

Building Capacities of Women to Enhance Adaptive Capacity of Migrant-Sending Households in Udayapur District, Nepal: Process Documentation and Learning



About ICIMOD

The International Centre for Integrated Mountain Development (ICIMOD), is a regional knowledge development and learning centre serving the eight regional member countries of the Hindu Kush Himalaya – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and based in Kathmandu, Nepal. Globalisation and climate change have an increasing influence on the stability of fragile mountain ecosystems and the livelihoods of mountain people. ICIMOD aims to assist mountain people to understand these changes, adapt to them, and make the most of new opportunities, while addressing upstream-downstream issues. We support regional transboundary programmes through partnership with regional partner institutions, facilitate the exchange of experience, and serve as a regional knowledge hub. We strengthen networking among regional and global centres of excellence. Overall, we are working to develop an economically and environmentally sound mountain ecosystem to improve the living standards of mountain populations and to sustain vital ecosystem services for the billions of people living downstream – now, and for the future.



Contact person: Soumyadeep Banerjee, soumyadeep.banerjee@icimod.org

ICIMOD gratefully acknowledges the support of its core donors: the Governments of Afghanistan, Australia, Austria, Bangladesh, Bhutan, China, India, Myanmar, Nepal, Norway, Pakistan, Sweden, and Switzerland.

This publication was produced with the financial support of the European Union. Its contents do not necessarily reflect the views of the European Union.

Building Capacities of Women to Enhance Adaptive Capacity of Migrant-Sending Households in Udayapur District, Nepal: Process Documentation and Learning

Authors

Ishan Ghimire and Soumyadeep Banerjee

Copyright © 2018

International Centre for Integrated Mountain Development (ICIMOD)

This work is licensed under a Creative Commons Attribution Non-Commercial, No Derivatives 4.0 International License (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).

Published by

International Centre for Integrated Mountain Development (ICIMOD)

GP Box 3226, Kathmandu, Nepal

ISBN 978-92-9115-929-1 (Electronic)

Production team

Bill Wolfe (Consultant editor)

Rachana Chettri (Editor)

Dharma R Maharjan (Layout and design)

Photos: Jitendra Bajracharya

Reproduction

This publication may be produced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided acknowledgement of the source is made. ICIMOD would appreciate receiving a copy of any publication that uses this publication as a source. No use of this publication may be made for resale or for any other commercial purposes whatsoever without express written consent from ICIMOD.

The views and interpretations in this publication are those of the author(s). They are not attributable to ICIMOD and do not imply the expression of any opinion concerning the legal status of any country, territory, city or area of its authorities, or concerning the delimitation of its frontiers or boundaries, or the endorsement of any product.

This publication is available in electronic form at www.icimod.org/himaldoc

Citation: Ghimire, I. & Banerjee, S. (2018) *Building capacities of women to enhance adaptive capacity of migrant-sending households in Udayapur District, Nepal: Process documentation and learning*. ICIMOD Working Paper 2018/4. Kathmandu: ICIMOD

Contents

Acknowledgements	iv
Acronyms and Abbreviations	v
Executive Summary	vi
Part 1: Introduction	1
Approach and methodology for process documentation	1
Limitations	3
Placing the Action Research in Udayapur within ICIMOD's larger framework	3
Action Research Site	3
Basic concepts operationalized in the Action Research	3
Part 2: Discovery	5
Conceptualization	5
Action Research Design	6
Selection of implementing agency and human resources for Action Research	8
Process flow intended at the beginning	9
AR activities: Timeline	10
Part 3: Measurable Actions	11
Episodic processes of the Action Research	11
Routine actions of the Action Research	20
Closure of the Action Research process	23
Part 4: Reflections	23
Attributes of the Action Research process in Udayapur	24
Reflections on the process	26
Part 5: Conclusion	31
References	33
Annexes	
Annex 1: List of people interviewed for process documentation	34

Acknowledgements

This working paper is based on research that was conducted as part of the Support to Rural Livelihoods and Climate Change Adaptation in the Himalayas (Himalica) Programme (ASIE/2012/292-464) funded by the European Union. The authors would like to thank Dr. Arabinda Mishra (ICIMOD) for his critical insights and feedback that have been crucial in process documentation of this action research. The authors are grateful for the guidance and encouragement from Dr. Dhruvad Choudhury (ICIMOD), Dr. Surendra Raj Joshi (ICIMOD), Dr. Golam Rasul (ICIMOD), and Dr. Ganesh Gurung (NIDS). The support provided by Mr. Ram Basnet (NIDS), Mr. Mahendra Gurung (NIDS), and NIDS's field team in Udayapur district had been vital in this process documentation. This documentation would not have progressed smoothly without the support of the participants from Hadiya, Jogidaha, Rampur Thoksila, Risku, Sunderpur and Tapeswori VDCs. The authors would like to thank the editorial team of Ms. Rachana Chettri, Mr. Bill Wolfe, Mr. Dharm Maharjan and Mr. Sudip Kumar Maharjan for bringing the manuscript to its present form. The views and interpretations in this document are those of the authors and are not necessarily attributable to ICIMOD and NIDS.

Acronyms and Abbreviations

AR	Action Research
ATM	Automated Teller Machine
CEPREAD	Center for Environmental and Agricultural Policy Research, Extension and Development
CESLAM	Center for Study of Labour and Mobility
DADO	District Agriculture Development Office
DC	District Coordinator
DDC	District Development Committee
HKH	Hindu Kush Himalaya
ICIMOD	International Center for Integrated Mountain Development
IIRM	Institute of Integrated Resource Management
IPCC	Intergovernmental Panel on Climate Change
IOM	International Organization for Migration
JTA	Junior Technical Assistant
KSB	Koshi Sub-basin
NGO	Non Governmental Organization
NIDS	Nepal Institute of Development Studies
PARC	Pakistan Agricultural Research Council
PI	Principal Investigator
SSP	Swayam Shikshan Prayog
ToT	Training of Trainers
VC	Village Coordinator
VDC	Village Development Committee
WWF	World Wildlife Fund

Executive Summary

The Action Research in Udayapur set out to demonstrate a sustainable, scalable, and replicable approach to build the adaptive capacity of the migrant-sending households by increasing the women's awareness and ability to process information about financial services, flood preparedness, and livelihood diversification. The process took over two years of collaboration between stakeholders from various backgrounds. The research was led by International Center for Integrated Mountain Development and implemented by Nepal Institute of Development Studies. The process started in November 2014 and was completed by June 2017. The interventions were in the form of customized training events (e.g., financial literacy, flood preparedness, and livelihood diversification) and village-level extension services for women from migrant-sending households.

The process documentation of the Action Research shows that it is a labour-intensive process requiring meticulous attention to detail in conceptualization and implementation. It requires a thorough understanding of the issues at hand and, most importantly, effective strategies for transfer of knowledge. The success of the research shows that it requires multiple actors from various fields to dig deeply into a problem and find solution.

The Action Research process was designed to allow flexibility for iterative changes, both conceptually and operationally. As in many cases, the process faced challenges at different stages, which would not have been overcome without making changes to the original design. Nevertheless, uncompromised content was the key to success. Furthermore, the changes were indicative of constructive response to the feedback mechanism built into the process. The process documentation shows that it is important to have not only a feedback mechanism but also a space for constructive response in the Action Research process.

An enabling environment should be created for the evolution of the Action Research process. This may be contextualized locally to address the needs of the participants but may also emerge during various stages of the process. For example, the tactfulness of the field team in Udayapur was reflected when encountering challenges that were not anticipated. Their way of resolving challenges was instrumental in the retention of a majority of study participants in the process.

A special note of caution must be made when conducting Action Research in development programme-laden areas. It is imperative to be distinctive and to communicate that effectively to the community so that unwanted expectations are not created. Similar Action Research in future would benefit immensely from a grass-roots communications specialist.

Other key learnings from the process were:

- Cross-cultural peer learning is an effective enabler for the Action Research process.
- Incentives, especially in-kind, for participation in the process are demanded by the beneficiaries. It is a major challenge for the practitioners to decide what can be accommodated.
- Long gaps between key components of the process can create challenging situations.
- Innovative programme design and applicability of the knowledge transferred is the key to retention of study participants.
- Diversity of individuals involved in the process can be a strength and also a challenge to the process.

Part 1: Introduction

This documentation provides an overview of the collaborative Action Research (AR) process in Udayapur district, Nepal. The International Center for Integrated Mountain Development (ICIMOD) has collaborated with the Nepal Institute of Development Studies (NIDS) since 2014 to implement this AR. The duration of the AR was initially planned from September 2014-December 2016; however, it was extended for six months, to June 2017. The aim of the AR was to assess the role of the gender-sensitive capacity building along with community level extension services, in enhancing the adaptive capacity of migrant-sending households.¹

This process documentation primarily serves two purposes: (i) to comprehensively and systematically compile the AR process and (ii) to present the reflections of the AR team members regarding their own practices. It offers an operational guideline beyond project boundaries, if replication of this research is sought. The intended audiences of this report are the ICIMOD and NIDS staff, government and non-government institutions, and development agencies.

The report is divided into five parts: (i) Introduction, (ii) Discovery, (iii) Measurable Actions, (iv) Reflection, and (v) Conclusion. The first part shares the approach and methodology undertaken to prepare the process documentation and describes the context of the AR within which it was structured and operationalized. The second part elaborates on the formative period of the AR in Udayapur that led up to devising a concept note and plans for implementation. The third part chronologically presents various actions in the process as they unfolded, both planned and unplanned at the beginning. The fourth part of the report contains the AR team's reflection on the process and research participants' experience in the process. The final part of the report highlights the key lessons learnt.

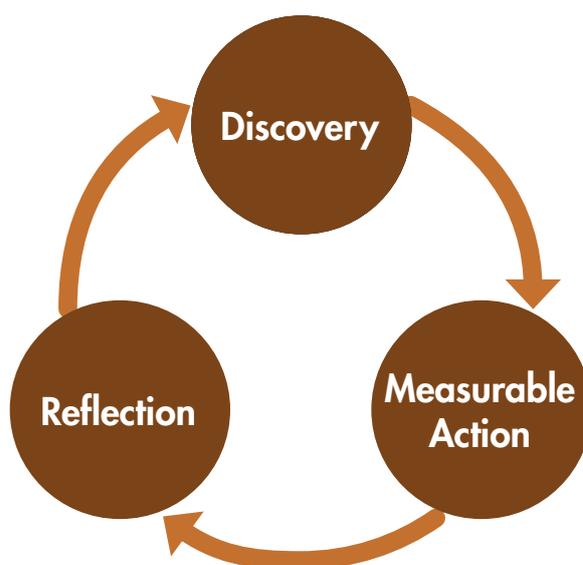
Approach and methodology for process documentation

Educators define AR as a type of research carried out in a collaborative manner that creates and measures change in a cyclical manner with the intention of overall positive growth throughout the process.² Furthermore, they remind us that it is not just problem-solving in the sense of trying to find out what is wrong, but rather a quest for knowledge about how to improve skills, techniques, and strategies to do things better.³ In that vein, this process documentation is a part of the AR, the process that is being documented, reflecting on why decision makers did what they did and how to do things better.

