

Community Need Assessment Cum Baseline Survey Report



Figure 1 focus group discussion with community people

April 2022

Contents

Executive Summary	4
Background	5
Objectives of Activity	5
Methodology and Tools	6
Limitation	6
Findings of Household Survey, FGDs and KIIs	6
Socio-economic Aspects	7
Income VS Expenditure:	7
Land holding:	9
Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA)	10
Impact of climate change:	10
Action to cope with climate change and disaster	13
Hydrological Aspects	14
Flooding trend since 2040 (1983 AD):	14
Flooding period:	15
Risk Financing Solution	15
Current practices of risk financing solution	15
Knowledge about insurance products, uptake and claim:	15
Risk Transfer Plan:	18
Capacity Assessment	19
Household capacity:	19
Capacity of distribution channel:	19
Government plan to address DRR & CCA:	19
Recommendation	20

Abbreviation

ADPC: Asian Disaster Preparedness Center
CBOs: Community Based Organizations
CCA: Climate Change Adaptation
CDMC: Community Disaster Risk Management Committee
CFUG: Community Forest User Group
DRR: Disaster Risk Reduction
FGD: Focus Group Discussion
HHs: Households
KII: Key Informant Interview
LAPA: Local Adaptation Plan of Action
LDCRP: Local Disaster and Climate Resilience Plan
LDMC: Local Disaster Risk Management Committee
PFI: Parametric Flood Insurance

Executive Summary

Socio-economic Aspect:

- ✓ Four out of five targeted households are from marginalized communities,
- ✓ Almost half of the targeted houses are made of mud and khar are prone to flooding,
- ✓ Households have a low margin of saving considering the yearly income and expenditure,
- ✓ High loss ratio; on average, a household lost economic value equivalent to \$870 in the last monsoon (October flood in 2021) alone.

Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR):

- ✓ Almost all households are living in flood-prone areas, and 66.23% of surveyed households are living in highly risky areas.
- ✓ Economic severity: once the area is flooded, it takes up to 2 weeks to resume normal life, causing huge economic loss
- ✓ The targeted area is exposed to multi-hazard and almost all households are exposed to flood disasters,
- ✓ Flood has a multi-sectorial impact in the targeted areas the includes transportation, agricultural loss, economic disruption etc.
- ✓ Climate change has shifted the monsoon (flooding period) timeline.

Hydrological Aspects:

- ✓ On average, the distance to the nearest household is 227 meters, with a minimum of 10 meters.
- ✓ Considering the past 10 years of data, June to October is the most frequent flood occurring period.
- ✓ The frequency of floods has been increased recently considering the past 10 years of data and the highest flood inundation level is on average 5 feet from ground level in the communities.

Solution for Risk Financing:

- ✓ Almost all households are dependent upon government or humanitarian action during an emergency for response and relief.
- ✓ Only 64% of respondents have knowledge about indemnity-based insurance products.
- ✓ 70% do not know about parametric flood insurance,
- ✓ PFI coverage period should consider the shifting pattern of flooding.

Capacity Assessment of Stakeholders:

- ✓ The data shows that on average, households can afford \$25.62 yearly for parametric flood insurance products and the affordable price ranges from a minimum of \$1.00 to a maximum of \$125.00,
- ✓ Only 11% use mobile wallets for fund transfers and top-up purposes,
- ✓ Partner cooperatives have experienced on insurance program implementation,
- ✓ Need to enhance the IT capacity of cooperatives for insurance administration digitally.

Background

Stonestep TFD Pvt. Ltd. and Practical Action Nepal have been working together for "climate action and resilience building" through parametric insurance development and implementation targeting climate vulnerable communities in coordination with Shikhar Insurance Ltd. and Cooperatives. The partners have been developing index-based flood insurance for downstream communities of the Karnali river basin. The partners under "Climate Action and Resilience Building" through Asian Disaster Preparedness Center support have been implementing the "Parametric Flood Insurance for Climate Vulnerable Agriculture in Western Nepal" project under the theme of "Risk Financing Solution".

The project is being implemented in flood-prone communities of ward nos. 8 & 9 of Rajapur Municipality, Bardiya and ward nos. 6, 8 & 9 of Tikapur Municipality, Kailali. The need assessment and baseline survey were conducted from March 20 to 24, 2022. The project conducted focus group discussion (FGD), key informant interviews (KII), and a household survey. A household survey was conducted in wards 8 & 10 of Rajapur Municipality, Bardiya, Lumbini province and 6, 8 & 9 of Tikapur Municipality, Kailali, Far-west Province; FGDs were conducted in each targeted ward; KII was conducted in each targeted ward with ward leaders and cooperative representatives.

The survey was conducted into four thematic areas:

1. **DRR and CCA:** The selected wards were highly vulnerable to flooding. Along with the flood, farmers have been experiencing the adverse effects of climate change on their agriculture, which is the main source of income for most of the houses in selected municipalities. The assignment aimed to study DRR and CCA impacts on the households of all wards and efforts made to date to cope with the disaster and climate change issues.
2. **Socioeconomic Aspects: Flooding and climate change have had unfavorable effects on the socioeconomic aspects of the poor and vulnerable people who live in municipalities.** The assignment aimed to incorporate socio-economic aspects into the HHS survey, KII, and FGD, along with DRR and CCA issues.
3. **Hydrological Aspects/Flood History:** Flood history and inundation level caused by floods at the community level (tentative) were collected through the HHs survey and FGDs.
4. **Stakeholder Capacity Assessment: Cooperatives are the primary stakeholders in the PFI.** Through household surveys and KII, a detailed study on the capacity of cooperatives, households, and local government was conducted.

Objectives of Activity

The overall objective of the assessment was to examine, assemble, and arrange the information on disaster and climate change knowledge, impacts, risk transfer mechanisms, focusing on insurance products and the capacity of local stakeholders and ward level government on an index-based insurance approach from communities.

