Community-Based Research Protocol
on
Transboundary Impacts: Fishery Resources, Ecosystem and Communities' Livelihood

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MY VILLAGE

Acknowledgement

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Contents

Abbreviation

CRs   : Community Researchers

DFID   : Department for International Development

GLBT   : Gay, Lesbian, Bisexual, Transgender

PWD   : People with Disability

PVC Paper   : Polyvinyl Chloride Paper

Figures and Photos

Figures

Photos

1. Introduction

1.1. Background

The developments along the Mekong River, including in Cambodia, have boomed. There were 755 dams. Of these, 537 have been completed, and 152 have been planned or proposed. Of these, 52 were under construction, and 14 have been canceled or suspended. Of these dams, 392 were hydropower, 337 were irrigation, and 26 were other types (CGIAR, 2015).

Even though some officials saw economic development as a result of the hydropower dam, the negative impacts of hydropower dams were seen by many local experts and NGOs. The negative impacts include reduced fishing stocks and exacerbated socio-economic issues (Asia and the Pacific Policy Society, 2022).

Experts have conducted some research on ecosystems and livelihoods, but there has been a lack of studies conducted by local communities to investigate their cross-border impacts as a result of the hydropower dam, despite the fact that local communities have been facing issues as a result of the Mekong Development. The community research protocol was developed to improve local communities' understanding of their local contexts and their confidence in negotiating with decision-makers and policymakers to address and respond to their needs and the findings of studies on local planning for sustainable community development.

This research protocol was developed by the MVi team

- Dr. Por Narith, Assistant Professor at Build Bright University and Advisor to MVi
- Dr. Lonn Pichdara, Executive Director of My Village (MVi).
- Mr. Kry Solany, MVi Stung Treng Program Team Leader
- Mr. Morn Chimor, MVi Team Leader Assistant

To make sure that this protocol is practical with local communities and implementable, this protocol development has been discussed and consulted with 15 community researchers from three villages who carry out this tool to investigate the resource changes in their communities and its drivers for their resource changes in their communities. The link between development projects and hydropower dam to ecosystems, fishery resource and livelihood of the people included for the investigation.

1.2. Paper Purposes

The paper aims to guide community leaders and staff in conducting community research on transboundary impacts on fisheries resources, ecosystems, and the livelihoods of local communities using their knowledge.

2. Key Terms and Concepts

2.1. Livelihoods

According to the Oxford Dictionary, "livelihood" is a means of securing the necessities of life." DFID (1999) defined that "livelihood is the capabilities, assets, and activities that are required for a means of living; a livelihood is sustainable if it can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and if it contributes net benefits to other livelihoods at the local and global levels and in the long and short term." There were five types of assets in the livelihood framework, including

Figure 1: Livelihood Assets

Human Assest

Natural Asset

Financial Assets

Physical Assets

Social Asset
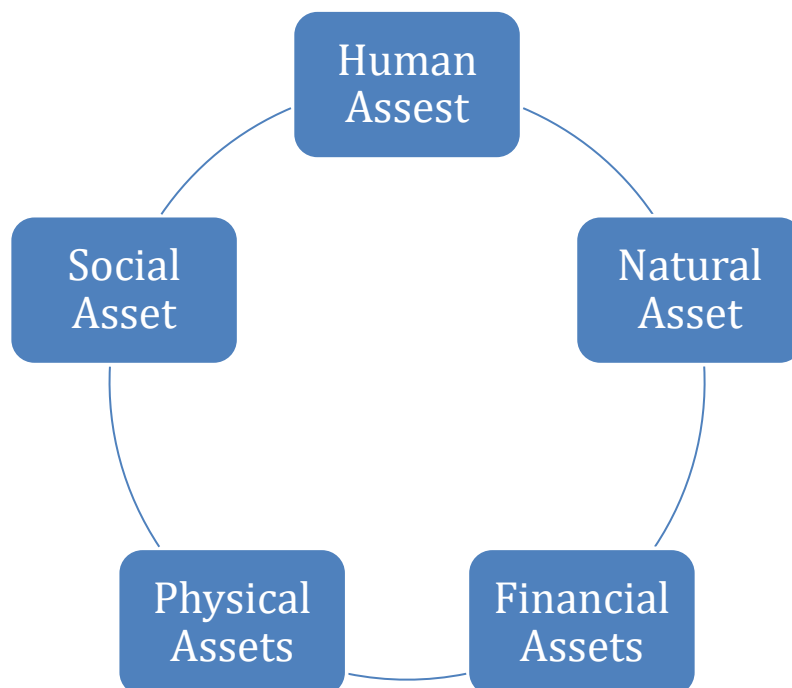
The types of the assets are defined below

a. Human Assets

Human assets are the skills and abilities of individuals within a community (The University of Memphis, n.d.).