The first approach taken to describe the process was to classify various actions in the AR in order to capture its cyclical nature. Hence, the AR process may be visualized in the following way⁴ (Figure 1):

Discovery, here, refers to the formative period of the AR, which includes prior experience, knowledge, identification of problem and opportunity of action, conceptualization and buildup before implementation of core activities. Furthermore, it is a continuous process fed by new data and information. *Measurable actions* are activities that were created and collected in the course of the AR, both planned and unplanned at the beginning, and also includes changes made in the process with new discovery and reflection. *Reflection* as a phase is to delve deeply into what is working and what is not working in the process and how it can be improved. The structure of this report mirrors the approach taken and presents the information in that format.

Figure 1: Phases of Action Research



¹ AR Concept Paper 2014, ICIMOD

² E. Alana James et al. (2011)

³ Eileen Ferrance (2000) p. 2

⁴ Adapted from E. Alana James et al. (2011)



The second approach taken was to identify decision makers at both the conceptual and operational level and to recognize the challenges and enabling environment that made them decide the way they did. It was also an effort to look at who makes what kinds of decisions that keep the process dynamic.

The proceedings of the AR were obtained from various knowledge products such as documentary, photos, and reports generated during the process by the AR team. Furthermore, interviews were conducted with the AR team members and participants to gather more information and insight into the process. In total, 24 semi-structured interviews were conducted among the researchers, implementers, and study participants of the AR⁵. Field visits to the research sites in Udayapur district were conducted from 28th January–8th February 2017.

The following steps were taken in the preparation of the process documentation⁶:

1. Identifying the theory of change and operational assumptions behind the initiative
2. Capturing systematically information related to the theory of change and operational assumptions
3. Organizing information in such a way that stakeholders can reflect and learn about the process
4. Analyzing information by looking at common themes, trends, and patterns, and placing findings in the context of the project and its theory of change
5. Disseminating information in a format
6. Using the findings to improve the approach and strategy and to adjust theories and assumptions about change

Limitations

⁵ List of people interviewed as part of the process documentation is provided in Annex 1.

⁶ da Silva Wells et al. (2011)

The contents of this documentation are limited to the AR process in Udayapur district and do not include the same AR process that was underway concurrently in India and Pakistan. Since the documentation was carried out two years into the process by an external observer, it naturally constrains the observer to rely on reflections of AR team members and participants over past activities. However, the documentation benefits from the situation also by allowing the observer to have an overview of the whole process from the outside.

Placing the AR in Udayapur within ICIMOD’s larger framework⁷

The Support to Rural Livelihoods and Climate Change Adaptation in the Himalayas (Himalica) is one of the initiatives of ICIMOD’s Regional Programme on Adaptation to Change.⁸ This initiative contributes to the regional programme’s vision to improve the resilience and livelihoods of mountain women, men, and children of the Hindu Kush Himalaya region through adaptation to socioeconomic and environmental change, including climate change. The Himalica initiative is comprised of the following components:

- Policy Support
- Knowledge Management
- Action Research
- Pilots
- Capacity Building

The AR in Udayapur is one of the activities of the Action Research component.

Action Research Site

The site of AR was Udayapur district located in the Koshi Sub-basin (KSB) in Nepal. The catchment area of this sub-basin is composed of the mountain region in the north, through the mid-hills, to the *Terai* region (plains) in the south. The Himalica programme selected the Sagarmatha Transect within the KSB through stakeholder consultations that included government and non-government institutions. This transect includes the mountain district of Solukhumbu, the mid-hill districts of Khotang and Udayapur, and the *Terai* district of Saptari. This region is known for the impacts of rapidly changing ecosystems, shifts in hydrological patterns, changes in land use, and concomitant pressures on ecosystems and livelihoods. This region experiences recurrent extreme events such as cloudbursts, flash floods, and droughts.⁹

Table 1: General information on Udayapur District

District headquarters	Triyuga
Municipalities	3 (Beltar Basaha; Triyuga; Katari)
Total VDCs	45
Total population	317,532
Total households	66,557
Absentee population [male; female]	22,060 [20,036; 2,024]
Human Development Index	0.475
Per capita income (\$PPP)	920
Source: CBS (2012), NPC & UNDP (2014)	

Basic Concepts Operationalized in the AR

Migrant Worker: A person who has been living and working in another village, town or city in Udayapur district, other parts of Nepal, or another country during the six months preceding the selection of treatment and control households.

Recipient Households: Households that has been receiving remittances during the six months preceding the selection of treatment and control households.

Iterative Process: A process to arrive at a desired result by repeating rounds of analysis or a cycle of operations.

Participation: All the stakeholders involved in the process having equal say on the process being designed and implemented.

⁷ www.icimod.org

⁸ Two other initiatives within the regional programme are Improving Livelihoods and Enhancing Resilience of the Rural Poor in the Hindu Kush Himalaya to Environmental and Socioeconomic Changes (AdaptHimal) and Himalayan Climate Change Adaptation Programme (HICAP).

⁹ Summarized from Banerjee et al. (2016)

Collaboration: Different actors with some understanding of shared goals and multiple interactions between the parties involved.

Adaptive Capacity: The ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.¹⁰

Financial Literacy: The knowledge of properly making decisions pertaining to certain personal/household finance services, such as savings, loan, ATM, locker services, debit card, insurance, and remittance transfers. It also involves intimate knowledge of financial concepts like interest, risk management, debt management, and household budgeting.

Flood Preparedness: Flood preparedness is the process of anticipating and taking appropriate measures in a flood event in order to reduce adverse flood impacts.

Livelihoods Diversification: Livelihood diversification refers to attempts by individuals and households to find ways to raise incomes and reduce environmental risk, which differ sharply by the degree of freedom of choice (to diversify or not) and the reversibility of the outcome.¹¹

Risk: The possibility that a person will suffer because something of human value is at stake (including humans themselves) and where the outcome is uncertain. The risk could result from bad investment, bad weather, disasters, unemployment, sickness, etc.



¹⁰ Intergovernmental Panel on Climate Change (IPCC) AR5 definition

¹¹ This definition was taken from a working paper by Karim Hussein and John Neelson for Institute of Development Studies (IDS) at the University of Sussex.

Part 2: Discovery

Conceptualization

ICIMOD has been studying linkages between human mobility and climate change since 2009. Its initial focus had been to gather empirical evidence that led to the identification of gaps in knowledge on the impacts of labour migration on climate change adaptation in origin communities. Furthermore, it was realized that while policy makers and development partners are interested in empirical evidence on emerging issues, they also expected an operational guideline or action plan to integrate migration in climate change adaptation and disaster risk reduction programmes. There was little empirical evidence available on mechanisms to support migration-related activities that can build the adaptive capacity of the migrant-sending households to environmental stresses and shocks.

Remittances have played a key role in poverty reduction of recipient households in Nepal in the last decade and their role has frequently been a part of public and policy discourses. However, similar discussions in the context of climate change adaptation or disaster risk reduction is scant. The majority of migration from rural communities vulnerable to environmental stressors or shocks will be to internal destinations. A negative perception about internal migration is common in public policy.

This knowledge was enhanced by the findings of place-based studies on vulnerability and gender, and case studies on migration and climate change adaptation conducted in China, India, Nepal, and Pakistan.¹² The findings showed there were differences in specific attributes of vulnerability between remittance recipient and non-recipient households in the context of extreme weather events. There were clear indications of lack of knowledge on how to use income effectively to develop adaptive capacities rather than an absence of money in the households. Moreover, in the absence of men due to migration, the women who were left behind had to take up new roles in the households. However, women's capacities in their new roles were found to be limited within prevailing social structures and cultural norms. Hence, the situation demanded innovation and action. In this regard, consultations were carried out among partners, experts, and community members to seek possible ways forward.

The conceptualization of the AR was a transdisciplinary process, comprising chiefly a Migration and Population Specialist, Senior Gender and Climate Change Specialist, Rural Enterprise and Value Chain Specialist, and Survey Research Specialist at ICIMOD. The team had consulted the ICIMOD's Livelihoods Thematic Leader, HICAP Programme Coordinator, and Monitoring and Evaluation Specialist. Additionally, colleagues from partner institutions in India (SSP, IIRM), Nepal (NIDS, IOM-Nepal, and CESLAM), and Pakistan (PARC and WWF-Pakistan) were consulted, and the concept paper was shared with experts at the University of Sussex.

In February 2014, a joint planning trip to Udayapur by ICIMOD and NIDS, including interactions with community members, community leaders, local experts, NGOs, cooperatives, and district administration, was undertaken. In March 2014, an action research design workshop was organized in Kathmandu, including partners from India, Nepal, and Pakistan.



¹² These case studies were supported by the HICAP and Himalica programmes.

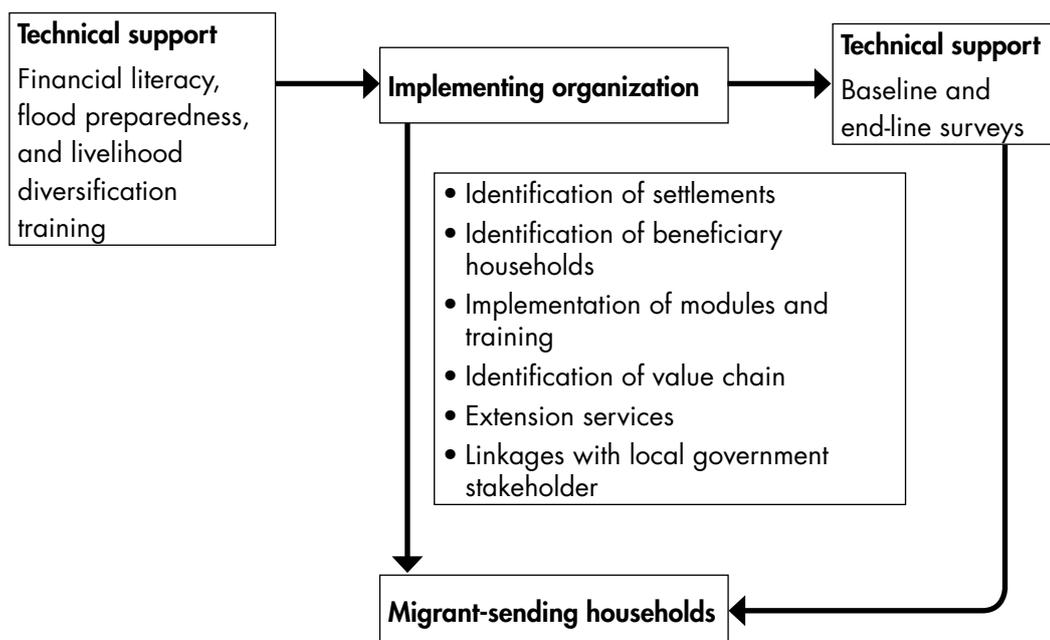
AR Design

AR hypothesis: Adaptive capacity will improve among migrant-sending households that have access to the proposed gender-sensitive training and community-based extension services compared to those migrant-sending households that do not.

