

Modernising Cambodia’s hydraulic and irrigation systems and practices

The four-year WAT4CAM project is helping to upgrade outdated infrastructure and taking the opportunity to support innovative, climate-friendly farming.



Meeting with Preah Vihear Mean Chey Union of Agricultural Cooperative. Photo: Rat Rotana



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More than 70% of Cambodia’s 13.5 million inhabitants are engaged in agriculture, with the vast majority being smallholders farming rice. To support this enormous agricultural population, substantial water infrastructure has been constructed over decades dedicated to mitigating the impact of flooding and ensuring water availability to more than 3 million hectares of irrigated land across the country. Yet many of these hydraulic and irrigation systems have not been maintained or upgraded since they were built during the 1990s - and some have not even been rehabilitated since their construction in the 1970s under the Khmer Rouge.

37% of irrigation systems have not been rehabilitated since their construction

Meeting this challenge will require investment in the upgrading and rehabilitation of key infrastructure. The Water Resources Management and Agro-ecological Transition for Cambodia (WAT4CAM) programme, consisting of a EUR 55 million loan from the Agence française de développement (AFD, the French Development Agency) and a EUR 11 million grant from the European Commission, has as its first objective the rehabilitation of up to 13 medium-sized irrigation schemes and up to 40 preks (small irrigation systems mostly built during the French Protectorate) in five provinces in the north of the country. Seizing on the opportunity afforded by the infrastructure investments, WAT4CAM will go beyond construction and work to realise an overall transformation in how governments, enterprises, and smallholders manage water resources and go about the cultivation of rice and other agricultural products.

The WAT4CAM program has four components which seek to deliver long-term poverty reduction, develop the economy, and reduce the vulnerability of rural populations to climate change:

1. Rehabilitation and completion of irrigation and drainage infrastructures
2. Improvement of irrigation management
3. Support to water resources monitoring and management
4. Support innovative farming practices and support to the rice value chain

The many benefits of innovation

NIRAS is responsible for the implementation of Component 4 covering innovative farming practices and support to the rice value chain. As noted above, most of the millions of smallholders in Cambodia cultivate rice, meaning that adopting innovative approaches can yield broad societal benefits while improving the lives and incomes of individual farmers. NIRAS involvement starts at the top by collaborating with the national Ministry of Agriculture, Forestry, and Fisheries (MAFF) as it implements sector-wide policies and strategies that seek to shape the way the agriculture sector adapts to the demands of the 21st century, including climate change and international markets.

Beyond collaboration with MAFF, the programme seeks to identify the most effective and realistic ways to effect an ‘agro-ecological transition’ in Cambodia, which would see the country’s farmers diversifying from rice crops (which require enormous amounts of chemical fertiliser inputs) and adopting an ecosy-

Donor

Agence française de développement and European Commission

Client

Government of Cambodia

Location

Cambodia (Battambang, Preah Vihear, Siem Reap, Kampong Thom, and Kandal)

Contract value

€2,659,750

Duration

February 2020 - February 2024



Site visit - the team learning from local farmers about their unique situation and challenges. Photo: Laura Wahlandt



stem approach. Such a transition would enhance productivity, prevent pollution, and improve the quality and nutritional value of the food being produced. Therefore, research will be conducted to engage smallholders and other stakeholders in the innovation process, including both controlled experiments and on-farm trials and demonstrations. This participatory research, which will be led by other partners, will inform how the programme supports farmers in their efforts to diversify their activities.

From experimentation to transformation

To put theoretical innovations into practice, the project will support extension activities in selected irrigation schemes and preks. Beyond building the capacity of farmers in climate-and-ecosystem-friendly agriculture, the extension services will be offered to service providers, government officials, and other involved stakeholders. Additionally, knowledge and innovations piloted in other complementary programmes funded by the EC and AFD such as Capfish (see box) will be integrated into the extension services, capitalising on existing knowledge and research.

Capfish is an ongoing EU-funded programme in Cambodia, which seeks to increase food security, improve nutrition and foster further economic development through targeted support to the aquaculture and fisheries sector. One of the pilot interventions that the programme has championed is rice-fish farming adapted to the local context, whereby fish (an important source of animal protein for Cambodians) are bred in rice paddies, thereby improving both the local ecosystem and diversifying farmer income and food sources.

As smallholders and service providers are operating within the larger rice value chain, improvements

made in one node must be supported by work across the value chain. No matter how much yields and quality may improve, it is key that farmers have access to processing facilities and ultimately to markets in order to see an economic benefit. Thus, the programme will also support value chain improvement activities including more robust certification processes and engagement of other private sector actors.

This is envisioned as only Phase I of a multi-phase programme. While the foundation of the project is the construction and rehabilitation of water infrastructure to provide reliable access to water for irrigation and agriculture, WAT4CAM takes a holistic approach and seeks to improve the ways that the water is used in agriculture. By undertaking an agricultural transition, smallholders will diversify what they cultivate, increasing incomes, improving food security, and leading to more ecologically and climate-friendly agriculture in Cambodia.

