



Lessons Learned from WorldFish Climate Change Adaptation Initiatives in Cambodia



WorldFish Implementation Projects

- Rice Field Fisheries Phase I (2012-2016)
- Feed the Future Cambodia - Rice Field Fisheries Phase 2 (RFF2) 2016-2021: Project Overview
- Climate Smart village and climate smart agriculture
- Building capacity for integrating climate change adaptation in fisheries sector in Cambodia (2011-2013)

Rice Field Fisheries Phase I (2012-2016)

Project Goal

Promote sustainable rice field fishery management practices to increase benefits for poor households who are dependent on aquatic resources

Project Approach

Enhance natural productivity of fish and other aquatic animals in rice field environments, through Community Fish Refuge (CFR) as dry season habitat of brood fish

- Improve the physical environment and connectivity between CFR and surrounding rice field
- Improve institutional capacity of CFR committees and governance of CFRs

Partners

NGOs

- Akphivat Neary Khmer Organization (ANKO)
- Village Support Group (VSG)
- Cambodian Organization for Women Support (COWS),
- Trailblazer Cambodian Organization (TCO),

Government

- Fisheries Administration
- Ministry of Water Resources and Meteorology
- Provincial and local authorities and line agencies

Other research and communication partners

World Vegetable Center, Feed the Future Innovation Lab for Nutrition (Tufts University), Cornell University, NOURISH/Save the Children, RUA, RUPP

What is Rice Field Fisheries System?

Rice field fisheries refers to the capture of wild fish and other aquatic animals (OAA) from the flooded rice field environment and associated waterways --- canals, river channels, or streams.

Community Fish Refuge (CFR)



Fish survives through the dry season (Jan – Apr) in refuge pond where fishing is prohibited



At the end of wet season (Nov-Dec), fish migrates into refuge pond with receding water



When the wet season starts (May – Jun), fish migrates out to rice field and floodplain where fishing is allowed

Key Activities



Physical improvements of CFR environment



Research and M&E

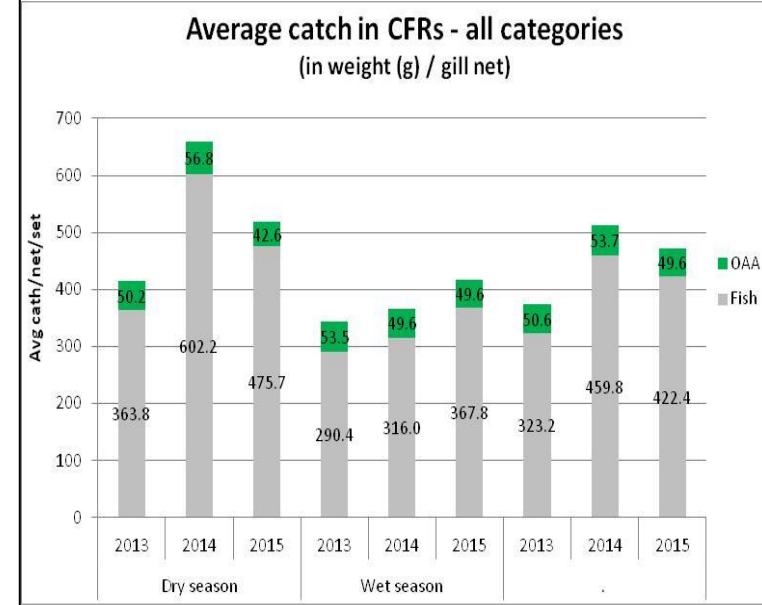


Community engagement & capacity building



Outcome: Improved fisheries productivity

- Over 100 fish species were found in rice field fisheries, about 70% are “grey fish”, indicating higher biodiversity than previously thought
- Fish biomass increased on average by 30% at the project supported CFRs between 2013 and 2015
- Fish biomass increased at 27 out of the 40 sites supported by the project, despite severe drought condition in 2015



