

GUIDANCE TO MOBILIZE COMMUNITY PARTICIPATION IN WATER RESOURCE PROTECTION IN VIETNAM

**DEVELOPING WATER SUPPLY
AND SANITATION SECTORS IN VIETNAM
THROUGH NEW PARTNERSHIPS PROJECT**



Hanoi, December 2020



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IN VIETNAM**

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PREFACE

The “Developing the Water and Sanitation Sector in Vietnam through New Partnerships” project has been implemented by Vietnam Water Supply and Sewerage Association (VWSA) and Finnish Water Forum (FWF). The project was funded by the Government of the Republic of Finland to start in March 2017 and to finish in December 2020.

Main outcomes of the project:

1. Performance of VWSA is enhanced in the context of equitization.
2. The network of VWSA and its collaborators are enlarged.
3. Pilot utility development programs are successfully implemented through supporting 02 pilot member utilities in development and implementation of Strategic Business Development Plans toward sustainability.
4. Service quality and operation indicators of VWSA’s members are improved through popularization, replication, experience sharing and application.

Water resource protection and the participation of all parties in water resource protection is an important approach to help the enterprises in water supply field improve performance efficiency and ensure safe and sustainable water supply.

The project commissioned a study and compilation of the “Guidance to mobilize community participation in water resource protection in Vietnam”, carried out by the Center for Environment and Community Research (CECR) - a reputable consultancy in water and environment sectors in Vietnam. It is hopeful that the handbook will be a useful reference to help VWSA members and those who interested in the water sector.

VWSA would like to appreciate the Government of the Republic of Finland for sponsoring the project, and the close cooperation of FWF in implementing the project. We would also thank the CECR team who compiled and edited the handbook.

**ON BEHALF OF VIETNAM WATER SUPPLY
AND SEWERAGE ASSOCIATION
VICE CHAIRMAN - SECRETARY GENERAL
Associate Professor Dr. Nguyen Hong Tien**

INTRODUCTION

Water is one of the three most important components of the environment. Every life on Earth needs water to grow and a country cannot grow sustainability if the country's clean water is not guaranteed. In Vietnam, important clean water sources such as lakes, rivers, streams, and coastal waters are threatened by wastewater and solid waste. At Center for Environment and Community Research (CECR), we believe in the role of community in protecting the environment, especially in the protection of water resources. This document provides the communities living along the banks of rivers and lakes how to organize and mobilize communities and stakeholders to protect water sources in their localities.

The community and stakeholders in this document refer to many components: Residents, communities benefit directly from water sources, social-politic organizations such as Women's Union, Youth Union, local authorities of all levels, enterprises exploiting and using water sources, potential parties that may pollute water and especially science and technology organizations/non-governmental organizations.

The participation of stakeholders in water resources protection is a very important approach to help businesses in the water sector improve operational efficiency, ensure comprehensive access to long-term use and sustainable water supplies and other services in the water sector.

In the past years, CECR, the coordinating organization of Clean Water Coalition (LMNS) in Vietnam has developed a number of models with community participation in the protection of rivers, streams, lakes and coastal waters in Son La, Thai Binh, Nam Dinh, Hanoi, Da Nang, Quang Nam and Binh Duong. For example, CECR implemented the model "Protection of water quality for white leg shrimp farms" in Nam Phu Commune, Tien Hai District, Thai Binh Province, the model "Community participation in improving quality of drinking water" in Quat Lam Town, Giao Thuy District, Nam Dinh Province and model on "Join hands to protect Bo Ca stream - water supply source for Son La City"

The document "*Guidance to mobilize Community Participation in Water Resource Protection in Vietnam*" aims to summarize best practices and provide guidance to mobilize community participation in water for to members of the Vietnam Water Supply and Sewerage Association to promote cooperation between enterprises and community in protecting local sources of rivers and streams.

The guidance includes 2 parts: Part I consists of two chapters: Chapter 1: Water Pollution and Overview of Law on Community Participation in Water Resource Protection; Chapter 2: Best practices and Lesson Learned in mobilizing participation in the community in Water Resource Protection. Part II consists of

one chapter is Chapter 3 on guidance to mobilize Community Participation in Water Resources Protection in Vietnam.

The editorial team of CECR would like to thank the Vietnam Water Supply and Sewerage Association (VWSA), especially thanks to Mr. Nguyen Hong Tien, Vice Chairman and Secretary General; Mr. Ung Quoc Dung, Vice Chairman; and Ms. Ha Thanh Hang, Head of Policy Development and International Cooperation Department of the VWSA for their supports in designing and developing this document. The team also would like to express special thanks to Ms. Tran Minh Anh Thu, Finnish Water Forum, who inspired us with Finnish experiences and provided support throughout the implementation process.

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ACRONYMS

CECR	Center for Environment and Community Research
BQL	Broad of Management
BVMT	Environmental Protection
FWF	Finish Water Forum
LMNS	Clean Water Coalition
READY	Red River Delta Adaptation and Youth
TDI	Trophic Diatom Index
UBND	Provincial People Committee
VWSA	Vietnam Water Supply and Sewerage Association
STO	Science and Technology Organization
CRO	Community Representation Organization

PART I

Chapter 1: Water Pollution and Overview of Law on Community Participation in Water Resource Protection

Chapter 2: Best practices, and Lesson Learned in mobilizing participation the community in Water Resource Protection



Photo 1: Cam Thanh community monitors water pollution

Source: CECR

CHAPTER 1: WATER POLLUTION AND OVERVIEW OF LAW ON COMMUNITY PARTICIPATION IN WATER RESOURCE PROTECTION

1.1. Protection of water resource and life

Surface water resources including rivers, lakes and coastal waters create different values for humans. For example, rivers symbolize connection because it relates to each person and one could say that every person lives in a certain watershed. Rivers also represent human health, because surface water from rivers and streams is extremely necessary for the community. Another very important value is that rivers and lakes are an ecosystem and habitat for both fish and aquatic species that live in water and amphibians such as frogs living both underwater and on bank areas.

Water is used for the following functions: Drinking water, water for agriculture and industry, water transportation, tourism and relaxation, food and shelter for aquatic life, plants and animals, and extractive activities.

Water resources and coastal areas serve many activities of the community such as landscape, sports, irrigation water, drinking water, and fishing.

However, many human activities seriously pollute water sources. Solid waste, chemicals, waste-water, seepage from septic tanks, and untreated livestock wastes are serious pollution sources.

1.2. Functions and health of rivers and lakes

Healthy rivers are defined by a number of criteria for flow characteristics including water quality, organic pollution, phosphorus content, Trophic Diatomic TDI (determination of acidification and other pollution), by structure of species (vegetation growing at the bottom, natural vegetation at the shore, natural vegetation in coastal areas, large types of wood waste), by the structure of the flow as the fineness of sediments, exotic animals, vertebrate animals such as birds, storks, frogs, fish, shrimp ...

Besides the ecosystem criteria, human activities may also be considered.

In Vietnam, it is possible that some of the characteristics of the flow of water may have been monitored by provincial and central monitoring centers. Information on the status of special rivers as available, but there is little information on canals, small water bodies.

When communities participate in the protection of rivers, they should consider information on flow characteristics as well as other indicators from local or central government authorities. The community should also monitor observable indicators, or those can be easily or assessed based on traditional local experiences.