b. Natural Assets

Natural assets include landscape, air, water, wind, soil, and the biodiversity of plants and animals (The University of Memphis, n.d.).

c. Financial Assets

Financial assets refer to money or other investments that can be used for wealth accumulation rather than consumption (The University of Memphis, n.d.).

d. Physical Asset

Physical assets refer to anything physically made by humans, including housing, factories, schools, roads, community centers, power systems, water and sewer systems, telecommunications infrastructure, recreation facilities, transportation systems, etc. (The University of Memphis, n.d.).

e. Social Assets

The networks, organizations, and institutions that exist among and within groups and communities are referred to as social assets (The University of Memphis, n.d.).

2.2. Fishery resources

Fishery resources consist of myriad biological (e.g., plankton, fish, and mammal species), chemical (e.g., salinity, oxygen concentration), and physical (e.g., sediment type, oil and gas reserves, currents, and space) attributes, which can be further differentiated by quantity, quality, and relational attributes (Edwards, 2005).

According to Fishery Law (2006), it defines fishery resources "inter alias any freshwater and marine organisms, living or non-living fauna and flora for example fish, mollusk, amphibian, insect, reptile, mammal and other invertebrate that get fertilized in water, planktons, seaweed, sea grass, coral reef, inundated forest including mangrove etc."

2.3. Ecosystem

An ecosystem is a geographic area where plants, animals, and other organisms, as well as weather and landscape, work together to form a bubble of life. Ecosystems contain biotic, or living, components as well

as abiotic, or nonliving, components. Biotic factors include plants, animals, and other organisms (National Geographic, n.d.).

2.4. Transboundary Effects and Impacts

The Cambridge Dictionary defines transboundary as "crossing the border between two or more countries or areas and affecting both or all areas" (n.d.).

A transboundary effect is defined as "any significant adverse effect on the environment resulting from human activity, the physical origin of which is situated wholly or in part within an area under the jurisdiction of another state." Environmental impacts and threats that do not respect national borders, such as the use of transboundary waters, long-range air pollution, and industrial accidents (UNEP, n.d.)

Transboundary impact refers to the impacts of a proposed policy, plan, or program on the environment, health, or society in another state (Law Insider, n.d.).

3. Steps of Community-Based Research

The community-based research process consists of five main steps: community researcher selection, research tool development and capacity building, data collection and validation, data analysis and production of a research report, and dissemination of research findings.

Figure 2: Steps of Community Research

Step 1: Community Researcher Selection

	Description
Objective	To select community researchers (CRs)
Time	Half day
Materials	Flipchart, markers, election box
Participants	Community members
Process	1. NGO personnel explain the rationale and meet the objectives. 2. Open remarks (authorities) 3. Candidate selection (volunteering) 4. NGO staff explain the process of selection and election. 5. Election process: five community researchers are selected in each of the villages to facilitate the research process. 6. Count the ballots and announce the election results (researchers) 7. Community researchers express their commitment to performing CRs. 8. Discuss the roles of community researchers. 9. Closing remark
Guide Questions	

Photo 1: Community Researcher Selection Meeting

Photo 2: Community Researcher Selection

Step 2: Research Tool Development and Capacity Building

	Description
Objective	To finalize the community research tools and train community researchers on research tools. The research tools include mapping resource and livelihood change and its factors, including hydropower dams; describing resource and livelihood change and their factors; and taking and describing photos in relation to resource changes, livelihood impacts, and their factors.
Time	Two days
Materials	Research tool slides, camera, flipcharts, markers
Participants	15 community researchers
Process	Day 1: Morning Session 1. NGO staff explain session objectives. 2. NGO staff ask participants (CRs) to write their expectation of the course on color papers and stick their expectation on flipcharts. 3. NGO staff category and show their expectation. 4. NGO staff present the expectation they have previously prepared. 5. NGO staff explain the research process. 6. Form community researchers into three groups by villages. 7. NGO staff explain how to produce a map of research changes, livelihood impacts, and their factors. 8. Each group discusses and draws maps on research changes, livelihood impacts, and their factors. 9. Each group presents to the entire group its discussion results on resource changes, livelihood impacts, and their factors.

