

Pre-Crisis Market Analysis (PCMA) report

**The Rice Market System in Tikapur & Rajapur areas,
Kailali and Bardiya Districts, Karnali River, Nepal**

Zurich Flood Resilience Programme



Floodwaters in Rajapur

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List of abbreviations

CSDR	Centre for Social Development and Research (Nepalganj)
CSO	Community Service Organisation
DDRC	District Disaster Reduction Committee
DRR	Disaster Risk Reduction
EMMA	Emergency Market Mapping Analysis
ER	Emergency Response
EWS	Early Warning System
(I)NGOs	(International) Non-Governmental Organisation
M4P	Making Market Work for the Poor approach
MFI	Micro Finance Institution
MS	Market System
MSA	Market System Analysis
NFC	Nepal Food Corporation
NFRP	Nepal Flood Resilience Project
NPR	Nepali Rupee
PA	Practical Action
PAC	Practical Action Consulting
PCMA	Pre-Crisis Market Analysis
RAM	Rapid Assessment of Markets
SAARC	South Asian Association for Regional Cooperation
SHF	Small Holder Farmer
ZFRP	Zurich Flood Resilience Programme

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Section 1: Objectives and key analytical questions

A Pre Crisis Market Analysis (PCMA) is based on comparing a baseline level (or “reference period”) of market functioning for particular commodity or service to the level of market functioning during an emergency, in order to anticipate how markets will be impacted in future emergencies. During this exercise, the baseline or “normal” time was established as May 2016 (i.e. dry season). The flood-affected market scenario was defined as the worst-case flood scenario in the two districts of Kailali and Bardiya, which was agreed to be August 2014. The PCMA team compared how market systems were functioning during the 2014 flooding with how they functioned at the time of this PCMA exercise (May 2016) to model how markets will respond during future flooding of a similar impact. The resulting analysis is intended to provide evidence and information to help formulate programming options previous to a future emergency. The recommendations resulting of this exercise are based on market functioning, and would need to be further informed by operational feasibility and coordinated needs assessments following the onset of an emergency.

This PCMA exercise took place in the context of the Nepal Flood Resilience Project (NFRP) (2013-2018) as part of the Global Flood Resilience Programme funded by the Zurich Foundation. The programme seeks to combine research, community development and risk expertise, with network reach to strengthen capacity and increase resilience of communities so that they can better assess, manage and recover from shocks. One of the priorities has been put on flood early warning system. The NFRP aims to build community flood resilience for the most vulnerable areas of the Karnali River Basin, through its flood resilience framework that recognizes the role of markets in building resilience and their high sensitivity to emergencies, particularly flood emergency.

PCMA objectives

The Global Zurich Flood Resilience Programme seeks to understand the role played by market systems in building resilience to flood. Within the project outcome 2, “***The impact of floods on market systems will be assessed and the strategies will be put in place to reduce market system vulnerability***”. More specifically, the question that this PCMA intended to explore was to *understand the actual and potential impacts that local and global markets have in building or undermining the resilience of the communities and to identify applicable interventions in the project areas of the Zurich Flood Resilience Programme in Nepal*. The PCMA therefore relied on two broad objectives:

1. **Improve Practical Action’s understanding of key market systems and the role they play in DRR/resilience programming**
2. **Strengthen Practical Action DRR capacity by generating recommendations (for PA and the DRR sector) to build community resilience through targeted market interventions before, during and after flooding**

The four specific core questions that the PCMA aimed to explore were as follows:

Question 1: How are local markets operating to deliver services that benefit local people?

Question 2: How are local markets affected by floods? (*through mapping of selected market system, create deeper understanding of how they operate and change in pre and post flood situation*)

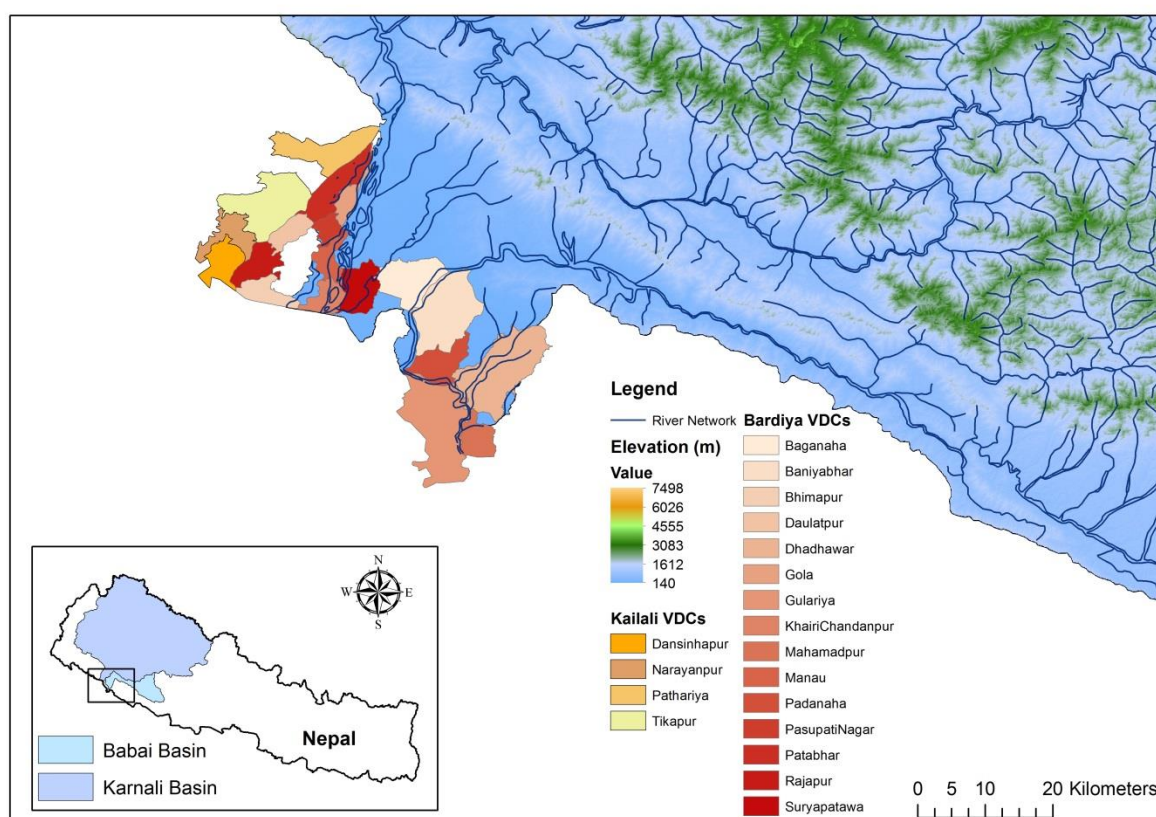
Following a thorough analysis of the market system:

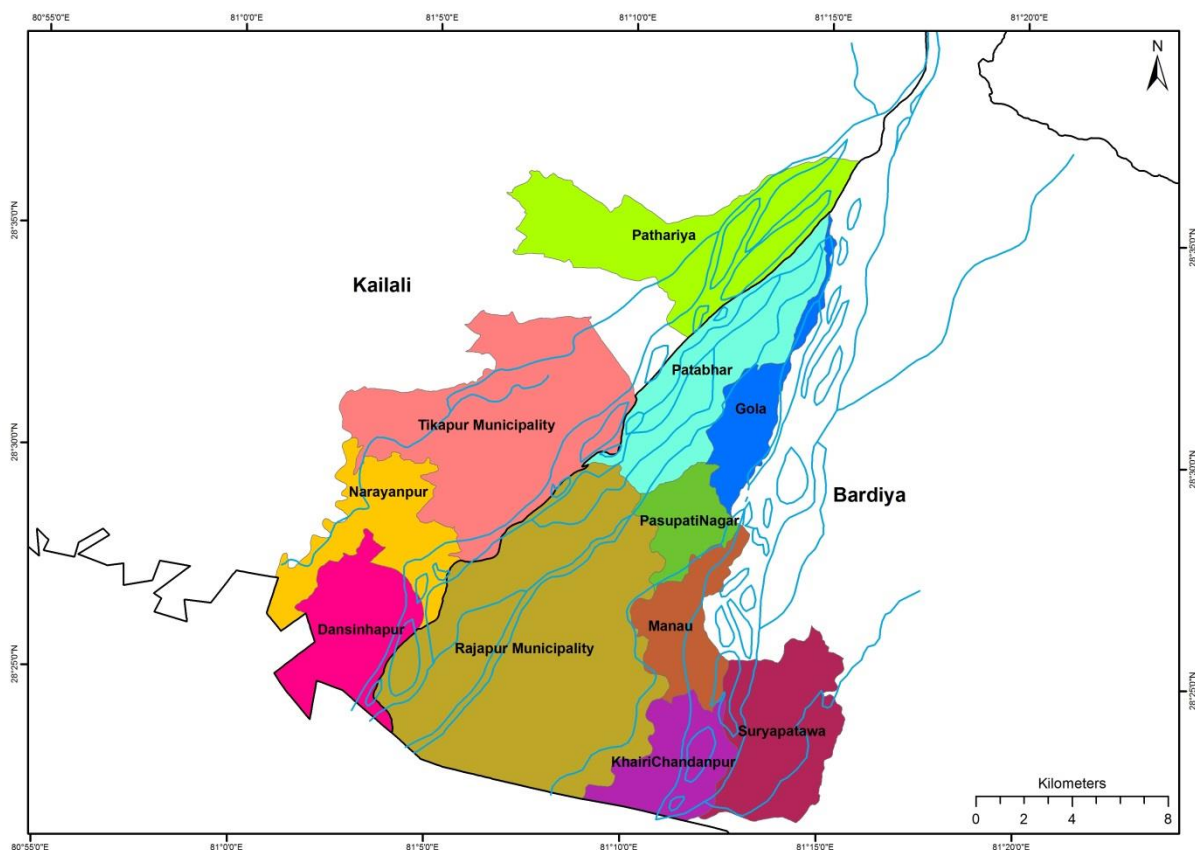
Question 3: How to make the market more resilient to floods?

Question 4: What markets focussed actions should the project support to build flood resilience?