1.3. Health of lake and pond

The health of the lake and pond: The ecosystem of ponds and lakes is classified into the static water system (Len-tic Ecosystem), defined as the water does not flow, unlike the ecosystem of water flowing like a river. The static water ecosystem is illustrated as follows:



Photo 2: Description of static ecosystem

Source: Internet

In a healthy pond or lake, the water is usually yellow, mossy green or transparent grey color. The water of a pond even in a static state is still subject to interact with water from the bottom, from the shore, from the rain ... circulating around it and the ecological balance of the living animals. The lake ecosystem has its own unique flora and fauna. For example, in Vietnamese ponds, there are typical plants such as guns, lotus, duckweed, rat ear, grass, etc. (lakeside vegetation by Thai Van Trung). Other animal indicators are fish, snails, and frogs



Photo 3: Overview of Hoan Kiem Lake, source - CECR

1.4. Status of water pollution in Vietnam



Photo 4: Untreated wastewater discharged into Ngu Huyen Khe River – Bac Ninh, source - CECR

Surface water quality in Vietnam has been facing serious degradation. In all 63 provinces and cities, the problem of water pollution is always a prominent and pressing issue. According to website of the General Department of Environment from October 1 to November 6 in 2013, news on water pollution accounted for 45 %. The remaining 55% covers general environmental management, solid waste pollution, hazardous-chemical waste pollution, land and forest resource management, minerals, and air pollution.

Surface water quality of rivers and canals is particularly degraded in urban and industrial areas to the extent of being metamorphosed and dangerous to humans and aquatic organisms. To Lich River, Set River, Kim Nguu River ... in fact, has become a part of Hanoi city's sewage system and the river water becomes dark and smells like sewage water. Other rivers such as Ngu Huyen Khe River (Bac Ninh), Buoï River (Thanh Hoa), Nhue-Day River (the section running through Ha Tay, Ha Nam), Thi Vai River (Dong Nai), and Bo Ca Stream (Son La), Da Do river (Hai Phong), Gam river (Cao Bang), Nhat Bich Tri lake (Lang Son), Nam Cat river (Bac Can), Ngoi Lao (Phu Tho), Na Bo stream (Lai Chau), ... are also in the state of alarming levels of pollution and have been published recently in the media.

Water quality in coastal areas is also seriously degraded: estuaries of Song Doc (Ca Mau), Hai Phong coastal area, especially in the Central areas causing environmental disasters which fishes died on April 2016. It showed that water pollution has changed the water quality, ecosystem quality and participation in the food chain. Often when water quality has deteriorated to such a degree, recovery is difficult, expensive and requires a lot of time.

1.5. National policy guidelines encouraging community participation in water resources protection

Law on Environment Protection

Article 54: Self-management committee for environmental protection

Clause 1: Government encourages all community to establish an autonomous organization to protect the environment where they live in order to implement the following tasks: Tracking and urging households and individuals to implement the regulations on hygiene and environmental protection

- Develop and organize the implementation of the convention on environmental protection, propaganda and mobilization of people to abolish unsanitary practices and habits, which are harmful to the environment.
- Participate in supervising the implementation of the law on environmental protection of production, business and service establishments in the area

Clause 2: Self-management committee on environmental protection is established and operates on the principle of voluntariness, community responsibility, and compliance with the laws

Article 63: Environmental protection of lakes, ponds and canals

Clause 1: Water sources of lakes, ponds, canals and canals must be investigated and evaluated for reserves, quality and protection and regulation of water sources.

Clause 2: Lakes, ponds, canals in urban and residential areas must be planned for renovation and protection; organizations and individuals are not allowed to encroach on, build new constructions, houses on the water surface or on the banks adjacent to the water surface of lakes, ponds, canals planned; minimize the levelling of lakes and ponds in urban areas and residential areas.

- Proponent preventing the flow of canals and ditches; projects for levelling up lakes, ponds, canals must implement environmental impact assessment reports according to law provisions.
- Do not dump soil, rock, gravel, solid waste, untreated wastewater up to environmental standards and other wastes into surface water sources of lakes, ponds, canals, and canals.

Clause 4: Provincial People's Committees shall organize investigation and evaluation of reserves and quality and formulate a planning on protection and regulation of water regimes of lakes, ponds, canals; planning and implementing to renovation or resettlement for residential areas and works on lakes, ponds, canals and ditches, causing environmental pollution, congestion, degradation of wetland ecosystems and loss of urban landscape.

Law on Water Resource 2012

Article 25. Responsibility to protect water resources

- Organizations and individuals must be responsible for protecting water resources
- Organizations and individuals have the responsibility to regularly protect water resources due to their exploitation and use, and at the same time have the right to monitor acts and phenomena causing pollution, degradation, and exhaustion of their water sources of other individuals.
- The person who detects acts, phenomena of harming or threatening water safety is responsible for preventing and immediately reporting to the nearest local authorities for timely handling. In case the local government receives a notice that it cannot handle it, it must immediately report it to the immediate superior local authority or a competent state agency.

Article 26. Preventing and combating pollution, degradation and exhaustion of water sources:

- Ponds, reservoirs of wastewater, wastewater storage areas must be waterproofed and spill-resistant to prevent water pollution

Article 31. Corridor of water source protection: Water sources must be built up protection of corridors including:

- Article b, Clause 1, Article 1: Natural and artificial lakes in urban and concentrated residential areas; large lakes and ponds with regulating functions in other areas; lagoon, natural lagoon.
- Provincial-level People's Committees shall formulate and manage corridors for protection of water sources prescribed at Point b, Clause 1, Article 1

Decree No. 117/2009/ND-CP on handling violations in the field of environmental protection has specific provisions on the types of warning or fines for violations of discharging wastewater into the environment (including rivers and lakes). There is a fine for waste amounts as small as 100,000 VND to 500,000 VND in case the discharge of wastewater is less than 10m³/day (24 hours) or up to 100,000,000 or 150,000,000 VND for a discharge of 10,000 m³/day.

CHAPTER 2: BESR PRACTICES, AND LESSONS LEARNED IN MOBILIZING PARTICIPATION THE COMMUNITY IN WATER SOURCES PROTECTION

This chapter will introduce good practices and lessons learned of community participation in the protection of water resources which drawn from a number of projects and programs carried out by the Center for Environmental and Community Research during 2012 - 2017 in the localities of Son La, Thai Binh, Nam Dinh, Hanoi, Da Nang, Quang Nam and Binh Duong Province.

2.1 Best practices in mobilizing participation in the community in water resource protection

Case study 1: Ethnic minority communities join hands to protect Bo Ca stream - water supply source for Son La City

Introduction

Bo Ca stream is located on three administrative units of Son La province including Thuan Chau district, Muong La district and Son La city. The downstream area of the Bo Ca stream is Tat Tong cave, where Son La Water Supply Enterprise No.1 exploits water source input for the production of domestic water supply for 11,000 households in Son La city and serve the agricultural production



Photo 5: Wastewater from preliminary coffee processing, source - CECR

In the 1990s, Son La planned coffee growing area at upstream area of the stream. In parallel with the development of the plantation area, preliminary coffee processing activities have also aggressively developed. Currently, there are about 16 large preliminary processing facilities, 40 small households, 100% of wastewater from these processing establishments discharge directly into streams, causing pollution for domestic water supply. From 2012 until now, Son La City

en-counted several events when pipe water had been shut off due to pollution when wastewater from processing coffee brought by rainwater flowing into the stream in the rainy season.

Son La province has taken initial actions to prevent like sanctions and impose fines on polluters. However, the situation has not improved.

This water pollution issue rooted directly from planning, development and investment and it is not easy to solve. But to help this situation, the community around the stream area has many activities to raise community awareness in protecting water resources with the pioneering of the North West University and People's Committee of Chieng Den commune.

Since 2014, Center for Environment and Community Research, North West University and People's Committee of Chieng Den commune have co-operated to implementing the community-based program protection Bo Ca stream to raise awareness and knowledge about water pollution in Bo Ca stream and look for solutions to this problem. Activities including:

- Stakeholder meetings include North West University, representatives of People's Committee of Chieng Den commune, clean water supply factory to identify the problem and plan for action.
- Evaluate the situation of pollution, identify pollution sources with community participation was carried out by Tay Bac
- Center for Scientific Research and Technology Transfer and Northwest University carried out research on coffee waste-water treatment technology at the household level and piloted it at 5 households.
- A Workshop on Water Pollution was organized at Northwest University with the participation of the Department of Natural Resources and Environment, Environmental Police, Son La Water Supply Company, and representatives of Chieng Den Commune to identify problems and solutions.