	10. Whole groups provide feedback on the group discussion results. Afternoon Session 8. NGO staff explain how to incorporate textual descriptions of resource changes, livelihood impacts, and their factors. 9. Each group explains and describes the resource changes and livelihood impacts within the last three years and their factors. 10. Each group presents the outcomes of their discussions to the entire group. 11. The whole group provides feedback on the discussion results. 12. NGO staff explain how to list the resource change and livelihood impacts and how to take photos of the research change and livelihood impacts. 13. Discuss the lists of resource changes and the schedule for taking photos. Day 2: Morning Session 14. Go to the field to take photos of resource change and livelihood impacts. Afternoon Session 15. NGO staff explain how to explain and describe the meaning of the photos. 16. Form groups by villages. 17. Each group discusses and describes the meaning of the photos they took in the morning. 18. Each group presents the discussion results. 19. The whole group provides feedback on the discussion results. 20. The whole group reflects on the research process and adjusts the research process (data collection). • Resource mapping • Describe resource changes, livelihood impacts, and their factors. • taking photos of resources and livelihood • Describing the meaning of photos 21. Assess training results: the indicators for assessing the understanding of researchers include: resource mapping and its drivers, description of resource changes based the information on maps and taking photos and description of photos regarding to resource changes. Three columns of each indicators: unsatisfied, undecided and satisfied 22. Adjust and finalize the community research process (data collection).
Guide Questions	Form In research process, 1. What did we do well? 2. What didn't we do well? 3. What should be improved?

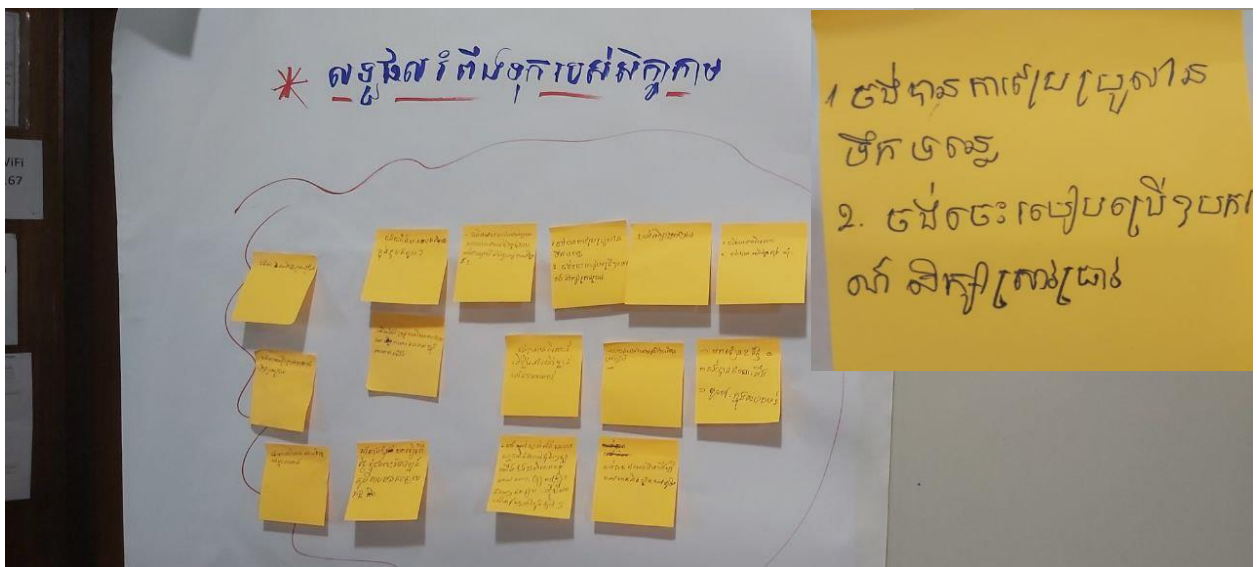*Photo 3: Community-Based Research Training Tools*