The specific objectives of the assignment are as follows:

1. To identify risks and their impacts on agriculture and on their socio-economic condition, and prioritize the most vulnerable communities, settlements, and areas.
2. To identify the historical data of losses/damages experienced by households per year due to the hydro-metrological-related disaster.
3. To ascertain the willingness and capability of communities to take part in risk transfer mechanisms.
4. To evaluate and prioritize local cooperatives based on their ability to facilitate Parametric Flood Insurance products, and to recommend capacity-building activities for those stakeholders.
5. To find out insurable assets or properties that can be compensated through insurance in the communities.
6. To set a target for insurance coverage

Methodology and Tools

The consultant (DRR specialist) designed the tools for the household survey, key informant interview (KII), and focus group discussions (FGDs). Considering the COVID-19 situation, community level enumerators were hired and trained to conduct household surveys. The household survey was conducted through a structured questionnaire deployed on the ONA platform. 151 households out of 800 were selected randomly, considering the 95% confidence level and 7% margin of error. The Grant/M&E Manager from Stonestep TFD Pvt. Ltd. reviewed data frequently and provided feedback to maintain data quality. The consultant conducted FGDs in each ward and KII with ward representatives and cooperative representatives. Institutions for KII were selected purposively.

The consultant reviewed the data and analyzed it using qualitative and quantitative methods in Excel, preparing the draft report and finalizing it by incorporating input from Practical Action and Stonestep.

Limitation

18% of the total targeted households represent the overall households and populations in the area. No accurate measurement or scientific tools were used to measure the intensity of the flood's impact on socio-economics, livelihoods, and infrastructure. Furthermore, chances of a gap in the information provided by informants increased since the survey tried to trace past information based on informants' experience over a long period of time.

Findings of Household Survey, FGDs and KIIs

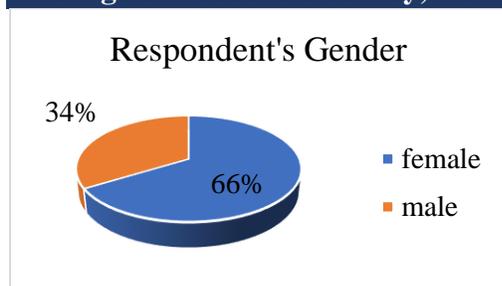


Figure 3 Respondents' gender

District	Ward no.	HHs No.	Targeted HHs.	Sample size
Bardiya	8	1059	176	34
	9	1018	170	33
Tikapur	6	1067	178	34
	8	914	152	28
	9	743	124	22

Figure 2 total population, hhs and smaple size

- ✓ Focus Group Discussion (FGDs): Five (5)
- ✓ Key Informant Interview (KII) with wards: Five (5)
- ✓ Key Informant Interview (KII) with cooperatives: Two (2)

Socio-economic Aspects

81% of households in the targeted areas are from minority groups.

41% of households are made of mud and khar, which are very prone to floods and other disasters.

Households can save only 36% of total income if there is no disaster year-round and 97% of households have agriculture as their main source of income.

Socioeconomic aspects attempted to identify the social and economic status of households and communities, as well as the interaction between social processes and economic activity.

The household survey shows that the majority of households in the targeted area are from minority groups; more than a third (76.16%) of households are Janajati, 3.31% are Dalit, 1.99% are other, 13.91% are Chhetri, and 4.64% are Brahmin. The area is also dense with a highly illiterate population rate above the age group of 45 years old, since one-third of total respondents have only informal education and a quarter of respondents are illiterate (can't read and write). Households residing in the surveyed areas are vulnerable in terms of flooding, and 11.26% of households are doubly vulnerable since they have household members with some kind of differently able capacity. The situation of 41.06% of surveyed households has been further jeopardized considering the structure of houses, which are made of Khar and mud. The chart below shows the type of house in the targeted area:

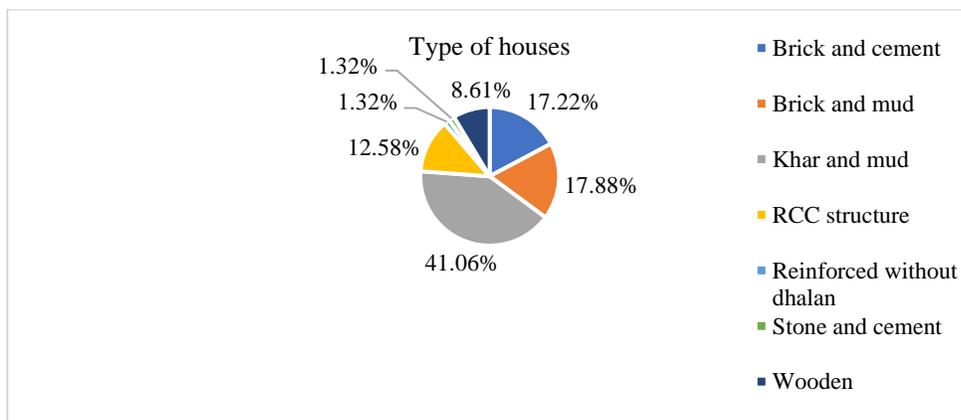


Figure 4 Type of houses

Income VS Expenditure:

The survey shows that on average, a household earns approximately \$2,132 in a year, spends approximately \$1,359, and can save only \$773 in normal cases (without any disasters year-round).

The saving margin is very low, which further exacerbates the situation in the case of flooding events. Farmers in the area lost properties (crops, livestock, and assets) equivalent to approximately \$870 in the October flood of 2021 alone.

Main source of household income:

Agriculture is a main source of income for 97.35% of surveyed households, followed by livestock and fishing as well as other sources of income. The chart below shows the main sources of household income:

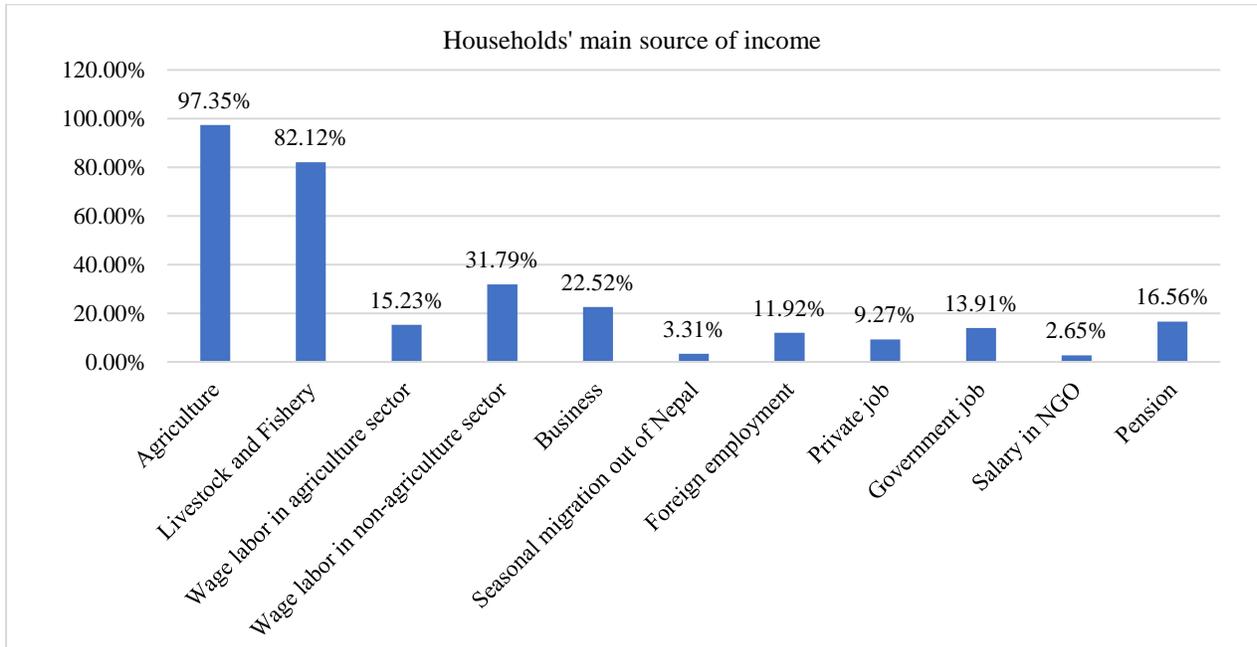


Figure 5 Income source

Major heading of expenditure:

The majority of households spend their money on health care, followed by education and pay installments (loans), and so on. The chart below shows the major headings of expenditure throughout the year, a household's expenditures are divided into several categories.

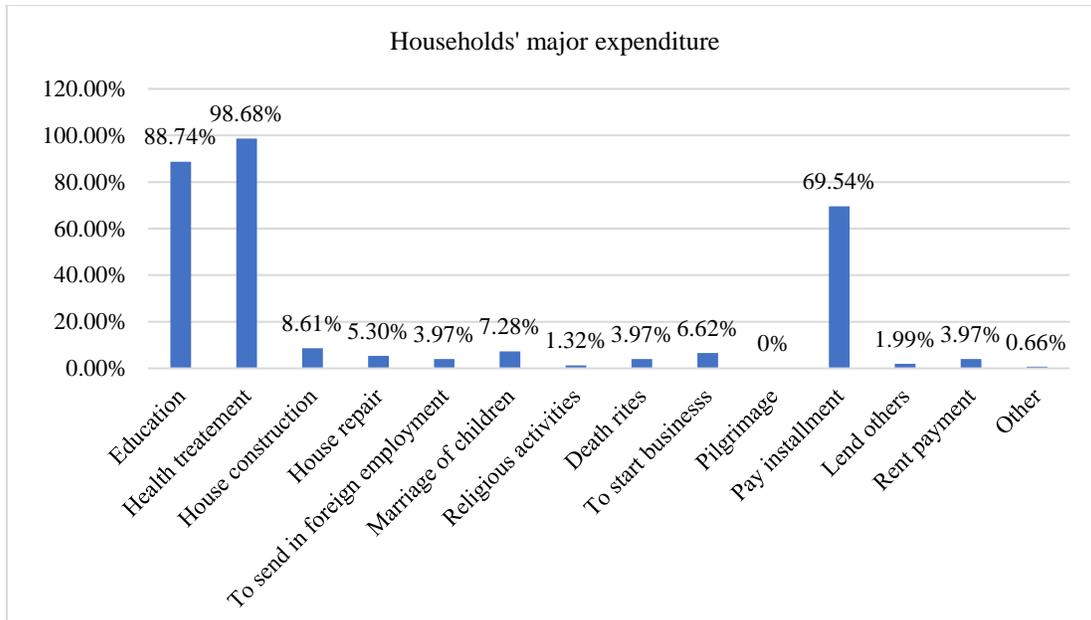


Figure 6 Household expenditure

Land Holding:

Since the targeted areas are agricultural areas, more than 96.03% of households are doing agricultural practices on the land with different types of ownership. This shows that households have been conducting agricultural activities on the land with a mixed kind of ownership. The chart below shows the type of ownership of each respondent in agricultural land:

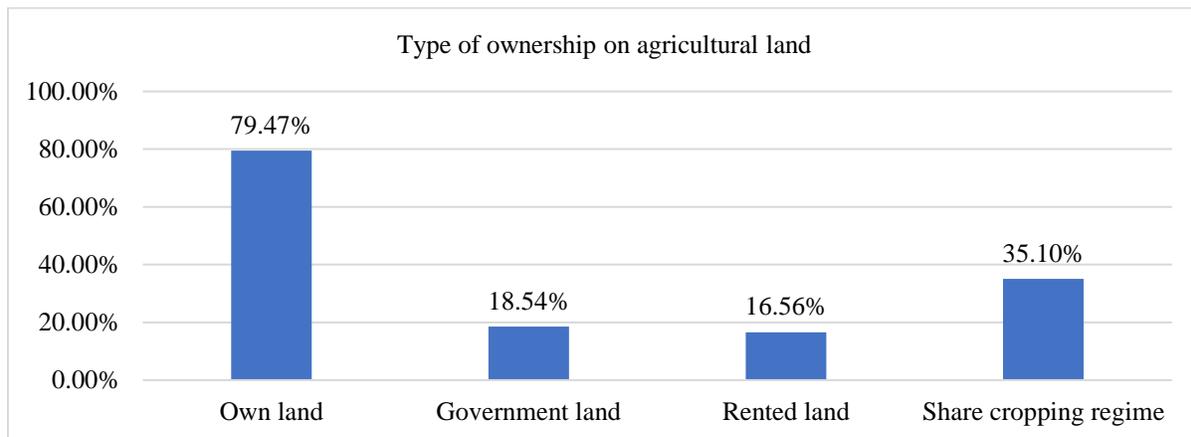


Figure 7 Type of land ownership for agricultural practices

In total, 151 surveyed households have been doing agricultural practices on 361.875 bighas of land, with an average of 2.3 bighas/household. Almost all households (95.36%) in the area are doing paddy farming, followed by wheat, other crops, vegetables, pulses, maize, and fruits. The chart below shows the types of crops farmers grow:

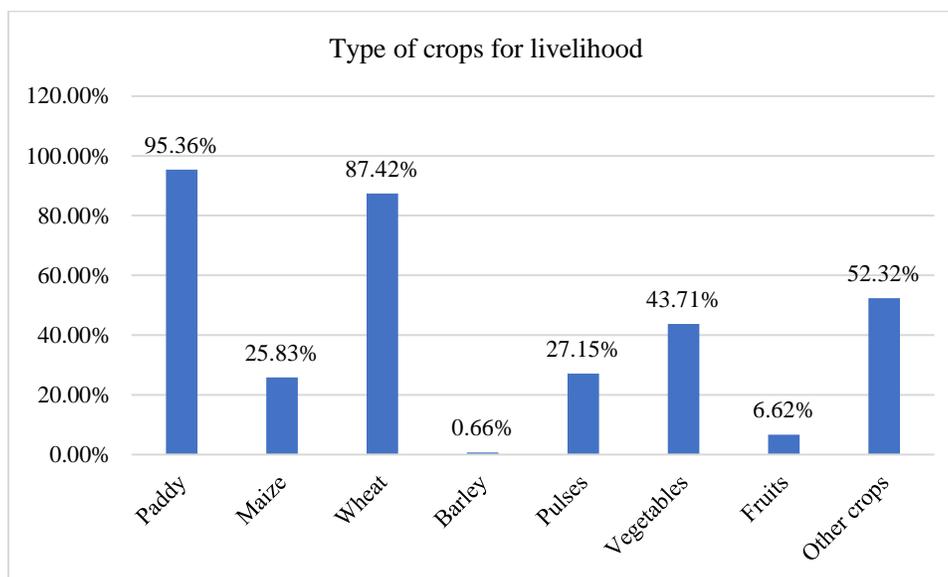


Figure 8 Crops planted in the targeted areas

Farmers are getting support through local-level cooperatives for agricultural activities. A Key Informant Interview (KII) with two cooperatives shows that cooperatives are providing agricultural services to households involved in agricultural practices. They provide agricultural loans, sell fertilizers and seeds, and also market the seeds and agricultural products.

Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA)

*98.68% households reside in flood prone areas
Increasing the frequency of flooding
On average, a household lost equivalent of NPR: 104,456.96 during last monsoon.*

DRR especially focuses on risk reduction for both man-made and natural disasters through preparedness, response, and reducing vulnerability, while CCA especially focuses on adaptation to reduce the negative impact of disasters. Hence, both DRR and CCA contribute to reducing the risk of disaster and adjusting against disasters like floods, wind, etc.

The household survey, FGD and KII tried to identify What are the major hazards? What is the impact of flood disasters in the area? How is the intensity of disaster and exposure affecting households and institutions? And what are the coping strategies? etc.

Impact of climate change:

The disasters have been linked to the impact of climate change. The respondents in the FGD informed that the main reasons for disasters along with monsoon floods are off-season rainfalls, extreme hot and extreme cold waves, storms and hailstorms in the area. The farmers are facing challenges of not having adequate water during the paddy season, whereas they have faced

unseasonal rainfall that destroyed their production during the months of November and December. All of them have informed us that deforestation is the major cause of climate change.

Together with impact of climate change, the location of surveyed households is also found exposed to multi-hazards. The chart below shows the types of hazards households are exposed to:

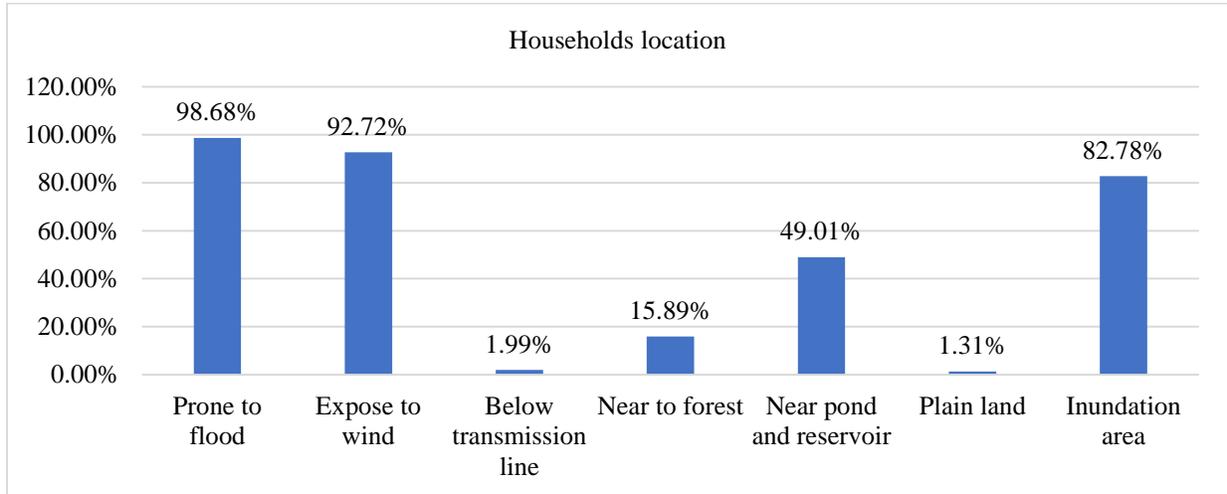


Figure 9 Household location in terms of hazards

The chart above shows that households in the targeted areas are prone to multi-hazards; 98.68% HHs are prone to fluvial flood, 92.72% HHs are exposed to wind, 82.78% HHs are prone to pluvial flood, 49.01% HHs are near to pond and reservoir, 15.89% HHs are near to forest, 1.99% HHs are below transmission line, and 1.32% HHs are in plain land.

Among multiple hazards, fluvial flooding is found one of the main causes of disaster in the area, where almost all households are affected. The table below shows the intensity of exposure to flood disasters:

Intensity	% of households are prone/risk to flood
Little risky	5.30%
Moderate risky	27.81%
Very risky	66.23%
Little risky	0.66%
Grand Total	100.00%

Figure 10 Intensity of exposure to flood

It is identified that almost all households are prone to flooding, where 66.23% are at high risk of flood disaster.