Results

- Awareness of the protection of water resources of local people, especially ethnic minorities, was enhanced and capable and confident in bringing the community's voice to reflect on pollution issues to the local authority. Thanks to these efforts, Son La Provincial People's Committee organized a field trip to coffee waste-water treatment model in the Central Highlands.
- Northwest Research Institute on Development was established focused on solving water pollution.

Case study 2: Protect water source inputs for white shrimp farming in Nam Phu Commune, Tien Hai District, Thai Binh Province

Introduction

Nam Phu commune, Tien Hai district, Thai Binh province is a coastal commune with economic activities mainly based on agricultural production, aquaculture and fisheries exploitation. Since 2010, Tien Hai district has converted a number of rice-growing areas to aquaculture for higher economic efficiency.

In the transition period, many households in the commune have selected the model of white leg shrimp farming. In the first season, when the water environment has not been affected much, raising shrimp has high economic efficiency. Since then many families have expanded their scale and have more households investing in shrimp farming. However, at this time, the local surface water has started to be polluted. Since shrimp farmers all come from rice cultivation, almost 100% of households lack technical knowledge about farming, especially water management knowledge.

In 2017, within the framework of the project of Promoting the participation of youths in climate change in the Red River Delta (READY), CECR and the Youth Union of Nam Phu Commune proposed technical assistance initiatives on management. water environment in shrimp farming for people. The objective of this initiative is to help people with basic knowledge of the water environment in aquaculture and sustainable techniques to help people control the quality of aquaculture water, ensuring early efficiency.

Together with the Youth Union and we support the commune farmers' union, CECR has provided technical training on the treatment of pond water quality and techniques for raising white leg shrimps for selected households. The training program is appropriately designed based on information from household surveys, focusing on improving the most basic techniques such as water quality testing techniques for pond water by water quality testing kits and treatment of pond water. The lessons apply active learning methods, learning and practicing right at the shrimp ponds of households about the problems and how to solve them. CECR also organizes for households to visit the process of water treatment and shrimp farming in some households who have over 15 years of experience in shrimp farming in Nam Dinh.

In addition, CECR also supported the tools to monitor and improve the quality of water sources including the Aqua base kit, the pH kit, and the NH₃-NH₄ kit, DO kit. This toolkit was designed to help households in assessing quality water of pond shrimp before making treatment decisions.

Results

After the training, many families have actively applied to their shrimp ponds. There were families who built tents next to ponds to continuously check water quality. As a result, shrimp farming productivity of participating households is higher than previous seasons and reduced costs.

The project also recorded an unexpected result, which is the proactive behavior change in protecting surface water resources in the locality.

Twenty households participating in the project contributed 280h/man (21.9% of the project's budget) to training, monitoring, and reporting on improvement of water quality.

After participating in the project, recognizing the importance of water quality, a group of four families met and mobilized six more families along the water supply canal to put together more than 10 million VND that use to hire crane, excavator and worker to clean up the canal that provides water to shrimp ponds - previously polluted by garbage and wastewater.

Families agree that together they must protect this canal, do not litter, discharge livestock waste or dirt into the canal and regularly clean up and clearing the flow. By the time of August 2019, the number of households participating in the initiative has increased to 17, the water of the canal is always clean and qualified to supply input water for shrimp ponds. In addition, families will share money to build a separate canal to drainage during the rainy season.

In 2019-2020: Community of Nam Phu commune and CECR are piloting community-based waste management at source model to prevent waste discharging to the river.



Photo 6: Technical practices on water management in white shrimp farm, source - CECR

Case study 3: Communities participate in improving the quality of drinking water in Quat Lam town, Nam Dinh province

Introduction

Quat Lam town is a coastal town in Giao Thuy district, Nam Dinh province. In this town, households have not yet access to clean water, who still have to use water from drill wells. However, water quality of drill wells is polluted with iron and manganese and other pollutants. On the other hand, water from drill wells was also at risk of microbial contamination of waste and wastewater.

In order to ensure safe drinking water for people, Quat Lam Youth Union and CECR have launched an initiative to support water filtration systems to eliminate metals pollutants and pathogenic bacteria and help community to understand of the importance of water hygiene and safety, water treatment and maintenance of treatment systems and protect groundwater systems from waste pollution. CECR and localities have identified local businesses that can provide filtering systems modules. This initiative is received strong supporting from Quat Lam people's committee.

- Develop implementation plan: Quat Lam Youth Union together with CECR chaired the meeting with the participation of the authorities and the community. At the meeting, participants participated in discussions about the status of water quality of drill wells, agreed on the need to improve water quality of drill wells, methods and plans for implementing initiatives. The proposed activities include:

- ✓ Training on water safety and hygiene, demonstration of water filtration, comparing water quality before and after fill for the community
- ✓ Carried out model monitoring on water filtration systems for drilling wells in some schools and some households in 11 villages.
- ✓ Check and monitor water quality of wells through filters
- ✓ Share discussions on practical use experience between households

Results:

- Quality of water in drill wells that set up the filter system is reached qualify. The water through the filter is different from the drill wells water.
- Water filtration wells are also protected from pollution from wastewater and waste. Because the landfill has been moved.
- Immediately after the test results, having 15 families invested in the filtration system. Quat Lam Town People's Committee announced, encouraging families in all towns to apply this method.
- The community contributed 358h/man (26.3% of project's budget) on training and piloting.

- This project has the participation of local businesses that provide filtering systems, experimental models made from practice, so the effect immediately creates a change of attitude from awareness to action to people...
- In 2019-2020: Community participates in monitoring of plastic waste at Quat Lam sea.



Photo 7: Drinking water polluted by with iron and manganese



Photo 8: Drinking water improved after having water filtration systems

Case study 4: Heritage preservation — Future protection: Towards sustainable protection of Hanoi's lake system with community participation

Introduction

Lakes and ponds are important common resources of urban communities in Hanoi. Many lakes are associated with important communal temples, historical sites and spiritual places of Hanoi. Ha Noi lake system is closely connected to the daily activities of people, serving as landscapes and places for relaxation and entertaining activities and enabling air-regulation, and reduction of flooding for the capital. Currently, many ponds and lakes have become organic waste and pollution reservoirs, being encroached for economic purposes



Photo 9: Pollution in Linh Quang Lake, source - CECR

In 2010, to commemorate the Great Ceremony of 1000 years of Thang Long - Hanoi, the Center for Environmental and Community Research published a report on the baseline data of Hanoi lakes. The report provided background information for 110 Hanoi pond lakes and launched the Program "Heritage Preservation - Future Protection: Towards a Sustainable Protection of Hanoi Lakes with community participation" with the goal of implementing projects to promote and mobilize communities to protect Hanoi lakes. Since then, protecting Hanoi lake has become a movement launched by the community with the support of the authorities and mass organizations.

2011: Community based model for the restoration and protection of Ao Cheo pond, Pho Linh Pagoda pond, Quang An ward

These two ponds are located across the gate of Pho Linh pagoda. They were seriously polluted by waste and wild plants. Especially Ao Cheo Pond was heavily

polluted by waste from pig houses discharged directly to the pond. These two ponds ruined the landscape in front of the temple.

- Quang An Ward Women's Union and CECR launched the initiative "Quang An people join hands for a green environment" and actively met with veteran associations and cooperatives in Quang An ward to develop a plan to restore the water quality of Ao Cheo pond and Pho Linh pagoda pond.

- Women Union and CECR have proposed and carried out activities such as sediment dredging, weed cleaning, bank reclamation, ecological bank embankment, planting of aquatic plants, planting of ornamental plants around the lake, periodically organize cleaning activities around the lake in collaboration with Buddhists in the temple, carrying out propaganda campaign to raise awareness and mobilize communities to protect the lake

Television and water pollution at Ao Cheo Pond

The biggest problem facing Ao Cheo pond is that the pigpen relocation issue cannot be settled. During a training session for students about water pollution, CECR organized an exercise at Ao Cheo pond. That day, a reporter from VTV1 came to make a short video about this class. When teacher took water samples and explain that even water showed obvious signs of contamination with organic pollution and bacteria from the waste of the pigs. VTV lenses swept through the pig house. Later the video was broadcast on VTV1. Soon after, Quang An ward people met and persuaded the family to move the pig's house to somewhere else. Currently, Ao Cheo pond and Pho Linh Pagoda pond are clean and provide a beautiful landscape



Photo 10: Ao Cheo pond in 2018- source: CECR

The project shows mass media such as television have the great capacity of changing the awareness and actions of the community for the better.