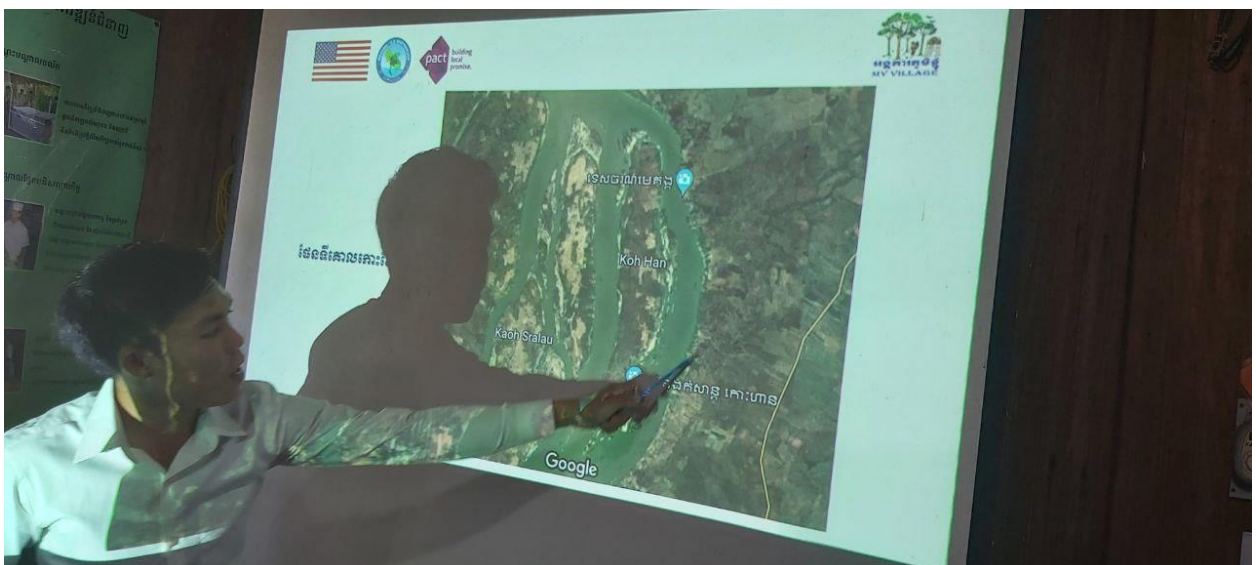*Photo 4: Participants' Expectation from Training*

Photo 6: Presentation of maps for participants

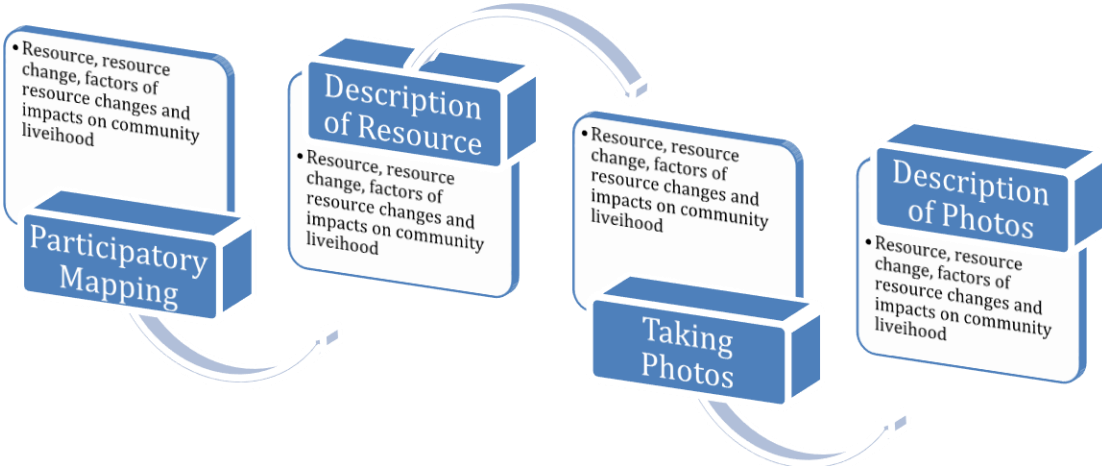*Photo 7: Training Session on Photo-Taking Techniques*

Photo 8: Field Visit for Photo-Shooting Practice

Step 3: Data Collection and Validation

There are four steps to data collection: participatory resource mapping, description of community resources based on maps, taking photos of resource changes, and description of photos of resource changes.