The PCMA facilitators (PAC UK) provided support to the NFRP team in Practical Action Nepal (Kathmandu and Nepalgunj) to make a first assessment of the potential role of market system development in disaster risk reduction and resilience. The PCMA acted both as study informing the current programme strategy in Nepal, and as capacity building exercise. Leadership and mentoring was provided from the PAC UK team to the Nepal disaster risk reduction team in market analysis.

Before starting the field data collection, the PAC UK facilitators and the Practical Action Nepal staff in Kathmandu (Agriculture & Markets team and DRR and CCA team) met for two days in Kathmandu to finalize the PCMA procedure, to undertake the market system selection and agree on key analytical questions guiding the exercise. The discussions also built on capacity of participants to understand the PCMA toolkit in Kathmandu and during the field work in the project sties (the Karnali River basin), in Tikapur and Rajapur areas.





The PCMA team was formed at the end of the preparatory session in the head office and included:

PCMA methodology design team (Kathmandu)

Practical Action Nepal :

Gehendra Gurung (Head of Disaster Risk Reduction and Climate Change Programme)

Dinanath Bhandari (Climate Change and DRR Programme Coordinator)

Sujan Piya (Team Leader, Agriculture, Markets and food Security Programme)

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Al Cunningham (Private Sector and Inclusive Market Consultant)

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One Market Focal Point	Dinanath Bhandari
Two market team leaders	Al Cunningham ; Noemie de La Brosse
One Operation Focal Point	Sumit Dugar
Four Market Team leaders	Sumit Dugar ; Lok Narayan Pokharel (NFRP Project Officer, Nepalganj) ; Buddhi Kumal (NFRP Project Officer, Nepalganj); Prakash Khadka (CSDR)
Market team	Four enumerators (CSDR staff)

Key analytical questions

Based on the market system selection exercise, the PAC UK facilitators developed a series of key analytical questions guiding the PCMA exercise, a preliminary assessment of the type and number of market actors to include in the sampling interviews [see annex 2], and a set of data collection tools reviewed in plenary with all the NFRP team [see section 3, and annexes].

The following analytical questions that the exercise intended to answer were the following:

In “normal times”
1. How does the market system operate in normal times? <ul style="list-style-type: none"> - Include seasonal analysis of selected market systems - Quantify prices, volumes, stocks. - Who are main actors? - What are the main relationships and linkages? <i>All within 3 components of a market map.</i>
2. Does the market system cover the needs of the people in normal times? <ul style="list-style-type: none"> - Can people access these markets? What are the goods/services exchanged? Who dominates the decision making? (price, quality...)
In “crisis scenario” (heavy flood)
3. How does the market system operate in times of heavy flooding? <ul style="list-style-type: none"> - Quantify prices, volumes, stocks. - Who are main actors? - What are the main relationships and linkages? <i>All within 3 components of a market map.</i>
4. Does the market system cover the needs of the people in times of heavy flooding? <ul style="list-style-type: none"> - Can people access the market in times of heavy flooding? - What will be the most likely constraints on the market system in times of floods that may hamper its ability to absorb the shock? - What are the important factors affecting market system during flooding and aftermaths.
5. What are the most relevant <u>market interventions</u> to build <u>long-term resilience</u> to flooding? <p>a. What immediate and longer-term market interventions are required to build the resilience of the selected market to flooding?</p> <ul style="list-style-type: none"> - Who should undertake these market interventions? - What market interventions should Practical Action / CSDR & partners take/support a) within Zurich project? b) in another intervention? - Who should Practical Action, CSDR & partners work with to implement these market interventions? i.e. existing structure(s) e.g. Local CSOs, NGOs, networks, government agencies, Finance institutions etc - How feasible are these market interventions in practice (technical, social and political feasibility)? - How quickly could these market interventions be implemented? - What resources would be required to implement each market intervention? <p>b. How willing and capable are the market actors (and essential/key service providers) to support these market interventions?</p> <ul style="list-style-type: none"> - What challenges/limitations exist (e.g. what is the traders’ cash absorption capacity) - What can Practical Action / CSDR & partners do to reduce those limitations (this includes advocacy as well as a market support intervention)?

6. What are the most relevant emergency response options to flooding (that take into consideration the market system capacity to provide for the needs of the people)?

a. What market-based emergency response actions are required to meet the priority needs of the target people?

- Who should undertake these market-based emergency response actions?
- What market-based emergency response actions could the project & DRR actors take/support?
- Who should the project & DRR actors work with to implement these market-based emergency response actions? (i.e. existing structure(s) – e.g. Local CSOs, (I)NGOs , networks, government agencies, Finance institutions etc.)?
- How feasible are these market-based emergency response actions in practice (technical, social and political feasibility)?
- How quickly could these market-based emergency response actions be implemented?
- What resources would be required to implement each market-based emergency response action?

b. How willing and capable are the market actors (and essential/key service providers) to support these market-based emergency response actions?

- What challenges/limitations exist (e.g. what is the traders' cash absorption capacity)
- What can Practical Action do to reduce those limitations (this includes advocacy as well as a market support intervention)?
- What are the opportunities the project and DRR actors can use to enhance the market capacity to function during emergency and contribute to community flood resilience?

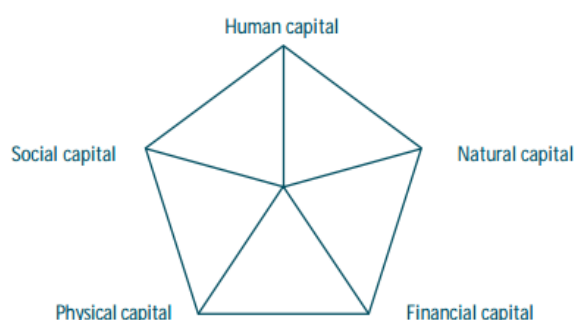
7. What market indicators can be monitored if flood occurs (part of EWS and Contingency plan) to prepare the market to cope better with the shock.

- Availability, physical access, prices, un/certainty
- Which actors and relationships are affected in the market system
- Etc.

Reference analytical frameworks

This PCMA took place as part of a wider discussion around the role of markets in community's flood resilience. The PCMA team used the criteria (4Rs) developed by the Multidisciplinary Center for Earthquake Engineering Research (MCEER) across the 5 capitals of the DFID's Sustainable Livelihoods Framework (SLF) as analytical guidance tools to develop the PCMA objectives and go through the data analysis.

The Sustainable Livelihoods Framework (SLF)¹ is a tool used to improve understanding of livelihoods of the poor and to assess the activities that could increase livelihoods sustainability in the context of vulnerability and identified risks and hazards. It can be presented through the "asset pentagon" that lies at the core of the livelihoods framework, 'within' the vulnerability context. The pentagon presents information about people's assets and brings to life important inter-relationships between the various assets that are vital to reduce people's vulnerability to risks and hazard.



¹ [The Sustainable Livelihoods Framework, DFID](#)

The R4 Framework was developed by the MCEER to conceptualize and measure disaster resilience. The MCEER defined "disaster resilience as the ability of social units (e.g., organizations, communities) to mitigate hazards, contain the effects of disasters when they occur, and carry out recovery activities in ways that minimize social disruption and mitigate the effects of future disasters. Critical infrastructure systems—including transportation and utility lifeline systems—play an essential role in community-wide disaster mitigation, response, and recovery and therefore are high-priority targets for resilience enhancement". Resilient systems reduce the probabilities of failure; the consequences of failure—such as deaths and injuries, physical damage, and negative economic and social effects; and the time for recovery. **Resilience can be measured by the functionality of an infrastructure system after a disaster and also by the time it takes for a system to return to pre-disaster levels of performance, through different factors:**

Robustness: the ability of systems, system elements, and other units of analysis to withstand disaster forces without suffering degradation or loss of function;

Redundancy: the extent to which systems, system elements, or other units of analysis exist that are substitutable, that is, capable of satisfying functional requirements in the event of disruption, degradation, or loss of function.

Resourcefulness: the capacity to identify problems, establish priorities and mobilize resources when conditions exist that threatens to disrupt some element, system, or other unity of analysis. It also includes mobilizing material, monetary, informational, technological, and human resources to achieve goal;

Rapidity: the capacity to restore functionality in a timely way, in order to contain losses and avoid future disruptions.

The Zurich flood resilience alliance is testing the "Four R and Five C" measurement framework by systematically collecting data as it works with communities together generating knowledge and facilitating actions to incorporate flood resilience in wider development initiatives. The PCMA team therefore used these frameworks for guidance in the design and development of this analysis.

Section 2: Crisis scenario and selected timeframe

Description of the selected reference crisis – August 2014

Based on secondary data review and discussions with Practical Action's DRR and Agriculture teams, the Karnali River floods that occurred in August 2014 were agreed upon as a major crisis scenario by the Zurich Flood Alliance, Practical Action and local partner organisations. According to the NFRP baseline report (2015), the frequency of floods has increased in last 5 years. Obviously, their impact is also going on increasing, however, the human loss decreasing due to the effective early warning system, awareness and exposure level of the community people and effective rescue and response team in the place. The flood mostly occurs during the four months of the rainy season: June, July, August, September and in rare cases in October when heavy monsoon rains fall onto the vast network of mountain streams converging to form the river basin. All the NFRP communities were flooded in the last five years. In mid-August 2014, three days of torrential monsoon rainfall led to the widespread Karnali floods in Western Nepal. The floods had a major impact on 49,088 people, damaging infrastructure and property and displacing households. Out of the 74 communities, 30 communities indicated that the flood had entered into their houses and provoked physical damage in August 2014. The report collected information showing that some people did not have food grain and firewood for cooking food and money to buy food items during and after the 2014 floods. Food supply and food storage were identified as major constraints for recovery.

Overview of humanitarian responses to date

A report² published in 2015 showed that the August 2014 floods were the worst event ever recorded³. However, the Early Warning Systems put in place since 2009 on the Karnali River were instrumental in saving lives and assets during the 2014 floods. The response actions from the Government and INGOs were however slow and poorly coordinated, particularly in terms of food distribution. "Political pressure complicated response and beneficiary selection, ultimately leaving the most vulnerable behind" and led to situations where food distribution created security issues. Significant improvement needs to take place in terms of crisis preparedness and in terms of coordination during the aftermath of similar floods. Without further improvement of the humanitarian response, INGOs may engage in similar coordination issues, which did not prove to follow a "do no harm" principle in 2014.