Women Union and people of Quang An ward contributed 900h/man (26.5% of project's budget) in propaganda, embankment, dredging, plantation in project to protect Ao Cheo and Ao Chua Pho Linh ponds.

Case study 5: The community strived to prevent water pollution in Tho Quang harbor, Da Nang

Introduction



Tho Quang harbor, Da Nang is a bay for local fishing vessels to anchor and conduct fish trading. Water pollution has been the most pressing issue for the past few years. The management board of the harbor and the local community were determined to identify polluting activities in order to curb pollution

Photo 11: Pollution in Tho Quang Fishing Harbor, gradually.
source - Internet

Polluting sources include:(i) Wastewater from fishery service zones, wholesale markets; service zones, anchored fishing vessels; (ii) Solid waste from ships anchored, wholesale markets, goods service zones

Despite many policy guidelines, water pollution was still very persistent. The community living near the harbor realized the participation and cooperation of all stakeholders were necessary to reverse the pollution trend and design measures and community-based models for monitoring and preventing sewage and trash flowing into the bay.

The management board of Tho Quang harbor along with CECR has organized many meetings with representatives of fish stalls, fish trucks, small fish processing establishments to identify problems, come up with solutions, delegate tasks and develop plans for all parties involved. The activities can be summed up in the following timeline:

2016: Community-based model for monitoring and preventing sewage from being irresponsibly discharged into the bay

- Detect the points at which wastewater was discharged into the bay
- Develop a wastewater discharge guideline specifically for the bay (with the assistance from Da Nang Environmental Protection Department)
- Forming teams to monitor points of wastewater discharge
- Provide training on monitoring, recording and reporting
- Periodic meetings to share results and experiences

Result: Currently, monitoring activities continue to be carried out, thereby reducing considerably the amount of sewage discharge into the harbor.

2018: Model for reducing waste, especially plastic waste dumped into the bay.

- Communicate the harms of plastic waste, citizens' responsibilities, measures to reduce plastic bags and plastic waste, collection of valuable waste via

instructional leaflet, decal posters at the harbor and markets, radio speakers, direct communication at markets for the owners of fish stalls and fishing vessels.



Photo 12: Direct propaganda at Fishing Harbor,

- A team of environmental workers collected on the spot the trash that had been sorted out and recorded the data.

Result: Collected and recorded 11,850 kg of plastic waste.

2018: Green Boat Model



Photo 13: Leaflet propaganda, source - CECR team when docking.

Fishermen participated in 2 workshops on the harms of plastic waste, fisherman’s responsibilities in protecting the marine environment. Launched the green vessel movement to bring waste in the sea to the shore, and organized commitment signing for volunteer vessel owners.

- Set up a hotline number for vessels to contact the garbage collecting

Results: 500 fishing vessels were educated on the effects of plastic waste, owners of 77 fishing vessels committed themselves to not dumping waste into the sea and sorting out resource waste and plastic bags which would be handled by the management board of Tho Quang harbor.

Currently, the management board of Tho Quang harbor is actively promoting action taking among the local community and interactions between them and the network of the Coalition for Clean Water.

Market vendors, women, boat owners contributed 1180h/man (13.6% of project’s budget) for training, collection, communication, and monitoring.

Case study 6: Model of communities preventing and controlling water pollution in mangrove forests in Cam Thanh commune, Hoi An

Introduction

Mangrove forests in Cam Thanh commune, part of Hoi An City is a special ecological buffer zone, which can act as a biological filter minimizing water pollution-induced waste from inland. This is a famous ecotourism site of Hoi An.

This buffer zone, however, is showing signs of organic pollution due to the impact of waste from restaurants, home-stays, aquaculture and agriculture.

Model of communities preventing and controlling water pollution

- Danang Riverwatch (DRW) is a science and technology organization established by experts from Danang University of Education. Danang Riverwatch, CECR, Cam Thanh commune authorities and the local community met to discuss issues, monitoring activities and develop an implementation plan.
- Within the framework of implementing aquaculture groups' initiatives, one of the polluters was invited to participate in the program to monitor water quality in the commune and protect the water sources of Cam Thanh.
- Main activities include: Training to improve the capacity of community groups to measure water quality, provide guidelines for practice and report periodically was organized and carefully facilitated. Community groups measured and monitored water quality, collected data and reported them to DRW to map the quality of surface water — which could serve as a tool for lively visual communication to the community and an effective tool for local environmental management.



Photo14: Community meeting in Cam Thanh commune, source - CECR

Result: Awareness and understanding of water pollution and preventing activities have been raised in the community. Monitoring teams work effectively and report periodically to authorities to help prevent and control pollution.

In particular, Cam Thanh commune has developed a convention to “control water pollution in mangrove forests in Cam Thanh commune” in coordination with many parties, linking community groups to join hands in preventing and monitoring water pollution.

The community of Cam Thanh commune contributed 330h/man (44% of project's budget) for training and monitoring.

Case study 7: Protecting Bung Cu stream, preserving cultural values

Introduction

Bung Cu is a small stream that is 4.35 km long in Binh Duong province. Legend has it that when people began to exploit this area, a cu tu (a species peculiar to the area) woke up and opened a water source which then turned into a stream, providing people with drinking and irrigation water. Therefore, people named the stream as Bung Cu and built Ong Cu temple to honor the stream. In 1852, King Tu Duc bestowed the "Spiritual Temple" status upon Ong Cu Temple.

Because the stream water was very clean, the area along the stream was very rich, thanks to the development of agriculture. During the war, soldiers could drink water directly and catch fish and shrimp from the stream. However, at present, the stream is seriously polluted by wastewater from enterprises in Binh Duong province and households' activities.



Photo15: Pollution in Bung Cu stream, source - CECR

The pollution of Bung Cu stream was so serious that spring water could not be used for irrigation or domestic activities and people have to drill wells for underground water instead. This situation was reported by the press.

In 2014, the Center for Environmental and Community Research (CECR) conducted field research, met with local authorities to know the experiences and desires of local people about the pollution of Bung Cu stream. On that basis, CECR proposed to Tan Phuoc Khanh Ward People's Committee discuss with the community to unify the spirit of determination to restore Bung Cu stream, identify 4 issues to be resolved as well as suggested activities to be planned and implemented as follows:

- (1) Development of a database for updating the stream's pollution status

In 2014, "Research on the effects of pollution on livelihoods and quality of life of people along Bung Cu stream" by scientists from Ho Chi Minh City Polytechnic University, Binh Duong University and local officials.

(2) Raised people's awareness and mobilize community participation

- Organized 2 training workshops for local people and businesses on water pollution, civic responsibility, environmental law and the monitoring role of local communities taught by environmental experts from the University Ho Chi Minh City Polytechnic and Binh Duong University chaired.
- Organized 3 clean-up events of Bung Cu stream, attracting about 250 participants each time including 8 community residents in Tan Phuoc Khanh ward and other units of local soldiers.
- Promoted communication through slogans and broadcasting in all activities to spread the message

(3) Technical solutions to improve water quality

- CECR and scientists examined 2 points of the stream in detail and studied the application of stream water treatments using reeds and water hyacinths.
- Assisted in the implementation of the pilot project of ecological embankment to improve water quality

(4) Improvement in the management capacity of environmental agencies

Development of a wastewater management software to monitor spring water quality, which becomes an effective visual management tool for local environmental management agencies

Implementation results after 2 years from 2014 to 2016: People's awareness is improved, the community proactively organizes and maintains periodic stream cleaning activities, whereby the flow is clearer, water quality is better. Communication programs have always been carried out, attracting the attention of many people, spreading messages, inspiring individuals, organizations and unions to implement initiatives to protect water resources. A prime example is an initiative: "Community monitoring waste at streams" pioneered by Tan Uyen District Women's Union.