Figure 3: Steps of Data Collection

a. **Participatory Mapping on Community Assets**

Objective	• to map community assets in communities. • to identify community assets, including resource changes and factors, and the impacts of hydropower dams on resource changes in communities. • to identify the impacts of resource changes on local communities' livelihoods.
Time	• One day
Materials	PVC, scissors, color papers, papers, pencils
Participants	15 people including community committee, members, people with disabilities, people from poor families and
Process	1. Community researchers (CRs) explain session objectives. 2. Community researchers (CRs) explain how to draw maps and identify resources in communities. 3. The map of community resources indicates the resources. The title of the map should be written down. Frame of the map should be drawn. The space for lagend should be kept (such as river, school, fishing ground…). 4. Participants draw the resources in their communities/villages including rivers, flooded forests, fish canyons, island ranges, community forests, people's houses, schools, and health centers. Other resources include vulnerable groups (LGBT people living with disabilities)

	5. Participants draw the resource variability/changes (through signal identification). To make easier for participants, the cross "+" from one to five are used. Cross "+" indicates the slight change while five crosses "+++++" indicate the much changes of their resources. The cross in red color (+) indicates the negative change of their resources while the green color of the cross (+) indicates the passive changes of their resources. 6. Participants draw the drivers or factors, including hydropower dams 7. Participants lists all resource changes in their communities and schedule for more explanation of the resource changes. 8. Each of the groups presents resource maps, resource changes and also schedule of resource change explanation to participants. 9. Participants provide feedback on the resource maps.
Guide Questions	Form 1 1. What resources exists in your communities/villages? 2. How have the resources changed in your communities over the last three years? 3. How have the resource changes affected people's livelihoods? 4. How have the resource changes affected the vulnerable groups? 5. What factors, including hydropower dam projects and operations, have contributed to resource changes in your communities?

Photo 9: Community Resource Mapping in Koh Sneng Village

Photo 10: Community Resource Mapping in Tunsong Village
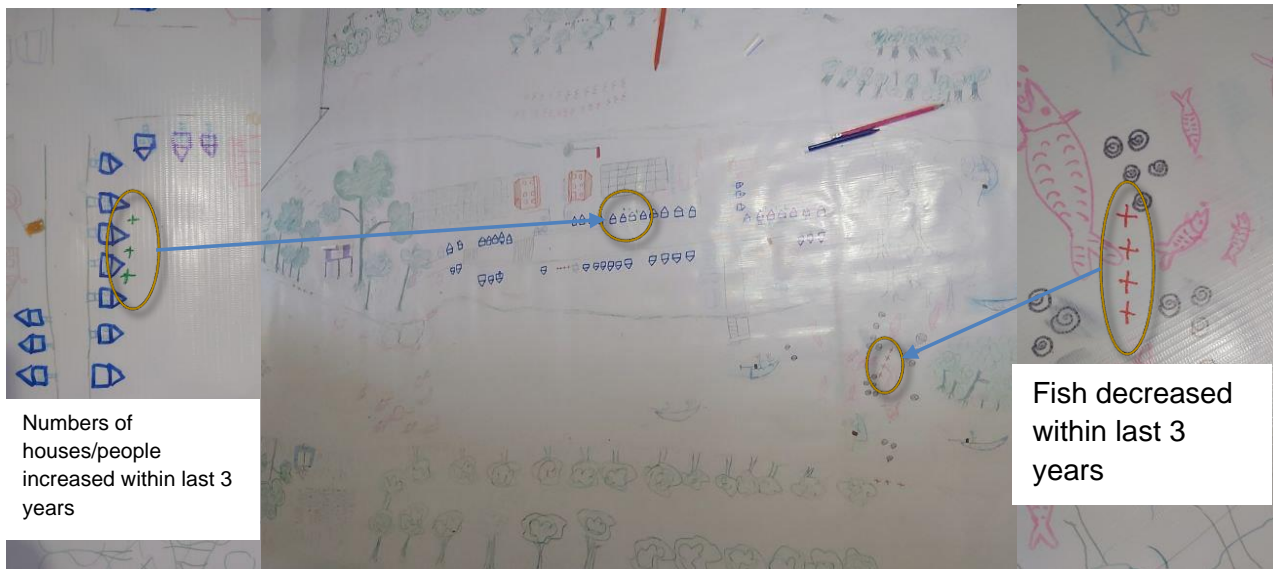