Outcome: Income benefits to local households

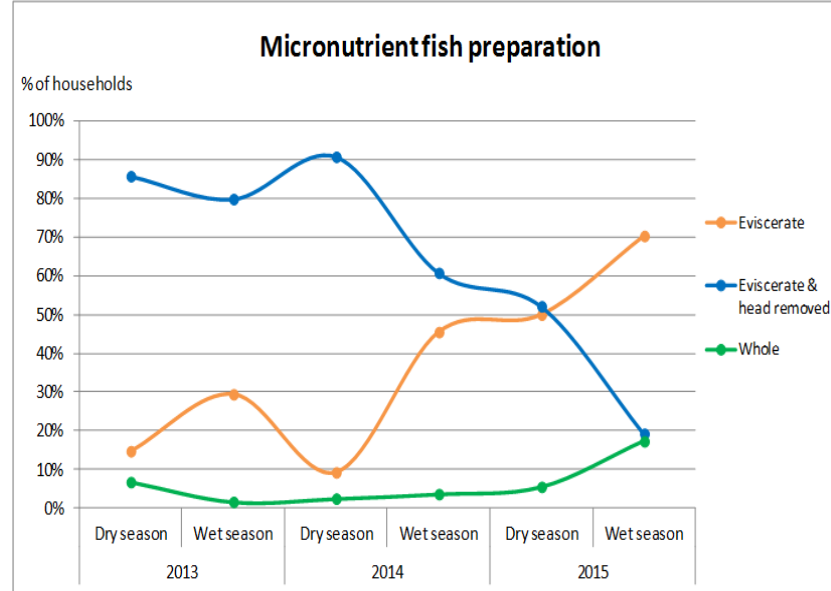
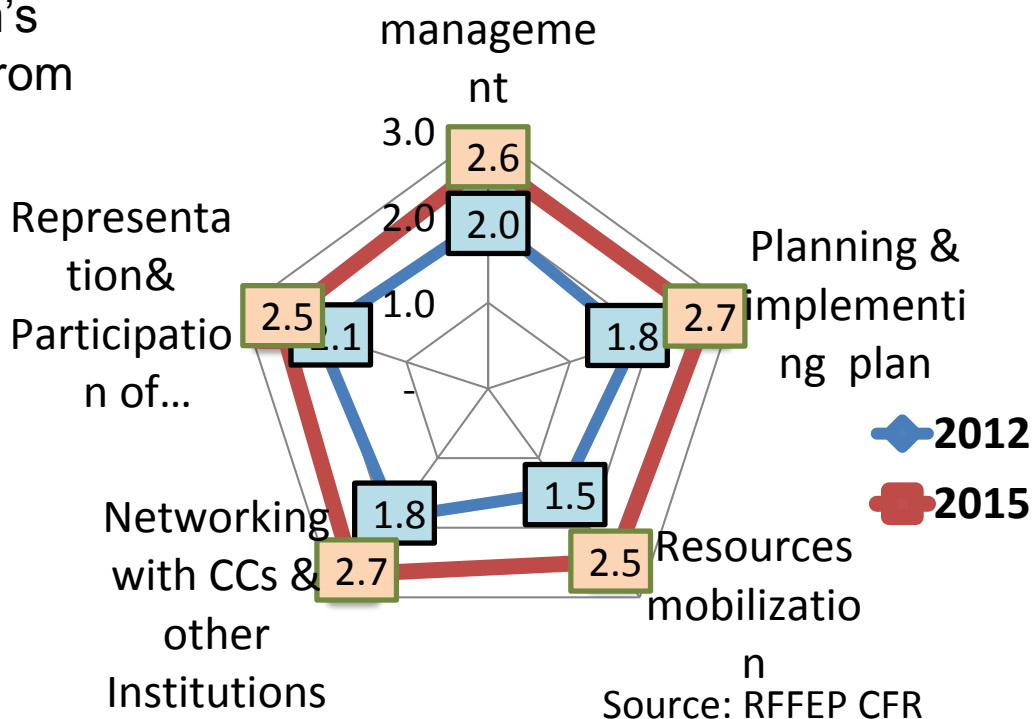
- 56% of the households increased amount of fish consumed at home
- Amount of small micronutrient-rich fish consumed at home increased by 13% on average, and the consumption by children under the age of 5 increased by 23%;
- 85% of the households consider that dry and smoked fish is good for pregnant and lactating women’s health in 2015 – an increase from 58% in 2012.