The community of Tan Phuoc Khanh ward contributed 6850h/man (48% of project's budget) for training and cleaning up at Bung Cu stream.

2.2. Lesson learned in mobilizing community participation to protect water resources

This section summarizes lessons from the case studies in section 2.1 on mobilization for community participation in water resource protection. Seven key lessons that determine the success of community-based projects include:

Lesson 1: Participation of the science and technology organizations, NGOs and experts is an important factor in building the database, supporting the community in sustainable water management and monitoring.

Science and technology organizations (STOs) and NGOs play a very important role in providing technical solutions to the community. These organizations gather a group of experts with technical expertise and the ability to mobilize, connect and produce scientific data. Specifically, they will bridge the community's needs and concerns with the local government, organize discussions to provide information, data and promote the development of action plans with the participation of all stakeholders. Connected with the leadership of local authorities, the role of STOs, NGOs, core groups is maximized. This group will develop technical solutions, which is the key to mobilizing community participation.

Lesson 2: The support and consensus of the local government brings many positive impacts on the community project

Local authorities are the People's Committees of districts, wards/communes, and environmental officers. Their support will inspire the community's confidence and synergy. Meetings to make decisions or reporting should ensure the participation of local authorities. Praise and rewards from local authorities will motivate the community and leading individuals to participate more actively in local activities. The acknowledgement and appreciation from the local authorities will promote the efforts of the people and make the protection of water resources more sustainable.

Lesson 3: The core group will strongly promote community activities in protecting water resources.

The core group are representatives of local communities such as Women's Union, Veterans' Association, Farmer's Association. This group has the closest connection with the local community, acting as a focal point to guide the community by urging, directing, implementing, monitoring and reporting,

learning from implementing projects and mobilizing people to participate in protecting water sources.

Lesson 4: Participatory approach needs to be applied throughout the project activities.

The community should get involved at the beginning of the project in problem identification, capacity building, planning, implementation and monitoring.

For example, a participatory capacity building program will provide scientific information and data on pollution levels, impacts of water pollution on the community's health and economy. Local people's awareness of the importance of protecting water resources, as well as environmental citizenship will be enhanced. After that, they will participate in planning to solve pollution problems, in implementation and monitoring.

The effectiveness of these approaches will help the community understand the objectives of the activities, clearly reflect community 's needs and expectations in a specific local problem, creating the space to show "their ownership to the solutions of the project.

Lesson 5: Communication Program creates awareness and behavior changes of community

The diverse and extensive communication program with the participation of media agencies to report on activities will create a strong impact on community awareness and promote action. Traditional newspapers and television, and social media will be the channels to make widely known the best practices from which communities can learn and adjust their behaviors accordingly, thereby raising their own awareness about local water protection.

Lesson 6: The project activities are associated with the concerns and needs of the community and provide technical and management measures to address specific issues.

People will be willing to participate and act when they themselves are able to determine the issues of their concerns and needs. They will actively participate in protecting water resources when they realize that clean water could provide direct and indirect benefits of economic, health, and social benefits. If they are equipped with technical tools and implementing the methodology, their participation will be proactive. Therefore, if there are technical solutions for water

resources protection that solve problems concerned by community, the project will have great impacts and effective implementation.

Lesson 7: Appropriate policy mechanisms and financial resources are mobilized from donors or community or supported by local budgets.

The policy mechanism and budget allocation from the local government will ensure long-term community participation activities. At the same time, mobilizing external resources of science and technology organizations, NGOs will help implementation activities to be more effective and sustainable.

PART II

Chapter 3: Guidance on mobilizing community participation in water resources protection in Vietnam



Photo16: Community monitor water pollution, source - CECR

CHAPTER 3: GUIDANCE ON MOBILIZING COMMUNITY PARTICIPATION IN WATER RESOURCES PROTECTION IN VIETNAM

3.1. Principles and model framework

Based on research results, experiences as well as lessons learned from community based projects, refer to Guidelines of North American Association for Environmental Education for Excellence Community Engagement (2017), The Center for Environment and Community Research summarized to come up 05 principles and the framework of development of community based ponds / lakes and water sources protection model. These principles are as below:

Principle 1: Make the community the center. Link water protection activities based on specific context, concerns, and capabilities of the local community. Place communities at the heart of solutions of water resources protection

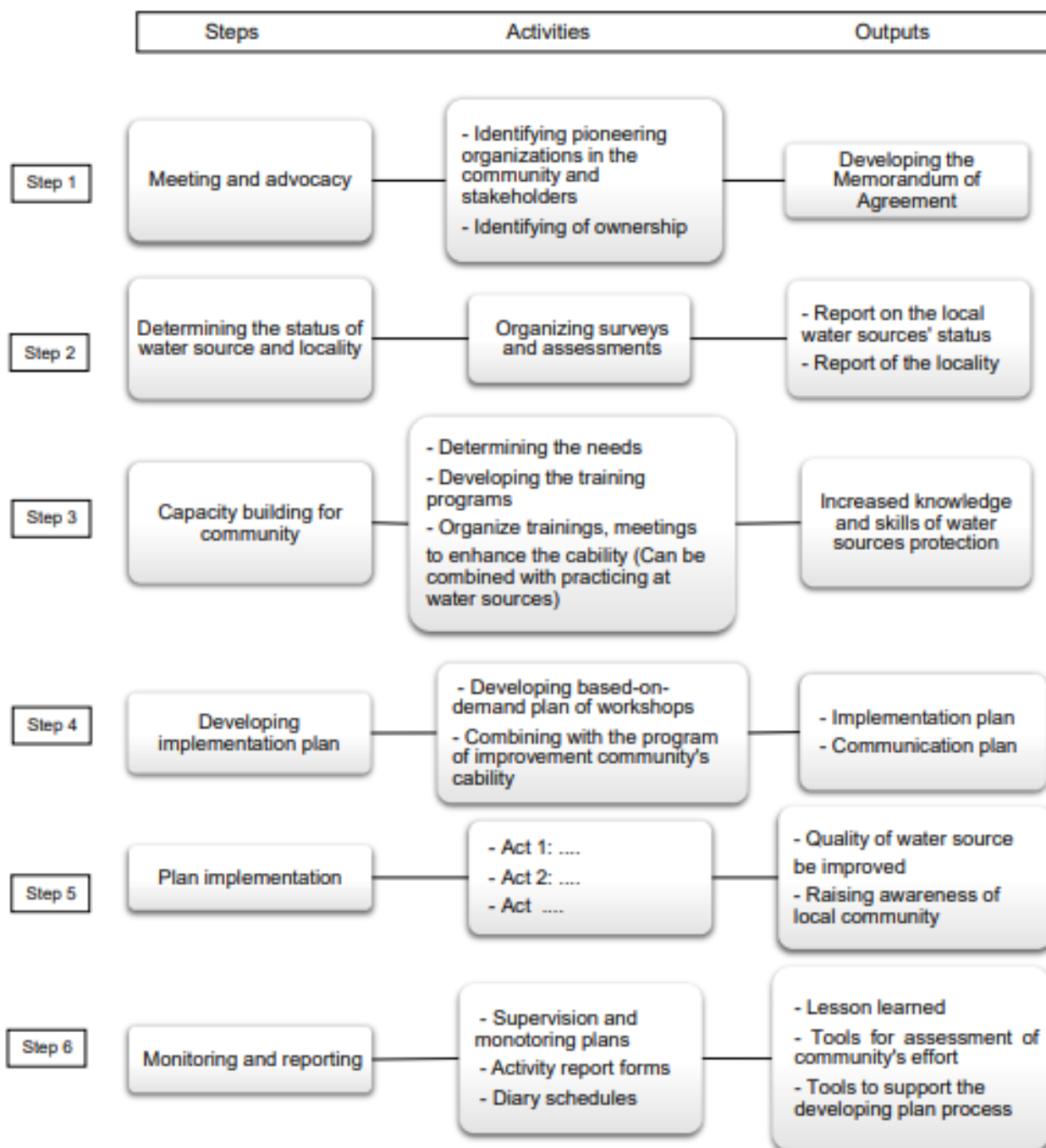
Principle 2: Based on healthy ecosystems principles. An ecosystem approach is defined as "integrated management of land, water and biological resources to promote conservation and sustainable use of these resources on the principle of equality". Applying the principle of healthy ecosystems must take into account the common interests of society and move towards promoting biodiversity conservation and sustainable use.