Numbers of houses/people increased within last 3 years

Fish decreased within last 3 years

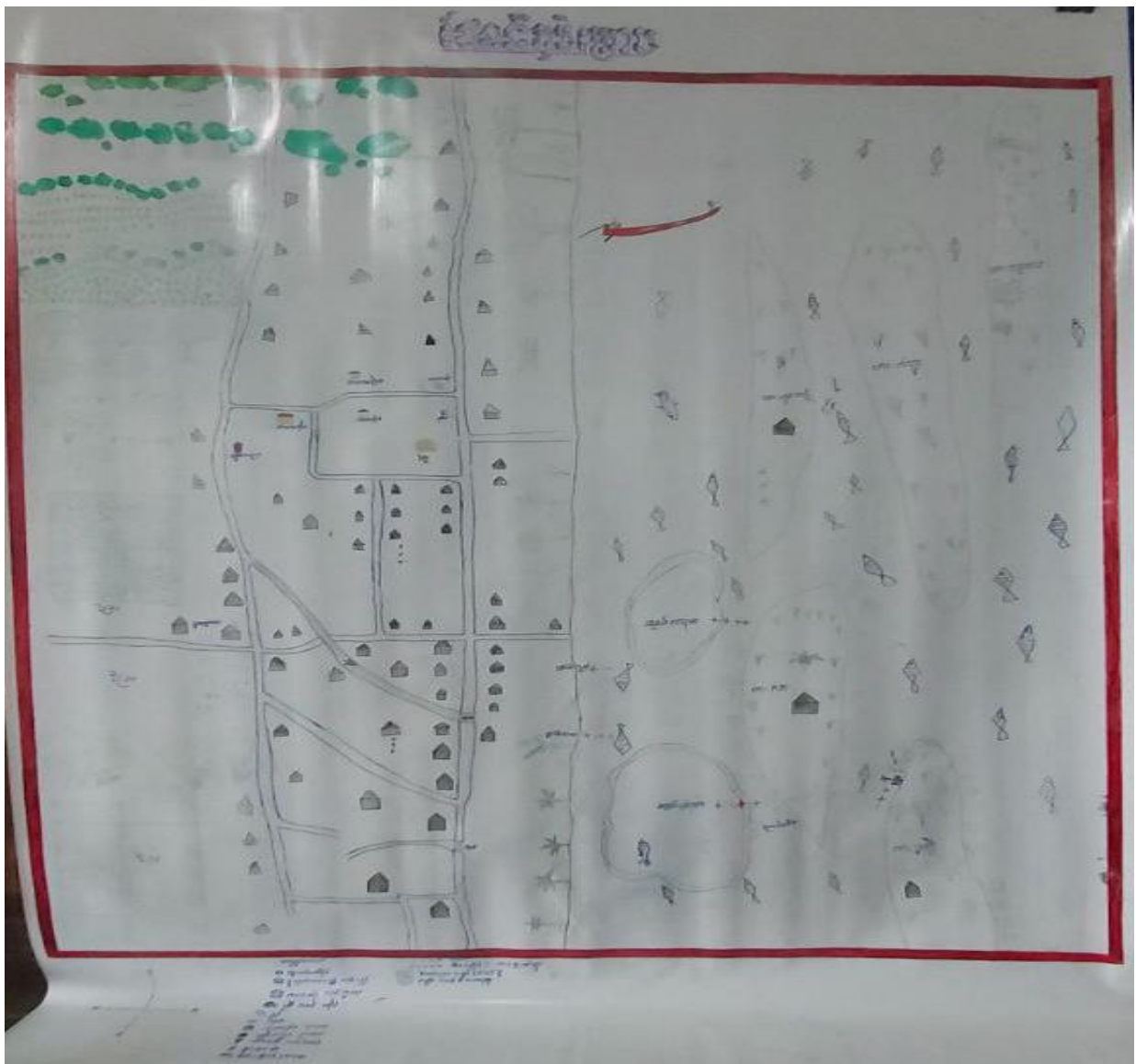*Photo 11: Community Resource Condition Identification*