The impact of flooding is very extensive in the targeted areas. The household survey shows that flooding causes multi-sectorial damage. Most importantly, transportation is the main sector impacted by the flood. The chart below shows the respondent's answer to the most frequently impacted sector by flooding in the past years:

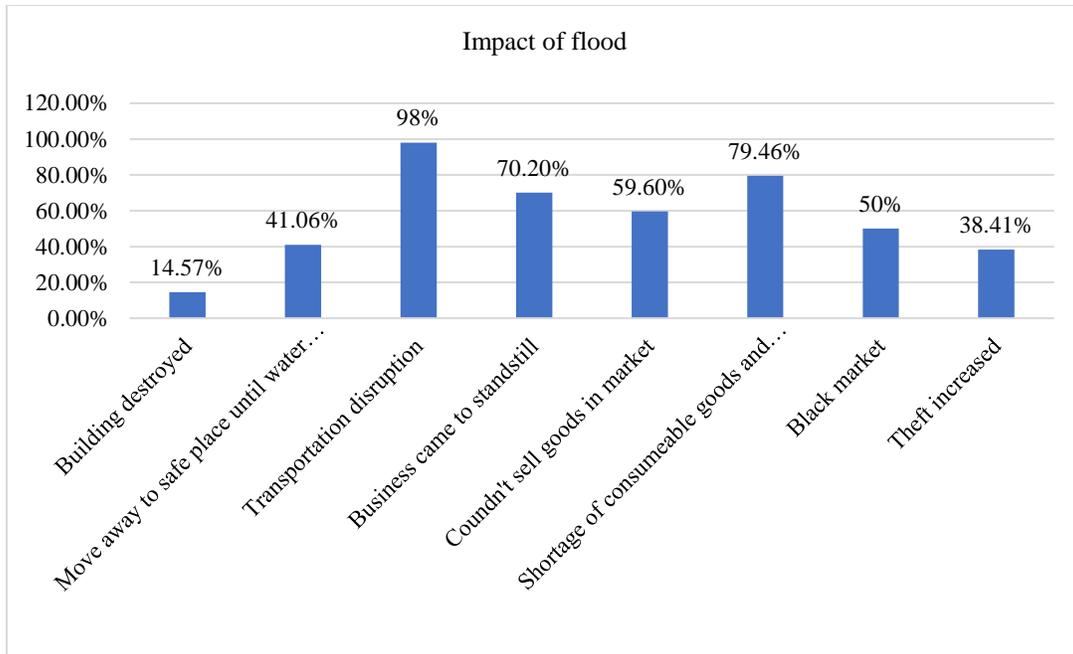


Figure 11 Impact of flood

FGD with the community suggests that the impact of floods on the agriculture sector is very high; 95% of the respondents in the household survey mentioned that agriculture (especially paddy) is the most impacted sector. The farmers are regularly facing a loss as they have faced unseasonal rain. Flooding, rain, and hailstorms damage agricultural products as the harvesting season begins. Besides paddy, bananas, sugarcane and vegetables are mostly affected by disasters. The productivity of land is also decreased by flood-induced sandy soils. Flooding in the area caused huge economic disruption that lasts up to two weeks, but in severe cases, economic disruption goes beyond six months, which immensely impacts poor and vulnerable households residing in the area.

The October flood of 2021 alone caused a loss on average economic value equivalent to \$800/household. Agriculture losses in October 2021 flooding have a significant impact on livelihood, with 72.19% reported that they have fallen into debt as a result of the loss, and 24.50% reported that they are also dealing with food scarcity. Furthermore, KII with five ward leaders, shown that the flood has hugely impacted 1782 households and 550 hectares of land area in the targeted wards of Tikapur and Rajapur municipality in 2021.

Communities have experienced the biggest floods and water inundation in 1983 AD in the proposed area. which has severely impacted the community. The table below shows the impact of the biggest flood in 1983 AD on the Karnlai river:

Intensity of impact of biggest flood in the area	Impact in agriculture
All fields washed away	13.25%
Destroyed crop field	78.15%
Some farming avoided	2.65%
Nothing impacted	0.66%
Nothing happened	2.65%
Slight effect	2.65%
Grand Total	100.00%

Figure 12 Impact of biggest flood in 1983

According to the table above, three-fourths of respondents had their entire crop field destroyed or severely damaged. 10% of respondents mentioned that the biggest flood also caused death and injury.

Action to cope with climate change and disaster

The KII survey with ward leaders shows that their actions are mostly at the level of awareness raising and reforestation. In Tikapur 6, the ward chairperson mentioned that they have prepared the five-year LDCRP. Similarly, in Tikapur 8, LDMC and LAPA are being prepared. However, none of these ward chairpersons could clearly share their ideas on how to make the community more accepting of climate change and how the local government can take action to become more resilient in such a climatic context. Local governments have understood the reasons for climate change, but they should also understand that such climatic challenges can be minimized by the adoptive plan or response plan prepared locally.

FGD shows that communities have put their efforts into mitigating the challenges, mostly through constructing the dam and retention walls. Reforestation, using bio technology for protection, high-raised water pumps and high-raised houses were built in the community with the support of different organizations. Similarly, local disaster preparedness and response plans and LAPA are also being developed. Committees are also formed. They also provisioned a community fund for emergency situations. In regards to prepositioning, they have ropes, life jackets, sirens, and mics.

KII Regarding the policies related to disaster management, Rajapur 9, Rajapur 6, and Tikapur 8 have prepared the disaster management act. In Rajapur 9, according to that act, they have formed a disaster management committee at palika level and also prepared a disaster and climate resilient plan. The ward chairperson mentioned that they have it prepared with the participation of security forces, NGOs, the Nepal Red Cross Society, teachers, social workers, and children's clubs. Similarly, Rajapur 8 has formed a disaster management committee at Palika level as well as at ward level. People's participation has been ensured during the preparation of this act and its committees.

Hydrological Aspects

*On average households are located 227 meters away from nearest river
On average highest level of water inundation in the community is up to 5 feet from the ground
84.11% mentioned that frequency of flooding has been increased comparing to past 10 years*

Proximity to the river and water inundation are major causes of flooding and instance of impact. The household survey shows that, on average, households are located almost 227 meters away from the nearest river, and the minimum distance is 10 meters from the nearest river, with the highest level of flood inundation recorded at 5 feet on average from the ground level.

Water inundation (feet) from ground on average	Average distance to nearest river (meter)	Short distance to nearest river (in meter)
5	227	10

The KII with ward representatives show that during the flood season, water levels increase from 1 to 5 feet and are retained from 6 hours to 36 hours in the community. The main reason for retaining the water is the Kailash dam in India. Furthermore, FGDs with the community shows that there was the biggest flood in 1983, when the flood inundation was approximately 5 feet from the ground. In the past, floods used to occur in the months of August and September, but the impact of climate change has shifted the timeline up to October.