Practical Action's role and geographical area of responsibility

The Karnali Basin is more advanced than most regions in Nepal in terms of its disaster preparedness. Substantial NGO intervention (including through the NFRP) in the basin has included setting up early warning systems (EWS), community disaster management committees (CDMCs) and other formal disaster preparedness structures; these exist in

² [*Urgent Case for Recovery: What We Can Learn From the August 2014 Karnali River Floods in Nepal, ISET-International, ISET-Nepal, Practical Action Nepal, 2015*](#)

³ With nearly 500 mm of rain fell across the plains and foothills in 24 hours.

combination here but not necessarily elsewhere in Nepal. It is likely that a similar flood elsewhere in the country might have had a different and potentially more severe impact.⁴

Practical Action and its partners CDSR along with local stakeholders (both government and non-government) have set up Early Warning Systems that enhance preparedness and response capacities of communities. Practical Action Nepal's role in this geographical area does not include responsibilities in terms of emergency relief. These activities fall under the responsibility of the Red Cross and CDMCs, who coordinate search and rescue activities as well as food distribution.

⁴ Ibid

Section 3: Scope, depth of the analysis and market assessment tools

Scope of analysis

Based on secondary information analysis and interviews with stakeholders, the PCMA team identified the needs of the affected population should a similar flood crisis unfold again in the future.

The target population for this PCMA is about 52,527 people (33,805 in the Bardiya district, and 18,722 in the Kailali district). This population is part of the NFRP target population, i.e. the households of 74 communities of vulnerable downstream communities of 9 VDCs and 2 Municipalities of Kailali and Bardia districts residing along both sides of the Karnali River. The population targeted by the PCMA was mainly the actors involved in the market chain, e.g. farmers, local traders, processors, wholesalers, retailers, and consumers/households. This population has got pre-existing chronic needs that would be increased in case of another severe flood of the Karnali river. These needs are mainly on extension services and agro-inputs, safe shelter, and safe food storage.

The geographical scope chosen for this PCMA exercise was the the island – Rajapur – in between two branches of the Karnali river, with big flood impacts on the communities residing in the flood plains. The PCMA focused on the Rajapur and Tikapur areas where the team realised most of the interviews individually and in groups with each of the market actors, in Tediya-Rajapur, Bardiya and Baidi-Narayanpur, Kailali.

The socio-economic situation and population needs in this area

The main sources of livelihoods in the PCMA depend on agriculture and agriculture wage labour. In addition, alternative sources of livelihood have been promoted by the NFRP. Capacity building was provided to the project communities on skilled work such as bamboo furniture making or flood resilient vegetables. Other activities such as carpentry, masonry, electricity wiring, plumbing, painting, hair cutting and beauty parlours, small businesses, mobile and TV repairing, tailoring, shoe making (cobblers) have been identified⁵ for further alternative livelihood promotion and potential income increase to build long-term resilience in flood prone areas.

⁵ Nepal Flood Resilience Project (NFRP), Baseline Survey Report, Innovative Research and Development Center (IRDC), 2015

The Market assessment tools

To conduct the market analysis, the team developed an integrated methodology including existing and adapted *Emergency Market Mapping Analysis* (EMMA) and *Rapid Assessment of Markets* (RAM) tools used in PCMA studies in Somalia, Pakistan and Bangladesh⁶. The list of key questions suggested in the PCMA Toolkit was also greatly used in the tool design. These tools were selected from studies that had similarities with the PCMA undertaken in terms of market (rice), type of crisis (flood), or for the accessibility and simplicity of the tools they used. The team also used a Market System selection exercise from the Participatory Market Systems Development (PMSD) approach.

All the PCMA team members took an active role in reviewing and translating the data collection tools and in the field data collection work. The team designed data collection tools for four identified categories of actors:

- Farmers (small holder farmers and larger farmers) - See Tools 1 and 2 in annexes 3 and 4.
- Local rice traders - See Tool 2 in annex 5
- Local collectors and rice processors (mills) - See Tool 3 in annex 6
- Local wholesalers and retailers
- Nepal Food Corporation - See Tool 5 in annex 7

Tools were tested by the team before the beginning of the field work. The team dedicated four days to primary data collection in communities, shops, mills, public institutions in Tikapur and Rajapur areas (working area of the NFRP) - see annex 1 for list of interviews. Key new information was captured and shared with the whole team on a daily basis through a thorough feedback session with all the market data collectors. These sessions allowed the team to readapt the data collection tools based on the shared challenges.

Considering the nature of this PCMA and the available time for interviews, the team used sampling techniques (i.e. selected 1 or 2 stakeholders by category of market actor in each area) such as “snowball sampling” (i.e. asking actors to recommend other actors who may have complementary information). The priority was put on meeting a larger number of wholesalers, retailers and rice processing mills to reach a satisfactory level of data triangulation in both field data collection areas.

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- [Pakistan Flood Response: Wheat Seeds and Flour Final Report, Punjab, KPK and Sindh Provinces September, 2010](#)
- [PCMMA using the Rapid Assessment for Markets \(RAM\) Toolkit, WaSH and Shelter Market Systems in the case of IDP evictions, Mogadishu, January, 2016](#)
- [PCMMA of Potable Water and Agricultural Labor Market Systems, Korail neighborhood of Dhaka and rural Sirajganj Area, December, 2015](#)

Section 4: Market systems and season of the analysis

Market system selection

The PCMA facilitators and Practical Action DRR and Agriculture teams in Nepal used a market system selection tool⁷ from the PMSD approach to decide which market system the PCMA exercise would focus on. The team pre-selected 6 distinct market systems for their importance in terms of livelihoods in the NFRP area:

- Rice,
- Vegetables,
- Bamboo,
- Small and medium enterprises sector (e.g. plumbing, wiring, cycle repair, etc.),
- Cane and timber,
- Private health services and medicines.

The shortlisted market systems were ranked against two major selection criteria, focussed on their potential in terms of (i) flood resilience and (ii) wider market development. Each major criterion was divided into a series of 5 sub-criteria that the PCMA team weighted according to their relative importance in meeting the major criteria⁸.

Under the first “Resilience impact potential” criteria, the team decided to allocate the highest importance (i.e. weight) to criteria concerning the potential of each market system to be critical for Practical Action and to achieve the Zurich project objectives. The level to which each market system would negatively be affected by the flooding and how much support would the market actors need to reduce flood impact. The total number of people impacted by this market system both in normal and following flooding was also weighted of high importance.

Under the second “Market development potential”, the team looked at the most important sub-criteria they considered to reflect on the major elements for a market system to expand in normal times (i.e. regardless of the disaster). Sufficient demand for the product or service as well as the potential for SHFs to be competitive in the sector, were allocated the highest weight to proceed to the scoring.

Each of the 6 market systems got a score per sub-criteria, taking into account the allocated weight. By the end of the scoring process, the team was able to rank the market systems. **The rice and private health services + medicines sectors got the highest and equal score.** Rice represents the major crop production in the Far Western region. It is a key element for local livelihoods and nutrition in normal and flood times, and has the most important impact in terms of the number of people and market actors that are likely to be highly affected if the rice market system was impacted by flood. Reflecting on the feasibility of a PCMA exercise for each of these market systems, and taking into account the teams’

⁷ Participatory Market System Development (PMSD) approach, [Step 1 – Market System Selection](#)

⁸ See annex 8 for the detailed weighting, scoring and ranking table

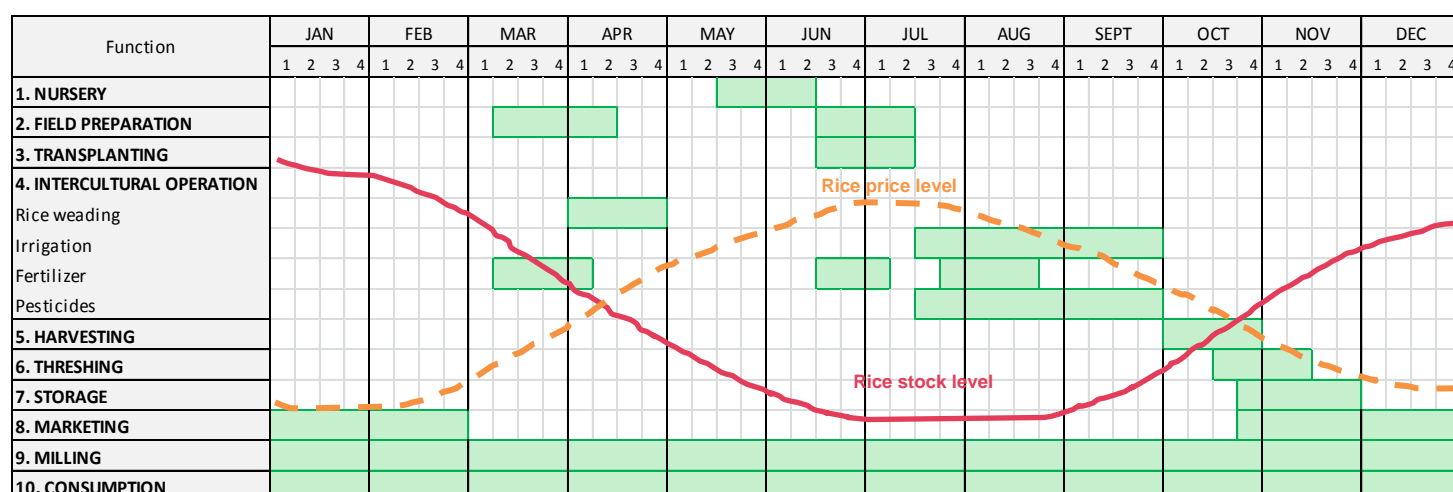
background knowledge and capacity to collect information on the ground, the PCMA team's final decision was to focus exclusively on the Rice market.

Rice seasonal calendar

The PCMA team involved Practical Action Agriculture and Markets team during the preparatory phase and designed a detailed seasonal calendar of the activities related to the rice production, trading, processing and sales in the selected geographical area.

