



Pre-Crisis Market Mapping and Analysis:

The wheat straw market system in the context of severe flooding

*Badin, Ghotki and Sanghar Districts, Sindh Province,
Pakistan*



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Executive summary

Pre-Crisis Market Mapping and Analysis (PCMMA) is a relatively new approach to conducting market assessments prior to emergencies in order to anticipate how markets will respond after a shock occurs. The PCMMA in Pakistan was the first of three pilot PCMMA assessments that the IRC is conducting in 2015 in order to generate learning that can be used to refine the approach and the PCMMA guidance manual, while also providing information to humanitarian actors in Pakistan to feed into strategic and operational emergency planning efforts. In Pakistan, the PCMMA exercise additionally served as a capacity building exercise to enable practitioners to carry out market analysis after emergencies occur.

The PCMMA took place from 18 May to 1 June 2015 in Sindh, Pakistan, covering Badin, Ghotki and Sanghar districts. The exercise was hosted by the IRC, with participation from eight other organizations. The analysis team followed the PCMMA guidance to apply an approach similar to that of the Emergency Market Mapping and Analysis (EMMA) Toolkit in a pre-crisis context. For the purpose of this PCMMA assessment, the severe floods of 2010 (for Ghotki) and 2011 (for Sanghar and Badin) were selected as the reference crises. The team examined how the floods impacted the function of four selected critical market systems in order to draw conclusions about the likely impact of future floods on the market systems and to propose appropriate market-based preparedness and response interventions.

This report presents the findings and recommendations for the wheat straw critical market system in Badin, Ghotki and Sanghar Districts. The focus population for this assessment are the approximately 359,000 households in the three districts affected by the 2010/2011 floods. The poorest people in this group work as either daily laborers or as sharecroppers, heavily burdened by debt to their landlords.

In normal years, the wheat straw market system functions well and provides sufficient volumes of straw to meet the needs of the population. Sanghar and Ghotki are large wheat production areas and produce most of their own straw, as well as sell to other districts, including Badin which does not produce much wheat. If additional straw is needed in any of the districts, traders regularly bring in more supply from neighbouring areas, particularly Punjab. During flood emergencies, straw stored in open fields suffers significant losses, and farmers who keep their own straw for consumption suffer significant damages and rely on markets to meet their needs. Even though livestock are often sold or die during floods, more farmers must resort to purchasing straw on markets because of inundation of grazing land and losses to straw and other types of green fodder. Market actors report being able to provide the necessary amounts of straw during flood emergencies to meet needs, both by purchasing straw at low prices from farmers who sell it as a coping mechanism and by bringing in straw from neighbouring provinces. The markets are likely to remain competitive and integrated with other straw producing areas and able to supply the necessary volumes of straw.

Based on an analysis of the 2010/11 floods, the wheat straw market system by and large has the capacity to meet the anticipated demand for straw during future floods. In Sanghar and Ghotki, straw markets will need to increase their volumes supplied in order to meet the high demand, while in Badin markets will need to provide roughly the same supply as before the emergency. Markets will need to scale up to meet these levels of demand for at least 3 to 5 months, from September until green fodder becomes available.

In all three districts, market actors will likely be able to scale up supply to meet the demand by importing straw from other districts. All straw vendors reported being able to maintain adequate supplies in 2010/2011, and some even reported providing additional straw stocks to NGOs to distribute as humanitarian aid.

The major limiting factor for households to access straw after the floods will be purchasing power. Because straw will need to be brought in from other districts or provinces, and roads will be inaccessible in many places, straw prices will increase.

Based on this analysis, this report proposes the following recommendations for emergency response during future floods:

For the first month of the emergency:

- **In Sanghar and Badin: In-kind distribution of fodder assistance to the affected population**, provided that relief efforts can reach the affected households.
- **In Ghotki: Cash or vouchers to the affected population** to enable them to purchase wheat straw from the functioning markets to meet their needs.

For the 3 to 5 months following the emergency, for all three districts:

- **Cash or voucher assistance for straw** should be phased in as soon as transport networks become more open, cash or vouchers redeemable at local straw retailers can be phased-in to replace in-kind straw distributions. Because of the high number of straw losses, assistance will be required for about 3-5 months until green fodder becomes available.
- **In-kind distribution of supplemental nutrition for livestock** to help prevent losses from disease and preserve livestock as an asset.
- **Provide assistance for green fodder crops**, depending on the availability of green fodder for grazing.

This study makes the following recommendations for emergency preparedness activities:

- **Improve straw storage mechanisms at the household and retailer levels**, including low-technology, low-cost solutions to better protect the straw yields stored in open fields. Training on improved storage techniques should be followed by development of village-based disaster management plans which could include plans for positioning adequate amounts of fodder in less flood-prone areas for the village to use.
- **Planning for green fodder planting, after floods.** It is essential to identify in advance of a flood areas where green fodder or grazing could be available and to plant these lands as quickly as possible after the flood.
- **Supplier agreements with straw traders.** Humanitarian organizations should identify traders, exporters and producers in straw-producing areas to act as suppliers if rapid distribution of wheat straw fodder is needed. Traders and exporters should be particularly targeted by humanitarians because they regularly deal in large volumes of straw, and have relationships with producers in other provinces as well.

I. Overview of assessment

Objectives

The [Pre-Crisis Market Mapping and Analysis \(PCMMA\) guidance document](#)¹ is a practical, step-by-step resource to guide market analysis practitioners and team leaders to conduct market assessments prior to emergencies in order to anticipate how markets will respond after a shock occurs. PCMMA is designed to help agencies improve response preparedness, to feed into contingency planning efforts and to contribute to the design of disaster risk reduction programs by identifying certain parts of market systems which may be vulnerable to shocks. Ideally, pre-crisis analysis will help to increase the speed of emergency responses and provide guidance on how to strengthen market systems ahead of emergencies to reduce the impact of future disasters on lives and livelihoods. Because PCMMA is still a relatively new approach, the IRC has devoted resources to conducting three pilot PCMMA assessments in disaster-prone countries in 2015 in order to generate learning that can be used to refine the approach and the PCMMA guidance manual, while also informing the strategic and operational emergency planning efforts of humanitarian actors in Pakistan. This PCMMA exercise additionally served as an opportunity to build the capacity of humanitarian practitioners to carry out market analyses in humanitarian contexts.