Climate risks: Riverine floods and flash floods

Problems in the migrant-sending households	Assumptions	Intervention	Expected results (↑, ↓: Direction of change)
<ul style="list-style-type: none"> • Partial understanding of long-term impacts and uncertainty associated with climate change • Low volume of remittance • Lack of financial planning and inclusion • Competing household priorities on expenditure • Due to outmigration of men, women have to take up new responsibilities associated with farm management, food security, and disaster preparedness. They are often unprepared for these responsibilities. • Lack of access to tailored information 	<ul style="list-style-type: none"> • Improving financial inclusion and literacy among women will help migrant-sending households to adapt better to environmental shocks and stress • Women gain necessary skills for financial planning • Building flood preparedness will help migrant-sending households to address long-term impacts and uncertainty associated with climate change • Diversifying household income will support the migrant-sending household's adaptive capacity by leveraging the investment of remittances in climate-smart value chains • Community-level extension services will provide tailored information to the migrant-sending household 	<p>Financial Literacy Training</p> <p>Flood Preparedness Training</p> <p>Livelihood Diversification Training</p> <p>Community-level extension services and providers</p>	<ul style="list-style-type: none"> % of households who saved money for the flood preparedness (↑) % of households who are aware of at least one financial service (↑) % of households preparing monthly budget plan (↑) % of households who had a female member with a savings account (↑) % of households who undertook at least one action for flood preparedness (↑) % of households whose physical assets were damaged as a result of flood (↓) % of households whose dwelling's construction was damaged as a result of flood (↓) % of households who faced problems accessing safe drinking water during flood season (↓) % of households who faced shortages in food items during floods (↓) % of households who participate in livelihood diversification activity (↑) % of households participating in group meetings (↑) % of households visited by community-level extension worker (↑)

Figure 2: Implementation plan for the AR process



Monitoring plan:

The progress of the AR was assessed every four months based on the feedback received from the beneficiary households. Guiding questions for monitoring activities were as follows:

- Are the strategies as effective as anticipated at increasing the capacity to manage flood impacts?
- Once implemented, are the strategies still viewed as acceptable?
- Are the strategies as feasible as was anticipated?
- Has adaptive capacity really been increased?
- Are people more willing and better able to pursue autonomous adaptation?

Table 2: Planned order of activities

Activities step by step	Planned date
Identification of the research settlements	October 2014
Community-level consultations	October 2014
Identification of the beneficiary and control households	October 2014
Baseline Survey	November 2014
Financial Literacy Training	November 2014
Flood Preparedness Training	March 2015
Livelihood Diversification Training	October 2015
End-line survey	At the end of intervention period
Bi-weekly meetings of beneficiary households to be convened with the start of the intervention	

Role of community level extension workers (i.e., village coordinators):

Group meetings of beneficiary households were planned to be convened by community-level extension worker whose role would be to assist the participants to:

- Keep an account of savings in the coin box
- Help the female participant to transfer the savings from the coin box to a savings account in a bank/cooperative
- Disseminate information on financial services, flood preparedness, and livelihood diversification
- Identify constraints in achieving the savings goals, flood preparedness goals, and livelihood diversification
- Recap the lessons provided during the trainings
- Visit the beneficiary households once a month

Selection of implementing agency and human resources for AR

The core team at ICIMOD for AR in Udayapur comprises:

- Senior Social Scientist
- Migration and Population Specialist
- Rural Enterprise and Value Chain Specialist
- Survey Research Specialist
- Food Security Economist
- Senior Gender and Climate Change Specialist
- Research Associate – Statistics
- Consultant to serve as liaison between ICIMOD and implementing agency

Additionally, ICIMOD hires independent consultants if needed.

Nepal Institute for Development Studies (NIDS), an organization based in Kathmandu, was selected as an implementing agency for the AR. After meeting various NGOs in Gaighat, the staff at ICIMOD observed a lack of local organizations with professional experience on migration issues. This was one of the reasons to select a Kathmandu-based partner. Though NIDS primarily identified itself as a research organization and had limited experience in implementation, it had considerable experience in research and policy engagement on migration. Since the beginning, this AR had envisaged engaging with policymakers and development partners to explore means of mainstreaming migration in climate change adaptation and disaster risk reduction programmes. The professional network and experience of NIDS's sociologist (earlier "Executive Director of NIDS") at the policy-making level was considered during the selection process. NIDS's sociologist is a renowned expert on migration in Nepal and has been part of several government commissions on migration.



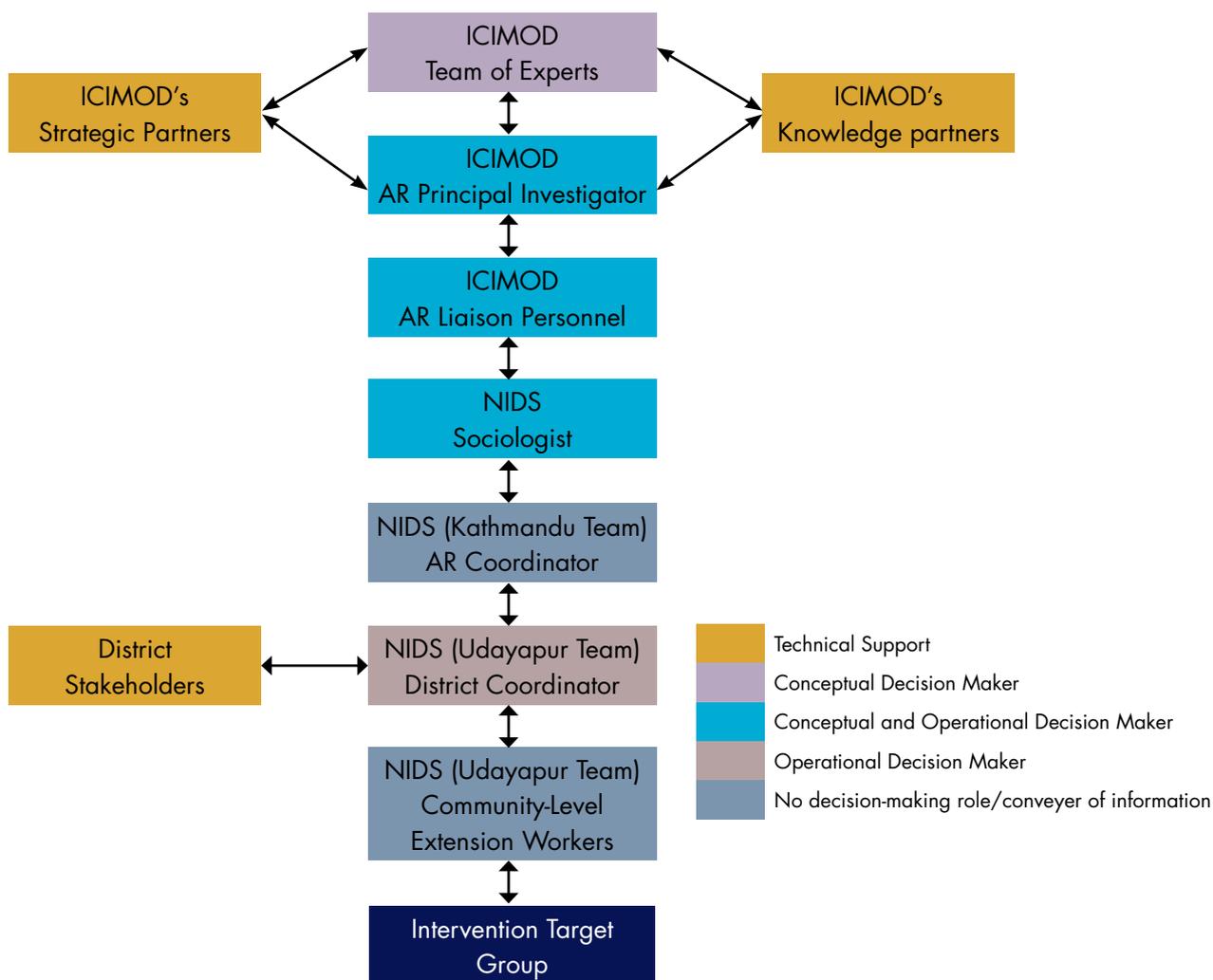
The team of implementers at NIDS comprised:

- Sociologist
- AR coordinator (one based in Kathmandu)
- District coordinator (one based in Udayapur)
- Village coordinators (four community-level extension workers)

The AR coordinator, district coordinator, and community-level extension workers (i.e., village coordinators) were to be managed by the implementing agency.

The Centre for Study of Labour and Mobility (CESLAM) was selected to conduct the baseline survey in Udayapur in 2014. The end-line survey was conducted by Shodhashala in 2017.

Figure 3: Process flow intended at the beginning

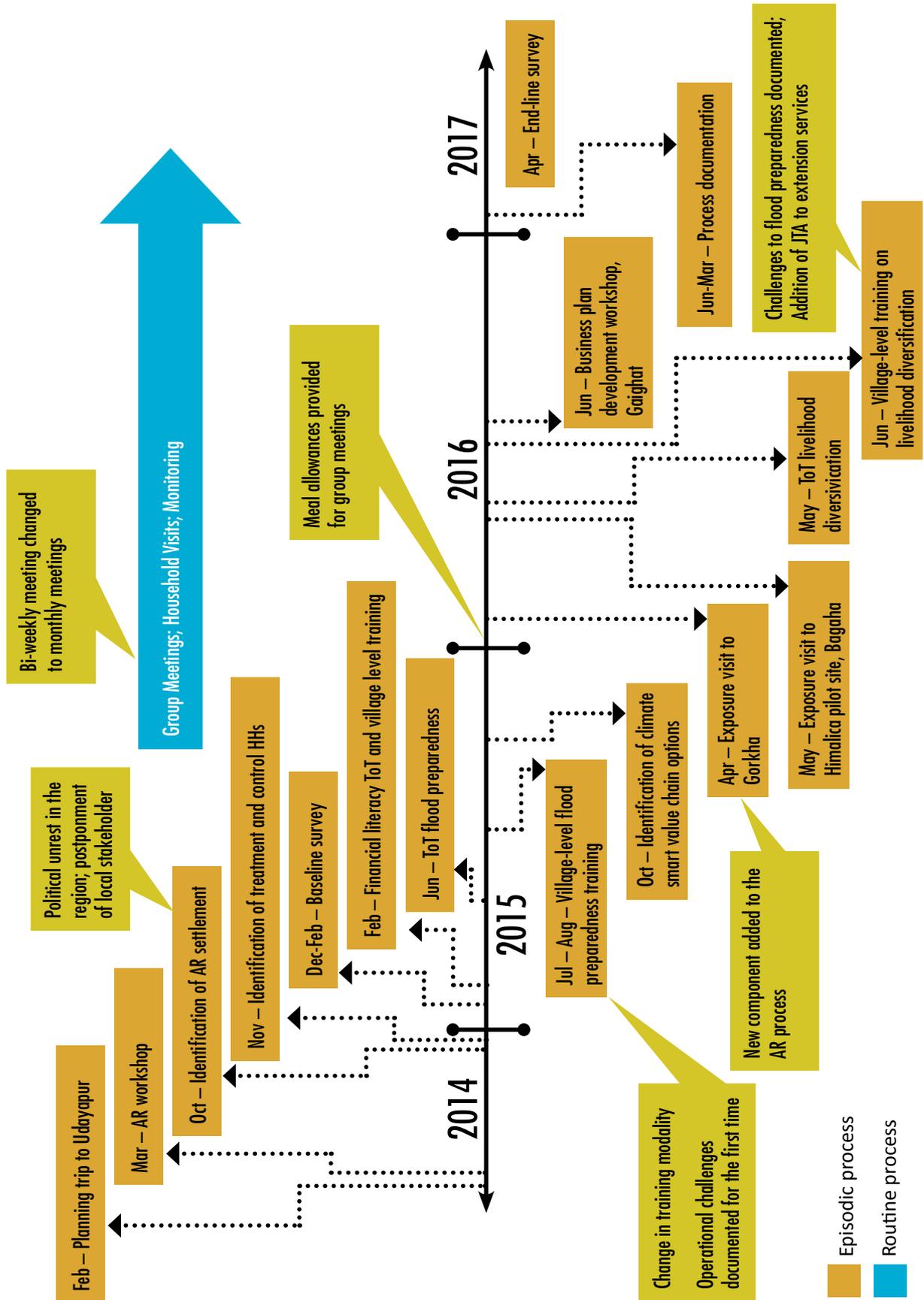


While the implementation plan in the concept paper does illustrate how the process was intended to flow, the diagram above attempts to show the planned operations of the AR in more detail. A hierarchical flow of operations was desired by ICIMOD and the implementing agency at the commencement of the AR (Figure 3). For ICIMOD, it was desirable based on its recent experience with the implementing partner in Assam, India carrying out similar research. NIDS's sociologist also liked the operational modality, as he credited the hierarchical model with a better flow of communication and a robust chain of command. On the other hand, he insisted that the modality also has space for information sharing among all collaborating partners.

