

Living weirs, a type of hydraulic structure constructed using natural materials like vegetation, have emerged as a promising solution for sustainable water resource management. These structures offer a more harmonious and eco-friendly alternative to traditional concrete dams, aligning with several Sustainable Development Goals (SDGs).

It can integrated water resources management as follows:

1. Sustainable Water Allocation: Living weirs help regulate water flow, ensuring a more equitable distribution of water resources.
2. Erosion Prevention: By stabilizing riverbanks, living weirs prevent erosion, protecting agricultural land and reducing sedimentation in water bodies.
3. Water Quality Improvement: The vegetation in living weirs filters pollutants and sediments, enhancing water quality for both human consumption and aquatic ecosystems.

It can made partnerships with local, regional, national, or global governments on water security for sustainable development

1. Community Involvement: Living weir projects often involve significant community participation, fostering partnerships between local communities, governments, and NGOs.
2. Knowledge Sharing: Sharing knowledge and experiences related to living weir construction and maintenance can contribute to a global partnership for sustainable development.
3. Innovation: Living weirs represent an innovative approach to water management, demonstrating the importance of partnerships in driving sustainable solutions.

The additional SDGs Supported by living weirs :

SDG 2: Zero Hunger: Improved water quality and reduced flooding can contribute to increased agricultural productivity and food security.

SDG 13: Climate Action: Living weirs can help mitigate the impacts of climate change by reducing flood risks and improving water resilience.

SDG 15: Life on Land: By creating diverse habitats and protecting biodiversity, living weirs contribute to the conservation of terrestrial ecosystems.

Living weir at Tambon Namaiphai, Amphoe Thongsung, Nakhon Si Thammarat, Thailand support water conservation off campus and a collaborative approach to living weirs by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Walailak University, living weir teacher group, Local administrative office and Communities since 2019.

1. Research and development: GIZ and Walailak University conducted research to assessment, monitoring, study the effectiveness of living weirs in different environmental conditions and to develop innovative designs.
2. Capacity building: GIZ and Walailak University provided training programs for local communities on the design, construction, and maintenance of living weirs. This can empower communities to take ownership of their projects and ensure their long-term sustainability.
3. Community engagement: Local administrative office and local communities play a vital role in the planning, implementation, and management of living weir projects. This can help to ensure that the projects meet the needs of the community and are well-supported.
4. Knowledge sharing: GIZ, Walailak University, living weir teaching group and local communities can share knowledge and best practices related to living weirs through participatory action research.
5. Policy advocacy: The collaboration advocate for policies that support the use of living weirs as a sustainable water management solution.

This collaborative approach can be highly effective in ensuring the success of these projects and maximizing their benefits. The living weir has created new habitats for aquatic species, such as fish and amphibians, and has also benefited local farmers by providing a more reliable water supply for irrigation. While living weirs offer numerous benefits, they also face challenges. One of the main

challenges is the need for ongoing maintenance to ensure their effectiveness. Vegetation in living weirs may require regular pruning or replanting to maintain their structure and function. However, the potential benefits of living weirs outweigh the challenges, and they offer a promising solution for sustainable water resource management. By combining traditional knowledge with modern engineering techniques, living weirs can contribute to a more resilient and sustainable future for communities around the world.

Living weirs are a valuable tool for addressing water resource management challenges in a sustainable and eco-friendly manner. By aligning with multiple SDGs, living weirs can contribute to a more equitable, resilient, and sustainable future. As communities continue to face increasing pressures on water resources, living weirs offer a promising solution that can help to meet these challenges while protecting the environment.