Photo 12: Sample of Resource Mapping and Resource Changes in Koh Sneng village

b. Describes of Community Asset Changes and Its Drivers

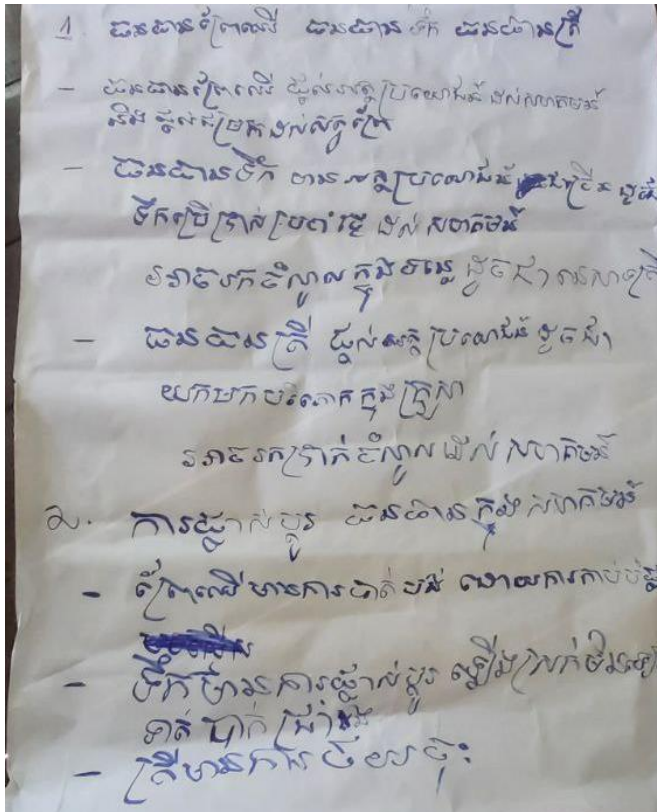|	Description
Objective	To describe community resources, consider how resource changes affect community livelihoods and the factors that lead to change.
Time	Half day per month (three stories of changes per half day)
Materials	Resource and resource change map, markers, flipchart (A0)
Participants	15 participants including committee members, women, youths, people with disabilities, people from poor 1 level families, and poor 2 level families and GLBTs.
Process	1. Participants are given an explanation of the session's purpose by CRs. 2. Divide participants into three groups (five people per group, including women, men, people with disabilities, people from poor families, and GLBT). One factor and recorder in each group are selected. 3. Identify and assign the topics (resource changes) for each group. 4. Each group talks about the resource changes and how they affect their communities. The results of discussion are recorded in flipchart (A0). 5. Each of the groups presents the discussion results to all participants. 6. Participants provide feedback on the discussion results.
Guide Questions	Form 2 1. What resources exist in your communities? 2. How has the resource changed within last three years? 3. What factors have caused the resource changes in your communities? 4. How has the hydropower dam changed the resource in your communities? 5. How have resource changes impacted the livelihoods of local communities? 6. How have the resource changes affected vulnerable groups in communities, including PWD, people from poor families, and GBLTs?

Photo 13: Group Discussion on Description of Resource Changes in Communities in Koh Sneng village

Photo 14: Description of Resource Changes and Its Drivers in Tunsorng village

Photo 15: Group Discussion on Resource Changes and Its Drivers in Phoum Krom Village

Fishery resource and water resource have provided benefits for local community members in term of food and incomes. It was noticed that the fish have decreased within last three years. This was because of ......???