Flooding trend since 2040 (1983 AD):

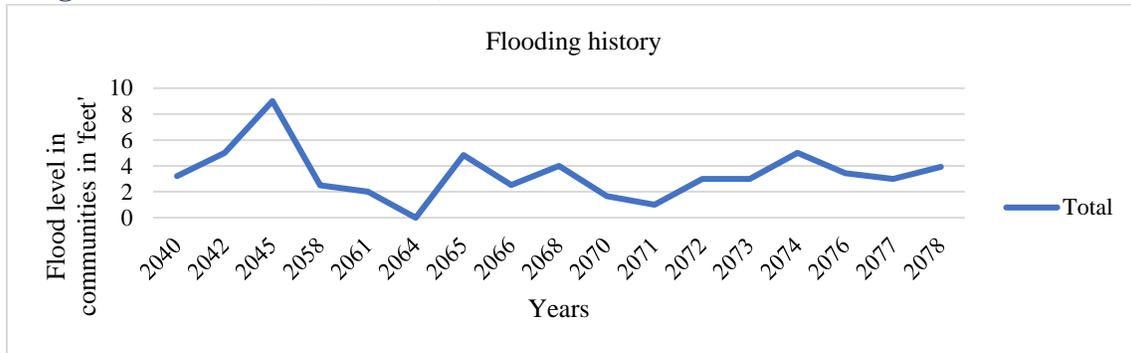


Figure 13 Trend of flooding

The survey found that the level of flooding is small, but the frequency of flooding has been increased in recent years since 2071 (Nepali Calendar). Considering the flooding history, 89% of respondents in the household survey mentioned that normal flooding occurs every year and the frequency of flooding has been increased in recent years considering the past 10 years of data:

Flooding frequency and intensity	% of respondent
A lot in the past	8.61%
Flooding increased in recent years	84.11%
Same as past	7.28%
Grand Total	100.00%

Figure 14 Frequency of flood

The table above shows that 84.11% of respondents experienced flooding in recent years.

Karnali is the main river system that impacts the community, followed by Budikhola and others in Rajapur Municipality, Bardiya. Similarly, Karnali is the main river stream that impacts severely on Tikapur, Kailali, followed by Mohana and Patahriya rivers.

Flooding period:

It seems that the time period of flooding in the targeted area has been shifted. KII with ward leaders and FGDs with community members revealed that the flooding period used to be up to August/September but now the timeline has been shifted. Considering the past 10 years of data, the timeline has been shifted up to the end of October. 46% of informants in the household survey mentioned that the flooding timeline for now is from June to October.

Risk Financing Solution

84.11% received emergency assistance from other agencies during emergency
64% of respondents have knowledge about indemnity-based Insurance products
97.70% do not know about the Parametric Flood Insurance
74.17% are ready to buy parametric flood insurance product even there is no premium subsidy from Government

The government of Nepal, different donor agencies, and private sector stakeholders are engaging in different ways to provide risk coverage in the aftermath of a disaster as humanitarian aid/emergency response and recovery through food distribution, cash for work, and non-food item support. Hence, the household survey findings show that 84.11% of households received other assistance, which included tarpaulin/blanket, and 15.89% also received commodity compensation for their crop through seed and fertilizer support.

Current practices of risk financing solution

The Ward representative from Tikapur 6 informed that they have provision to provide \$4,166.00 to the affected households after deducting the 3% contingency. This action looks innovative. Rajapur has provisioned an emergency management fund. Tikapur 6, and this ward office is also providing financial support to the community for their need-based program. Tikapur and Rajapur have allocated the budget for disaster management, which is 7% and 5%, respectively. Rajapur 8 has also allocated the budget, not directly but in the resembling line of the environment and forest. KII Regarding the risk transfer, in Tikapur, there is a practice of plant insurance through the Ujayalo Cooperative Society, but it is accessible to the members of this cooperative only. To date, they have not reimbursed the loss.

Knowledge about insurance products, uptake and claim:

The FGDs in the communities show that the community has taken the initiative to insure the banana farms recently. However, they do not have specific knowledge about agriculture insurance or flood-induced damage insurance. They have heard about life insurance, health insurance, and

livestock insurance. Supporting the findings of FGDs, household survey data shows that 98 out of 151 respondents have knowledge about the following insurance products shown in the chart below:

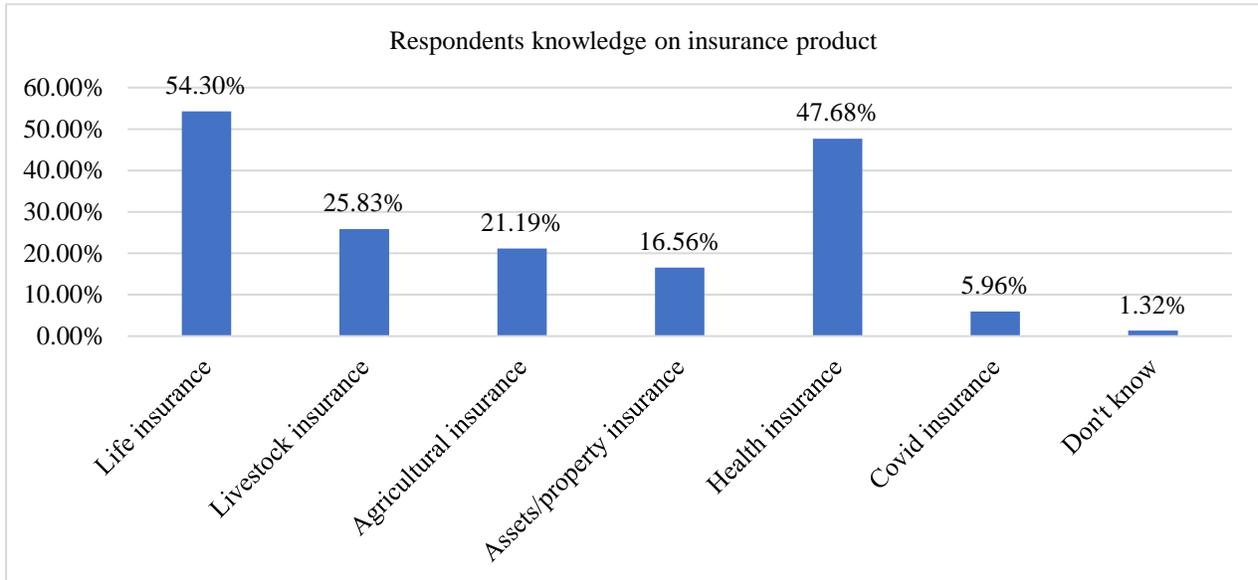


Figure 15 Respondent's knowledge about insurance

65 of the 98 people who are aware of the insurance products and have family members who are insured in some way. The chart below shows the type of insurance coverage that exists among surveyed households:

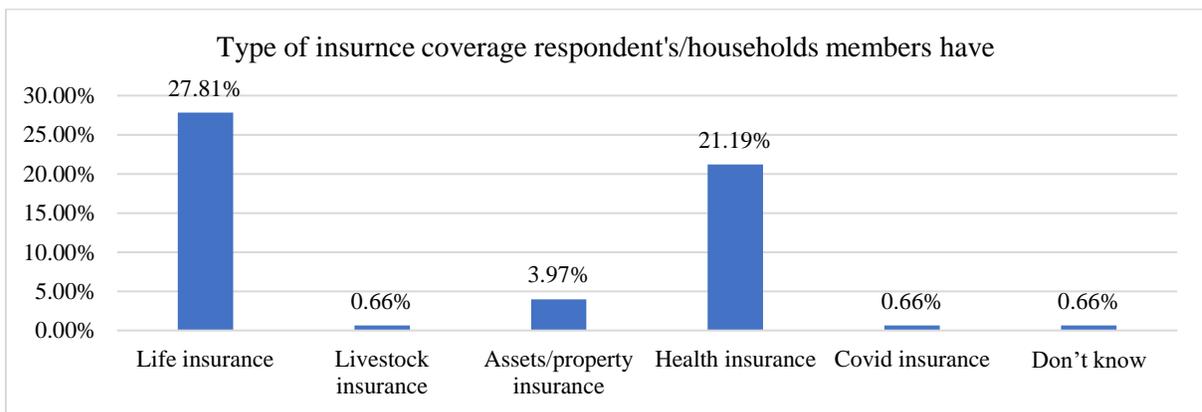


Figure 16 Type of coverage respondents household members have

The chart above shows that out of total respondents, those who have or family members have some form of insurance; 0.67% mentioned that the enrollment/claim process was very complicated; 18% mentioned that the process was easy and convenient; and 23.33% mentioned that it was moderate (neither easy nor complicated). Furthermore, FGD findings also show that people have found the claim process very complicated. At the beginning, during the collection of premiums, the insurance company does not ask for any documents, but when it is time to claim, they ask for lots of

documents, which makes the process complicated. Therefore, people are not satisfied with such services.

Parametric flood insurance product and possibility of uptake:

FGD shows that community people have very limited knowledge of parametric insurance. They believe that this would be a very good initiation. 146 out of 151 surveyed households want to buy parametric flood insurance products even if they have to pay a small fee, the same as in the households' survey. The data shows that, on average, households can afford \$25.62 for yearly coverage. Households wish to cover their crops, livestock, and assets through parametric flood insurance in the future, as shown below in the chart.

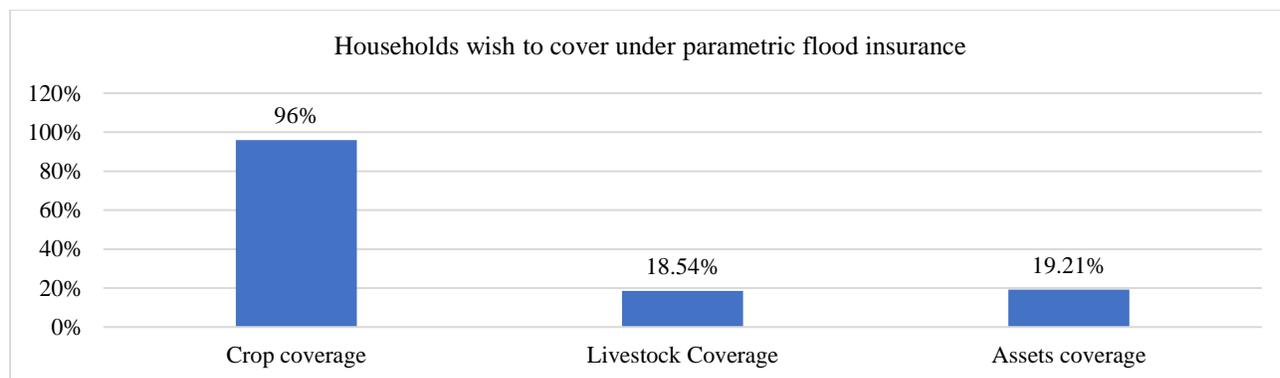


Figure 17 possible insured assets

The chart above shows that 96% of the total wish to buy parametric flood insurance for crop coverage. Where out of 96% of those wish crop coverage, 100% wish paddy coverage, 14.48% wish maize, 35.86% wish wheat, 0.68% wish barely, 21.37% wish mustard, and 4.8% wish other product coverage. Similarly, 18.54% of the total wish to buy parametric flood insurance for livestock coverage. Where out of 18.54%, 10.71% wish to cover cow, 39.28% wish to cover buffalo, 53.57% wish to cover pig, 64.28% wish to cover chicken, 14.28% wish to cover bullock, 25% wish to cover duck, 3.57% wish to cover turkey, and 6.42% wish to cover both. Furthermore, 19.21% of the total wish to buy parametric flood insurance for asset coverage. Where out of 19.21%, 100% wish to cover the house, 100% wish to cover the car, 27.58% wish to cover bikes, 100% wish to cover buses, 100% wish to cover trucks, 27.58% wish to cover tractors, and 13.79% wish to cover other assets.