A noteworthy aspect in the process flow is decision making and makers of the process. Decision making for this AR may be observed at two levels: conceptual and operational. The conceptual decision making refers to those decisions that can qualitatively affect the process after it has started. It is also part of the iterative design process

of the AR. Operational decisions pertain to everyday decisions made in the field, which are expected to keep the process flowing as intended and are not anticipated to significantly affect the quality of the process. The diagram illustrates three levels of decision makers in the AR process in Udayapur. The team of experts at ICIMOD made significant changes in the process based on information relayed by the implementing agency; ICIMOD's Principal Investigator made both conceptual and operational decisions; and NIDS's sociologist served as conceptual and operational decision maker to ensure a smooth flow of activities.

Figure 4: Action Research activities: timeline



Part 3: Measurable Actions

This part of the report documents the process of the AR as it happened. It has been compiled from documents generated during the process and from interviews conducted as part of the documentation. Overall, the processes of the AR may be categorized into two: Episodic and Routine (Figure 4).

An Episodic process can be regarded as singular events at different points of time in the AR that necessitated the collaboration of multiple actors. These events were integral to the process, as it involved interactions among many stakeholders (more than two) and were points in time when significant exchange of knowledge took place. Routine processes, as the name suggests, are activities that have been periodically carried out to keep the process going and primarily involve two or less stakeholders.

Episodic processes of the action research

Identification of research settlements (October 2014)

A local stakeholder consultation was planned at the onset of AR process in October 2014. It was reported, at the time, that consultation could not be organized as planned due to political unrest in the region. Instead, the District Coordinator (DC) interacted with an official at the District Development Committee (DDC) to identify potential intervention areas based on the following criteria communicated by the Principal Investigator of the AR.

- Minimum one incidence of riverine/flash flood during the last two monsoon seasons
- High incidence of outmigration for work (minimum 30% of the households have at least one migrant worker living or working in another village, town or city in Udayapur district, other parts of Nepal, or another country)
- Ease of physical accessibility
- Strong presence of the implementing partner
- Interest of the community members
- Feedback of the district-level stakeholders

The recommendations received by the DC were communicated to the researchers for identification of the research settlements.

Community level consultations (October 2014)

Based on the information received on the identification of research settlements, community consultations were carried out in October 2014 by community-level extension workers, hereafter Village Coordinators (VCs), in eight VDCs of Udayapur district (Table 3). The VCs were supported by the DC.

All the VCs followed a semi-structured guideline during consultations to seek information from the participants. This format was designed based on inputs from community consultations in the AR research site in Assam, India. Although eight VDCs were selected for community consultation, Tawashree and Saune VDCs were dropped after consultation because these did not meet all the selection criteria. These consultations also resulted in the identification of Wards within respective VDCs for AR activities (Table 4).

Table 3: Details on community consultation

VDC	Ward	Date	Number of local participants
Rampur Thokshila VDC	1	28 Oct 2014	22
Tapeshwari VDC	1	28 Oct 2014	25
Hadiya VDC	6	29 Oct 2014	25
Jogidaha VDC	2	29 Oct 2014	26
Sunderpur VDC	4	29 Oct 2014	26
Saune VDC	7	29 Oct 2014	22
Risku VDC	4	30 Oct 2014	22
Tawashree VDC	6	31 Oct 2014	23

Table 4: Details on ward selection within VDCs

VDC	Ward	Selection Criteria
Hadiya	5 and 6	<ul style="list-style-type: none"> Highly flood-affected VDCs since 2013 Wards having at least 50% of households affected by flood since 2013 Wards having at least 40-100 households that has been receiving remittances for at least 6 months
Jogidaha	6 and 7	
Rampur Thokshila	4,5 and 6	
Risku	1, 4 and 5	
Sunderpur	2 and 4	
Tapeshwori	2, 4 and 5	

Identification of beneficiaries and control households (November 2014)

The next step in the process was the identification of beneficiary and control households in November 2014. At the conceptual level, the activity was guided by multi-stage sampling¹³. First, the VCs were asked to provide a list of households in the selected wards based on the following selection criteria:

- Minimum one migrant worker who has been living and working in another village, town, or city in the Udayapur district, other parts of Nepal, or another country for at least six months or more.
- Households has been receiving remittances for at least six months.

The preparation of a list of households fulfilling the criteria above was carried out by the VCs based on the information gained from community consultations and served as a basis for a baseline survey. The list was communicated to the ICIMOD team for necessary sampling measures.

Based on this information, the Survey Research Specialist at ICIMOD categorized the wards into control and intervention areas and allocated the number of households to be surveyed for each area (Table 5).

Baseline survey (December 2014 – February 2015)

The baseline analysis of adaptive capacity is a prerequisite to enhancing adaptive capacity. A baseline survey was conducted in the research villages to document the status of:

- Access to financial services (e.g., loan, savings account, and other financial products)
- Access to self-help groups/cooperatives/ financial institutions
- Remittance transfer (e.g., frequency/cost/recipient)
- Remittance utilization
- Flood impacts
- Household-level flood preparedness
- Role of the local institutions involved in disaster preparedness

The baseline for the AR was conducted by a team from CESLAM – ICIMOD’s knowledge partner – based in Kathmandu. The coordination of activities was done by NIDS with overall guidance from the Survey Research Specialist and Liaison Personnel from ICIMOD. It was conducted between December 2014 and February 2015. The findings of the baseline were utilized by the AR team to refine the action research design.

Problem encountered: The baseline team discovered that some of the households identified earlier in the process had not met the selection criteria.

Way out: The information was quickly shared with the AR team. The Survey Research Specialist, along with the Liaison Personnel, intervened to solve the problem by reselecting the households and reiterating the importance of research criteria to the field team. As per the Survey Research Specialist, these were anticipated situations for any survey and measures to rectify were well-established.

¹³ Multi-stage sampling refers to sampling plan in which the sampling is carried out in stages, using smaller and smaller sampling units at each stage, and by utilizing simple random sampling at each stage.

Training of Trainers (ToT) workshop on financial literacy (January-February 2015)

A ToT on financial literacy was organized in Kathmandu from 30 January to 1 February 2015. The objective of the ToT was to develop the capacity of village coordinators to provide financial literacy training in the intervention areas.

The manual for training was developed by ICIMOD with inputs from the Swayam Sikshan Prayog (SSP), NIDS, and IOM-Nepal. The SSP had already developed the financial literacy manual for the AR in Assam, India. This document formed the basis of the training manual in Nepal. The NIDS had engaged a financial expert to identify good practices from financial literacy programmes in Nepal. Lessons were also drawn from the Financial Literacy Manual prepared by the IOM-Nepal and Nepal Rashtra Bank (NRB). The focus of ICIMOD-NIDS's financial literacy manual on risk management in the context of extreme weather events plugs a gap in the IOM-NRB manual. Five Master Trainers were utilized to conduct the ToT. The training involved the DC, four VCs, and three additional participants from the community. A report on the episode was prepared by NIDS. One of the Master Trainers from the SSP, a partner in the AR in India, was invited as an expert and to share the experiences of the training in Assam.

Village-level training on financial literacy (February 2015)

Following the ToT, training on financial literacy was organized in all intervention areas between 14 and 25 February 2015. The objective of this training was the transfer of knowledge on financial literacy to the research participants.

The training was conducted for three days in each of the intervention sites and followed the Financial Literacy Training Manual. The training was organized at intervention sites to make it easy for the female participants to attend the training, as opposed to having to travel to a centralized location such as Gaighat (Table 6).

The participants were provided a household budget book at the completion of the training to record their monthly income and expenses and a coin box for each participant to use for savings. It was assumed that the household budget book would help the participants keep an account of income and expenditures. If the participants could identify essential and non-essential expenses, it would help them to better manage their household income. The presence of the coin box was expected to encourage the participants to save on a regular basis. Its presence in the household is symbolic and a constant reminder to the participants about regular savings. The VCs encouraged the participants to transfer the savings to their individual accounts in the cooperative on a monthly basis. In many cases, the VCs had initially accompanied the participants to the cooperative and helped them to open an account and become familiar with the cooperative's functions.

Table 5: Allocations for survey

VDC	Ward No.	Eligible households	No. of HH to be surveyed
Intervention Area			
Hadiya	6	47	29
Jogidaha	7	43	26
Rampur Thokсила	6	75	46
Risku	5	40	24
Sunderpur	4	60	37
Tapeswori	2 & 4	63	38
Total		328	200
Control Area			
Hadiya	5	53	34
Jogidaha	6	49	31
Rampur Thokсила	4	40	25
Sunderpur	2	80	51
Risku	4	53	34
Tapeswori	5	39	25
Total		314	200

Table 6: Financial Literacy Training, Participants

SN	Village	Number of participants
1.	Hadiya-5	38
2.	Jogidaha-7	31
3.	Rampur-6	47
4.	Tapeswori-2&4	38
5.	Sunderpur-4	47
6.	Risku-5	30
Total		231

Problem encountered: Many of the participants are unable to read and write. Hence, they could not record their income and expenses in the household budget book by themselves.

Way out: The VCs supported these participants to record their income and expenses in the budget book. Some participants had sought assistance from other family members.



Training of Trainers (ToT) on Flood Preparedness (June 2015)

The ToT on Flood Preparedness was organized by NIDS in Gaighat, Udayapur from 29-30 June 2015. The training, initially planned for the month of May, was delayed because of the earthquakes that occurred in Nepal in April and May of that year. The objective of the ToT was to develop the capacity of village coordinators to deliver flood preparedness training in intervention areas and effectively follow up on the same.