The PCMMA analysis is based on comparing a baseline level of market functioning 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 was established as August 2014, which was deemed a “normal” year, just before the onset of seasonal flooding. The emergency-affected market scenario was defined as the worst-case flood scenario in the three districts, which for Badin and Sanghar was agreed to be September 2010, and for Ghotki September 2011. The PCMMA team compared how market systems were functioning during the 2010/2011 flooding with how they functioned in August 2014 to model how markets will respond during future flooding. The resulting analysis is intended to provide evidence and information to help determine programming options in advance of an emergency. The recommendations of this analysis are based on market functioning, and would need to be further informed by operational feasibility and needs assessments following the onset of an emergency.

In summary, the specific objectives of the Pakistan PCMMA exercise were:

1. **Emergency response** - To recommend the most appropriate market-sensitive programming options (including both direct assistance to the affected population and indirect assistance to market actors) to respond to monsoon season flooding.
2. **Preparedness / DRR** - To identify program options to strengthen markets and address potential constraints in access or availability of essential items during floods.
3. **Capacity building** - To strengthen skills of humanitarian actors in Pakistan to conduct market analyses before and after emergencies.

¹ Available at <http://emma-toolkit.org/practice/pre-crisis-market-mapping-and-analysis/>

4. **To learn about the PCMMA approach itself** - to capture learning about the PCMMA approach in order to inform revisions and improvements to the PCMMA guidance manual.

Methodology

This analysis exercise followed the PCMMA guidance to apply an approach similar to that of the Emergency Market Mapping and Analysis (EMMA) Toolkit in a pre-crisis context. The EMMA toolkit is a mixed methods (qualitative and quantitative) approach that is based on 10 logical steps and is designed for non-specialists to rapidly conduct market assessments in a quick and low-cost manner. The approach includes three “strands” of analysis, including a household gap analysis to understand the material needs at household level, a market analysis to evaluate the capacity of the market to respond to those needs, and a response analysis to identify appropriate options for programming.

The PCMMA took place from 18 May to 1 June 2015 in Sindh, Pakistan, covering three districts – Badin, Ghotki and Sanghar. The exercise was hosted by the IRC, with participation from eight other organizations – HWA Foundation, Takhleeq Foundation, Root Work Foundation, Care, ACTED, ACF, Concern Worldwide, WHH and Oxfam. The three districts of the assessment were selected based on (1) Geographic coverage of the north, central and southern parts of Sindh; (2) Proximity to partner agency offices to support the assessment teams; and (3) Having been seriously affected during the 2010/11 floods. In total, 18 national and 3 expatriate staff participated in data collection and analysis, including intensive mentoring support to 4 critical market team leaders. A training workshop was held at the beginning of the exercise from 19-21 May in order to introduce the PCMMA approach, train team members in market analysis and prepare fieldwork activities. This workshop was followed by 7 days of intensive field-level data collection in each district and a 3-day analysis workshop to review and analyze the data.

Data was collected from key informants and market actors using semi-structured interview tools and from communities through detailed focus group discussions and household interviews. For the wheat straw portion of this exercise, the sample included 28 households, 15 market vendors and 7 focus groups, as well as a number of key informants. Qualitative and quantitative data was inputted into databases for each critical market system on a daily basis and shared with the other districts to coordinate data collection efforts across districts.

The size and scope of this exercise, in terms of the geographic areas of coverage, the number of team members and the number of critical market systems studied, were quite ambitious, especially considering that this was a pilot study. In one sense, this breadth was extremely positive, as it reflected a strong interest in market assessments among a range of humanitarian actors in Sindh. However, it also made it difficult to allocate appropriate time to each of the study’s four objectives. In addition, few of the team members, team leaders included, had any prior market analysis experience, which meant that leaders were learning key concepts and the methodology alongside the people they were leading. Finally, the assessment leaders were not always able to provide in-person support to the field team because of the geographic spread of the study (3 districts for 2 assessment leaders) and because of security concerns. Though a good effort has been made to discuss outstanding questions and clarify key findings with the field team, all of these factors had implications for the quality of data and the resulting analysis.

II. Crisis scenario

Severe floods recur on a regular basis in Pakistan; the country has experienced 12 particularly destructive flood years since its independence in 1947. Flooding of some form affects parts of the country almost every year, normally during the late monsoon months of August and September, and it is anticipated that climatic changes may mean floods of greater frequency and destructive force in the future. The consecutive flood years of 2010 and 2011 were the worst floods to date, affecting 20 million and 9.3 million people, respectively, throughout the country.²

Due to its flat topography and its location at the bottom of the Indus River basin, Sindh Province is particularly vulnerable to riverine floods, triggered by heavy monsoon rains. According to Pakistan's National Disaster Management Agency (NDMA), Sindh faces the added challenges of a lack of protective infrastructure or integrated flood management and inadequate awareness about monsoon hazards and responses among the vulnerable members of the population.

The 2010/11 floods led to loss of life and also damaged standing crops, household and livestock food stocks, health, education and road infrastructure, houses, irrigation and drainage facilities and protected drinking water sources. Millions of people were displaced for several months or more while waiting for the flood waters to subside. Unless there are major changes to protective infrastructure, it is likely that a similar flood in the future will have a similar impact.

The 2010/11 floods saw a massive humanitarian response in Sindh that spanned all of the usual emergency sectors, like shelter, food security, WaSH, health, education and nutrition.³ The government of Pakistan and a multitude of Pakistani NGOs led the initial response and was later joined by the international humanitarian community. The government drew some criticism for restricting when, where and how NGOs could intervene; notably for this assessment, it sometimes discouraged NGOs from distributing unconditional cash grants to flood-affected people.⁴ While some NGOs did utilize CTPs to deliver food assistance, the vast majority of the assistance provided was done in-kind. Sindh Province was and continues to be served by a range of humanitarian actors, including the nine agencies involved in this assessment and many more.