Premium subsidy and enrollment in the parametric flood insurance product:

The government of Nepal provides premium subsidies up to 80% for agriculture and livestock coverage insurance products. Since the parametric flood insurance product aligns with agricultural products, there is a high chance of getting a premium subsidy. Almost all (92.72%) of the surveyed households (140 of 151) want premium subsidies to enroll in the parametric flood insurance product, with on average subsidy of 77%. The chart below shows the percent of respondents' wishes for premium subsidy from where:

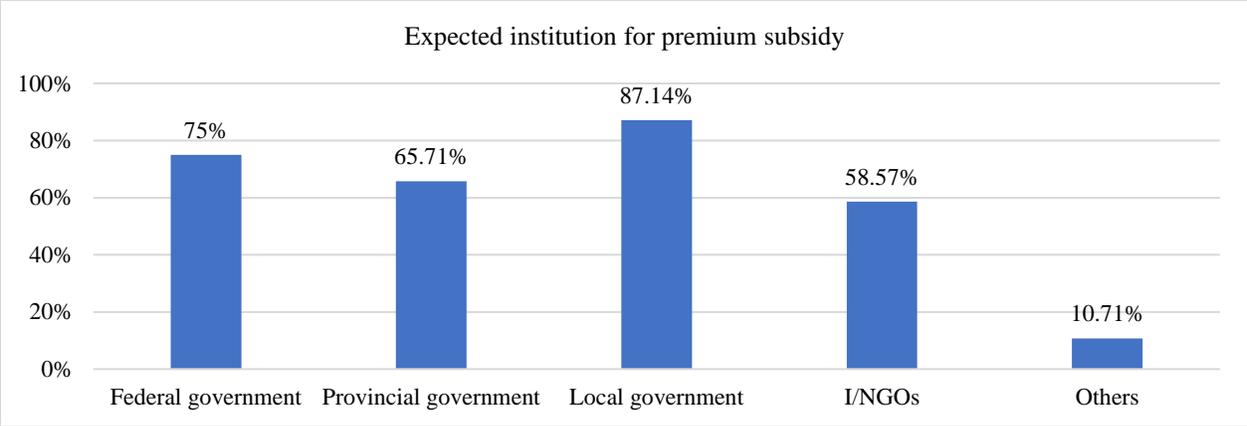


Figure 18 Institutions for premium subsidy management

Though households expect subsidy support from other agencies, 74.17% of 140 also mentioned at the same time that they are ready to buy the Parametric Flood Insurance product even if they did not receive a premium subsidy.

The findings of the focus groups revealed that the community requires premium subsidies. FGD suggests that the subsidy can be managed by social organizations. However, they do not believe the subsidies can be provided by CFUG or CDMC (community-based organizations). Linking such subsidies into the program of local government would be much more effective. The FGD participants also recommended that the insurance process be hassle-free. They have experienced that they had filled out an emergency response form months ago, which had not been received yet. Such practices have to be mitigated.

Risk Transfer Plan:

In the KII with local level government, while asked about the role of local government in scaling up insurance plan, they indicated that such interventions should not be limited to the role of local government. Three tiers of government should be equally responsible for such a program. Federal and provincial governments, in addition to local governments, can allocate resources for loss recovery in certain proportions. Local governments can also allocate resources to pay the premium. To increase the ownership, a certain percentage of the premium can also be borne by the farmers themselves. The role of the local government is to identify the agro-product pocket area, facilitate the loss recovery process, and organize communities for awareness-raising and trust-building.

Capacity Assessment

Affordable premium on average \$ 25.62

Minimum \$1.00 and maximum \$ 125.00

84.76% owns smart/android phone

*Distribution channel has experience of implementing insurance program and have IT capacity
Local level governments have policies and plan for disaster management and budget allocation for
response*

Capacity assessment of stakeholders measure the household capacity to pay the premium, the households' ability to use digital solutions, cooperative capacity for insurance administration and digital solutions, and local level government capacity to provide premium subsidy and disaster risk education and climate change adaptation.

Household capacity:

The households' capacity measured their capacity to pay the premium; though households' wish premium subsidies to enroll in the product, 74.17% of those who wish to buy parametric flood insurance are ready to pay the full premium to enroll in the product. The premium affordability ranges from \$1.00 to \$125.00. On average, households are able to pay up to \$25.26.

Similarly, the survey tried to measure the household's capacity to use a smart phone-based digital technology to invest in the product. It is found that 84.76% of households own a smart phone. However, only 55.62% use mobile apps and the internet, especially for Facebook, YouTube, mobile games, mobile banking, and wallets. The survey showed that only 11.25% use mobile wallets and only 10.59% can load money into wallets to make a transaction for service acquisition in the targeted areas. This showed that the integration of mobile wallet in this phase is impossible for payment gateway.

Capacity of distribution channel:

Ujyalo Multipurpose Cooperative Ltd. and Didi Bahini Sanakishan Sahakari Sanstha Ltd. are both friendly in insurance administration. They have been providing services like saving and loaning, selling fertilizers and seeds, and also functioning as insurance agents. Technically, both cooperatives are sound; they have adequate human resource policies, procurement policies, and financial policies. They are providing relief materials (mostly food) to the members who are not insured. They are using computers to record their daily transactions but they do not have capacity to use payment gateways or other information technologies for administration.

Government plan to address DRR & CCA:

All the respondents mentioned that the relationship between local government and local people is very good. They also mentioned that the acts or plans are prepared with people's participation. However, it was hard figure out how much the impact population or highly vulnerable people's participation had been ensured during that preparation. If the participation was not inclusive, then it would be tough to implement the plans or act effectively.

Regarding the budgetary framework, the majority of the budget is allocated to physical infrastructure, which is 60 to 70%, the social sector, 15 to 20%, and the economic sector, 15 to

20%. Tikapur and Rajapur have allocated the budget for disaster management, which is 7% and 5%, respectively. Rajapur 8 has also allocated the budget, not directly but in the resembling line of the environment and forest. The opportunity we can see here is utilizing the infrastructure budget for mitigation or mitigation actions/premium subsidy management. The budget allocation process follows the seven-step planning and people's participation has been ensured while drafting the plan. Similarly, all four ward chairpersons mentioned that there is a practice of sharing the plan and budget at the community level after approval.

Recommendation

- ✓ It is better to provide multi-sector (agriculture, livestock, and assets) coverage through parametric flood insurance.
- ✓ Increase coordination and collaboration with local level, provincial level, and federal level governments for subsidy management for low-income and smallholder households.
- ✓ Coordination with I/NGOs and CBOs for subsidy management,
- ✓ Awareness raising and PFI product marketing among communities
- ✓ Management of digital distribution at cooperative level for insurance administration (enrolment, customer care, and claims)
- ✓ IT capacity enhancement of cooperatives
- ✓ Increment of local community participation in the local level planning process to include PFI as a mitigation approach to disaster risk reduction and increase the investment from local level government on mitigation
- ✓ Product coverage period should extend up to shifted time for flooding.