

Asia Hub and CIAERA Annual Meeting 2024

November 12-15, 2024 | Centara Riverside Hotel, Chiang Mai, Thailand



Strengthening innovation in hydropower by the Research Center for Community Water Management, according to the Royal Initiative

The Research Center for Community Water Management, according to the Royal Initiative, was recognized as an outstanding community research center (Showcase) in 2023 by the Regional Research Network: Northern Region.

The Research Center for Community Water Management for Sustainable Development, according to the Royal Initiative, is located at Ban Pa Tung Ngam community. This small community is situated upstream of a watershed and its population main income is derived primarily from agriculture. The center was established in 2018 to utilize the results of research on water management, based on the royal Initiative, to support, expand, and build upon the existing knowledge that community members have already been applying. This has led to positive quantitative and qualitative outcomes for the community.

The community faces challenges due to a lack of data on quantity of water supply and demand. This data is essential for developing a concrete water management plan for the community, as well as addressing the problem of water shortages for various activities, both during normal periods and times of scarcity.



Problem Conditions

Project Objectives



To apply appropriate technologies and innovation in hydropower, in order to reduce household expenses and increase water resources, to ensure that the community has sufficient water supply for consumption, household use, and agriculture. Additionally, this project aims to strengthen efficacy of the community in management of upstream, midstream, and downstream water resources, according to the royal initiative, as well as to expand youth involvement in the area.

Upstream



- Apply technology and mapping systems for systematic water management.
- Implement a 3-tier natural filtration weir system.

Midstream

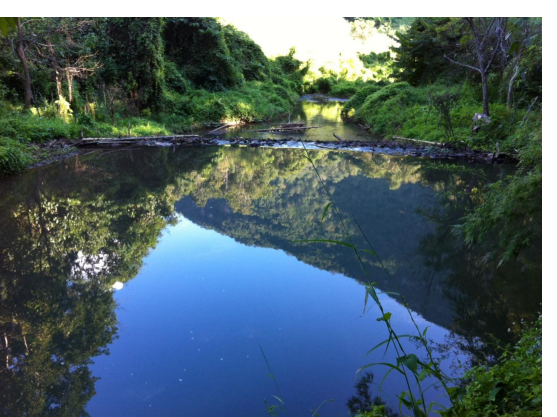
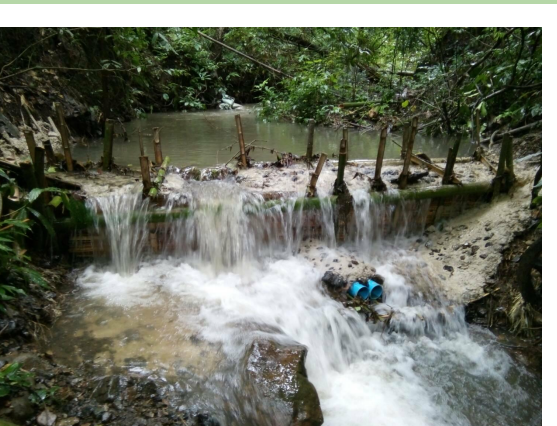


- Plant Krai Noon, and Krai Nam, (local flora species), to help prevent riverbank erosion.

Downstream



- Design and install a solar-powered water pumping system to replace existing pumps.
- Encourage youth groups to cultivate local tree species to be planted in upstream forest areas.

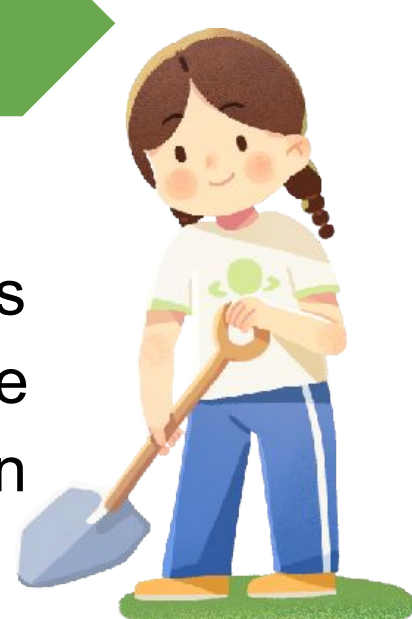


Target Areas

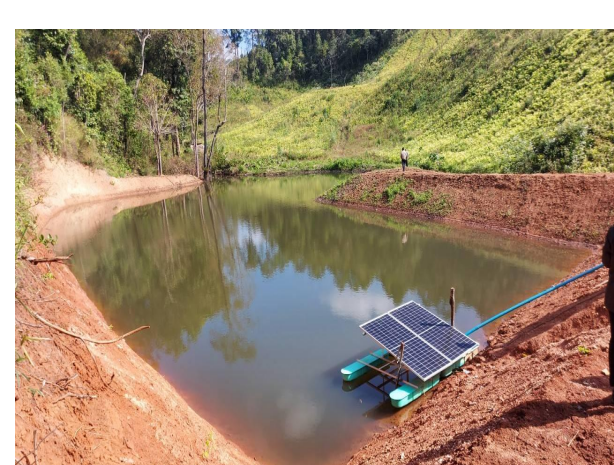
Ban Pa Tung Ngam Community, Ping Khong Subdistrict, Chiang Dao, Chiang Mai