The selected season for "reference time" analysis in this PCMA exercise was the winter and spring seasons (October-May) when harvesting, threshing, storage, marketing and most of the processing (milling) activities take place. The crisis scenario chosen for this PCMA exercise is the heavy monsoon flood of August 2014 that strongly impacted the intercultural operation activities (irrigation and application of fertilizers and pesticides) at the core of the production process. As a result, most of the forecast production for the year 2014 was destroyed and some of the previous year's harvest in storage was damaged⁹.

Rice seasonal calendar in Kailali and Bardiya Districts:



⁹ The team did not access detailed data at the time of the study.

Section 5: Market maps and analysis

The rice market system in non-monsoon time (May 2016)

The map describes the rice production in November-December in non-monsoon time. The reference time chosen was May 2016, date of the PCMA exercise. The PCMA tool place in the “Tikapur area” (population 100,000 ; i.e. 20,000 HHs) located west of the right branch of the Karnali River (belonging to the Kailali district), and the “Rajapur area” or “Rajapur island” (14,000 people) located east of the west branch of the Karnali River (belonging to the Bardiya district). The Far West region of Nepal, often called “the rice pocket of Nepal”, is generating most of the rice production in the country, both for national consumption and export. The Kailali district has 9,300 ha under rice cultivation.

The total land under cultivation on the “Rajapur Island” is 14,000 ha, which produces on average 400,000 quintals of rice yearly. 90% of this rice is good quality variety (Mawkwanpur variety) and does not represent the most common variety produced in the region. The “Tikapur area” average annual rice production is 300,000 quintals. Most of this rice is lower quality variety (Sarju rice).

Core Market Chain

Rice farmers:

The rice is produced both by “large farmers” (categorised as farmers owning land a minimum of 2/3 ha) and “small holder farmers” (SHF) (owning up to 2/3 ha). Some are organised in groups and cooperatives. SHFs typically produce between 5-20 quintals per year. They also work on larger farms as labour for approximately 400 NPR/day and engage in sharecropping. The interviews and focus group discussions revealed that some SHFs do not produce enough rice (and grains) to meet their family’s needs all year round, knowing that an average family (5 people) consumes 6 quintals of rice and 5 quintals of wheat over a year.

Local traders (Kantawallas):

Farmers sell their paddy (unprocessed rice) to a network of local traders (*Kantawallas*)¹⁰ who set the price which is influenced by the price set by the Nepal Food Corporation. Selling price reported during the interviews ranged between NPR 1,700 (immediately after harvest – Oct-Dec) and 2,000 per quintal (August – end of monsoon). Many Kantawallas deal in rice about 6 months per year (over the rest of the year their activities revolve around dealing with loans and agricultural input & supplies, and do business development). Most of them clear their stock before monsoon. Kantawallas also play a credit provider role as they offer advance payments to some farmers, i.e. farmers can borrow money from them by getting an advance payment on the next delivery of paddy rice later in the season or year. Kantawallas give as a reference the price fixed by the Nepal Food Corporation or a price set in October-November (harvesting season). Often farmers lose out because the price set up in advance

¹⁰ There are 106 kantawallas on the Rajapur island, who can store from rice from 500 to 10,000 quintals. There was no information available for Tikapur when the PCMA was realised.

is actually lower than the current market price when the farmers request this advance payment a few months later.

Processing mills, wholesalers and retailers:

The Kantawallas sell the unprocessed rice to small mills in communities (processing up to 5,000 quintals / year) and larger mills in Municipalities (> 10,000 quintals /year). Small mills process rice all year round for individual consumers, whereas large millers only mill between October and June. They reported being able to increase the volumes processed by 15% if requested. The larger millers set the price for the rice they get from the Kantawallas.

Kantawallas and mills based in the market places buy their rice from these areas: Thapapur, Narayanpur, Dhansinapur, Dakshinshahpur, Village Development Committees (in Kailali district). Small and large farmers are based in Thapapur, Narayanpur, Dhansinapur, Dakshinshahpur.

The price of rice in the Rajapur and Tikapur areas is generally high from June to August (until the harvest begins) when the demand for processed rice is the highest. Immediately after the harvest time, the prices start coming down and the milling activity is at the highest (in September-October). Rice mills adjust their selling prices every 2 years based on fixed prices set by District level Mill Association. The rice mills sell their produce to local wholesalers and retailers (approximately 15 wholesalers and 50 retailers in each of Tikapur and Rajapur areas) and beyond.

Small millers sell milled rice to local wholesalers, local retailers and individual customers. Local wholesalers also sell directly to local retailers. For example, Rajapur rice mill has business all year round and is used by 1,000-1,500 farmers. This mill also sells to other districts of Nepal. Locally, the demand is 4,000 to 5,000 quintals a year, and the mill also processes 10,000-15,000 quintals / year of wheat.

Small to medium size mills interviewed produce 4,000-5,000 quintals of processed rice per year. Karnali Rice mill reported a selling price to consumers ranging according to the variety from 3,000 (Sarju), 3,400 (makwanpur) 3,600 (Sabitri), to 4,000 NPR (R-22). This rice goes to Surkhet and Nepalgunj.

The large millers based in the Municipalities sell milled and unmilled rice collected from the local VDCs to local wholesalers and local retailers as well as dealers/wholesalers from other geographical areas (Nepalgunj, Surkhet, Dhangadi, Narayanghat, Butwal, Kathmandu, Nawalparasi) and to the Nepal Food Corporation. In total, they sell between 5,000 and 7,000 quintals per year. They also play a finance provision role (at 18% interest rate) for the farmers they work with.

Large and smaller mills, the NFC and the local wholesalers and retailers sell their produce individual consumers. They can be individuals, businesses such as restaurants and hotels¹¹.

In normal times there is good trust between local millers and their clients. This trust breaks down in times of flooding.

¹¹ At the time of the PCMA, the team did not manage to access information about the selling price to individual consumers.

The Nepal Food Corporation (NFC):

The team interviewed the Rajapur representatives of the NFC, a government institution within the Ministry of Supply, helps implementing the Government Food Security Strategy by playing a large food distribution role in relief times across the country and in the South Asia Association for Regional Cooperation (SAARC) region. They represent a large buyer of rice in the region of the PCMA. The NFC buys paddy rice directly from farmers (during the buying season, the NFC sees up to 100 farmers per day coming to sell their production) considering their welfare (i.e. offering decent price). Each year the NFC gets a quota of food items to fill. The NFC purchases, collects, processes and transports grain throughout the country wherever necessary on behalf of the Government and maintain stocks of food items for relief distribution (not for sale). The Rajapur NFC mill is the largest rice mill in the country. This mill provides about 20-25% of the total national stock. They can process 2 tons per hour. On average, the NFC buys 10-15% of the “Rajapur island” rice production (30,000-40,000 quintals out of a 400,000 quintal year production).

The Rajapur NFC mill buys rice from farmers between October and March on a “First come – First served” basis until the fixed quota is reached. The price is set just before the rice harvest, and the Rajapur NFC mill increases the price paid to farmers if the supply is insufficient to reach their quota. The price set by the NFC gives some bargaining power to farmers with Kantawallas, as they can use this attractive price to get a better price from the local traders.

Input and supporting services

Each of the market actors and connections described above need different inputs and supporting services to perform their role in the rice market system.

At the production level, larger farmers provide land to small holder farmers for a rent equalling 50% of the harvest generated on the land plot. All farmers also rely on agricultural inputs (e.g. seeds, fertilizers, insecticides) and services (e.g. technical advice, agriculture extension services, and training). The Agricultural Centres (Ministry of Agriculture) offer free advice and technical assistance. Agricultural equipment, seeds and fertilisers mostly come from India, the open border being located less than 10km from the studies areas, enabling free circulation of goods and people between both countries.

In terms of finance, local traders (Kantawallas) may provide advance payments to small holder farmers on production and harvest. They often set the price at a specific time of the year or at the NFC rate minus NPR 50. Often the price paid to farmers is 10 to 12.5% lower than the market rate at that time of the advance payment is generated. Another type of credit channel is provided by larger mills at an 18% interest rate annually. Cooperatives also provide finance, but only to organised farmers at a 15-24% interest rate annually. In this case, farmers contribute to the savings with NPR100 monthly payments and NPR 500 following rice and wheat harvests in Nov and Apr respectively. Community savings groups as well play a finance provision role for SHFs and community members to meet needs. These savings groups cover about 20% of the community but funds are limited. People pay in NPR 20 to 100 per month, and the interest rate on loans taken out is 1% per month. Flexible terms are available in times of disaster. The main knowledge gap in this exercise in

terms of finance provision was that the PCMA team was not able to speak to finance providers directly to document the credit products accessible from banks and microfinance institutions.

The rice production in Rajapur and Tikapur areas also relies on labour, provided by the landless or small holder farmers who need to offer labour work to larger farms (NPR 400 per day on average) to cover their basic needs. They also offer remote work to small and larger mills.

The storage facilities are strategic at each stage of the rice core value chain. The quality of the storage is what guarantees good quality produce, hence a high selling price and secure income. Some farmers build their own storage units made of clay or bamboo. Some buy metal silos. Bamboo is considered better for storing rice, whereas metal is usually preferred for wheat. The PCMA team decided to investigate further on the cost of storage and the level of access available locally. There are several SMEs selling metal silos in Tikapur and Rajapur towns. The offer storage facilities at different costs: ½ quintal silo for NPR 550-600; 1-3 quintal silo for NPR 1,000 – 2,000; or 5 quintal silo for NPR 2,500.

Rice processing mills are core market actors and small mills also act as service providers for family consumption at a cost of NPR 80-110 per quintal. On average, 5 to 10 small holder farmers use this milling service every day.

Most of the rice market actors locally rely on transport services. Some farmers own their own transportation mode, and others rent carts to transport rice from the production site (farm/household) to local traders, mills or the NFC. Local traders, mills, wholesalers and retailers use trucks as transported volumes of rice are greater between these actors. The cart pulled by oxen costs 10 per quintal to nearest collection centre (7-8 KM) and can transport 10-15 quintal. Almost all farmers have their own cart and those who do not have get in return of other work support (not in cash often, if cash then 10/quintal). The PCMA team identified missing information about the price of some other transport services.