In response to the 2010/11 floods, the NDMA developed a contingency plan in an effort to be better prepared for such events in the future. In the plan, authority for all aspects of flood preparedness, including risk assessment, resource mapping and deployment, is delegated to the district-level authorities; however, at the provincial and district level it is not clear to what extent these measures have been undertaken.⁵

For the purpose of this PCMMA assessment, the floods of 2010 (for Ghotki) and 2011 (for Sanghar and Badin) were selected as the reference crises. Although less severe floods happen more regularly, it was decided to focus on a worst-case scenario, both because the impacts of the floods throughout our districts

² http://www.ndma.gov.pk/Documents/Contingency_Plan/2012/CP_NDMA.pdf

³ http://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/assessments/ACF_Nutrition_Causal_Analysis_Pakistan_2012.pdf

⁴ <https://www.oxfam.org/sites/www.oxfam.org/files/bn-pakistan-floods-emergency-16-02-12-en.pdf>

⁵ http://www.ndma.gov.pk/Documents/Contingency_Plan/2012/CP_NDMA.pdf

of focus were more evident during such a scenario and also because our conclusions about the market's capacity to deliver needed humanitarian assistance would err on the conservative side and be applicable even to less severe flood scenarios. This decision is consistent with NDMA's choice to utilize the worst-case scenario as the basis for its contingency plans.⁶

III. Scope of the assessment

Critical market systems

During the preparatory phase of this study, the IRC's team in Pakistan prepared a list of categories of goods and services that are crucial for the survival and livelihoods of vulnerable people in Sindh and that were heavily impacted by the 2010/11 floods. This list included staple foods; other agricultural commodities like fruits and vegetables; construction materials; livestock and livestock fodder; drinking water; daily labor (on farm/ off farm) and non-food items like soap, storage containers and buckets.

The IRC then consulted with representatives of agencies with which it partners via the [PEFSA consortium](#)⁷ and the senior team members of the agencies participating in the assessment. The group identified specific commodities for each of the categories on the list and agreed upon a set of criteria to help determine which critical market systems to focus on in this study: (1) Critical to save or sustain lives of vulnerable people in the affected areas; (2) Significantly impacted during past floods; (3) Relevant to the expertise and past activities of participating organizations. Based on these criteria, the group identified the critical market systems listed in the table below. These were validated by assessment team members during the pre-assessment workshop.

Table 1: Critical Market Systems Selected for the PCMMA

Badin	Ghotki	Sanghar
Rice	Wheat flour	Wheat flour
Wheat straw	Wheat straw	Wheat straw
Drinking water	Drinking water	Drinking water

Separate reports have been produced for each of the critical market systems assessed in Sindh in 2015. This report focuses only on wheat straw.

Key Analytical Questions

In accordance with the EMMA approach, the assessment team developed and approved a set of key questions that guided the field research and analysis. The questions were the same for all of the critical market systems. These questions are answered at appropriate points in the analysis and recommendation sections of this report.

1. How is the critical market behaving today, and how will it behave during the flood emergency?
 - a. Is it supplying the appropriate volume/quality of goods?
 - b. Is it integrated and competitive?

⁶ http://www.ndma.gov.pk/Documents/Contingency_Plan/2012/CP_NDMA.pdf

⁷ Pakistan Emergency Food Security Alliance, including ACF, ACTED, Care, IRC, Oxfam and Save the Children

- c. To what extent can it respond to an increase in demand?
2. Will the affected population be able to continue to access the needed volume and quality of goods from the critical market system during the emergency?
3. What are the appropriate market-sensitive programming options to meet the needs of the affected population for each critical market system?
4. What are the most appropriate ways to reduce the possible impact of the floods on the wheat straw market system and on the target population's access to markets?

IV. Focus Population and Locations

Aside from its manufacturing and financial centers near Karachi, Pakistan's Sindh Province is largely agricultural, growing rice, wheat, cotton, sugarcane, bananas, mangos and animal fodder. Though the province as a whole produces more agricultural goods than it consumes, the productivity of agriculture varies enormously by district, and 75% of Sindh's districts are actually deficit producers.⁸

Although 80% of Sindh's population engages in farming, less than 64% actually own land. The poorest people work as either daily laborers (including many near the coast who work as fishermen) or as sharecroppers, many of whom live in perpetual debt to their landlords. Most of those who own land are relatively poor themselves, with only a few acres of land of their own and sometimes additional acreage that they rent from landlords. Other development indicators for the province are quite stark; only about half of its youth attend primary school,⁹ 50% of the population practices open defecation, and chronic malnutrition affects more than half of all residents.¹⁰

This PCMMA exercise focused on three districts of Sindh - Sanghar, Ghotki, and Badin (see Figure 1). The focus population for this study was the flood-affected population in the three districts, totalling an estimated 359,000 households. Livelihoods comprise a combination of field crop production (wheat or rice), cash crops (cotton and sugar cane), and livestock rearing. Non-agricultural wage labour is also a significant income source for many, particularly the very poor and poor wealth groups. The amount of land farmed and the number and type of livestock owned are two most significant determinants of how families engage with the wheat straw market – either as wheat straw sellers, buyers, or both. As such, the assessment team disaggregated the focus population into four sub-groups to better understand their fodder needs and consumption trends.

⁸ <http://practicalaction.org/docs/emma/EMMA-Pakistan-Sindh-report.pdf>

⁹ <http://tribune.com.pk/story/759232/international-literacy-day-only-half-of-sindh-goes-to-primary-school/>

¹⁰ http://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/assessments/ACF_Nutrition_Causal_Analysis_Pakistan_2012.pdf

Figure 1: Districts of focus within Sindh Province (map courtesy <http://www.sindh.gov.pk/>)



A livelihoods assessment¹¹ conducted in 2013 for Shikarpur, another district in Sindh Province, identified the following wealth breakdown, which was adapted for the PCMMA study: Very Poor: 32%; Poor: 30%; Middle: 28%; and Better Off: 10%. The team triangulated the four wealth group categories and land/livestock characterizations throughout Badin, Sanghar and Ghotki Districts. Community-level focus group discussions and household interviews were carried out in the three districts in order to verify if the land and cattle owning characterizations from Shikarpur coincided with community perceptions in the target districts of this PCMMA. Based on this information, we largely used the same wealth group definitions as in Shikarpur.

Table 2: Wealth Ranking from the Shikarpur Livelihoods Assessment

Wealth Group (Percent of population)	Household Size	Cattle/Buffalo Owned	Land Cultivated (acres)
Very Poor (~32%)	7	0	0-2
Poor (~30%)	7	0-1	3-4
Middle (~28%)	7	1-4	4-8
Better Off (~10%)	7	2-6	10-15

Based on this wealth ranking, four focus population sub-group categories were identified:

- The Very Poor: These households do not own large livestock, and thus do not consume wheat straw. They do produce small quantities of wheat straw, and sell their production immediately after the wheat harvest. On the market maps, they are referred to as “Growers who sell only.”