Outcome: Nutritional benefits to local households

- 56% of the households increased amount of fish consumed at home
- Amount of small micronutrient-rich fish consumed at home increased by 13% on average, and the consumption by children under the age of 5 increased by 23%;
- 85% of the households consider that dry and smoked fish is good for pregnant and lactating women's health in 2015 – an increase from 58% in 2012.

Outcome: Improved capacity of CFR Committees



Key lessons learned

- CFR committees and commune councils that have worked well together to develop community visioning plans for good rice field fishery ecosystems; parts of CFR management plans have integrated into the commune investment plan.
- CFR committees and villagers are more committed to CFR management once they fully understand benefits. They are more willing to change habits and practice based on full personal understanding and believe
- Lessons sharing events encourage knowledge and information sharing between CFRs and key stakeholders, allowing different committees to see how others manage and organize their CFR efforts.

Plan for scale out in 4 Tonle Sap Lake Provinces

Rice Fields Fisheries Enhancement Project - Phase 1 (2012-2016)	Rice Fields Fisheries - Phase 2 (2016 - 2021)
<ul style="list-style-type: none">❑ Improvement of physical environment and connectivity between CFR and rice field habitats❑ Establish sustainable CFR management practices<ul style="list-style-type: none">• Strengthening institutional capacity of CFR committees• Village and agency support• Revenue generation	<p>‘RFF PLUS’</p> <ul style="list-style-type: none">❑ Scale out the best practice CFR approach to many more locations❑ Explore coordination mechanism for multi-purpose use of CFR as dry season water source, e.g. vegetable cultivation, livestock raising, rice farming, and drinking water❑ Maximize nutritional benefit of increased fish consumption by promoting more diversified diet among children and women❑ Develop and share a CFR best practice implementation guide, together with Fisheries Administration

Concept of Climate Smart Village & Climate Smart Agriculture

Climate Smart Village (CSV) is a community-based approach to sustainable agricultural development that was implemented by CCFAS and partners. Their aims are to improve **farmers' income** and **resilience** to climatic risks, and boost their **ability** to adapt to climate change.

Climate Smart Agriculture (CSA) aims to sustainably increase **productivity** and **income**, build **resilience** to climate change, reduce **greenhouse gas** emissions, and further the achievement of national **food security** and development goals.



Partners in Cambodia

- WorldFish
- IRRI
- Department of Agricultural Extension, MAFF
- Provincial Department of Agriculture (Battambang)
- Aphivat Strey (AS), local NGO
- CABI



What has been done?

- Baseline studies on site
- Review existing climate change-related projects and policies
- Participatory land use planning
- Participatory selection of climate smart agriculture technologies/practices
- Building capacities of project team and community representatives
- Testing climate tolerant rice varieties (with USAID/IRRI project)
- Plant clinic for disease and pest management (with CABI/GDA project)
- Testing agroforestry and
- Rain water harvesting

CSA	Benefits/ expected outcomes
Pest smart management: Plant clinic	<ul style="list-style-type: none"> • Reduce crop loss due to weather anomalies • Improve farmers knowledge and capacities for climate smart rice production/farm management techniques
Climate-stress tolerant rice varieties	<ul style="list-style-type: none"> • Reduce crop loss due to weather anomalies • Maintain or increase food and income security at household level • Improve farmers' knowledge and capacities for climate smart rice production/farm management techniques
Rain water harvesting	<ul style="list-style-type: none"> • Improve access (over 100 hhs) to water during dry season and dry spells in wet season • Extend crop growing periods despite sporadic rainfalls • Improve farmers' knowledge and capacities for water conservation
Agroforestry	<ul style="list-style-type: none"> • Provide essential ecosystem services, e.g. soil nutrient, water retention • Contribute to food and nutritional security, income diversification • Carbon smart