Principle 3: Cooperation and inclusivity. Water resources protection activities need to be implemented through the cooperation of stakeholders such as the local authorities, community, science and technology organizations, NGOs, enterprises and research institutes. In doing so, strategic partner programs and the network of alliances will create core values and cover all water-related issues.

Principle 4: Capacity building and specific community activities. Capacity building, communication program and the implementation of pilot models on water resource protection are very necessary. These activities will enhance knowledge and skills, and develop best community-based practices in local water resources protection. At the same time, it would contribute to long-term economic, social and environmental development.

Principle 5: Long-term vision and investment. This principle will ensure that community mobilization activities to protect water resources will be continued. State policies on resources and laws need to ensure the facilitation and promotion of community participation in long-term management of national water resources.

Framework of development of community based ponds / lakes and water sources protection model



Community-based activities and projects could apply these frameworks and principles flexibly and in accordance with their local practices.

3.2. Detail guidelines to apply 06 steps in the framework

This part will introduce specific steps to guide the planning and implementation of community projects in lakes and rivers management for companies and members of the Vietnam Water Supply and Sewerage Association.

Step 1: Meeting and Advocacy: Identify potential partners that have influenced to locals and policy advocacy

Establishing a partnership between the Science and Technology Organization (STO) and the Community Representative Organization (CRO) (Women's Union, Cooperative, Veterans' Association, Youth Union ...), meeting with leaders of local authorities and communities to:

- Mobilize supports from local leaders through support for community projects
- Identify the functions, roles and responsibilities of each partner
- Develop documents based on the consensus of stakeholders and unify the orientation of activities

How to implement:

- STOs or NGOs initiated and developed the proposal
- Organize a meeting with local leaders to discuss and get consensus on solutions to deal with the pollution of local rivers and lakes. The leaders would assign an appropriate group to be a focal point in cooperating with the community (core group). After that, STOs will meet with this organization to determine the roles and responsibilities of each stakeholder.
- In case the STOs has previously cooperated with the group, a meeting will be organized for both parties to discuss and get consensus on the road-map, then core group will directly report to the leaders of local authority to get their support as well as to identify the roles and responsibilities of each party.

Output: An Memorandum of Agreement (MOA) between STOs/NGOs and core group on activities, roles and responsibilities of each party as well as project and financial management and reporting

Step 2: Determining the status of water source and locality

Initial assessment in the locality through researching, assessing of the current situation and collecting data on the general situation of the community living near the areas of ponds, lakes, and rivers faced pollution problems in order to:

- Assess the water resources' quality status
- Assess the local economic, social and environmental situation
- Understand the needs, concerns and desires of the community in the water resource protection
- Understand the capacities of local authorities and communities in water resources management and protection
- Mapping of causes, factors causing water pollution problems in the locality
- Identify the role of stakeholders in water resources protection

How to implement

- Survey the current situation of selected pond/lake/river
- Identify and assess pollution sources, water quality, and state of aquatic biota in the water body
- Organize an initial survey on the local situation through data collection and interviews with government agencies, local people and enterprises to provide comprehensive data and information reports on water quality.
- Assess the capacity, knowledge, and habits of the community in the practice of water source protection.
- STOs/NGOs, based on the information collected, research and develop specific technical options to promote community participation and strengthen management and community.

Outputs: The documents include a research report on the local situation and report of assessing community capacity, knowledge, practice and habits in protecting water resources. The information in the report will be an input source for the implementation of step 3 on capacity building for the community.

Step 3. Capacity building for the community

STOs/NGOs, based on the results of the first survey, design a program to improve the capacity of CRO or core group and local residents aim to:

- Provide information and knowledge about water resource management
- Provide technical tools for water source protection for local communities
- Develop community skills and organize community representatives through the exchange process, teamwork, evidence-based decision making, presentation and communication
- Identify priority issues to be addressed
- Develop an action plan between community representatives and community organizations to join hands to protect water resources based on a consensus of all parties
- Set up a core group that will participate in coordinating and implementing activities

How to implement:

- Community capacity assessment.
- STOs, experts or NGOs will design and develop a training program (TOT) with diverse contents from basic knowledge to advanced techniques of water resources management and protection (refer to appendix 1).
- Organize a training program to improve community capacity on water resource protection. The training will apply a participatory approach with the aim of engaging the community from the beginning of the activity to building ownership and responsibility for the community. The training course takes 1-2 days, including theory and practice.
- Conduct pre-post assessments to measure the level of change in knowledge, practice, and skills of the community. This assessment also helps to improve, adjust the content and quality of the training in accordance with the desires, concerns and local capacities of the community.

Outputs: A set of training materials on water resources protection in mobilizing community participation (refer to the example in appendix). After the training, the capacity and knowledge of the community on water source protection will be enhanced and ready for activities of monitoring and managing water pollution.

Step 4: Develop implementation plan

The core group proactively organizes 01 meetings with the participation of community representatives to develop a specific plan on water source protection based on the action plan discussed in the training course (refer to appendix 2).

Detailed implementation plan should answer the below questions:

- What are the problems?
- What are the goals?
- How will the specific activities be implemented? (demonstration meeting or short training, or sharing information and communication experiences ...)
- When is it implemented?
- Who is the organizer?
- What tools and materials are needed?
- How are the monitoring and inspection?
- Estimated cost?
- What activity of the communication plan are?

The plan should receive the consensus of the stakeholders from CRO (Women's Union, Cooperative, Veterans' Union, Youth Union ...) and residents living in the locality. Depending on the actual needs and scale of the activities, the detailed implementation plan is needed to be adjusted to fit with the local context.

The communication plan is important component of the implementation plan. The communication plan is developed at the same time with implementation plan. Communication activities such as distributing leaflets, drawing pictures on lake or river protection or broadcasting through radio speakers, at community events, creating interview video clips, media stories ... will create direct and indirect effects on community awareness and behavior to protect water resources.

Output: Detailed implementation plan and communication plan

Step 5: Plan implementation

For the core group

- After identifying the tasks, the core group will follow the specified dates, list of tasks to be performed and checked regularly by time schedule or tasks recorded in the yellow piece of paper to memorize and list the tasks that should be prioritized on daily diary schedule (refer to Appendix 3).
- To mobilize community participation strongly, the core group will promote the commitment of the people through signing the Citizen Commitment (refer to Appendix 4).
- Cooperate with the stakeholders to implement the planned activities to achieve the highest efficiency
- Check continuously project progress and adjust when needed.

For science and technology organizations or NGOs

- Always ready to provide technical support to the core group
- Always follow and motivate the core group to implement the activities on schedule
- Cooperate with core groups to implement activities

Step 6: Monitoring and reporting

The role of the core group

- In the process of implementing activities, the core group is responsible for monitoring and supervising in accordance with the proposed plan, adjusting the activities' content and time through periodic reports, diary schedules, and monitoring and evaluation plan.
- This step must be carried out continuously from the beginning to the end of the activities. The purpose of this step is to identify risks in the process of implementing activities to adjust in time.
- Monitoring tools: monitoring and supervision plan, diary schedule, activity report form.

At the locality, the core group should organize the ending dissemination workshops (once a month or every two months depending on the project) with the participation of leaders. Implementation teams have their own group reports. Based on the results, there will be a discussion to adjust the implementation plan to make it more reasonable.

