**Cluster 2 Flagship FP2.2 Fish in Multi-functional landscapes: Narrative report 2019**

**Main achievements**

Main achievements in 2019 demonstrate how small scale fisheries can be sustained or enhanced in complex mixed use landscapes. FP2.2 delivered research on novel governance, ecosystem-based planning and management and enhanced production strategies -deliverables fall under three main *closely interlinked* activity areas;

1. Testing and refining governance and ecosystem-based management models for sustaining fisheries in multi-use landscapes
2. Cross-scale governance mechanisms tested and refined to account for impacts of external drivers and competition on SSF
3. Management of trade-offs between SSF, infrastructure and land use understood

Specifically, this included journal articles, methods and tools development, models, maps, workshops, write shops, panel sessions, guidelines and reports - providing new knowledge on:

* water productivity and fisheries, (*draft guidelines developed*)
* on integrating fisheries into water control infrastructure planning and design *(special issue CSIRO journal* McCartney et al., Dubois et al., Connalin et al., 2019) a*nd dedicated panel session at Global irrigation forum)*
* integrated production models *(experimental data from trials in the Ayeyarwady Delta, infographic produced in dual languages) Rice fish ACIAR project data…*
* youth aspirations on fish in multi-functional landscapes *(report)*
* research engagement in policy *(case study based journal article drafted, a typology /PPT produced).*
* dialogues among land use, fisheries and agriculture policy makers produced *(capacity development on rice and rice fish suitability mapping and dialogue)*
* rice fish systems *(Regional write-shop and journal article drafted from case studies in Cambodia, Viet Nam, Myanmar and Bangladesh, international symposium proceedings produced).*
* integrating gender in Rice Fish Systems (*gender empowerment tool under development)*
* multi-scale characterisation of rice Fish Systems *(rice fish suitability maps and model developed and under refinement in 2020 to incorporate a range of social data layers)*

In summary, research aimed to improve water governance associated with water storage (reservoirs) and conveyance (irrigation canals) for enhanced fisheries and agricultural production - illustrating how water management can be adapted/better designed for positive fisheries outcomes without undermining other water resource objectives (i.e. increasing overall water productivity). Research also aimed to better understand and inform policy processes on the competing demands and trade-offs that exist in multifunctional landscapes between SSF, infrastructure and the different uses of land and water. This will supported through dialogue among land use, fisheries and agriculture policy makers to help foster collaboration between these different agencies and to enable scaling.

Finally, innovations were developed to account for competing demands and tradeoffs between the different uses of land and water within these landscapes and with a focus on building capacities to adapt to external drivers of change and natural seasonal and inter-annual variability.

**Main achievements with specific gender focus TBC**

Our research on youth and inclusion is embedded within our Myanmar work. We are conducting a case study in the Kyonkadun Village, Ayeyarwady Delta, to understand better what determines the life aspirations and outcomes of youth and how these intersect with the small-scale fishery sector. Two rounds of fieldwork took place in 2019 including ten focus group discussions and 63 in-depth interviews. Findings from the ongoing study were presented at the ‘Seeds of Change’ Gender Equality through Agricultural Research for Development Conference held at the University of Canberra in April, 2019 and at the ‘Gender, water and food: perspectives and contestations’ workshop organised by CGIAR and the Institute of Development Studies in Brighton, UK held in December, 2019.

We are also developing in Myanmar with our research partner ‘Includovate’ a women’s empowerment tool in rice fish systems. This tool will allow researchers to assess status and change as a result of research intervention in womens empowerment.

**Main achievements with specific Cap Dev and knowledge focus TBC**

Main achievements in capacity development include hosting PhD students and interns from international and national universities, capacity building of DoF, DoA and DAR staff in integrated farming systems specifically Rice Cum Fish Culture and capacity development of DoF and communities in Small Scale Community Fisheries.

**Main gaps TBC**

In Myanmar, a proof of concept around community water management of sluice gates in the Ayeyarwardy delta, to enable fishers to benefit from their operation was planned (leveraging several bilateral projects). Arrangements were made for de-silting of a sluice gate in Kyonkadun Village (Ayeyarwaddy Delta) as the site for undertaken participatory action research for testing farmer-fisher sluice co-management arrangement in 2019. This activity was however hampered due to bureaucratic complexity and therefore ultimately this activity had to be dropped.

**Measures taken and adjustments proposed**

We ensured that the GIS mapping work, trainings and the multi-stakeholder dialogues associated with integrated rice-fish systems continued and were further refined, an adaptation of the Mean Dietary Diversity for Women tool was tested and a related ICT based visual food plate monitoring system was developed.

**Main achievements and challenges related to partnerships management TBC**

* Partnership with WLE and FAO continues to be strengthened in regards investigating how fisheries productivity can be improved in human-made water bodies, associated with both water storage (reservoirs) and conveyance (irrigation). The guidelines (volumes II and II) are completed and currently under review by FAO.  We have a publishing agreement with FAO but the review is a formality that FAO need to go through before we can proceed. Key joint outreach activities included:
	+ Co-convener of a session titled: Inland fisheries, freshwater governance, and the 2030 Agenda at the Stockholm WWW in August 2019.
	+ Co-organizing a session titled: Modernizing irrigated agriculture to protect and restore aquatic biodiversity and inland fisheries in Asia at the International Commission on Irrigation and Drainage, Third World Irrigation Forum (WIF3) held in Bali, Indonesia in September 2019.
* Close collaboration between WLE and FISH CRPs continues. Two WLE supported proposals were awarded that enable close cross-CRP and cross-center collaboration; 1). The WLE project on Transformation of rural landscapes for sustainable and nutritious food systems in Myanmar, contributes towards operationalizing the Tripartite MoU between IRRI, WorldFish and IWMI by investigating how Myanmar’s food systems could change to provide healthy diets and simultaneously reduce environmental degradation. 2) IWMI together with WorldFish, through the WLE project Seeking transformative change: identifying and addressing root causes of gender inequity in wetlands management in Myanmar, are working in close partnership with Helvitas and IUCN to minimize unintended social marginalization in implementing the Gulf of Mottama (Myanmar’s fourth Ramsar Site), by investigating underlying attitudes and gender norms. The overall aim is to contribute knowledge and tools nationally and globally on better integrating gender in wetlands wise use.

**Main achievements and challenges related to fund raising TBC**

* A meeting was held in Bangkok, Thailand, in February 2019 between IWMI and WorldFish, with the main objectives of identifying and prioritizing specific topics for future WorldFish/IWMI collaboration; exploring joint fund raising opportunities, scoping of concept notes for further development and determining next steps for joint business development. As an output of the meeting, a precursor to an MOU was produced highlighting five thematic areas of mutual interest.
* A five-year tripartite MoU was signed by IRRI, WorldFish and IWMI in April 2019. The agreement provides a framework for cooperation on R4D initiatives focused on the sustainable intensification and management of rice-fish production systems in irrigated landscapes and wetlands in Southeast Asia. The agreement aligns with the CGIAR 2030 Plan which calls for transformations of its research programs to usher in a “food systems revolution”. This MoU is enabling closer cross-center and cross-CRP collaboration.
* Preparation of CNs: In Cambodia, a Concept Note on the topic of managing Cambodian irrigation systems within multi-functional landscapes was developed together with inputs from WorldFish Cambodia to be presented to ADB. The idea is to also explore the possibility to link this CN with investments such as those by the Cambodia Agriculture Value Chain (CAVAC) project. Preliminary discussions were held with ADB and CAVAC, but progress has been slow, and in-country follow-up will be required to move this forward.