The training manual was developed by ICIMOD with inputs from the Swayam Sikshan Prayog (SSP) and NIDS. The SSP had already developed the flood preparedness manual for the AR in Assam, which formed the basis of the training manual in Nepal. This process of training manual development ensured a transfer of knowledge generated from one research site to another.

The key contents of the training were:

- Linkage between financial literacy and flood preparedness training
- Importance of flood preparedness
- Flood preparedness planning process and its components
- Go Bag/Flood Survival Kit
- Savings Plan, Expenditure Plan, and Flood Preparedness Plan
- Do's and don'ts during a flood

The training was attended by six personnel from NIDS, including DC and VCs, and facilitated by four Master Trainers (including one from the SSP who was invited as an expert and to share experiences from the training in Assam). Although the duration of ToT was planned to be three days, it was reduced to two days. Disruption of normal activities following the earthquake and limited time in light of the month of July being plantation season in intervention areas, led to the operational decision to reduce training days. However, the content of the training was not compromised; rather, it was consolidated by organizing a residential training starting early in the morning and running until late in the evening. The team of Master Trainers and participants also visited intervention sites after the completion of ToT to arrange dates for village-level training.

Village-level training on flood preparedness (July – August 2015)

As per the suggestion of the participants during the visit by NIDS after the ToT, the contents of the three-day training were divided into eight weekly meetings. The reason cited was unavailability of the participants during the plantation season and monsoon that followed. The opportunity of the interaction was also taken by the visitors to introduce various components of the training to the beneficiaries. The weekly trainings of two hours each were conducted by four VCs in their respective VDCs in the months of July and August 2015. This process was supervised by the DC. The proceedings of the revised training were documented by the NIDS team, and the report indicates that the following achievements were made by the participants:

- Understanding the importance of savings in flood preparedness
- Identifying local organizations who work in the area of disaster risk reduction
- Precautions and first aid of snake bites
- Ways to prepare go-bags
- Do's and don'ts during, after, and in between floods
- Understanding potential risks and ways to address them
- Prioritizing savings

Problem encountered: Disruption of normal activities following earthquakes and limited time at hand to conduct the ToT as planned.

Way out: A residential ToT was organized to address local conditions without compromising the content. This was done in consultation among the AR team and participants.





The training was attended by around 220 women in six intervention areas over the period of eight weeks.

The report prepared at the end of the 8-week training also includes a list of challenges and ways out devised by the implementers during the process.

Of the challenges (Table 7), the VCs recalled that encouraging women from disadvantaged groups to mingle with other group members was particularly difficult and their household visits to convince them were yielding limited success. While the expected level of participation in group meetings was not achieved, the VCs suggested that their retention in the AR process showed that these women were interested in the interventions. A few participants also expressed that their migrant husbands were not supportive of their engagement. The VCs were unable to address the situation, as the spouses were absent.

Table 7: First documentation of challenges

Challenges	Way out
Unavailability of time for study participants during plantation season, hampering their frequency of meeting participation	More household visits by VCs to reinforce the learning of the training
External factors such as political strikes hampering the follow-up meetings	More frequent phone calls by VCs to study participants in respective villages
Participants from Dom community, the Madhesi dalits, showing less interest in the process and challenges to mingle with group members from other communities	More household visits by VCs to convince them
Family members of a few participants, particularly migrant husbands and sons, not supportive of their engagement in the process.	The VCs to convince the family members through the participants
Since nature of the data collected is private, participants are hesitant to report their actual income, including remittance.	The assurance of confidentiality to be reinforced by the VCs
Only a few means of water purification available locally	Potential solutions were explored.

The aforementioned report also attempted to capture the impressions of implementers through comparisons among different intervention sites. The highlights of those observations were:

- Identification of a village that was “performing very well” (Hadiya VDC) and probable factors contributing to that performance (e.g., sociocultural composition of the communities and performance of VC)
- Identification of a village where participants had dropped out from the process (Risku VDC) and probable factors contributing to the situation (poor performance by VC, resulting in misunderstanding about action research among participants; some participants migrated to nearby town).

Identification of value chain options (October 2015)

Identifying value chain options was incorporated in the AR process for the following purposes:

- Generate income from an alternative source, which was less at risk from floods
- Generate additional income by using the comparative advantages of the area
- To adopt new technology
- Strengthen value chain governance by bringing in chain actors in one platform for collaboration and coordination
- Strengthen market linkages
- Strengthen access to information in relation to selected value chain
- Livelihood diversification training was envisaged as an incentive to engage the beneficiaries about financial literacy and flood preparedness

ICIMOD hired an independent consultant to conduct a value chain analysis. A report was submitted by the consultant in October 2015. A commodity matrix ranking approach was undertaken by the consultant to select the potential “climate-smart” value chain options. The field work for the process was carried out in five of six treatment rural wards. A report on the process identified the following sub-sectors for further analysis:

- Bamboo
- Goat meat
- Green pea
- Milk collection and selling
- Fish farming
- Drum stick (moringa)
- Rajma bean
- Sugarcane juice making
- Bay leaf transport service from upstream areas to downstream areas

The Rural Enterprise and Value Chain Analyst at ICIMOD recalled that the idea was to provide knowledge about a product that would sell well in the market, which is of interest to the participants, and least affected during the flood seasons. Of the options identified by independent consultant, goat meat was explored, as it had good value in the local market. However, the idea was dropped after considering the difficulties that could arise during flood season to keep the goats safe. While other options were explored, it was decided after an assessment that pea farming was the way to go. It had a good market, could be started on a small piece of land, and had the comparative advantage of study participants already having knowledge of the farming through traditional means.

Exposure visit to earthquake-affected VDCs in Gorkha district (April 2016)

This event in the process was unplanned at the beginning of the action research. Apparently, it follows from the AR team’s realization that study participants were still not prioritizing disaster preparedness as expected, even after receiving flood preparedness training. Monitoring visits at the time showed that many participant households had not prepared a Go-bag. Furthermore, numerous unanticipated grievances were arising from the study participants that basically led to them asking the implementers, “What is this programme going to give us?”

The following assumptions were indicated by the AR team in the event report about adding this component in the process:

- *“We assumed that a visit to the earthquake-affected villages would help the beneficiary women visualize the impacts of the unexpected disaster”.*
- *“An interaction between the women from the AR villages and earthquake-affected households would help the former to better understand the role of household level preparedness to manage risks”.*
- *“We assumed that the earthquake victims in Barpak and Laprak would learn to be prepared for a crisis from our participants by interacting with each other”.*

Barpak and Laprak VDCs in Gorkha district, Nepal were the epicentre of an earthquake in April 2015. The VDCs were reported physically devastated in the aftermath.

At the implementation level, this event started in April 2016 with pre-trip video documentation and ended with the screening of documentary and sharing of experiences by visiting participants among their peers upon return. A team of 15, including six from implementing agency, six women from the intervention area, two video journalists (hired independently by ICIMOD), and liaison personnel from ICIMOD went on the exposure visit. The following achievements of participants were recorded in the report prepared by NIDS at the end of the trip:

- Realized the importance of disaster preparedness training
- Perceived high value of saving money for uncertainty
- Realized that victims cannot get help immediately after the disaster
- Knew different nature and impacts of earthquake and flood
- Knew about additional household income from home-stay schemes
- Realized the importance of education, vocational skills, and practice in real life for surviving

This component was not added by an operational decision, but was adjusted at a conceptual level in response to the feedback received by the Principal Investigator (PI). The PI felt this was an opportunity to create a scenario of peer-to-peer learning.

Training for Trainers (ToT) on Livelihood Diversification (May 2016)

After the identification of the value chain options, the training of trainers on livelihood diversification was organized in Gaighat. The objective of the training was to develop the capacity of DC, VCs, and representatives from the six treatment villages, which would assist them to organize village-level livelihood diversification training and effectively provide extension services. The training was facilitated by six people and received by 17 participants over the course of two days (8-9 May 2016). Prior to this training, a training manual had been jointly developed by ICIMOD and an independent consultant. The following achievements of participants were highlighted at the completion of the training:

- Enhanced knowledge about livelihood diversification (e.g., cultivation of green peas, biochar, and business planning)
- Increased capacity to conduct training and provide extension services related to business planning, preparation of biochar, and cultivation of green peas
- Better clarity on various aspects of the training module
- Increased confidence among the village coordinators.

Problem encountered: Since the participants for the Gorkha visit would be a select few, the AR team anticipated that it could create expectations among other group members.

Way out: Each women’s group selected one representative to participate in the Gorkha visit. The AR team provided other opportunities for peer learning. For example, another group of women visited the ICIMOD-CEAPRED pilot site in Udayapur. A few others had participated in a ToT on livelihood diversification, which was organized in Gaighat. Some participants had the opportunity to interact with an IOM team that had visited Udayapur to prepare a documentary.



The use of biochar in peas farming was introduced in this component to transfer innovation and knowledge to the study participants. It was assumed that using biochar would increase the production of peas, contribute to environment-friendly ways to do agriculture, and reduce the expenditure on fertilizers.

Village-level training on Livelihood Diversification (June 2016)

The village-level training on livelihood diversification was organized in all the treatment villages between 4 and 10 June 2016. The duration of the training was two days in each treatment village. This training focused on growing green peas and other vegetables at a commercial scale and involved discussions on production practices, sorting, grading, and market linkages. Additionally, it was also used to recap the learning of earlier trainings on financial literacy and flood preparedness. A total of 163 women from six intervention sites participated in this training. Detailed information on the participation of the women on each day of the training in table 8.

Table 8: Participant details on Livelihood Diversification Training

Name of VDCs	1 st Day	2 nd Day	3 rd Day
Risku	19	20	20
Rampur	41	41	41
Sunderpur	45	45	45
Tepeswori	33	33	33
Jogidaha	24	24	24
Total	162	163	163

Two observers from WWF, Pakistan participated in this training, as they were responsible for undertaking a similar AR in Pakistan.

A noteworthy situation in the process during this episode was the delay in organizing the training in Hadiya VDC. A small group of participants there demanded daily allowances for the training period, which was not allocated in any of the trainings, and obstructed the proceedings of the training. This was an unexpected consequence of the Gorkha exposure visit. The participants of the Gorkha trip had received a daily subsistence allowance. Upon their return, they had mentioned this to their peers. A few had misunderstood this and assumed that an allowance was to be provided even when the meeting is taking place in their own village. The situation was later resolved by the DC and respective VC. Finally, the training in Hadiya VDC was organized in the last week of July.

Documentation of the event lists the following achievements at the completion of the training:

- Reiterated the importance of financial literacy and flood preparedness
- Improved understanding about business planning
- Prioritized use of biochar and cultivation of green peas

As part of this training, the study participants were trained to prepare biochar. A consultant, hired by ICIMOD, gave practical lessons on making biochar. Furthermore, an exposure trip to the ICIMOD-CEAPRED site in Udayapur was organized. A few participants were nominated by their peers to participate in this visit.

Furthermore, table 9 shows the challenges and ways out observed by the implementers at that point in time in the process.

Table 9: Challenges to the process

Challenges	Way out
The DC and VCs were unable to address green pea cultivation-related queries from participants on their own.	A Junior Technical Assistant (JTA) was recruited to support the participants to grow vegetables during pre-monsoon and post-monsoon seasons.
Lack of a water-purification filter in the local market	Suggestions to hire an expert to train beneficiaries in making water filters
Go-bags not prepared in all households	VCs were to provide continuous motivation, and documentation of the reasons for not preparing go-bags.