The business enabling environment

The border between Nepal and India is particularly relevant to this PCMA exercise as the area of analysis is located close to the border. This represents one of the major factors in influencing the price for rice in the region and in Nepal. The border, whether it has been open, porous or closed, has had a huge impact on the rice market system in the Kailali and Bardiya districts. The open border makes it easier for a majority of male farmers¹² to migrate for seasonal work to India. On the other hand, this also means that a large part of the agricultural inputs needed in the region are easily purchased for a lower price in India and brought back in communities.

¹² At the time of the PCMA, the team did not manage to access more detailed information about migration.

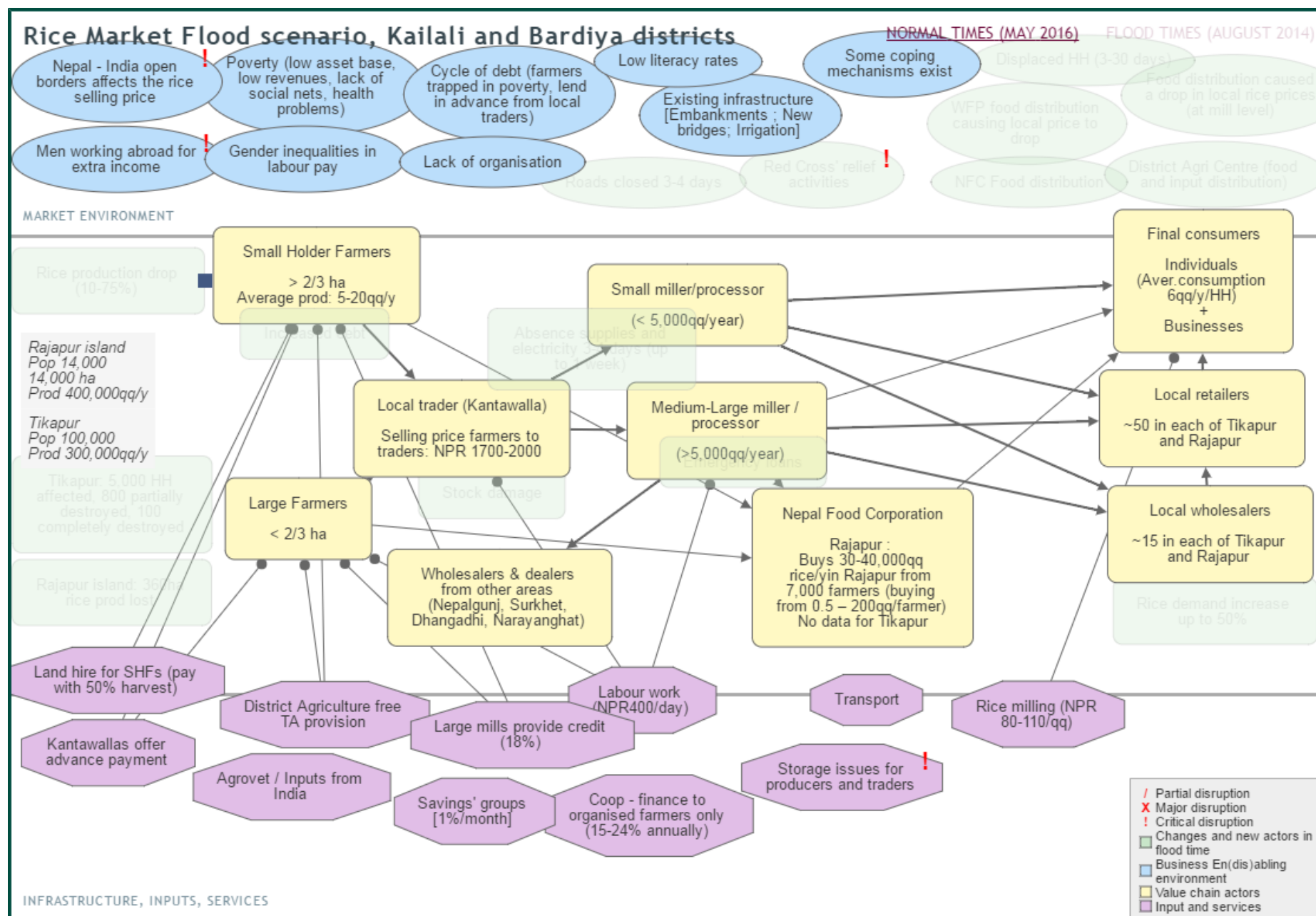
An important disabling factor for the rice market system in the region is the high level of poverty demonstrated by a very low asset base, low revenues, the lack of capacity of social networks and informal safety nets to overcome poverty and its root causes, and general health problems and access to essential health services. Many farmers are often trapped in poverty and a cycle of debt, as they get advance payments for their harvest from local traders at a lower price than the market price at the time they take this loan. They often lose the amount of interest of the loan which could be saved and the opportunity price if they were able to store and sell once the price has increased. This is partly based on the lack of skills in managing available household income and low income to cover the daily needs. Lack of storage capacities also represents another factor. Low literacy rates and a general lack of organisation of farmers can contribute to increase their bargaining power.

However, flood coping mechanisms have been developed by local market actors facing recurrent flood impacts. Seasonal migration to India and Middle East countries is now a common way for households to increase their income. Men usually come back once to twice a year (for the planting and/or harvesting season). Seasonal work for other larger rice farms and mills has also been identified as a common coping mechanism. Finally, crops diversification and crop rotation is largely practiced in the area of analysis. Local farmers are making use of sandy fields (from river flood sedimentation) to grow varieties of vegetables that can grow in this less fertile environment until the natural regeneration of nutrients present in the soil.

Gender norms have been investigated by the PCMA team in this exercise, although deeper analysis and data collection on the subject could have been beneficial. In fact, it has been challenging to meet men and women in separate group discussions. However, the interviews identified that women were in charge of double work both at home and in farming, especially in households where the man is absent the majority of the year working abroad. This is strongly influencing the capacity of a household to maintain a sufficient level of income, savings. It is therefore impacting hugely on the resilience capacity of the household. In general, women in the region are paid 25% less than men for agriculture labour (based on the community group discussions in Tikapur and Rajapur).

The level of physical infrastructure in the region has been improving in the recent years. Some irrigation systems are in place in the area of analysis and ensure satisfactory rice production. Some embankments are now under construction. They have a high potential in reducing the impact of floods at the farm and household level and can protect the most vulnerable fields from severe flooding of the Karnali River. This work should be achieved by 2018. Two new bridges have been inaugurated in two branches of the river, one on the left branch that connects Rajapur to district headquarter and another one on the right branch of the river, now creating a rapid connection between the Municipalities of Tikapur and Rajapur, traditionally referred to as “Rajapur Island” because of the isolation of the Municipality located between two arms of the river. Economic growth and business opportunities expansion is expected Rajapur Municipality in the next years.

Rice market map in non-monsoon time (May 2016)



The flood-impacted rice market in severe monsoon time

In the Kailali and Bardiya districts, the communities that the NFRP supports refer to August 2014 as a major flood in terms of discharge of water that incurred high levels of loss in terms of assets and livelihoods. This PCMA exercise is looking at this recent flood episode as a mean to collect strategic recommendations.

A general observation from the PCMA team was the observed lack of available secondary data (e.g. consolidated impact report, census, economic data etc.) in the area of analysis. The field work undertaken in the 2014 flood impacted areas nonetheless achieved to show what kind of impact the rice market system suffered in 2014 and the kind of market-based interventions that could reduce its vulnerability to future similar floods¹³.

Impacts at production level:

Many people had to abandon homes for an average of 3 days; some for up to a month. One group of people have still not returned to their homes due to the flood vulnerability (beside Karnali river) and are occupying university campus land in Tikapur and are still receiving aid. Due to time limitation and a lack of available data on the impact of the flood, the PCMA team was not able to identify the exact number of temporary displaced people.

However, the interviews showed that in Tikapur, 5,000 out of 20,000 households were affected, 800 partially destroyed, 100 completely destroyed. Details on the level of impact for these households remained challenging to assess through the interviews as communities were not sharing detailed information with the team. In this area, the rice production decreased from 10-15% in areas further from the river, and 75% in areas close to the river. The wheat production also got down by about 25%, and by 50% the following year due to drought.

In “Rajapur island” 360ha of rice production were lost, but in other areas (slightly elevated) observed productivity and production actually increased due to the flooding. This demonstrates that globally there was no net loss in production in the Rajapur area. In both Tikapur and Rajapur, storage losses were reported, but no detailed related data was available.

In the driest areas of both Tikapur and Rajapur, some farmers have actually increased productivity post-flood, and have referred to the beneficial aspect of the flood.

¹³ Nepal Flood Resilience Project (NFRP), Baseline Survey Report, Innovative Research and Development Center (IRDC), 2015
[*Urgent Case for Recovery: What We Can Learn From the August 2014 Karnali River Floods in Nepal*, ISET-International, ISET-Nepal, Practical Action Nepal, 2015](#)

Impact for rice traders and processors:

For up to one week after the flood started, the kantawallas in the Rajapur area only made business with their local customers. The smallest kantawallas experienced stock damages due to unraised storage facilities.

During the 2014 flood, some of the smaller traders lost rice in storage (that were stored for their household consumption), but most had already cleared last year's stock. The PCMA team could not obtain figures from the interviews. One of the most noticeable impacts of the flood was a reduction of work available on larger farms, mills, and with local traders for SHFs who wanted to mitigate reduced income from rice through labour work.

Most millers reported having not been affected by flooding. Some smaller community mills were flooded. The major reported impact by millers is the reduced quality of rice due to flooding which in turn has impacted the millers' customer base. One of the mills interviewed in Rajapur reported that demand (for processed rice) decreased by 75% during 3-4 days of flooding. During 2014 flood, rice millers did not experience major impacts on their business. This is explained by the fact that mills are comparatively located in safer locations, and have the capacity to clear their stocks before the monsoon. This is part of their existing resilience practice.

There was an absence of supplies for up to 3-4 days, but both mills and wholesalers source their rice from other regions of Nepal and from India, so their businesses are not adversely affected. Some mills had a reduction in demand from wholesalers/retailers who, worried by impact on quality of locally produced rice due to flooding sought supply from outside the area. During the emergency, local mills in Rajapur Island have provided shelter to communities; and so did the NFC.

