge	Program Director + theme leaders	2015–16	No

7. Strengthened governance	Rejected	Take a more proactive approach to reporting to the Board of Trustees	POP	2015–16	No
8. Clarification of roles	Accepted fully	Clarify roles of staff in relation to science management	Program Director + theme leaders + science directors of managing Centers	2015	No
9. Management information	Accepted fully	Update planning and reporting cycle and guidelines for initiative-oriented implementation	Head of Monitoring and Evaluation (M&E) + Head of Operations	2015	No
		Migrate planning and reporting functions to intranet	Head of M&E	2015	No
		Pilot migration of selected AAS data sets for open data compliance	Head of M&E	2015	No