End-line Survey (April 2017)

The end-line survey was carried out by Shodhashala in April 2017, indicating the closure of the AR process.

Routine process of the AR

The first of the routine processes devised in the AR was the group meetings of beneficiary households in research villages. Other activities emerged as part of the everyday operations of the AR and were guided by the process flow developed by the AR team.

Group meetings

The group meetings of the participants followed the completion of village-level training on financial literacy in February 2015. However, the intended bi-weekly meeting quickly changed to a monthly meeting because the participants in all the intervention sites suggested that they could not attend twice a month as they had other priorities too. The meetings were organized regularly over the two years, even if their frequency decreased. The change also reflected the flexibility of the approach to accommodate the inputs of the participants. Hence, a fixed date in a month was planned in each of the intervention sites for group meetings. The proceedings and decisions made by the group were recorded in the minutes of each meeting by the VCs.

Here is an excerpt of an interview with a VC describing the proceedings of a monthly meeting:

"The monthly meeting usually lasts for 2-3 hours . . . in the meetings . . . we discuss new programmes. . . what has happened in the month . . . follow up on whether the commitments made in earlier meetings have been kept by participants or not, for example, if they have prepared Go-bag or not . . . the information of the individual budget book is also collected . . ."

(Interview, Rampur Thokshila VDC, Process Documentation)

Here is an excerpt of the interview with a study participant about monthly group meetings:

"We meet on the fourth day of every month . . . in the beginning we used to meet twice but, in the villages, as you know, we go here there and cannot always meet . . . we have to prioritize our livestock and agriculture . . . we submit the form on expenses that we have made in the month and she [VC] shares the advices and suggestions that have come from the top . . . we listen, we attend and share our daily life and sorrows with each other . . . this is how it is."

(Interview, Sunderpur VDC, Process Documentation)



Another revelation was the introduction of lunch in the group meetings. A small amount of lunch money (Rs 50) in was provided to the participants since 2016 to motivate their participation. Providing such an incentive was not part of the initial plan.

Household visits

A routine activity in the process is for the VCs to make household visits to the participants. Household visits started along with the group meetings and happened regularly during the course of the AR. The VCs made plans to visit each participant household in their respective area at least once a month. Whenever a group meeting was difficult to organize or an individual was unable to participate, additional household visits ensured that there was interaction between the VCs and the beneficiaries. The purpose of the household visits was to help the participants, if needed, with anything related to the AR process, reiterate learning from trainings, and receive feedback that may not have been shared in a group, and stay in touch with the family of the participants. The VCs made household visits starting in February 2015 and, were in regular contact with the study participants. The DC, based in Gaighat, visited the intervention sites once a month.

Reporting of collected data and information

NIDS established a system of periodic collection of data and information. A guideline was used by DC to make weekly calls to VCs and participant women. This information was compiled in periodic progress reports by NIDS and forwarded to the PI. Reports of episodic events were also prepared and shared in a similar manner. A structured format, developed by ICIMOD, was used for collecting monitoring data on selected indicators for each month during the group meetings.

Livelihood diversification activity and addition of extension service

A routine activity that emerged after the livelihood diversification training was pea farming and associated extension services. The process of procuring pea seeds and distributing them to the participants started after the training in July 2016. A planning calendar shared by the NIDS team shows that the plantation started in the intervention sites in September 2016. Only the households that participated in the cultivation of peas were given a 40 percent subsidy to buy pea seeds (Table 10).

A Junior Technical Assistant (JTA) on agriculture was also hired by ICIMOD in June 2016 to support to study participants. ICIMOD staff felt it was necessary to add a JTA because the participants needed expert opinion and guidance to grow green peas. Moreover, the JTA ensured correct application of biochar for pea farming and made routine visits to the participant households to provide technical backstopping.

At the time of this documentation, the first cycle of pea farming had ended in the villages with moderate success. Some of the participants met during the documentation expressed dissatisfaction over the pea farming activity and reported a low yield because many saplings had died. The DC explained that many of the pea plants in the first cycle had died due to various factors: *“There were no conclusive results of what went wrong. We sent the samples to two institutions and found different results”*. It was understandable that the people had grievances, for they had also invested money in the process.

This is what a husband of a study participant, understandably irritated, had to say during the process documentation visit:

“. . . see this is all what programme has been doing . . . help me understand . . . all this that you are doing, what is objective of this? Is it to give us skills only or will any programme be implemented? What is the benefit of this? Nobody among the participants here are clear about what this programme will do. Should not the objectives be clear to us?”

(Interaction, Jogidaha VDC, Process Documentation)

There are a few matters to consider here regarding what the husband said. First, it was an understandable irritation caused by recent loss, albeit of minimal monetary value, in pea farming, and the process documentation visit was an opportunity to vent their feelings. Second, it may also be an instance of a family member who was not supportive of their wife’s participation, a point that had been raised earlier in the process as a challenge by the implementers. Third, it indicates that community members perceive a programme that focuses on income generation and technology as more beneficial than one that focuses on human capital (e.g., building awareness, knowledge, and planning capacities).

During the field visits, study participants also complained that the JTA had not been able to provide support when needed and some remarked that the peas farmed according to the JTA’s suggestion showed no results, while their own ways did. There was reportedly a lack of coordination between the NIDS’s field team and the JTA hired by the ICIMOD.

Subsequently, a new JTA, hired by NIDS, was appointed in January 2017. The team also tried to introduce other vegetables to the participants (e.g., gourd, bitter gourd) as a result of limited success in green pea farming in the first cycle. It was deemed important to diversify vegetables and not to depend on green pea alone.

At the end of field visits for process documentation in February 2017, the field team, including the JTA, were busy distributing new saplings to the study participants.

Table 10: Number of households participating in pea farming

VDC	Number of participating households in first cycle	Number of participating households in second cycle
Jogidaha	13	7
Hadiya	7	9
Sunderpur	24	23
Tapeshwori	2	17
Rampur Thokshila	8	6
Risku	10	9
Total	64	71



This is an excerpt of the field note kept on the day after the distribution of saplings was carried out in Hadiya VDC:

“On our way to Rampur Thokshila VDC, we met the VC and JTA in Hadiya VDC. They had distributed the new batch of saplings the day before. They reported to the DC upon meeting that the distribution had been haphazard, with many participants claiming the units of saplings. Some who had not participated in the pea farming also came to get the saplings. These new saplings were originally meant to compensate those who lost in pea farming. The VC and the JTA requested the DC to draw allocations for distribution, for their say had not been heeded by the participants.”

(Field note, 4/2/2017, Process Documentation)

Closure of the AR process

In March, 2017 VCs informed participants about the impending closure of the intervention. The end-line survey was carried out in April 2017. A revision of key lessons on financial literacy, flood preparedness, and livelihood diversification was the main agenda of group meetings in April and May 2017.

It is also important to note here that the number of households receiving intervention at the end of the process was 221, and there were only 19 dropouts by participants from the process over 28 months.

Part 4: Reflections

The aim of this part is to present findings of the process documentation. It includes attributes of the AR process, common themes of process that were identified during interviews and interactions with the researcher and implementers, and observation and analysis of the documenter.

Attributes of the AR process in Udayapur

The AR process in Udayapur was labour-intensive and transdisciplinary. It involved following individuals (core team) – those who were engaged in more than one process, episodic or routine – during the two-year period in Udayapur (Table 11).

Table 11: Core team of the AR process in Udayapur

Organization	Number of individuals involved	Included expertise
ICIMOD	8	Senior Social Scientist; Migration and Population Specialist; Gender and Climate Change Expert; Survey Research Specialist (one turnover); Food Security Economist; Rural enterprise and Value Chain Specialist; Research Associate-Statistics; Independent Consultant (one turnover)
NIDS (Kathmandu)	4	Sociologist; AR Coordinator (two turnovers)
NIDS (Udayapur)	8	District Coordinator; Village Coordinator (one turnover); JTA (one turnover)

Table 12: Other contributors to the process

Organization	Number of individuals involved	Included expertise
ICIMOD	1	Creative Communication Specialist
CESLAM	12	Baseline Data Collection
Independent Consultants	3	Video journalist; Process Documenter; Agriculture and Value Chain Expert
Shodhashala	11	End-line Data Collection

The process also involved those who were involved in one of the AR activities.

Additionally, independent consultants were hired by NIDS during different trainings of the process. Furthermore, the process benefitted from those involved as ICIMOD's strategic partner during the two-year period and partners from other AR sites (Table 12).

There were turnovers in both the ICIMOD and NIDS team during the two years. One of the turnovers, from ICIMOD, hired as an independent consultant to liaise between the AR team and implementing agencies, was not replaced. Other turnovers were replaced by a new person in the same position at NIDS. Also, an extension worker was added to the field team in the role of JTA.

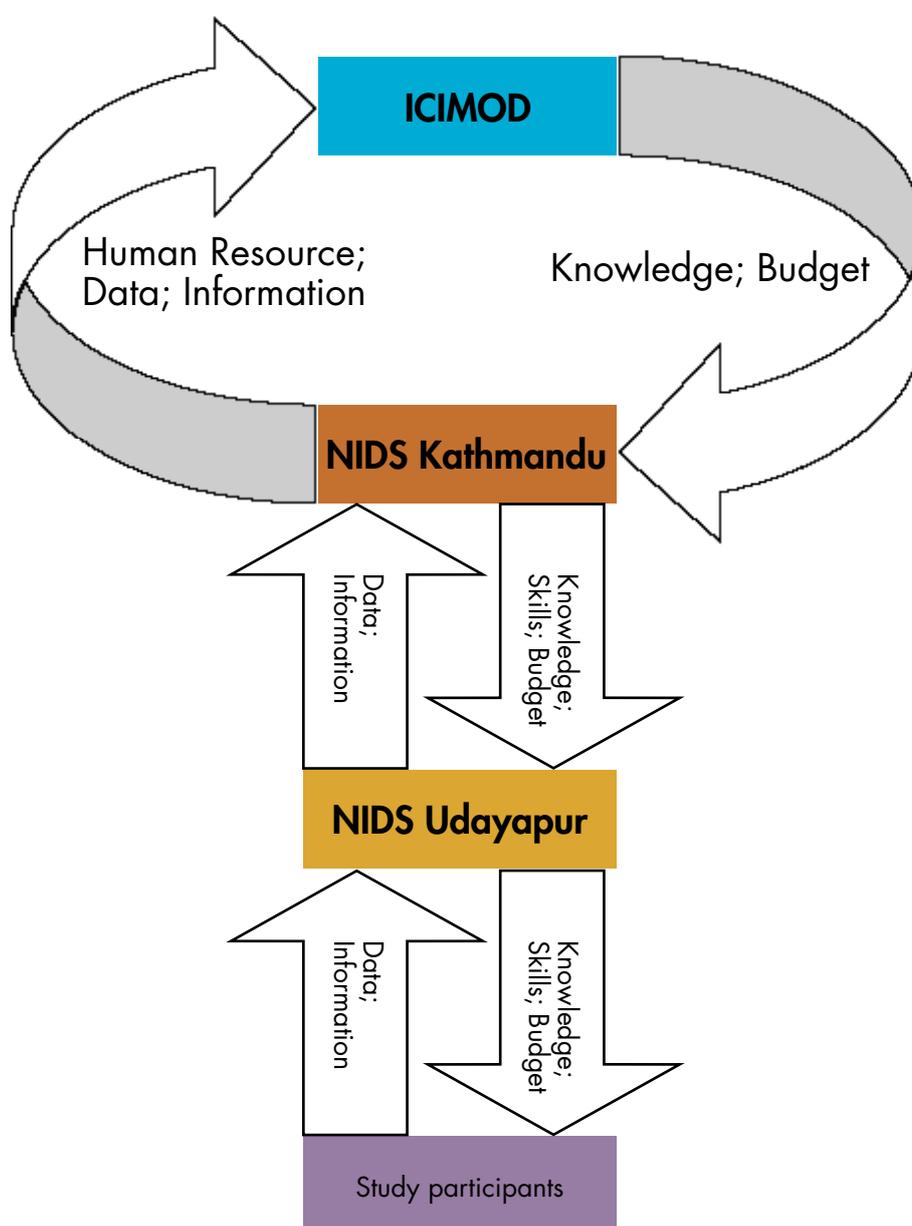
A key characteristic of the AR process was its transdisciplinary nature. The AR in Udayapur was a collaborative effort of not just the organizations involved but also the individuals within each institution. The transdisciplinary nature was explicit in the conceptual process of the AR, with collaboration among experts from different backgrounds contributing in the design; however, it was not emphasized at the operational level. For instance, the disciplinary backgrounds of the VCs – who all have the same role – are not emphasized in the process. But they have different levels of qualifications from different disciplines and are from different social groups. This point is highlighted here because diversity can be both an opportunity and a challenge.