¹¹ http://wins.org.pk/resources_files/baseline_report_fsl.pdf

- **The Poor:** The poor growers generally own 0-1 cows or buffalo, produce wheat straw on a small landholding, keep a portion of their wheat straw production for their animals and sell the rest to meet other needs. They are usually able to fulfil 8-10 months of their straw needs through their own production. As they cannot afford wheat straw for the remaining months they rely on freely available green fodder during this time. Nonetheless, they prefer wheat straw, as they believe it increases milk production. These are “growers who consume and sell” in the market maps.
- **Middle-off:** The middle off population has 1 – 4 animals per household, and they keep all their wheat straw production. This fulfils their need for 10 – 12 months. They rely on freely available green fodder if they do not have wheat straw. These are identified as “Growers who consume only” in the market maps.
- **Better Off:** The better off growers have 2 – 6 animals and consume all of the wheat straw they grow. The amount of straw from their own production lasts for 3 – 5 months, and they buy straw from other growers and traders to meet the remainder of their straw needs. These are the “Growers who consume and buy.”

Table 3: Focus population for the PCMMA assessment

Focus Population	Focus Population Sub-group	Number of households	Locations
Flood Affected populations of Ghotki, Sanghar and Badin Districts	Poor	115,000	<u>Sanghar</u> : 55 of 55 UCs affected in all 5 tehsils ¹² <u>Ghotki</u> ¹³ : 9 of 40 UCs affected in 2 of the 5 tehsils <u>Badin</u> : 46 of 46 UCs affected in all 5 tehsils ¹⁴
	Very Poor	108,000	
	Middle	100,000	
	Better Off	36,000	

Seasonal Calendars

The production patterns and seasonal considerations are quite different in Sindh’s southern districts (Badin) as compared to the northern areas (Sanghar and Ghotki). Badin District is primarily a rice producing area, with much less wheat being cultivated. Rice is the main staple food crop, with lesser amounts of wheat cultivated and harvested in the spring months when rice stocks begin to run low. Because smaller plots of land are dedicated to wheat in Badin, the straw yield only covers several months of needs for most households. The district is predominantly dependent on wheat straw fodder imports from surplus districts (such as Ghotki), and relies more heavily on green fodder at different points throughout the year. Being further south, the seasonal patterns in Badin are also about one month or more ahead of the more northern districts. Because there are significant differences between the wheat

¹² <http://pakresponse.info/LinkClick.aspx?fileticket=tykxtL2ZgHU%3D&tabid=98&mid=722>

¹³ TEHSIL UBAURO: Ranvti, Wasti Jeewan Shah, Langho and Pakka Chandio; TEHSIL GHOTKI: Qadirpur, Hussain Beli, M. Khan Ghoto, Baghoo Daho and Umar Daho. <http://www.itacec.org/document/flood/hwa/Ghotki%20area%20profile.doc.pdf>

¹⁴ <http://pakresponse.info/LinkClick.aspx?fileticket=n7bD1mwkJV0%3D&tabid=98&mid=722>

straw market system in the northern districts (Ghotki and Sanghar) and Badin in the south, the different geographic areas will often be discussed separately in this report.

Figure 2: Livestock Fodder Seasonal Calendar, Ghotki and Sanghar Districts

Activity/Event	J	F	M	A	M	J	J	A	S	O	N	D
Wheat Production			Harvesting								Sowing	
Rice Production					Sowing					Harvesting		
Cotton Production (Sanghar)				Sowing				Harvesting				
Sugar Cane Production	Harvesting									Sowing		
Rains												
Floods												
Shortage of Wheat Straw												
Substitute Fodder (Bersim)												
Substitute Fodder (Sorghum)												
Substitute Fodder (Loosan)												
Unemployment	Ghotki					Sanghar + Ghotki						
Migration for work	Sanghar			Ghotki		Ghotki						

Figure 3: Livestock Fodder Seasonal Calendar, Badin District

Activity/ Event	J	F	M	A	M	J	J	A	S	O	N	D
Wheat Production			Harvesting								Sowing	
Rice Production					Sowing				Harvesting			
Rains												
Floods												
Substitute Fodder (Barsing)												
Substitute Fodder (Janter)												
Unemployment												
Migration for work												

V. Market-system maps and Analysis

Baseline – August 2014

The Market Chain

For all three districts, the main actors in the fodder market chain can be divided into three categories: Grower/Producers, Traders and end users, who, in many cases, are the same people as the producers.

Growers:

Wheat straw producers are broken down into four categories, which are largely determined by the amount of land they hold for straw production and the number of livestock they own. Only “Growers who produce and sell” and “Growers who consume and sell” actually supply wheat straw to the market system. The other two categories of farmers produce straw exclusively for their own needs.

- Growers sell all the straw they produce: These growers have small amounts of land and no livestock. They produce small quantities of wheat straw which they sell immediately after the wheat harvest.
- Growers consume some of their production and sell the rest: These growers own 0-1 cows/buffalo and produce slightly more straw than they consume; the excess production is sold.
- Growers who keep all their straw for their own consumption: They own 1-4 animals and are generally self-sufficient in straw production; however, no excess remains to be sold on the market.
- Growers who keep all their straw for their own consumption, and still buy more from the market: Due to their number of livestock, they consume all of their own production in 5-6 months and must purchase more straw from markets to meet needs of their livestock.

In Sanghar and Ghotki, the overall production of wheat straw is greater than the district-level demand, and the extra volume is exported to other districts and abroad. Farmers generally have small pieces of land where they can cultivate one wheat crop over the year. In Sanghar, small farmers are generally tenants to the landlords, to whom they are required to give around one-third of the yield. The production varies district to district, but on average, the production is 40 muns (1600KG) per acre. In all three districts, straw stockers, traders and other farmers visit surplus straw producers on their land to buy straw at cheaper rates. Some of the landlords store wheat straw and sell it at end of Kharif¹⁵ or bit later at higher rates. The rate remains low (Rs.90 – 100/mun) during and after harvesting of wheat crop. This goes high up to Rs. 350/mun at the end of Kharif season and afterwards.

