Community-based Water Resources Management

Experience from the Development of Waterhole Model in Cam Chau and Cam Tam Communes, Cam Thuy District, Thanh Hoa Province

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Currently, there are 496 rural water projects in Thanh Hoa province, of which only 213 (43%) operates sustainably. This implies shortcomings in the management, exploitation and usage of rural water resources, which could be caused by the following reasons: the scattered settlement of rural people, complex terrain preventing a centralized water supply; weaknesses in clean water management (lacking inspection and monitoring of local government, departments and people). Therefore, it is essential to develop a model that could both provide a solution of sustainable and efficient exploitation and usage of water resources, and meet the requirements of the National Target Programmes on Rural Water Supply and Sanitation, and New Rural Development.

The waterhole exploitation and usage model in Cam Chau and Cam Tam – combined with other models such as equal-level drainage model, forestation, beef cattle breeding, building sewage under Coc dam, and aquaculture – with the objective to mitigate droughts and water shortage; prevent flash floods; and improve people's livelihoods. These models were under the biodiversity and climate change categories, for which the Small Grants Programme of the Global Environment Fund (GEF SGP) provides financial aids in 5-year cycles, as well as priorities of the Government of Viet Nam for GEF funds during 2011-2015.

In order to develop the model, the project has conducted surveying, design, operation management, monitoring and evaluation, with the participation of local people. As a result, 86 households from Cam Chau and Cam Tam participated in the model, with 391 direct beneficiaries, including 70% ethnic Dao and 30% ethnic Muong. A total of 19 intermediate feeder tanks were constructed, with 28,950 meters of pipes from the waterhole to the feeder tanks, and 4,811 meters of pipes from the feeder tanks to the household tanks.

The total project cost was VND : *195 million, of which GEF SGP provided VND: 55 million, and the households contributed in cash and labor worth of VND 140 million.*

86 house holds

391 people

100% ethnic minority

19 FEEDER TANKS

4,811 METER PIPES from feeder tanks to households

28,950 METER PIPES from the waterhole

GEF SGP provided **55** million VND

HOUSEHOLDS contributed **140** million VND

To ensure effective model management, two training courses on water resources management were organized for 100 participants, including household representatives, local departments and agencies. The training topics included:

- Basic concepts of water resources;
- Water resources of the world, in Vietnam and Thanh Hoa province;
- Summary of the Law on Water Resources;
- Integrated management of water resources;
- Community-based water resources management.

The project has established the model management and operation procedure, and organizational and operation regulations of the Water Usage Interest Group (WUIG), on the basis of consultation with local government, agencies and communities. These served to achieve the objective of comprehensive and integrated water resources management, contributing to the socio-economic development, poverty reduction, environmental protection and improvement of living standards.

Within the operation management procedure, potential risks were identified and mitigation measures were proposed, for ensuring model sustainability and replication, including :

- Signboards of non-disposing fertilizers and pesticides packages in the waterhole zone, and in case of water pollution, water exploitation is temporarily suspended and specialized agencies are informed to collect sample and proceed with treatment measures;
- Plant and protect forests near the waterhole to create aquatic biological resources;
- Deep burial of pipelines (minimum 10 cm) to avoid rupture caused by cattle movement, regularly conduct checks to ensure timely repair or replacement;
- Create two compartments at the water intake point to avoid clogging (1 for filtering sediments and impurities, 1 for carrying filtered water into the pipes), and in case of clogging, manual or machinery inspection is required from the bottom up

WUIG is a voluntary organization, intended to support the system of waterhole exploitation and usage. WUIG could be considered a community-based water resources management model at the lowest level. WUIG members voluntarily participated and self-managed according to the organizational and operational regulations approved by the Commune People's Committee. They shared experience in developing the system of waterhole exploitation and usage, from locating the waterholes, water collection methods, connecting pipes from the waterhole to feeder tanks. In particular, when searching for waterholes, local people often aimed toward the hydraulic lines on the hillsides, which are dried out the dry season. However, if there were signs of sycamore and fig trees or traces of rock crabs, there were certainly ground water arteries underneath. This experience can be applied for the mountainous ethnic minorities who often face water scarcity.

> **According to Mr. Pham Ngoc Giap, Vice-Chairman of Cam Chau Commune People's Committee:** *"The model of waterhole exploitation and usage to improve local livelihoods is very relevant and timely in the context of prolonged droughts and heat waves since early 2015 until now. The Commune People's Committee will continue to lead and guide local community in replicating the model, following the management modality based on Water Usage Interest Group and procedures specified by the project, as well as advocating for forest protection, aquatic biological resources creation, and water resources protection...".*

In addition, advocacy and awareness raising have been carried out on watershed forests planting and protection, the important role of forests in regulating water resources, reducing surface runoff, increasing groundwater, preventing soil erosion, increasing water in the dry season, and reducing water in the flood season. Forests planting and protection are increasingly important in preserving our habitats, including all types of forests, prevention of land degradation and deforestation, contributing to creating aquatic biological resources in the dry season, with the aim of promoting sustainable socio-economic development in general and sustainable waterhole exploitation in particular.

The National Target Programme on Rural Water Supply and Sanitation 2015 of Thanh Hoa province (according to Plan 6451/UBND-NN dated on 23 July 2014) set the target of 86% rural population having access to clean water, of which 43% of population using clean water that meets the national technical regulation on domestic water quality QCVN 2.

To achieve the above objectives, the proposed solution is to continue mobilizing resources from the central government, assistance loans and funding from international organizations, and the participation of the community. In addition, the focus should include trainings on management, operation, maintenance and repair of centralized water supply projects for management staff at all levels, to ensure the effectiveness of water supply, contributing to meeting the demand for clean water and sanitation in rural areas, especially mountainous and remote areas in the province.

In general, the waterhole model in Cam Chau and Cam Tam (Cam Thuy district) recognized and appreciated the important role of local communities as both the direct water users and the managers and protectors of water resources, at the same time proved that water resources would be better managed with community participation in the decision-making process, thereby motivating communities to join, benefit and contribute to socio-economic development, poverty reduction, environmental protection and improvement of living standards. ■

* The above models are under the project: ***"Development and expansion of effective models within CBA project in Cam Tam, contributing to strengthening capacity in management and sustainable exploitation of natural resources on slope lands in Cam Thuy district – Project code VNM/SGP/OP5/Y4/STAR/2014/01"***

- **UNDP-GEF SGP fund of VND:**
  1.023.800.000 vnd
- **The provincial counterpart fund of VND:**
  520.000.000 vnd
- **Beneficiaries' contribution of VND:**
  1.340.000.000 vnd
  as well as contribution of labor and facilities at the local level.
- **Total project investment was VND:**
  3.028.690.000 vnd
- **Implemented from:**
  1/1/2015-31/12/2016

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DEVELOPMENT AND EXPANSION

OF EFFECTIVEMODELS WITHIN CBA PROJECT IN CAM TAM, CONTRIBUTINGTO STRENGTHENING CAPACITY IN MANAGEMENT AND SUSTAINABLE EXPLOITATION OFNATURAL RESOURCES ON SLOPE LANDS IN CAM THUY DISTRICT

COMMUNITY-BASED WATER RESOURCES MANAGEMENT

Duration:	*2015-2016*
Project site:	*Cam Tam, Cam Chau communes, Cam Thuy district, Thanh Hoa province*
Project owner:	*Irrigation Association of Thanh Hoa*
Co-implementing partner:	*Thanh Hoa Provincial Peoples' Committee*