The structure of the process flow intended at the beginning was hierarchical (Figure 3). However, patterns of

relationships that keep the process flowing are not necessarily hierarchical. New communications patterns can emerge as the process evolves. It was revealed that the role of the DC and liaison personnel were the key to smooth operations, as they bridged between decision makers and implementers. They covered all the intervention sites, maintaining relationships with all the participants. In the last year of the process, the direct communications channel between the PI and the DC was initiated through social media applications. This was initiated basically to receive direct information from the field rather than through hierarchical filters intended at the beginning and also to fill the gap left by liaison personnel. Thus, it shows that the AR process is dynamic and evolves with experience and need.

A remarkable aspect of the AR process was the multiple roles of individuals involved in the process. A majority of the core team are engaged in other tasks, work, or jobs, too. Moreover, the study participants also have roles in other groups they are associated with in the villages. It implies that the majority in the process have allocated a certain amount of time for this process, but not full time. It was observed in the previous part of the report that unavailability of time for some of the participants resulted in fewer group meetings than was intended. However, a measure of the period of engagement in the process and its effect on the results of the process may be a point for evaluation, but not for process documentation.

Figure 5: Transactional content of the process



The transactional content of the process refers to what was exchanged between the different actors. The main transactional content of the AR process in Udayapur was knowledge and information. It has been visualized in figure 5.

It is obvious that the cornerstone of exchange in the process was communication. Communications in the process of transferring knowledge and skills have taken place through trainings, group meetings, household visits, exposure visits, and interpersonal interactions. While the key components of knowledge transfer were done through trainings at two levels, the learning was reinforced through communication during group meetings, household visits, and exposure visits. The diversity of actors in the process, here too, offers a challenge and learning.

Here is what a VC had to say on language barriers encountered in the field:

"We need to understand in what ways will they [participants] understand what we are saying. Different cultures have different ways of understanding. For instance, two of the intervention sites have a majority of Chaudhary people and, at first, I did not know how to speak their language, but later I learnt as I worked. Now I can explain to them in their own language and style and they understand better."

(Interview, Rampur Thokshila VDC, Process Documentation)

Reflections on the process

Enabling environment

The enabling environment, here, refers to those aspects of the process which contributed to the continuity of the process over the past two years and more.

Novelty of knowledge transferred

The first feature of the process that was remarked upon by the field team members of the AR was the novelty of the knowledge being transferred. At the conceptual level, using financial literacy for flood preparedness was innovative



in design and was strengthened by livelihood diversification activity. The activities carried out in the process and the transactional content of the process were appreciated by the participants and acknowledged as useful in daily life. A participant interviewed during the documentation echoed this feeling:

“Yes, sir and other people come time to time and make us understand. They have explained also, for us what is beneficial, what is not. We like the organization. Before we used to farm in our own way but this way was better, for example making and using bio-char, yes, we like that very much. We had not done farming that (modern) way before.”

(Interview, Hadiya VDC, Process Documentation)

Addressing the core concerns of community members

An indication that the process has been addressing core concerns of the people in the study area was observed in a case in Hadiya VDC. A dissatisfied study participant who had impeded the organizing of the livelihood diversification training initially and had vocally left the process was found re-joining the process. During her interview she was asked why she re-joined the process.

“When I understand and commit to something then I, um . . . when I get satisfaction then that is it. It is not always about benefits only, sometimes there might be some loss . . . I have saved in the coin box, even if I don't have much, I have about ten thousand, in the future it may be fifty thousand or a lakh . . . well, at least I will remember NIDS had made me do this, and that is my goal. I will remember which organization made me achieve that.”

(Interview, Hadiya VDC, Process Documentation)

One may assume that retention in a voluntary process in such manner can only be achieved if it has been addressing some concerns of those involved. Moreover, each participant interviewed appreciated at least one component of the process, whether it was the usefulness of keeping a household budget book or a go-bag.

Tactful field team

The tactfulness of the field team in Udayapur has also contributed to the continuity of the process. Despite numerous challenges in the field, the field team managed difficult situations well. The friendly manner of this team with the participants could be observed during visits and a sense of relationship beyond project activities among implementers and study participants was felt.

Flow of knowledge and sharing of ideas among stakeholders

The process benefitted amply from the flow of knowledge between three AR sites in India, Nepal, and Pakistan, and the sharing of ideas between different partners. This helped to build in efficiency in the process and ensure effectiveness of the intended action, for instance, through sharing of training manuals and the presence of experts during the ToT. This resulted in effective training on the subject matter. For example, the report prepared by NIDS on the completion of Financial Literacy Training captured the following impressions of the implementers:

“Participants have a high level of queries about the use of the household budget book, emergency fund for flood preparedness, and opening of bank account in their own name.”

“They are committed to implement the skills achieved in the training.”

(NIDS, 2015)

Flexibility in approach

A few conceptual and operational changes were made in the process. Chiefly, three aspects of the process are noteworthy: i) the reduction in frequency of meetings to once a month; ii) the changes in the modality of flood preparedness training from three continuous days to a course of one day per week over eight weeks; and iii) addition of components. These changes were made to accommodate local conditions and the input of participants.



Efforts were made to ensure no training contents were compromised, household visits were made frequently, and expectations were managed. This indicates the process was flexible to manage feedback, particularly from the field.

Decision making and makers

The key decision makers in the process are obvious and do not need much explanation. However, one aspect worthy of reflection is decisions made by those in the process that were not expected to make such decisions. One example is nomination of a group leader among the women participants in the intervention areas. Although the process had intended to collectivize women through the intervention, it had no intention of identifying anyone in the group as leader or any other rank. The decision to nominate a leader in a group was made by VCs early in the process so that coordination among them could be effective. The nomination was made and approved by the group members, and leaders in each group were identified. The PI reflected on the issue,

“These leaders have been quite helpful. I think, lot of times they have actually convinced other participants, and when they have done something, I think it has encouraged others to stick to the process. They are playing a critical role to keep the process running. They had an important role in bringing other participants regularly to the meetings.”

(Interview, ICIMOD, Process Documentation)

Iterative process of the AR

The foundation of the AR process is its iterative design. It allowed the process to constructively address feedback from the participants and mitigate challenges. It was part of the iterative design to allow space and flexibility to make changes in the process to make it better. Exposure visits or providing allowances for group meetings were aimed at better learning and increased participation. Although the implementers refer to grievances and demands made by the study participants as a challenge, it is part of the feedback mechanism put in place by the researchers for an iterative design. An example of iterative design in application was the addition of the exposure visits in the

process. For example, the exposure visit to Gorkha district was added to provide the participants with the counterfactual input of the impacts of a severe sudden-onset disaster, which it was assumed would influence the ways in which participants perceived the necessity for disaster preparedness. It was also intended that the visitors would share their experiences with the peer group upon return. The visit was supplemented by a documentary. The screening of the documentary and group discussions had been organized in all villages. A creative tool had been adopted to ensure that others could also participate vicariously in the exposure visit to Gorkha District. All the field team members agreed that working in the community became easier after the participant's visit and sharing of what they saw in Gorkha. Here is an excerpt of the interview with a participant who had visited Gorkha:

"We went to VDCs and health post, and talked with three sisters there. They said, 'Look didi, when earthquake hit, we went hungry for three days, no treatment was available, how to treat, children went hungry, there was nobody to give anything, nobody came, whatever came was taken by big people.'"

(Interview, Rampur Thokshila VDC, Process Documentation)

"After hearing their experience (of Gorkha visit), we felt that we had to be prepared for such disasters with, like go-bags. Who knows when such things can happen, if there is some preparation. If they (people in Gorkha) had things in their bags, they wouldn't have had to remain without food for three days. There should be some preparedness that is what I felt."

Another participant listening in to the conversation added

Challenges encountered in the process

External challenges

Numerous challenges were encountered during the implementation of the process. Political unrest and disasters such as earthquakes and floods stand out chiefly among the external factors influencing the planned activities of the process. A planned local stakeholder meeting was cancelled at the onset of the process due to strikes in the region, which was later consolidated by a brief presentation to the local stakeholders in a different event. The earthquake in April 2015 disrupted the normal activities of the AR team members from ICIMOD and NIDS based in Kathmandu and consequently delayed village level training on flood preparedness in Udayapur. This led to a change in the training modality (see Part 3).

Monsoon and subsequent floods in the region also challenged the implementers routinely. Here is a VC describing household visits to the intervention area during flood season:

"I have to cross the river to get to that village. Let me tell you a personal challenge, I can do that, can't I? During monsoon, we don't find vehicles easily, so I was walking that day, first there was no water but suddenly water came everywhere (referring to flash flood). I thought I was going to die but, thank God, someone was there to help me . . . he asked where I was going, and I said that I have to go there for this programme."

(Interview, Sunderpur VDC, Process Documentation)

Similar challenges were faced by many participants, and reduced participation during the monsoon season was reported by the implementing team during the process. The number of meetings was reduced during the monsoon. Seasonality also affected the planned schedule of the flood preparedness training and subsequently the training modality had to be changed. High rainfall also affected the first cycle of pea farming.

Managing expectations

A challenge frequently reported at both the conceptual and operational level was "managing study participants' expectation from the process". The context of this challenge was other development programmes in the study area that were observed by the participants as providing different in-kind support while "this programme" did not. The implementing team in Udayapur reported frequently facing such comments as, "This programme takes our information and asks us to do things; what is this programme going to give us?" It was a challenging situation for the

PI of the research because the clarity of objectives and distinctiveness of the AR from other development activities were communicated repeatedly among participants as well as the field team since the beginning to mitigate such expectations. While the policies and procedures of development programmes in research areas may loom in any case for researchers, a look into the clarity of communicators delivering AR's objectives to the study participants may suggest the context giving rise to such expectations.