Badin, on the other hand, is a rice producing district and has very low production of wheat straw. The production of wheat straw is less than the demand within the district, and traders import the straw from other districts such as Sanghar or from Punjab Province. The majority of wheat straw producers in Badin consume their own production, but a small number of producers sell straw, generally those without livestock.

¹⁵ The growing season in Sindh that occurs during the monsoon, from roughly July-October.

Traders: Wheat straw is the biggest fodder market, and millions of muns are traded within and among the districts of Sindh each year. Large traders buy wheat straw from rural areas and sell where they find profit. Some of them store the straw for longer periods to maximise the profit and some do pressing as well. In total, over 100 traders were identified in the three districts during the PCMMA assessment. Some were very large and had the capacity to trade hundreds of thousands of muns in a month. On average, however, a trader sells 9000 muns per month. The purchase price varies with the seasons, hitting its low point (Rs.200/ mun) from April - June, and peaking at the end of Kharif at Rs.400/mun.

Stockers: Stockers buy straw from traders and growers. They store the straw on their land, covered with mud for protection, for long periods of time and sell it at higher prices during the peak season to earn more profit. They sell when the rate is above Rs.300/ mun. There are an estimated 50 stockers in the three districts studied.

Exporters: Only two actors were found during the assessment who export straw outside Sindh and overseas, but there may be more.

Retailers: Retailers are found in market places located in towns and cities. They are not as numerous as the traders are; there were as few as five retailers in all of Badin District, and only 17 could be found in Ghotki and Sanghar. The price at the retail level shows similar variation, starting at Rs.200/ mun and increasing to Rs.350/ mun in Sanghar and Ghotki and Rs.400/ mun in Badin. Retailers buy straw from traders and sell it to landless livestock rearers, with average total monthly sales of 2000 - 2500 muns.

Consumer: There are three types of wheat straw consumers: (1) Dairy farms; (2) Landless livestock rearers who own a small number of animals for household use; and (3) Better off livestock owners who grow straw but are only able to meet about 50% of their need. Dairy farms often buy a large amount from traders and stockers and store it within the farm's courtyard, while landless livestock rearers buy from retailers.

Key Infrastructure, inputs and market-support services

Warehouse: As it requires a large area, wheat straw is normally dumped on open ground and covered with mud; this offers some protection but is generally not adequate to protect the straw during heavy rain or floods. Retailers and dairy farmers store the required quantity within the available courtyard of buildings, which is safer than in open fields.

Roads: All agriculture-related market activities need farm to market infrastructure, including roads. Most of the rural areas in Sindh, especially in the south, have poor quality roads that are very narrow for the large trucks used to transport wheat straw.

Transport: Transport for wheat straw is easily available throughout Sindh. For inter-district transportation, Bedford Trucks, widely referred to as Rockets, are used. Within districts or for shorter

distances, tractor trolleys are preferred. A truck can carry 350 muns, tractor trolleys have a maximum capacity of 250 muns. For very small quantities and distances, donkey carts are also used. For export to Karachi and beyond, containers, each with a capacity of 300-400 muns, are used. Traders with pressing facilities use these containers.

Finance: Various actors, including money lenders, microcredit institutions, commercial banks and NGOs that provide microcredit, can provide loans ranging from 10,000 to ten million rupees. Main consumers of this credit are small-scale wheat straw producers, as well as traders and stockers who may require credit to maintain their operations

Labour: Labour is always available in the market to support production, harvest, transport, loading/unloading, etc. within the straw market system. Labour charges vary area to area. In villages or remote areas Rs.200 – 350 while in market places located in towns this is Rs.350 – 650.

Pressing Machine: Some traders have pressing machines, which compress loose straw into bales for easy and safer storage and for transport in containers. Pressed straw sells at Rs.350 – 600/ mun.