Photo 16: Descriptions of Resource Changes and Its Drivers

c. Taking Photos of Community Assets Changes and Its Drivers

	Description
Objective	To conduct the field visits to take pictures of resource changes and transboundary impacts as mentioned as mentioned in resource maps.
Time	Once a month in each village
Materials	Camera, data recording notes
Participants	15 participants including community committee, committee members, PWDs, GLBTs and people from poor families
Process	1. Participants list the resource changes and impacts from the maps. 2. Participants identify the resource changes and impacts they plan to follow and explore. 3. Community Researchers (CRs) schedule field visits to take photos. 4. Community Researchers (CRs) conduct field visits to take photos of resource changes or cross-boundary impacts and record data regarding the photos. 5. Community Researchers (CRs) keep safe photos.
Guide Questions	Form 3 For schedule of photo-taking 1. What resource changes and impacts in your communities do they want to explore and follow up on?

	2. When do you want to take the photos of the resource changes and impacts?
	3. Who are responsible to take photos?
	For recording note
	4. Where, when is the photo taken? What the photo focus?

Photo 17: Irregular Water Level Fluctuation

Photo 18: Water Level Fluctuation Monitoring

Photo 19: Taking Photos of Resource Changes

d. Description of Photos of Community Asset Changes and Its Drivers

	Description
Objective	To describe the meaning of photos regarding fishery resource change, ecosystem changes, and cross-border impacts,
Time	Half day (description of three photos, description of one photo per each of group)
Materials	A0, markers, photos taken by community researchers
Participants	15 participants including community committee, committee members, people with disabilities (PWDs), gay, lesbian, bisexual and transgender (GLBTs) and people from poor families
Process	1. Community researchers (CRs) explain the session's purposes. 2. Community researchers (CRs) form three groups. Each group consists of five people. 3. In groups, participants discuss the meaning of the photo (resource changes and factors). 4. Each group presents the group discussion results to participants.
Guide Questions	Form 4 1. What does "mean" mean regarding ecology or livelihood changes? 2. How does the ecosystem, or livelihood, regarding photos change?

Photo 20: Group Discussion on Description of Photos regarding Ecosystem Changes

Photo 21: Description of Photos related Ecosystem Changes and its drivers

Step 4: Analyzing Data and Producing Research Report

	Description
Objective	to analyze the data and produce research reports.
Time	1 day
Materials	Computer, flipcharts, markers, stickers and LCD projector, collected data
Participants	15 community researchers
Process	1. Community researchers (CRs) explain the session objectives. 2. The draft format for a research report is presented in CRs.

	3. Participants discuss and agree on the format for the research report.
	4. Community researchers (CRs) ask community researchers and participants to classify data and information in groups as research format reports
	5. Participants produce research reports.
Guide Questions	Form 5
	1. What types of research and livelihood changes have you noticed?
	2. What factors have caused the resource changes?
	3. How have the hydropower dams contributed to resource and livelihood changes?

Photo 22: Discussion on The Research Report

Step 5: Research Finding Dissemination

	Description
Objective	To disseminate community research findings to community members.
Time	Half day
Materials	Flip charts, markers, research finding drafted on flipchart (A0)
Participants	30 participants including community members, GLBT, PWD and marginalized groups
Process	1. Community researchers (CRs) present the rationale, objectives, and agenda for the workshop.
	2. Opening remarks (authorities)
	3. Community researchers (CRs) present the research findings.
	4. Participants discuss how to use the research findings.
	5. Questions and answers
Guide Questions	

Photo 23: Research Finding Dissemination Meeting

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Annexes

Annex 1: Lists of Community Researchers

No	Researcher Names	Sex	Age	Village	Remarks

Annex 2: Lists of community asset changes and its drivers

No	Asset Change/Drivers (what)	When	Where	Remarks

Annex 3: Schedule for Taking Photo and Meetings

No	Asset Change/Drivers (what)	When	Where	Who

Training Assessment

Contents	Degree of Understanding on Subjects		
	Low ☹	Medium 😐	Hight ☺
Resource Mapping and Its Drivers			x
Description of resource changes			
Taking photos of resource changes and its drivers			
Description of photos (resource changes and its drivers)			
Total			

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