Impacts for Retailers / Wholesalers:

The retailers and wholesalers that the PCMA team met in Tikapur said that they were not affected by 2014 flood because the rice produced locally (sarju) is exported outside the area and they bring in the better quality rice from elsewhere (Bhairahawa and further East in Nepal). In that sense, a reduction of local production in times of crisis did not affect the local businesses. And the storage was not affected (in safe locations). Retailers and wholesalers were not keen to provide detailed information to the team on supply and demand. However, they reported that in the rainy season, the demand goes down because the farmers store from their production, process/mill in advance of monsoon and store in home in sacs; and people working (not having their own production to sustain across the year) on harvesting buy rice in bulks just before the very intense harvesting work season. There is no change of price of the rice they sell, because that rice comes from outside. During the 2014 flood, local wholesalers and retailers did not increase rice prices to consumers. They experienced an increase in demand of rice immediately after the flooding by up to 50% (wheat by 25%). The demand then immediately reduced once the relief and food distribution programmes began.

A very interesting fact for this PCMA is that the retailers and wholesalers met in Tikapur and Rajapur areas reported that they had never been interviewed or consulted by any INGO or

NGO about the situation of the rice market and the role they play in food supply in relief times.

Impact on infrastructure:

The 2014 flood was representative of what impacts another similar severe flood could have in the area of analysis in terms of infrastructure. In August 2014, the roads were impassable for 3-5 days, but returned to normal after the flood receded. As a result, transport services between mills and wholesalers were interrupted for up to 3 days. In the communities met by the PCMA team, access to markets for communities cut off for 2-14 days. This made small holder farmers rely on grain storage or neighbours' solidarity to sustain the lack of access to food items. Irrigation channels were as well disrupted at the production level, and power cuts incurred some losses in business for some mills¹⁴. Larger mills did not have power to run machines for one week in Tikapur Municipality, and up to 30 days for community mills of the area. The interviewees were not able to measure and share the level of impact that this incurred in their business.

Emergency Response

Market response:

Rice market actors themselves have developed some response mechanisms. Large mills provided some emergency loans to SHFs repayable at the next harvest (details were not provided to the PCMA team on the conditions of this type of loan), but this is not enough for SHFs to cover the losses incurred by the flood. In general, debt amongst SHFs increased, especially the smallest and most vulnerable to flooding and trapped them further into a cycle of debt.

Emergency response programme:

In response to the August 2014 flood, the local Red Cross organised the distribution of food and non-food items¹⁵. All other organisations channelled the distribution of relief items through the Red Cross: the World Food Programme (WFP), the Government and other NGOs. The PCMA team met the Rajapur Island Red Cross team who recognised that they had distributed in the aftermath of the 2014 flood up to 6 times more than was actually needed.

The Government supplied food and non-food items coming from local markets; but relief activities provided by other organisations used food and non-food items coming from outside.

Although the PCMA team was unable to meet Government officials, the World Food Programme or other organisations to triangulate information and corroborate findings, preliminary findings show that food distribution in the flood aftermath caused a drop in local rice prices (at mill level).

¹⁴ Detailed data about these losses was not available at the time of the study.

¹⁵ Information about relief distribution by the Red Cross were not made available at the time of the PCMA or in secondary data analysis.

Recovery activities:

After the flood receded, the Agriculture Centre in Tikapur provided 600 households with hybrid seeds via arrangements with cooperatives. The farmers indicated that seeds were only distributed to organised SHFs. This emergency response was funded by the central government.

In Bardiya district, the District Agriculture Development Office (DADO), through the Agriculture Centre, distributed NPR 35 million worth of seeds. According to the discussion with DADO in both Rajapur and Tikapur areas, the government agencies (DADO in particular) provide seeds and other kind of support through farmers' groups registered to them and cooperatives. Therefore, organized farmers and linked to cooperatives are more likely to get support after emergencies than the ones who are not connected to government agencies.

It was impossible during the PCMA exercise to collect available information on the number of farmers who benefitted from this relief programme.

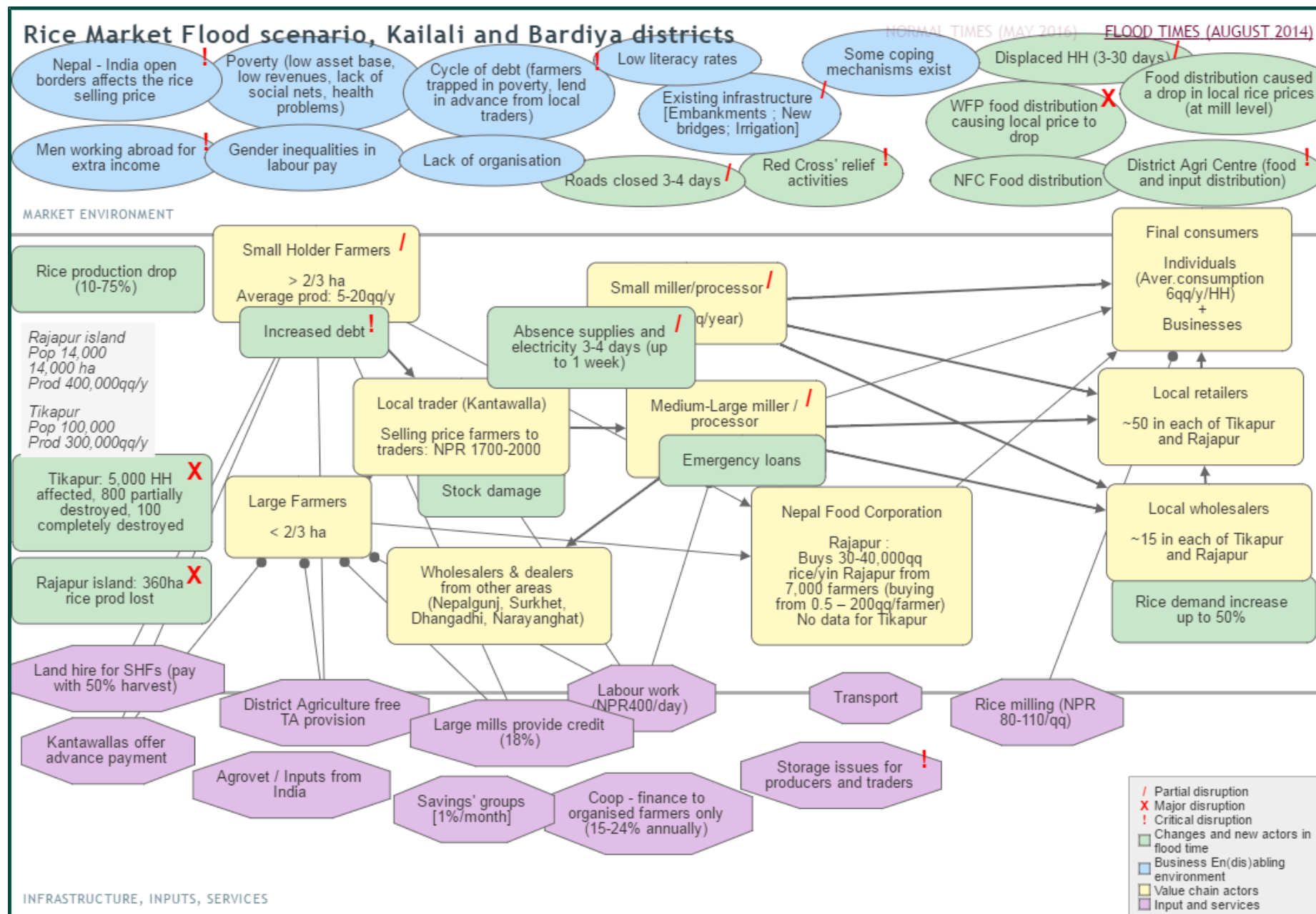
The Nepal Food Corporation's interventions:

The Rajapur NFC mill has got a stock of 100,000 quintals for emergency response. This is for wherever necessary in the country. They coordinate with the DDRC who buys the rice from the NFC to distribute it. The WFP however distributed rice imported from Vietnam during 2014 flood. The NFC shared with the PCMA team the challenge to reach an agreement with organisations like WFP instead of importing. The current limitations are about the WFP demand (which is largely higher than 100,000 quintals) for disaster. The NFC indicated they could get more stocks if advance notice mechanisms existed prior to severe flood event. Another major limitations lies in the fact that the price of rice procured by the NFC is still higher than the price of rice that the WFP imports from other countries. This is an important competitiveness blockage that the NFC may face to promote Nepalese rice in food distribution.

According to the NFC interviewed in Rajapur, the food distribution following the August 2014 flood emergency created dependence, whereby the World Food Programme distributed a lot of food which disincentived people to produce and buy. For instance in Mugu, a very poor area of Nepal, although the local market had 5,000 quintals of available rice after the drought this year, people did not buy it because a) they were waiting for food distribution (by the organization like WFP) for free and b) they were too poor to afford that local rice.

The 2014 flood emergency response demonstrated several challenges: the Damage and Needs Assessment in Rajapur did not access sufficient and consistent enough information to ensure well organised food distribution. Poor coordination, tensions around distribution and security issues were reported in Rajapur area. In emergency context, the NFC provides shelter during flood. Each year NFC collects and stocks 230,000 quintals of food (rice, wheat, maize and barley) so they can respond to emergency in Nepal and SAARC. In the Rajapur area, they always keep 1000 quintals of rice for emergency response, and sell it to the District Disaster Management Committee (CDMC) for relief activities. The NFC also provides rice to the Red Cross.

Rice market map in heavy flood scenario (August 2014)



Section 6: Main response recommendations

The following table sets out the short and long-term recommendations to strengthen the rice market system generally, and for Practical Action's short-and long term DRR and resilience programming in the Karnali River area.

Further discussion will take place the PA DRR and Zurich teams to prioritise the most suitable interventions based on capacity, available resources, and feasibility.