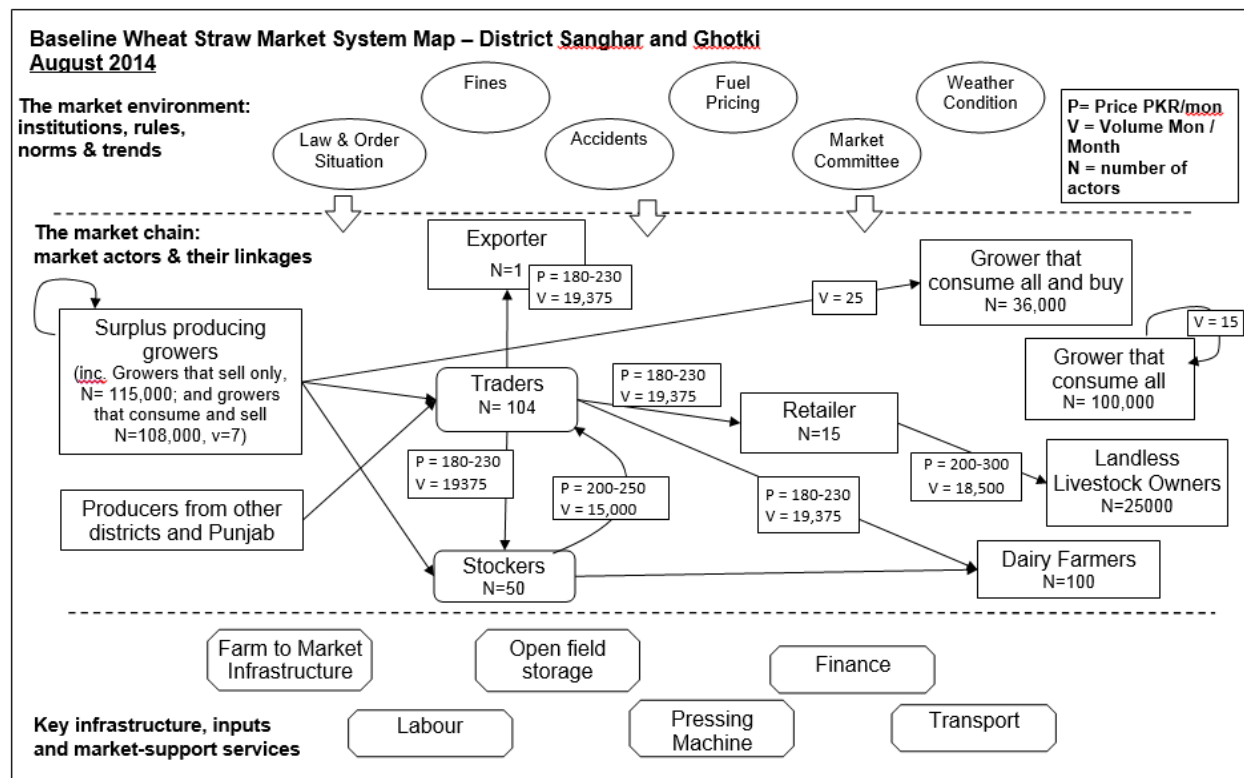
The Market Environment

Law and order: Southern Sindh is more peaceful than the northern part of the province. Trucks and other straw carriers move freely in the south day and night. Meanwhile, northern Sindh has clashes among tribes that sometimes hinder movement on farm to market roads. Currently, this situation is fairly well under police and ranger control; however, the threat of insecurity is constant.

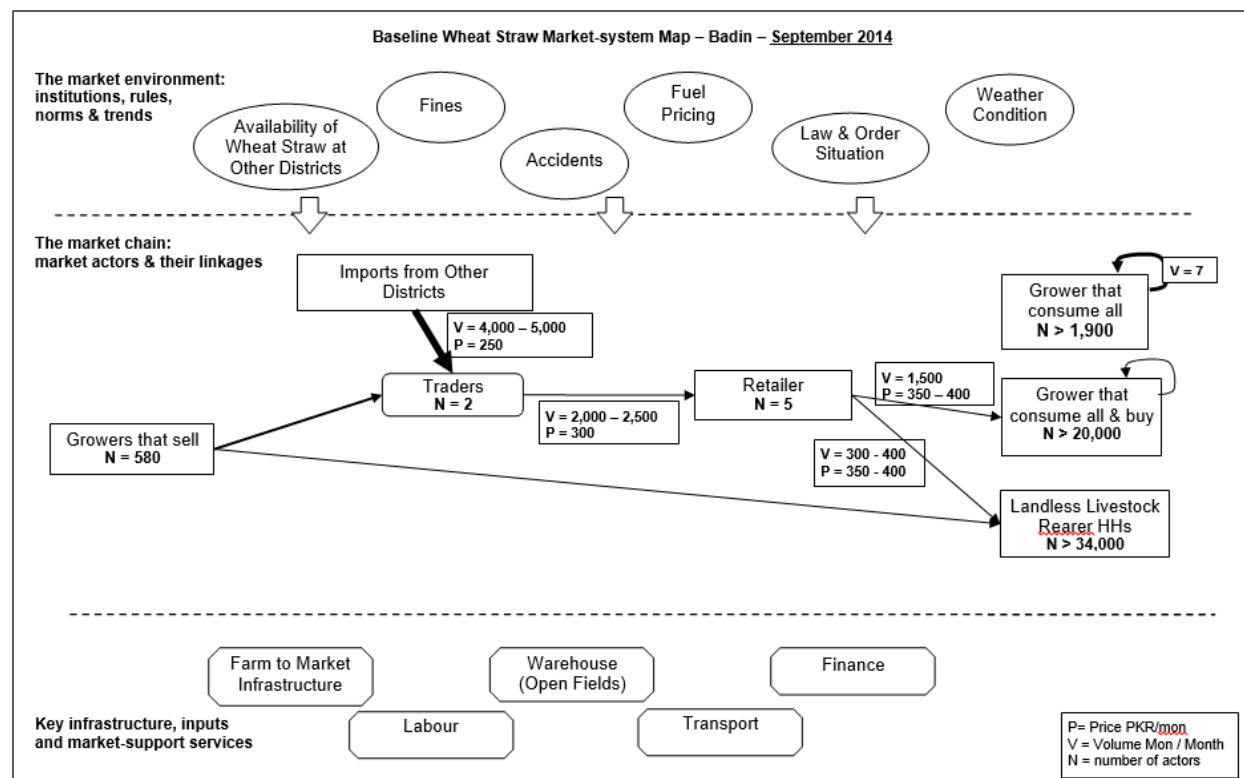
Fuel prices: Fuel prices obviously affect transportation costs, which in turn impacts the price of wheat straw. Buyers in towns and cities normally receive the straw at their doorstep and pay accordingly. The transportation remains the responsibility of seller. The government's fuel price control system is weak, and petrol pumps and companies do not follow the rates announced by government.

Weather: Once produced, straw cannot sustain water or strong winds. Rains, floods, storms and fire can cause serious damage, especially given the commonplace practice of storing straw in the open protected only by a layer of mud.

Market Map #1: Sanghar and Ghotki Baseline



Market Map #2: Badin Baseline



Emergency-Affected Situation – September 2010/2011

During and after the floods in Sanghar and Badin in 2010 and in Ghotki in 2011, a number of changes occurred in the wheat straw market system as a result of the flooding (See market maps #3 and #4, below).

Loss of wheat straw stocks: In Ghotki, after the 2010 floods, many medium and small-scale farmers of katcha lost significant portions – up to 80% – of their stored wheat straw. As the floods did not severely affect the urban centres in these districts, wheat straw held by the traders or growers in pakka (outside of the river embankment) do not appear to have suffered significant losses. Damage in Sanghar was far greater than in Ghotki; growers, traders and retailers were equally affected and lost their stored straw. Individual farmers lost large portions of their stocked straw, while traders and stockers also experienced significant losses. In Badin, losses of stocks were less significant simply because most farmers there do not grow wheat, and because during the flood season, livestock farmers generally rely on barsing fodder rather than on wheat straw for most of their livestock's food supply.

Changes in availability of straw from local producers: In September, when the floods hit, most producers had already sold their surplus wheat straw to markets and were relying on their own stored straw. However, in Ghotki and Sanghar, where flood water threatened to destroy farmers' own wheat straw stored in fields, many farmers, even those who did not normally sell any of their production, sold off their straw to traders at low prices in order to minimize flood-related damage and loss of stocks. However, as the flooding continued, farmers soon began purchasing fodder from markets. To meet the demand, traders began importing straw from neighbouring districts and provinces, particularly Punjab. This makes an increase in the number of producers selling straw to the market, at least temporarily in the very short term after the floods occurred.