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APPENDIX

APPENDIX 1

TRAINING MATERIALS

COMMUNITIES DEVELOP THE LAKE MANAGEMENT PLAN

(For trainers)

- Training course:** Communities develop the lake management plan
Duration: 2 days
Participants: 50 - 70 representative living along ponds and lakes in Hanoi (including participants from Women's Union, Youth Union; Elderly People Union, Green Living Club ...); officials and other social organizations.
Goal: Promote residential communities along Hanoi lakes and social organizations (Fatherland Front, Farmers' Association, Women's Union, Youth Union ...) to participate in the development and implementation of lakes, ponds and water sources protection plan
Method: Conversation, team work, group discussion
Tools: Colored paper, A0 paper, colored pen, pen, tape
Place: Room with area of 30 m² or more

Reference program:

Time	Content	Coordinator	Result
Day 1			
8h-8h10	Opening session	Local leaders	
8h10-8h30	Participants' introduction		Participant are divided into groups
8h30-8h45	Participants' expectation		Knowing participants' expectation
8h45-9h00	Training course introduction	STO	
9h00-9h15	Tea Break		
9h15- 9h30	Status and causes of lakes and ponds pollution in Hanoi		Participants recognizes the community role in lake protection. Participants understand the sources of water pollution.
9h30-9h50	Experience on Tahoe Lake Protection		Participants gain experiences
9h50-10h00	Experience on Ha Đình Ward protection		Participants gain experiences
10h00-10h15	Introduction of community participation models in the development of lake protection plan		Participants understand the steps to develop lake protection plan.
10h15-11h00	Behaviors of households and communities in the protection of lakes	Group discussion	
11h00- 11h15	Groups presentation		Behavior table
11h15-11h30	Conclusion		
11h30- 13h30	Lunch		

13h30 - 14h00	Warm-up		
14h00 - 15h30	Development of lake protection plan	Group discussion	
15h30-15h45	Tea Break		
15h45-16h30	Groups present their plans	Groups	Plans
16h30	Conclusion		
Day 2			
8h00-8h30	Warm-up		
8h30-9h00	Introducing causes and concepts		Participants gain the concept of climate change
9h00-9h15	Break		
9h15-9h40	Causes of climate change		Identifying the causes
9h40-10h00	Impact of climate change on Vietnam and the world		Raising awareness of climate change impacts
10h00 - 10h10	The world and Vietnam respond to climate change		Knowing some ways to respond to climate change
10h10-10h25	Film screening: Climate change and response ... (8')		
10h25-11h 10	Community behavior in response to climate change	Dividing discussion groups	
11h10-11h30	Report on the results of discussions and conclusion	Groups+Leader	Behavior table Conclusion
11h30 - 13h30	Lunch break		
13h30 - 14h00	Warm-up focusing on the morning content		
14h00-14h10	Flooding urban video		
14h10- 14h20	Context introduction		Identify the risk of flooding in urban areas
14h20-14h40	Steps for community to plan urban flood prevention		- Remember the three steps of flood and storm prevention; - Master the planning steps
14h40-15h30	Behavior of households and communities in urban flood response	Group discussion	
15h30-15h45	Tea Break		
15h45-16h15	Groups present their discussion results		Behavior table
16h15	Conclusion		

APPENDIX 2

Before step of identifying the problem, the core group should carefully read the manual and learn about information on climate change on the press, internet, issues related to challenges of the lake in Hanoi and information related to urban climate change.

Implementation: Organizing 01 meetings in the locality (meeting in the ward, residential area, residential group ...) to determine the problems that urban lakes are facing; at the same time, raising community awareness about lake management and developing climate change adaptation strategies.

Participants: 20 people; divided into 4 groups

Time bound: 2 hours.

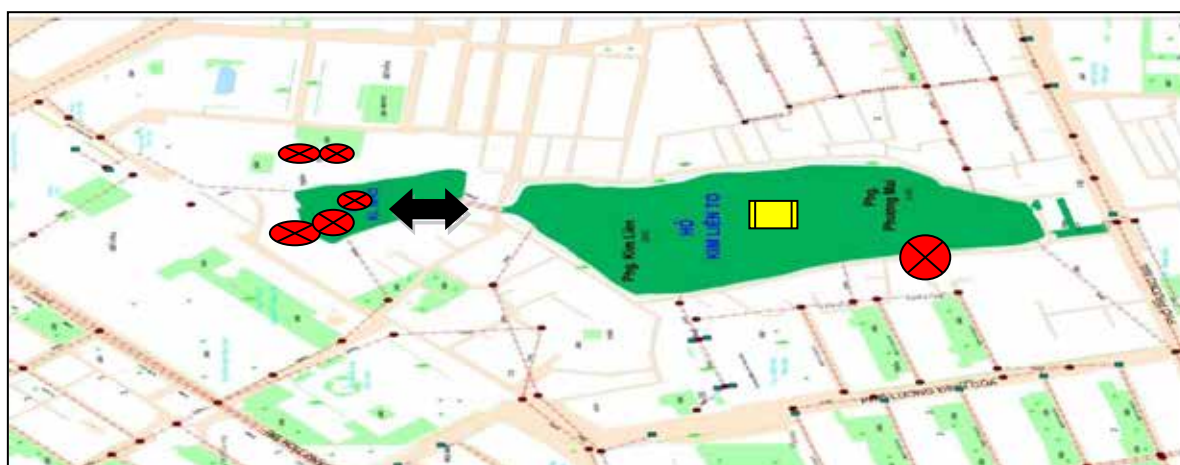
Tool: A0 paper, felt pen, board, clip chart, color paper!

Method: Group discussion; Ask questions to identify problems, problem trees.

Goal: Identify problems in lakes and ponds around Hanoi lake area

Facilitator: STOs/NGOs will be lecturers or experts to share experiences and teach area of expertise related to water resource protection, and play a role in facilitating discussion.

Exercise 1: Mapping the main polluted sources discharged into lake



Red circle: represents the pollution point caused by households discharging domestic waste water into the lake.



Black arrows: two lakes are connected so when the small lake is polluted, the big lake is also affected.



Yellow square: Aquatic rafts and sprinklers used to treat lake water clear

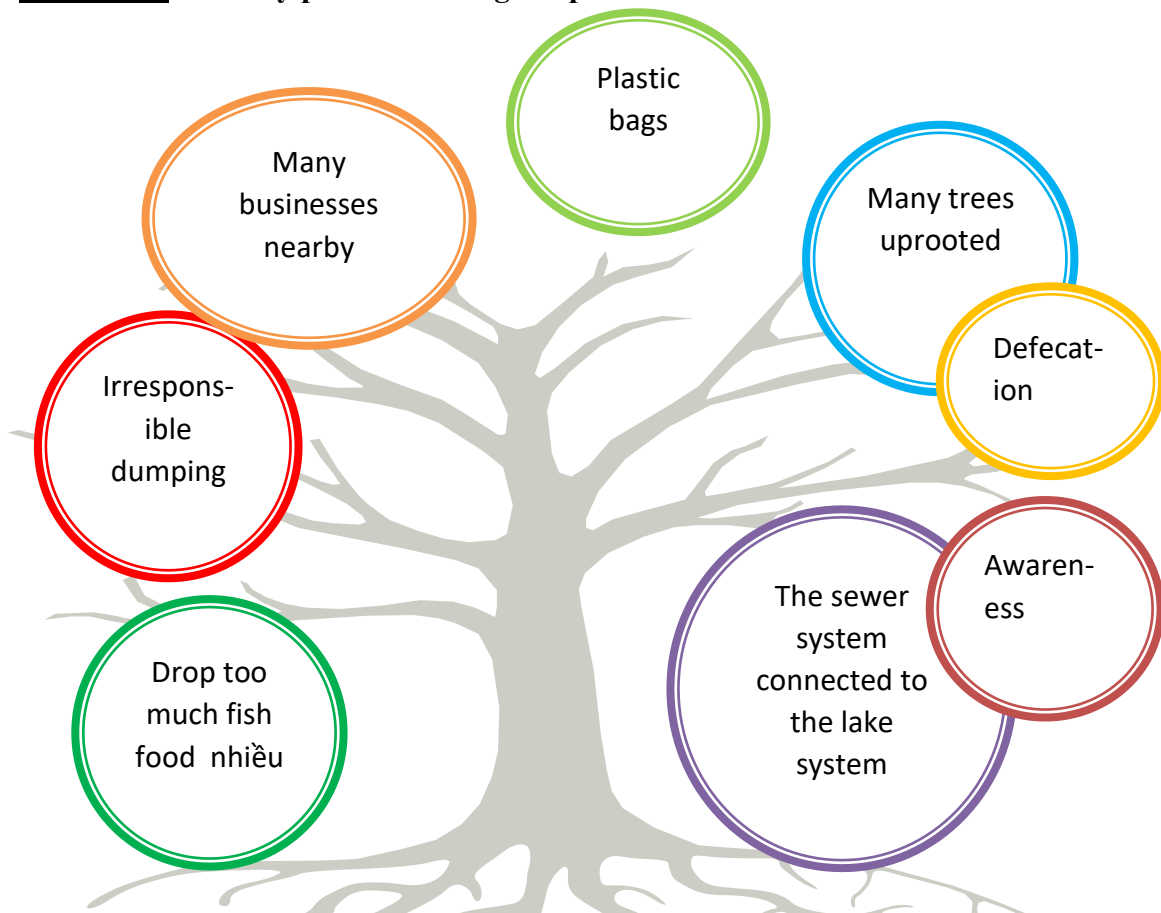
In order to get to the depths of different problems, the team will employ the method of **raising questions** to identify lake problems and their causes. For example, in the case of Kim Lien Lake:

Identify the existing problem: The water of the lake is polluted

Facilitate questions: What are the causes of the pollution:

1. The water is polluted because people have dumped trash into it
2. The water is polluted because the trash has been blown into it from the shores of the lake
3. The water is polluted because of households' domestic waste
4. The water is polluted because of the direct waste water discharge from nearby restaurants and service establishments

Exercise 2: Identify problems using the problem tree



LAKE WATER POLLUTION

After the problem and its cause have been identified: The team will develop a plan. This step will determine the goals and tasks needed to address the problem in question and single technical solutions to improve the status quo.

Organize 01 core group meeting to discuss what needs to be done, who is assigned what, and demonstrate commitment to the execution of the plan. Appointing 01 representative or a focal point to organize the implementation in coordination with NGOs or state agencies.

In particular, the role of a representative of an NGO or a state agency will provide briefings on the current environmental situation, its causes and fundamental guidelines for the minimization and limiting of the problem. And the role of the group will be to brainstorm operational ideas that are practical and sensitive to local contexts.

Before conducting the meeting, group representatives will build a program framework—the first preparation step.

Duration: 2-3 hours

Participants: Residents in the neighborhood of the lakes, ponds, water sources in question; Women’s Association; Veterans’ Association; Fatherland Front; Youth Union; Representatives of NGOs and state agencies.

Tools: A0 papers, color cards, markers, scissors, tapes.

Program framework for a group meeting (for reference)

Time	Activity	Person in charge
9:00 – 9:30	Start up – Play ball throwing	Groups
9:30 – 10:00	Introduce the objectives and content of the meeting	Groups and representatives of NGO
10:00 – 10:30	Present the current situation of lake water pollution	Representative of NGOs
10:30 – 11:30	Group discussion on solutions	Groups
11:30 – 12:00	Agree on the content of prioritized activities and show commitment	Groups

Exercise 3: Design goals and activities in details

Goal	Activity
Reduce heat	Planting trees around lakes and houses / planting trees with large foliage (high light absorption) on balconies or around houses.
	Use a curtain to cover the window when the weather is hot and turn off the electricity when it is not needed.
	Mop the floor often to cool it down and flush cool water on the rooftop (with used water).
	For ponds and lakes: it is necessary to create an open space by not letting motorbikes and cars encroach on the vicinity of these water bodies.

Reduce flooding	Waste sorting (inorganic, organic, recyclable) Reduce the use of plastic bags; Replace them with eco-friendly bags
	Use domestic water economically
	Reduce the amount of domestic waste into the lake
Minimize the pollution of lake and pond water	Stop the throwing of altars and ash into the lake on holidays and Tet
	Warn against waste dumping on the shore of the lake
	Remind owners of drink stalls and businesses around the lake to collect / clean up their garbage regularly
Raise awareness	Read newspapers, read and look into internet newsletters and environmental journals
	Actively participate in local meetings on environmental issues
	Share your lake-related experiences with your neighbors

After coming up with simple technical measures, the team will develop activities and rank them in decreasing order of preference

Exercise 4: Identify prioritized activities

Measures		Number of members in favor of
1	Minimize waste discharged into lakes	20
2	Domestic waste sorting	18
3	Dump garbage in the right place, at the right time	17
4	Reduce the use of plastic bags	50
5	Replace plastic bags with eco-friendly bags	10
6	Plant trees, creating cool spaces	8
7	Use domestic water economically	7
8	Save electricity (air-conditioner, refrigerator, electronic stove, ...)	7
9	Clean up the lanes and roads of the village once or twice a week on Saturday, Sunday	5
10	Making propaganda banners to call for lake protection	3
11	Remind people to throw garbage into the right place / not to throw it into lakes or ponds	2
12	Pay trash collecting fees	1

With the measures being listed out, the groups will determine the time to carry out the activities. The most popular measure will be carried out first or at least 3 activities will be carried out simultaneously at a specific time.

Exercise 5: Set the implementation time

Activities		Implementation time
1	Reduce waste discharged into lakes	Start from 25/6/2019
2	Domestic waste sorting (inorganic, organic, recyclable)	
3	Use eco-friendly bags	
4	Limit the use of plastic bags	
5	Plant trees around the lake	7/7/2019
6	Call for the protection of lakes	7/8/2019

APPENDIX 3

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1  Discussion on reducing the use of plastic bags	2	3	4	5
6	7	8	9	10	11 01: Use eco-friendly bags as containers for dried food	12
13	14 Use eco-friendly bags to go shopping	15	16  02: Use eco-friendly bags as containers for fruits	17	18	19
20	21 Clean up the lanes and roads of the village 	22	23 Sharing meeting	24	25	26
27	28	29	30	31		

Total amount of plastic bag reduction:/month;

REDUCE PLASTIC BAGS

Commitment form

	 TỈNH ĐOÀN SƠN LA	
<p>Hương ứng Thư kêu gọi cả nước tham gia giải quyết vấn đề ô nhiễm rác thải nhựa của Thủ tướng Chính phủ ngày 24 tháng 05 năm 2019 và Phong trào Chống rác thải nhựa do Bộ TN&MT phát động</p>		
<hr/> <h2 style="margin: 0;">CAM KẾT THỰC HIỆN</h2>		
<p>1) Giảm thiểu sản xuất ra rác thải thông qua mua sắm và tiêu dùng vừa đủ</p> <p>2) Triệt để phân loại rác thải tại nguồn như chai nhựa, giấy, lon kim loại chuyển cho đồng nát, công nhân môi trường, cơ sở thu mua thu gom</p> <p>3) Phân loại và xử lý rác hữu cơ tại nguồn thông qua ủ phân compost, chế phẩm sinh học ...</p> <p>4) Hạn chế tiến tới từ bỏ sử dụng ống hút nhựa, cốc nhựa, hộp xốp, túi nilon, thìa-dĩa-đũa nhựa...</p> <p>5) Vận động khách hàng hạn chế sử dụng ống hút nhựa, cốc nhựa, hộp xốp, túi nilon, thìa-dĩa-đũa nhựa...</p>		
		<p>Chủ cơ sở (Ký và ghi rõ họ tên)</p>



Photo17: Community meeting in Binh Duong, source - CECR



Photo 18: Training water management in fishing shrimp in Nam Phú, Thái Bình