Short to medium term	Long-term
Community organisation <ul style="list-style-type: none"> - Increase SHF organisation as a means to access agricultural services in normal and emergency time (Farmers' organisations + Savings groups) 	Diversify income sources amongst SHFs
Storage <ul style="list-style-type: none"> - Discuss market intervention local agricultural centre (Min Agr.), SHF coops, MFIs, local people with skills to construct clay/bamboo grain storage units and local traders; PA (support from PAC?) to develop participatory business model - Promote safe storage in affected communities - Discuss community storage facilities with local population, including use/adaptation of existing shelters - Promote safer grain storage strategies - Link local traders (kantawalla) & community mill owners with those who have already invested in safe storage facilities 	Strengthen local and district level DRR structures <ul style="list-style-type: none"> - General coordination capacity - Damage & Needs Assessment capacity - Incorporate market systems analysis within DRR annual planning, including ER planning. Work specifically with Ag Centre as key ally to achieve this,
Finance <ul style="list-style-type: none"> - Meet financial institutions to assess viability of SHFs/coops accessing finance to build flood resilience - Further promote savings amongst community savings groups and coops - Promote saving for emergencies <p><i>Further analysis required</i></p>	Advocacy aimed at government and humanitarian agencies: <ul style="list-style-type: none"> - Promote primordial DO NO HARM principle in all humanitarian interventions - Analyse response capacity of local market systems - Link NFC with WFP and others (will include national level advocacy for the supply of local grain) - Advocate for cash transfer programming and/or coupons where there is a demonstrated local market capacity to meet gap needs - Consider cash/food for mitigation works – investigate existing programmes in Nepal for best practice - Address dependency creation culture of food hand-outs

Labour <ul style="list-style-type: none"> - Link supply and demand (those SHFs offering work & mills demanding work) 	
Consider replicating PCMA <ul style="list-style-type: none"> – Health (private services and medicines) – Bamboo – Carry out PCMA with CDMC groups and include it in preparedness planning 	Include PCMA in flood preparedness planning

Recommendations for further investigation and monitoring activities included in an M&E framework

- *Regular market-strengthening interventions to be implemented right after the PCMA exercise*
 - *Regular market monitoring*
 - *Future market-based interventions to be implemented if the crisis happens.*
-

ANNEXES

Annex 1 – List of participants

List of participants to the PCMA preparation (Kathmandu)

PCMA Co-facilitators, Practical Action Consulting UK	Al Cunningham, Private Sector and Inclusive Market Consultant Noemie de La Brosse, Inclusive Market Consultant
Practical Action Nepal, DRR and CC Team	Gehendra Gurung, Head of Disaster Risk Reduction and Climate Change Department Dinanath Bhandari, Climate Change and DRR Programme Coordinator
Practical Action Nepal, Agriculture and Markets Development Team	Sujan Piya, Team Leader, Agriculture, Markets and food Security Programme Trishakti Rana, Supply Chain Officer
Practical Action Consulting Nepal	Sumit Dugar, Research Associate, DRR and Climate Change Adaptation Puja Shakya, Project Development Officer, DRR and Climate Change Adaptation

PCMA team (Practical Action and CSDR staff members)

One Market Focal Point	Dinanath Bhandari (Climate Change and DRR Programme Coordinator, Practical Action Nepal)
Two market team leaders	Al Cunningham (Private Sector and Inclusive Market Consultant, PAC UK) Noemie de La Brosse (Inclusive Market Consultant, PAC UK)
One Operation Focal Point	Sumit Dugar (Research Associate, DRR and Climate Change Adaptation, PAC South Asia)
Four Market Team leaders	Sumit Dugar Lok Narayan Pokharel (NFRP Project Officer, Nepalgunj), Buddhi Kumal (NFRP Project Officer, Nepalgunj), Prakash Khadka (CSDR staff)
Market team	Four enumerators (CSDR staff)

Annex 2 – List of interviews & focus group discussions

Tikapur

- Small holder farmers, larger farmers
- Individual interviews and FGD
- Traders (Kantawallas)
- Wholesalers
- Retailers
- Small rice processing millers
- Large rice processing millers
- Red Cross
- Area Agriculture Service Centre

Rajapur

- Small holder farmers, larger farmers
- Individual interviews and FGD
- Traders (Kantawallas)
- Wholesalers
- Retailers
- Small rice processing millers
- Large rice processing millers
- Nepal Food Corporation

Annex 3 – Data collection tool 1: Farmers’ questionnaire

INTRO	<p>Introduction by Data Collectors about this exercise.</p> <p>We are interested in finding out about:</p> <ul style="list-style-type: none"> • farmers’ livelihoods • farmers’ sources of income / economic activities • how these are affected by flooding <p>We are particularly interested in rice and other food items:</p> <ul style="list-style-type: none"> • What farmers produce, sell and buy in the market • What happens in times of crisis – like the August 2014 floods • What can be done to improve things <p>The conversation should take about 30-40 mins.</p>		
Q1	Name of interviewer	<p>Name of interviewee:</p> <p>Sex: M / F</p> <p>Age:</p>	Household size:

Q2	What is your main economic activity or source of income? (Number them in order of importance 1, 2, 3, 4, 5, 6)	Farming		
		Skilled labour		
		Unskilled labour		
		Own business		
		Remittances		
		Other		
	Do you have your own land? Y / N	_____	Do you engage in share cropping? Y / N	
Q3	If yes, give size of plot: _____ Kattha		If yes, what size of land do you hire? _____ Kattha	

Q4	What are the most important crops for your household in terms of PRODUCTION ? (Note in order of importance)	CROP CALENDAR When do you plant each crop? When do you harvest each crop? GIVE MONTH FOR EACH	How much do you PRODUCE of each product per year? GIVE UNIT IN QUINTAL OR KG	How much do you CONSUME of each product per year QUINTAL OR KG PER YEAR	How do you STORE your produce during the year? 1. Raised 2. Not raised 3. Other	In the last flood, how much of each product did you lose in storage? <i>Give volume lost in QUINTAL (Q) Or KG</i> QUINTAL OR KG PER YEAR	In the last flood, how much of each product did you lose in field? <i>Give volume lost in QUINTAL (Q) Or KG</i> NAME which marketplace and to whom	How much do you SELL of each product during the year?	How much do you BUY of each product during the year?
								What price do you sell at?	HOW much does it cost?
								WHEN do you normally sell it? (MONTH)	WHEN do you normally buy it? (MONTH)
								WHERE do you normally sell it?	WHERE do you normally buy it?
								QUINTAL OR KG PER YEAR	QUINTAL OR KG PER YEAR

						PRICE obtained per QUINTAL OR KG		PRICE/KG	
	1								
	2								
	3								
	4								
Q5	<p>What are the most <u>important goods</u> and <u>services</u> that you PURCHASE but you don't PRODUCE? <i>Note in order of importance</i></p>	<p>When do you <u>BUY</u> this good/service? GIVE MONTH</p>	<p>How much do you pay for this? PRICE / KG Or PRICE per service</p>	<p>Where do you purchase each PRODCUT OR SERVICE? NAME marketplace and who (business, grocery, wholesaler, etc.)</p>	<p>Were you able to get each product and service in the time of the last flood? Y/N</p>	<p>If no, why? 1. No physical access to market 2. Not available in market 3. Price was too high 4. Other reason, please specify. _____ —</p>	<p>If no, for what period of time were you unable to access this product or service? <i>e.g., in 3 days, 1 week, 1 month</i></p>	<p>What did you do when there was no access to this product or service? 1. Did without 2. Got from someone else. <i>e.g., neighbour, relative, humanitarian aid programme, etc. --</i></p>	
	1								
	2								
	3								
	4								

Annex 4 – Data collection tool 2: Farmers’ Focus Group Discussion

Q1	Name the area(s) affected by the crisis. <i>(e.g., district, community or other area. Organize a map of the area.)</i>	
Q2	What was the population size in the affected area(s) during the time of the crisis? <i>(Number of households and people. If the population varied during the crisis, give population estimates during the worst part of the crisis.)</i>	Total population
Q3	What are the major livelihoods in this community?	- -
Q4	What are the major economic activities in this community?	1. 2. 3. 4.

ALL THE QUESTIONS BELOW ARE FOCUSED ON THE RICE MARKET

Q5	What market services are available for the rice market? A. Technical assistance B. Equipment providers C. Agro-input providers D. Finance providers E. Storage facilities F. Transport G. Processing H. Other (Please specify) _____	Who provides these services and <u>where</u> are they available? NAME TYPE OF SERVICE PROVIDER AND WHERE	Were you able to <u>access</u> these services when the flood occurred? Y/N	If no, why? 1. No physical access to market 2. Not available in market 3. Price was too high 4. Other reason, please specify	For how long these services were not available? NUMBER OF DAYS/WEEKS/ MONTHS
Q6	What support is normally available to help communities with rice? Ex: Government subsidy, Government soft loan, seeds from district agriculture office, irrigation schemes etc.)	What things make rice activities difficult? Ex: import taxes, policies only benefitting big farmers, open and closed borders with India etc.)	Where there any specific government institutions that helped the community with rice after the 2014 flood? Y/N Please specify		
Q7	What infrastructure help the communities with rice?		What infrastructure related to rice is vulnerable to flooding?		

Q8	Are people affected by flooding in different ways? E.g, How are men affected? How are women affected? How are children affected?				
	MEN		WOMEN		
Q9	What could be done to improve rice activities <u>before</u> a flood occurs? 		What could be done to improve rice activities <u>during</u> a flood occurs? 		What could be done to improve rice activities <u>after</u> a flood occurs?
Q10	What kind of support did you receive during the last flood? (e.g. Food items, cash, shelter, non-food items, seeds, tools, etc.)	Who provided the support? 	Was it what you needed? 	If not, what did you then need? 	