Increased reliance on markets for wheat straw: In Ghotki and Sanghar, the majority of the affected households were not able to save their own wheat straw stock and were either buying wheat straw from urban retailers or dependent on the occasional distribution from local governments and NGOs, leading to an increase in the local demand for wheat straw. In Badin, the flood damage to barsing fodder, which is normally a substitute for wheat straw in August/September, led many livestock owners to rely more heavily on wheat straw available from market. In all districts, the number of livestock in the affected areas decreased due to livestock owners selling animals at low prices after the floods as a coping mechanism, or as a result of disease from the flood waters. Despite the decrease in livestock, there was an increase in the number of farmers relying on the market for straw as a result of the losses of stored straw.

Increase in straw from outside the districts. In all three districts, traders reported they were able to expand the amount of straw they had available in 2010/2011 by two or three times. As mentioned, the additional straw came from other districts or provinces, particularly Punjab.

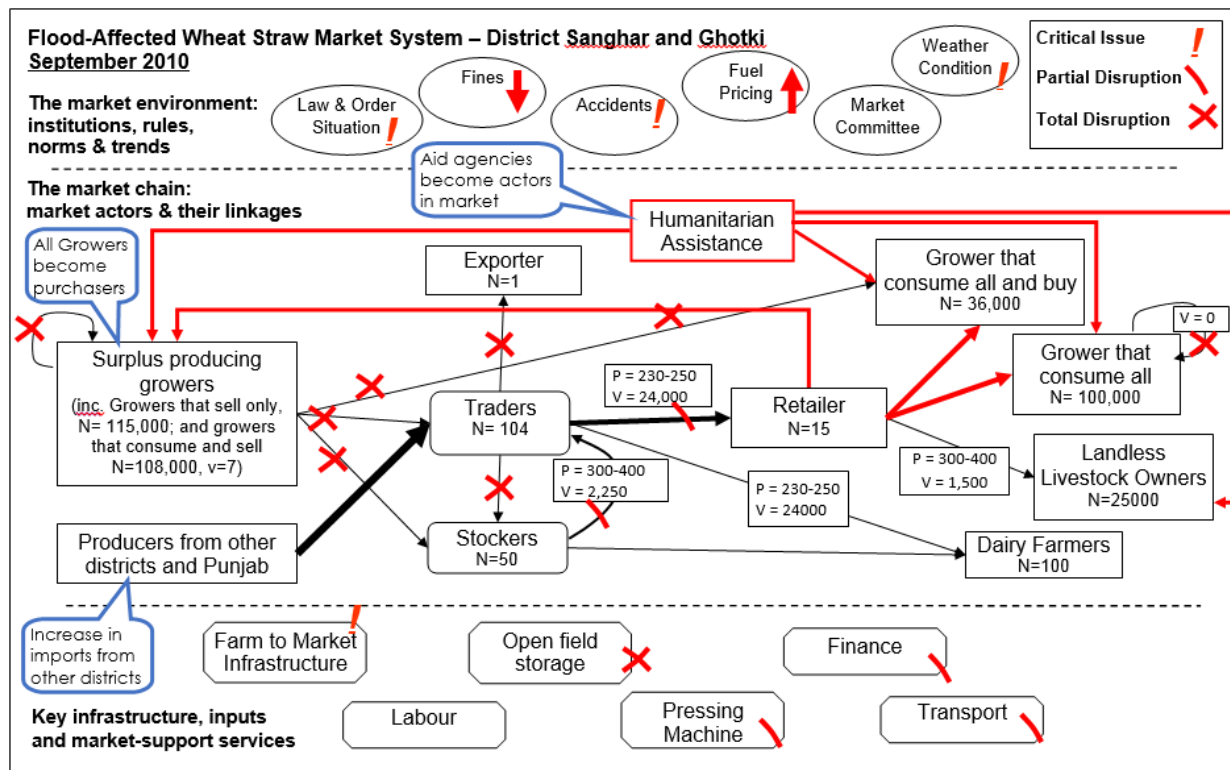
Humanitarian actors enter the market system: During the floods, humanitarian and government agencies enter the market system to distribute straw fodder to affected households. Often these organizations purchase straw from traders or from outside the districts, and transport it to affected areas for distribution. The aid distributions of straw were a critical channel for reaching affected households during the floods, but effectively bypassed the local retailers.

Price: Prices decreased immediately after the floods as farmers sold off their stored straw, and after some time, the price increased as demand increased and the floods continued. In Ghotki, prices increased by over 100%, from Rs.100/ mun before the floods to 200/ mun afterwards. In Badin, high transportation costs and scarcity of straw led to extremely inflated prices of Rs.800/ mun.