Research Outputs and Outcomes

Trained, enhanced knowledge and skills of three new instructors of the Community Research Center: two members from the community and one officer from Srilanna National Park Protection Unit No. 3.



Expanding the results of water management knowledge application to a nearby community, namely Ban On Community, Ping Khong Subdistrict, Chiang Dao District Chiang Mai Province.



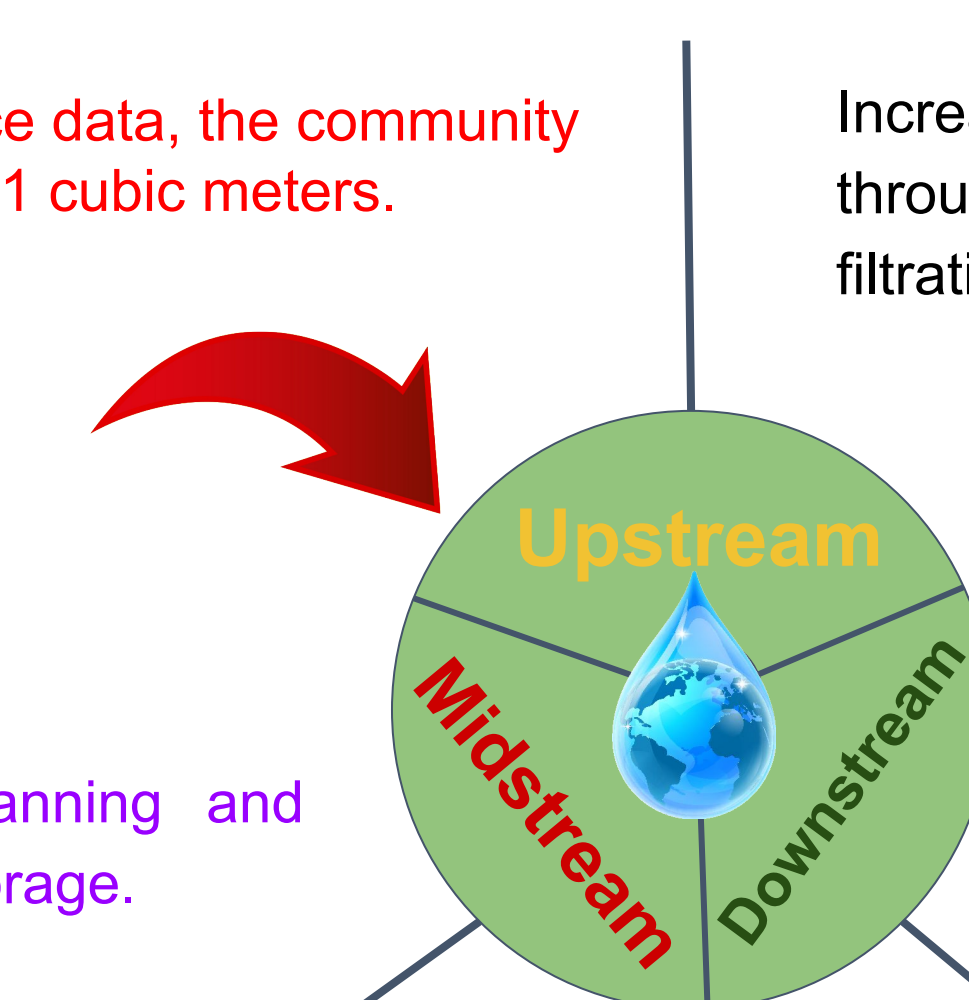
Based on the water balance data, the community has a surplus of 627,845.51 cubic meters.

Increased water resources by 60 cubic meters through the construction of a 3-tier natural filtration weir system.

Utilized mapping to aid in planning and managing water resources for storage.



Planted *Krai Noon* and *Krai Nam* trees along a 500-meter risk zone to prevent riverbank erosion.



Reduced fuel expenses for water pumping by approximately 20,000 baht per year for agricultural irrigation.

A youth group propagated 100 local trees, such as teak and *Krai Noon* and *Krai Nam*, for planting in forested areas.