Annex 5 – Data collection tool 3: Local rice traders, Key Informant Interview

A. Assessment details	
Name of interviewer:	
Date of interview :	
Contact details of interviewee(s)/ informant(s)	
Name and position <i>(Explain role if not clear from position)</i>	Telephone
Name of business	
Type of business <i>Small retailer, large retailer, wholesaler</i>	
Location of business	
Period business functions <i>E.g., All year round, seasonal (when), weekdays, etc.</i>	
Q1.: Key products traded	Give the total demand of each product in the area. <i>(Total demand, daily/weekly/monthly)</i> Give data in QUINTALS or KG
1. Rice	
2.	
3.	
Q2: Observations on travel to the marketplace, if applicable: <i>(Time needed, obstructions, trade flows observed etc.)</i>	
B. Overall impact of August 2014 Flood on the market	
Q3: In general, how did August 2014 Flood affect you and other traders? <i>E.g., reduced demand, increased demand, no supplies, damaged infrastructure, price increases.</i>	
C. Market Demand	
Q4:	
a. Who are your customers? <i>(category of customer: People? Farmers who do not produce rice? Wholesalers? Retailers? Local company? Government? Etc.)</i>	
b. Where do your customers come from? <i>(from the communities, municipality; other regions of Nepal when there is a flood, etc.)</i>	
Currently	During / in the aftermath of the August 2014 Flood

Q5: Did the number of your customers change during / in the aftermath of the flood?

(If the number changed, try to estimate the % change)

Commodity	Decreased by	No change	Increased by
1. Rice			
2.			
3.			
4.			

Q6: Can you explain why you had more / fewer customers during / in the aftermath of the flood?

D. Market Supply

Q7: QUESTION ONLY FOR RETAILER: How did the number of wholesalers supplying your key commodities change during / in the aftermath of the flood?

Commodity	Number In "normal times"	Number during / in the aftermath of the flood
1. Rice		
2.		
3.		

Q8: QUESTION ONLY FOR WHOLESALER: How did the number of retailers buying your key commodities change during / in the aftermath of the flood?

Commodity	Number In "normal times"	Number during / in the aftermath of the flood
1. Rice		
2.		
3.		

Q9: QUESTION ONLY FOR RETAILER: Did the wholesalers provide you with the same volume of each product during / in the aftermath of the August 2014 Flood?

Y / N

Volume provided:

Commodity	Same as pre-shock	More than half of pre-shock	Half the pre-shock supply	Less than half of pre-shock supply	No more supply
1. Rice					
2.					
3.					

Q10: What/Who is your source of each product in "normal times" and during / in the aftermath of the August 2014 Flood?

Commodity	Source(s) in normal times	Source(s) during / in the aftermath of the August 2014 Flood
1. Rice		
2.		
3.		

E. Market Constraints and Response Capacity												
Q11: If the local population were (will be) affected by a similar crisis in the future and they were given money to buy things (they need) by a government or humanitarian agency programme, do the traders here have the capacity to supply the key products to the populations?												
Commodity	Can traders supply? (Mostly, hardly, no, don't know)					Explanation						
1. Rice												
2.												
3.												
Q12: Why can't the traders and wholesalers expand their businesses (in normal times)?												
Q13: How can the traders be supported to supply the key products during / after the flood? <i>(What is needed and for how long.)</i>												
F. Price information												
Q14: How does the price for each product normally change during the year? <i>(Note for each commodity and month whether prices are typically high (H), normal (N) or low (L))</i>												
Product	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Rice												
2.												
3.												
Q15: What happened to the prices of the key products during / after the August 2014 Flood?												
Commodity	Increased / Decreased / Stayed the same											
1. Rice												
2.												
3.												
G. Contact, comments and observations												
Q16: Who else can help us to understand the market? <i>(Ask for names, contact details and help to arrange meetings.)</i>												
Retailers: Wholesalers <i>(do not have to be present at this marketplace itself)</i> : Authorities, associations, etc.: Others:												
Q17: Any final comments or suggestions												

Annex 6 – Data collection tool 4: Local collectors and rice processors (mills), Key Informant Interview

A. Assessment details	
Name of interviewer:	
Date of interview :	
Contact details of interviewee(s)/ informant(s)	
Name and position <i>(Explain role if not clear from position)</i>	Telephone
Name of business	
Type of business <i>Small collector Large collector Small rice miller Large rice miller</i>	
Location of business	
Period business functions <i>E.g., All year round, seasonal (when), weekdays, etc.</i>	
Q1: What products do you do business in?	Give the total demand of each product in the area. <i>(Total demand, daily/weekly/monthly/yearly)</i> Give data in QUINTALS or KG
Rice	
Q2: In general, how did August 2014 Flood affect your business? <i>Possibilities include: reduced demand, increased demand, no supplies, damaged infrastructure, price increase.</i>	
C. Market Demand	
Q3: a. Who are your customers? <i>(category of customer: People? Wholesalers? Retailers? Local company? Government? Etc.)</i> b. Where do your customers come from? <i>(From which districts, communities, towns, etc.)</i>	
Currently	During / in the aftermath of the August 2014 Flood

Q4: Did the number of customers change during / in the aftermath of the flood? (If the number changed, try to estimate the % change)				
Decreased by E.g., 20%, 50%?		No change		Increased by
Q5: Why did you have fewer or more customers during / in the aftermath of the flood?				
D. Market Supply				
Q6: Did your suppliers change during / in the aftermath of the August 2014 flood?				
a) How many suppliers do you have in normal times AND during/in the aftermath of the flood? b) What is the total volume of each product you obtain from your suppliers in normal times AND during/in the aftermath of the flooding?				
Commodity	Number In "normal times"	Number during / in the aftermath of the flood	Volume purchased in normal times	Volume purchased during / in the aftermath of the floods
Rice				
Q7: Who do you buy each product from in "normal times" and during / in the aftermath of the August 2014 Flood?				
Commodity	Source(s) in normal times		Source(s) during / in the aftermath of the August 2014 Flood	
Rice				
E. Market Constraints and Response Capacity				
Q8: If the local population were (will be) affected by a similar crisis in the future and they were given money to buy things (they need) by a government or humanitarian agency programme, do you have the capacity to supply the key products to the populations?				
Commodity	Explanation			
Rice				
Q9: Why can't you expand your business (in normal times)?				
Q10: How could collectors AND/OR rice millers be supported to supply the key products during / after the flood? (What is needed and for how long.)				

G. Price information												
Q11: How does the price for each product normally change during the year? <i>(Note for each commodity and month whether prices are typically high (H), normal (N) or low (L))</i>												
Product	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Rice												
Q15: What happened to the prices of the key products during / after the August 2014 Flood?												
Commodity	Increased, Decreased, stayed the same											
Rice												
G. Contact, comments and observations												
Q12: Who else can help us to understand the market? <i>(Ask for names, contact details and help to arrange meetings.)</i>												
Retailers: Wholesalers <i>(do not have to be present at this marketplace itself):</i> Rice millers: Authorities and government officials? Others:												
Q13: Any final comments or suggestions												

Annex 7 – Data collection tool 5: Nepal Food Corporation (NFC), Key Informant Interview

A. Introduction: What is the NFC?

- What is its structure?
- What does it do?
- What is its mission?
- How is it funded?
- Annual budget?
 - i. For Bardiya district
 - ii. For Mid-Western Region
 - iii. For Nepal?
- What are the products that the NFC purchase? (main products)?
 1. _____
 2. _____
 3. _____
- How do they interact with rice market actors?
 - Farmers
 - Local traders (Kantawalla)
 - Small and large rice processing mills
 - Retailers
 - Wholesalers

B. What is the role of the NFC in terms of supply and demand dynamics?

SUPPLY

- Geographical coverage:
 - Type of rice?
 - When do they buy it?
 - Who do they buy it from?
 - How much (volume) do they buy?
 - What is the cost?
 - How do they set this price?
 - How does this price affect others in the sector? (Farmers, trades, millers, wholesalers)
 - Is supply growing? Going down? Steady?

DEMAND

- Geographical coverage:
 - Type of rice?
 - When do they sell/distribute it?
 - Who do they sell it to? Who are their customers?
 - How much do they sell (volume)?
 - What is the price they sell at?
 - How do they set this sales price?
 - How does this price/distribution affect others in the sector? (Farmers, trades, millers, wholesalers)
 - Is demand growing? Going down? Steady?

C. Coordination with other food distribution actors

- Does the NFC coordinate with other government departments/institutions?
 - In normal times?
 - In emergency time?
 - Do they work with other
- Do they work with other relief organisations? (local, international, World Food Programme, Red Cross etc.)?
- Are they part of DRR structures?
- What can be done to stabilise markets during floods?

Annex 8 – PCMA Market System selection exercise

PCMA Practical Action Nepal Zurich project: Market selection criteria, weighting, scoring and ranking								
	Weight	Rice	Veg (generic)	Bamboo	SME sector	Cane & timber	Private Health services + medicine	Notes
Resilience impact potential								
1. Critical sector for the PA target group and to achieve the Zurich project objectives (1 = not very important, 3 = very important)	3	3	2	2	2	1	3	
2. Sector is likely to be negatively affected by flooding and market actors need support to reduce flood impact (1 = not very likely to be affected, 3 = very likely to be affected)	3	2	3	1	1	1	2	
3. Total number of people impacted by this sector. 1 = few people affected, 3 = many people affected	3	3	2	1	1	1	2	
4. Potential income increase for target group 1 = low potential for income increase, 3 = high potential for income increase	1	3	3	3	3	3	2	For health, if people are not healthy they cannot work to earn money
5. Sector is of specific interest in terms of potential impact on gender and social inclusion 1 = sector is not that relevant for gender equality and inclusion, 3 = sector is very relevant	2	2	3	2	1	1	3	
Total		13	13	9	8	7	12	
Total weighting adjusted		31	30	19	17	14	29	
Market development potential								
1. Is there sufficient demand for the product or service? (either existing or potential demand) 1 = low demand, 3 = high demand	3	3	3	3	3	3	3	
2. Do smallholder farmers or entrepreneurs have the potential to be competitive in the sector? 1 = low potential to be competitive, 3 = high competitiveness potential	3	2	2	3	2	3	3	
3. Is there potential for value addition? 1 = low potential for value addition, 3 = high potential for value addition	2	2	1	3	2	3	2	This criteria cannot be easily applied to health. It was marked 2
4. Is the sector a priority for government and/or other actors in the area? 1 = low importance, 3 = high importance	2	3	3	1	2	1	3	
5. Is the sector complex? / Do we have the capacity to readily understand the sector? 1 = very complex sector, 3 = relatively easy to understand	1	2	2	1	1	1	1	
Total weighting adjusted		12	11	11	10	11	12	
Market development potential		27	25	27	24	27	29	
GRAND TOTAL		58	55	46	41	41	58	
RANKING		1	3	4	5	6	1	