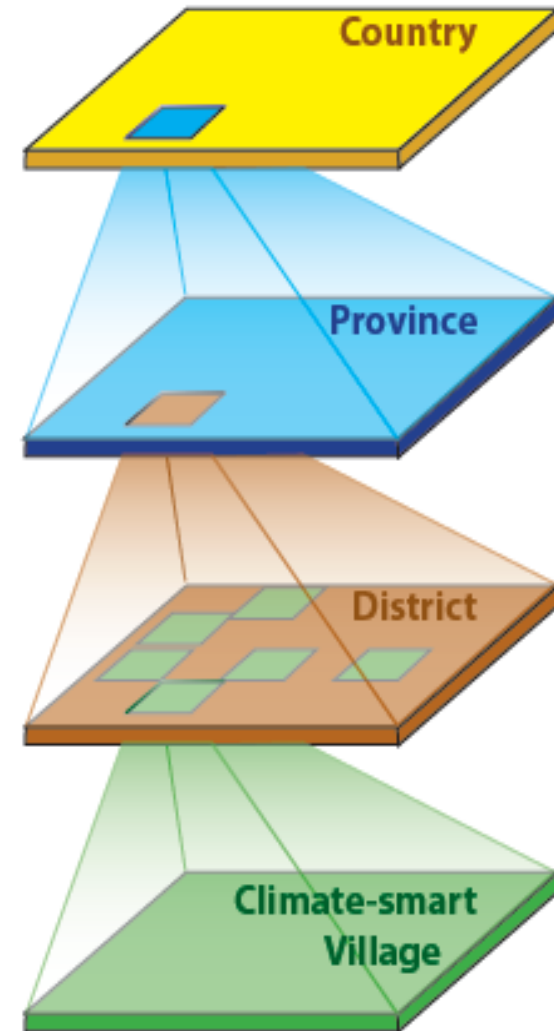
Key Lessons Learned

- Selection of CSA activities needs to be based on local knowledge through a participatory process that considers a variety of cost-benefit criteria such as social constraints and market/value chain.
- Adopting CSA may not result in immediate income benefits and needs a strong long-term commitment or economic incentives.
- CSA interventions need to address specific local priorities and demands, and resource availability to become sustainable.
- More cooperation is required among a broad range of government departments, local governments, and NGOs to build social capital among the wider community.



Scaling-up Approach: Climate smart village

- Participatory testing and improving CSA technologies and practices.
- Document findings and key lessons from implementation and practice for scaling up and out.
- Identify and test innovative mechanisms for scaling up and out, e.g., through integration into a commune/district develop plan.
- Linking to a broad range of development partners, research institutions, and government departments.



Climate Change Adaptation in Fisheries: Approach and Lessons Learned from Capacity Building (2011-2013)



**Building Capacity
for Integrating
Climate Change
Adaptation**

National Level

Sub-National Level

Ground/Community

Training needs
asses.

IEC tools and
Train. Mater.

Pilot

Training

Policy Dev't.



Improved aquaculture pond technology for increased survival of fingerling fish and fish seed by DAD



Enhancing the quality of fish processing products to adapt with climate change by DFPT

Piloting



Rehabilitation of dry season fish refuges in Pursat for climate change adaptation by DFC



Community Based Flood Early Warning Network by DCFD

Key Lessons Learned

- Clearly understand knowledge gaps and capacity building approaches at different levels; it was very useful for designing the training topic and tools to target different groups,
- Platform for exchanging experiences and lessons learned among FiA-CCTOT was very useful for themselves to share and update their progress (beside training and workshops)
- Pilot team and beneficiaries gave very positive feedback about pilot activities; but difficult to evaluate success of projects after only one season of testing/with few participants;
- Pilot team need technical support to design pilot projects and more resources for testing more sites;



Thank You for Your Attention