"At the beginning, I did not have full information about the program. Our DC asked us to go to each village and bring a name list of households (according to the criteria). I went and asked the information like . . . They used to ask, 'What is this information for?' We are going to work in a flood-affected region, we just said that much, and they followed up, 'What work?' During the household survey, we said that will be known later. That is because I did not have full information at the time."

(Interview, Gaighat, Process Documentation)

Here is a study participant recalling the initial phases of the AR process:

"I was there, coming back from collecting grass, then the sir who lives in neighboring hamlet, had come and said, 'You have to sit in flood-affected didi'. He has a field adjoining ours. He asked, 'Do you have flood-affected field? . . . I said ok, ok, and then he kept and went."

(Interview, Risku VDC, Process Documentation)

That gap at the beginning of the process may have contributed to misunderstandings about the process. All the study participants we interacted with for this documentation shared that when they first heard of the programme, they thought programmes of embankment or other in-kind support would be provided. They found the process different after participating. While many expectations may have been addressed during the process, there may be unmanaged expectations among some households. Also, although the process is qualitatively different than many other development activities, its distinctiveness is not clearly understood and/or acknowledged at the beneficiary level. Women's groups made in the process across all intervention sites do not share a uniform name and each identifies itself differently as "savings group" or "flood-affected group" or "pea farming group". While not imposing a name on the group may have been a part of creating distinctiveness, the lack of a uniform name could obscure the identity.

Another space giving rise to such context could be the change in modality of the process and the gap between the episodic events. While we see upbeat reporting on the study participants during the first training on financial literacy, we observe documentation of challenges during the second training, when the modality of the training was changed. There was also a significant time gap between the second and third training and more challenges were encountered during this period. One of the reasons to add an exposure visit in the process was also influenced by these challenges.

In the same vein, the timeliness of activities was a challenge to the process. In particular, the recent livelihood diversification activity of pea farming, after a prolonged selection, suffered from delays in procuring seeds and untimely activities of the JTA.

It is noteworthy that the trainings provided were to be useful for the future and not limited to the specific year in which it was provided. Challenges in managing expectations in the field also led to providing allowances for group meetings. Such incentives were basically introduced to mitigate the challenges faced and to motivate participation in the process.

Part 5: Conclusion

5.1 Conclusion

The foundation of the AR process in Udayapur is its iterative design process. The AR process was designed on the basis of earlier research findings by ICIMOD on migration, and climate change adaptation that showed gaps at the policy level and lack of knowledge. The conceptualization of the AR process was a transdisciplinary process that included experts from different disciplines and professional backgrounds.

The process, initially planned for two years, was extended for six months until June 2017. During the time of this documentation, all the key components of the process had been carried out and the process was moving toward its completion, including the end-line survey.

The AR process in Udayapur started in October 2014 with the identification of research settlements and community consultations. The various components of the AR can be divided into two categories: episodic and routine. In total, there were thirteen episodic events and four routine events over the two-year period. Episodic events in the process were the identification and selection of research sites and households, community consultations, training for trainers, village-level training events, exposure visits and baseline and endline surveys. Routine processes included group meetings, household visits by community extension workers, collection of data and information, and periodic reporting.

There were some changes in the process. Of all the planned activities, only a local stakeholder meeting could not take place, which was later consolidated by sharing information with local stakeholders in a different event. A major change in the episodic process was the modality of flood preparedness training, which was changed from three continuous days to weekly sessions over eight weeks. A major change in the routine process was the reduced number of group meetings from bi-weekly to monthly. Exposure visits were added in the second year of the process. One of these exposure visits was also video documented and shared with non-participants of the exposure visit. In the same year, a meal allowance for group meetings and the community extension worker in the role of JTA was added to the process. Of recent activity, new vegetables were being tried instead of focusing only on green peas.

The AR process in Udayapur was labour-intensive, involving as many as 25 individuals – excluding study participants and survey enumerators – from different backgrounds. Although the process was intended to flow in a hierarchical manner at the beginning, a new communication pattern evolved among the actors of the process. The roles of District Coordinator and liaison personnel were central at the implementation level and also a bridge between the conceptual level and operational level. Channels of communication are an important consideration for this process, as the major transactional content of the AR is knowledge and information.

Political unrest, disaster, and monsoon season were the main external challenges for the process. The former two factors affected AR team members based in Kathmandu, while the latter challenge was associated with reduced participation of women in group meetings, as well as limited access to a few treatment villages. Carrying out research in sites laden with development programmes was a key challenge for the implementers that subsequently led to a flood of demands and grievances. Subsequently, measures were taken in the form of incentives to the participants and additional components to the process. However, managing the expectations of study participants and clarifying the distinctiveness of the AR and its objectives remains a challenge.

The novelty of the process components were much appreciated by the implementers and practitioners and noted for its usefulness. It has been a key feature to retain the participation of the target group. The cross-cultural peer learning environment created during and by exposure visits was remarked as a key transition phase in the process in terms of increased sensitivity of study participants toward goals of the process. The tactfulness of the field team was also notable in dealing with difficult situations. Moreover, the sincere participation of women in the intervention area has provided an enabling environment for the process.

A key consideration for the process is to consider the inclusion of other local stakeholders, such as husbands or other family members and local teachers, in the intervention. Finally, the success of this process has the potential for demonstrating sound knowledge production and development intervention at a low cost.

Key findings from the AR

Both climate change adaptation and disaster risk reduction recognize that it is necessary to raise societal capacities to manage risks. Societal capacities to adapt effectively are shaped by access to information, institutions, social entitlements, and support services. Supportive policies, budgetary allocations, and an effective extension system can create an enabling environment to empower community level stakeholders to adapt to climate change and variability. There is an increasing need to engage, educate, and train local government staff and community members in adaptation-related activities. Furthermore, it is necessary to ensure that community members receive requisite information and training in an adequate and timely manner, particularly in the context of uncertainties associated with climate change.

Experience of disasters vary among different actors in a society. Gender identity, which shapes the role of a woman in the family and society, also determines particular vulnerabilities of women in the context of disasters. Hazard risk may be accentuated and adversely impact disaster preparedness and recovery of a migrant-sending household. Building the capacities of women who are left behind to make more informed choices about the use of household resources could enhance the adaptive capacity of migrant-sending households. This could contribute to adaptation to longer-term climate change. A gender-sensitive extension service would acknowledge that women would have little time and limited mobility and literacy, and accordingly design the service-delivery. Moreover, it is necessary for policy makers and local governments to recognize the diversity among women and adopt tools of inclusion while organizing village-level consultations, training events, or extension services.

A capacity building intervention that focuses on human capital (e.g., building awareness, knowledge, and planning capacities) is likely to confront longevity issues. Generally, beneficiaries tend to prefer interventions that generate income or provide technology rather than those that focus on building capacity. Beneficiaries of capacity-building interventions could experience fatigue due to their perceived uncertainty regarding the usefulness of knowledge in the short-term, the choice between participation in the intervention and household work or wage-earning opportunity, lack of novelty in knowledge exchange, or perceived repetition of activities. To sustain beneficiaries' interest in the intervention, it would be necessary to strengthen extension services by regularly organizing trainings for trainers and updating contents of toolkits. It would also be necessary to organize marketing campaigns to promote extension services, provide monetary or non-monetary incentives to beneficiaries for their participation in extension services, and organize exposure visits for beneficiaries.

While decentralization of capacity-building initiatives is important, it is a resource-intensive approach. Rather than attempting to train everyone in a community, future interventions could plan to take advantage of 'spill-over' effects. A feasible approach involves nurturing village-level women's leadership and fostering peer-learning among women. For instance, audio-visual communication media and ICT-based interactive platforms could be adopted to reinforce peer-to-peer learning among women in the same or different communities.

References

- Banerjee, Soumyadeep; Sijapati, Bandita; Poudel, Meena; Bisht, Suman; and Kniveton, Dominic (2016) Role of remittances in building farm assets in the flood affected households in Koshi sub-basin in Nepal. In: Migration, Risk Management and Climate Change: Evidence and Policy Responses (pp. 25-41). Springer International Publishing.
- Central Bureau of Statistics (2012). National Population and Housing Census (village development committee/ municipality. Government of Nepal: National Planning Commission Secretariat. Pp. 19
- da Silva Wells, C., Borgne, L., Dickinson, N. & de Jong, D. (2011). *Documenting change; An introduction to process documentation*. (Occasional Paper 47) [online] The Hague, The Netherlands: IRC International Water and Sanitation Center (Published October 2011). Available at: <http://www.irc.nl/op47>.
- Ferrance, E. (2000). *Action Research Brown University: Northeast and Islands Regional Educational Laboratory*
- Hussein, K. and Nelson, J (1998) *Sustainable Livelihoods and Livelihood Diversification*, IDS Working Paper 69, pp.3, Institute of Development Studies: University of Sussex.
- Intergovernmental Panel on Climate Change (2014a). WGII AR5 glossary. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.
- James, E.A., Slater, T. & Bucknam, A. (2011). *Action Research for Business, Non-profit and Public Administration: A tool for complex times*. Sage Publications.
- National Planning Commission and United Nations Development Programme (2014). Nepal Human Development Report Beyond Geography, Unlocking Human Potential. Kathmandu: National Planning Commission and United Nations Development Program pp. 91
- Tichy, N.M., Tushman, M.L. & Fombrun, C. (1979). "Social Network Analysis for Organizations" in *Academy of Management Review*, Vol. 4 (4), pp. 507-519. Available at: www.jstor.org

Annex 1: List of people interviewed for process documentation

Organization/Study participants' location	Interviewee
ICIMOD	1. Suman Bisht
	2. Anu Joshi Shrestha
	3. Bidhubhusan Mahapatra
NIDS	4. Ganesh Gurung
	5. Mahendra Rai
	6. Ram Basnet
	7. Uttar Kumar Rai
	8. Prakash Raskoti
	9. Deb Kumari Thakur
	10. Mandira Bhattarai
	11. Rajkumari Rai
Independent Consultants	12. Sitaram Chaudhary
	13. Sanjay Sharma
Study participants (Risku VDC)	14. Durga Rai
	15. Sabitra Bhujel
(Hadiya VDC)	16. Radha
	17. Sita Dangal
(Jogidaha VDC)	18. Ambika Rai
(Sunderpur VDC)	19. Kamala Poudyal
	20. Anita Bardewa
(Tapeshwori VDC)	21. Saraswati Chaudhary
(Rampur Thokshila)	22. Gita
	23. Phulwati Chaudhary

Apart from the interviews above, Ishan Ghimire had brief interactions regarding the AR with study participants in Risku (Ten Kumari Rai and her husband); Jogidaha (Durga Rai and her husband); Tapeshwori (Kabita Chaudhary); DADO official Saroj Adhikari.



European Union

© ICIMOD 2018

International Centre for Integrated Mountain Development

GPO Box 3226, Kathmandu, Nepal

T +977 1 5275222

F +977 1 5275238

E info@icimod.org

W www.icimod.org