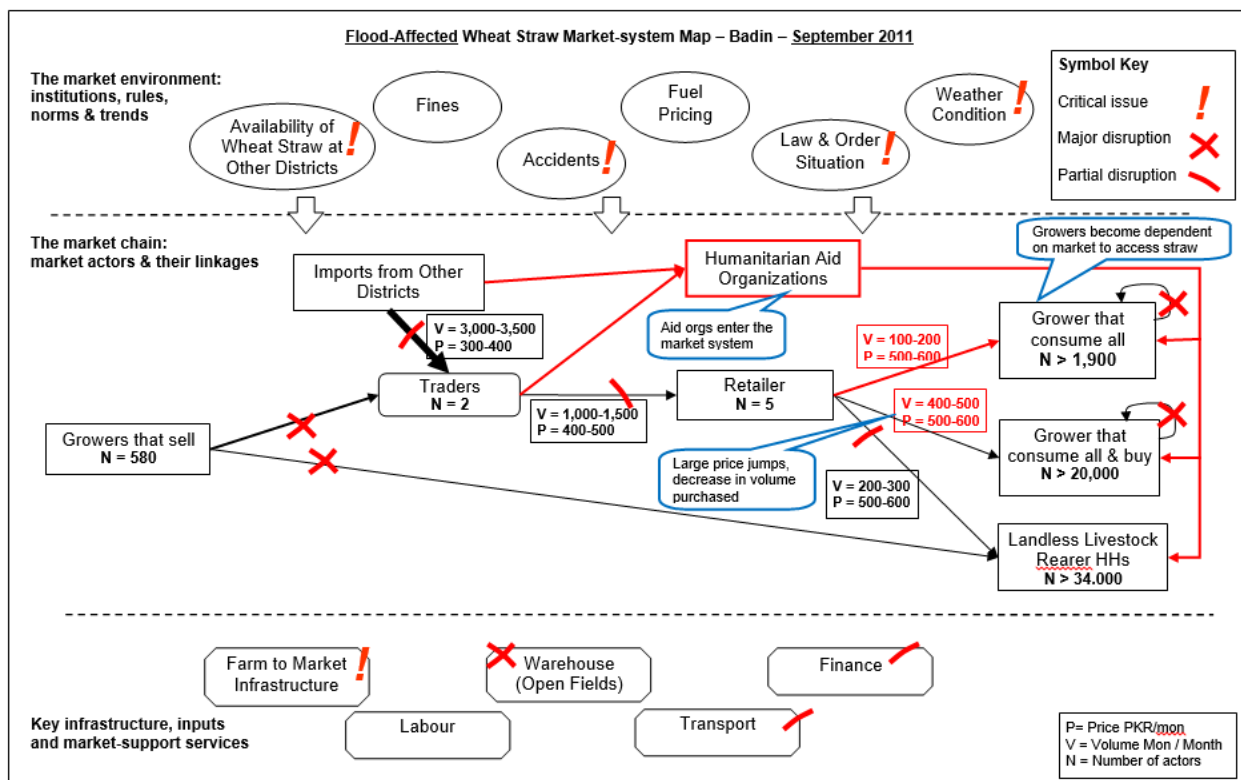
Damages to key infrastructure: roads, bridges, and wheat straw storage facilities all sustained severe damage during the floods. With time, the transport constraints lessened, and more straw from outside areas was able to get through.

Fuel Prices: The most notable change in the institutions and norms that form the enabling market environment appear to be rising fuel prices after the floods (set by the government controlled oil and gas refineries).

Market map #3: Flood-affected market system Sanghar and Ghotki



Market map #4: Flood-affected market system Badin



How the market will perform in future flood emergencies

Based on the current wheat straw market system, and its performance during the 2010/2011 floods, we can realistically expect the following changes/disruptions in future flood emergencies:

In Sanghar and Ghotki

- **Similar losses of straw from floods as 2010/2011.** There has been no change in stocking practices, meaning that a similar level of losses is expected if flooding happens in the future.
- **Increased availability of wheat straw in the short-term after flooding happens,** as farmers who have stored straw in mounds in their fields attempt to rapidly sell off straw stocks in order to prevent a total loss of the straw from flood damage. This will create a temporary spike in availability of straw and lower prices.
- **Increased reliance on straw brought into the affected areas from other districts or provinces** after about one month following the floods. By this time, rapidly soldoff fodder will be exhausted, but flood waters still cover most fields. Livestock owners will increasingly rely on the market to purchase straw for their animals. Traders will bring in straw from other districts in Sindh, as well as import large volumes from Punjab to meet the need. As flood waters recede, green fodder grazing areas will become available, but reliance on market for straw will remain high for several months.
- **In Ghotki, the market system outside the embankments will be largely unaffected,** experiencing a smaller increase in prices than in Sanghar. The unaffected areas will also be able to easily bring in straw from other surplus areas, but the prices will be higher.
- **Fodder prices will increase about one month after the flood,** due to the high demand for straw. Also, fodder will be brought in from other districts or provinces, requiring greater costs for transport and fuel, driving up the price of straw by nearly 100%.
- **Roads, bridges and transportation networks are likely to be affected** for 1-2 months. Locally sold fodder will improve the availability of straw in the market in the short term, when transportation infrastructure is most likely to be affected and impassable. As roads become more accessible, 1-2 months after the floods, demand for straw imported from other areas will grow rapidly.
- **The market system is likely to remain connected to other straw producing areas** and once road networks are passable, the market system will be able to access straw from other producing areas to meet the increased demand during floods.

In Badin

- **Increased demand for imported straw from other districts** because green fodder is affected by the flooding, and normally accessible grazing areas are flooded. Farmers increasingly turn to straw as a main fodder, and this must be brought in from other areas.
- **The infrastructure will be in even worse condition than in 2011,** meaning that movement of straw from surplus to deficit areas will be restricted after flooding. Prices will increase.
- **The price will remain high** during and after floods, reaching Rs.800/ mun or higher.

Key Analytical Question #1: How is the critical market behaving today, and how will it behave during the flood emergency?

In normal years, the wheat straw market system functions well and provides sufficient volumes of straw to meet the needs of the population. Sanghar and Ghotki are large wheat production areas and produce most of their own straw, as well as sell to other districts, including Badin which does not produce much wheat. If additional straw is needed in any of the districts, traders regularly bring in more supply from neighbouring areas, particularly Punjab. During flood emergencies, straw stored in open fields suffers significant losses, and farmers who keep their own straw for consumption suffer significant damages and rely on markets to meet their needs. Even though livestock are often sold or die during floods, more farmers must resort to purchasing straw on markets because of inundation of grazing land and losses to straw and other types of green fodder. Market actors report being able to provide the necessary amounts of straw during flood emergencies to meet needs, both by purchasing straw at low prices from farmers who sell it as a coping mechanism and by bringing in straw from neighbouring provinces. In these situations, the prices for wheat straw will likely increase during the emergency due to the high demand for straw, but the markets are likely to remain competitive and integrated with other straw producing areas and able to supply the necessary volumes of straw.

VI. Comparing the gap in needs with the market capacity

Sanghar and Ghotki

Baseline Gap Analysis: The gap analysis tables below show the number of months each focus population sub-group in Ghotki and Sanghar must rely on the straw market to purchase wheat straw to meet the needs of their livestock. In the baseline year, only the better-off households purchase straw from the markets, mainly because of the number of livestock they own relative to the other sub-groups. All groups supplement wheat straw with green fodder when it is available, and make up any gaps in self-provisioning by relying on green fodder or grazing to meet their needs. In normal times, the markets are easily able to meet the demand for wheat straw.

Table 4: Baseline Gap Analysis, Sanghar and Ghotki Districts

Focus population sub-group	Number of people	Number of livestock owned	Number of months of straw produced for own consumption (in normal year)	Number of months of straw remaining in September in a normal year	Number of months rely on market for straw
Very Poor	68,000	0	0	0	0
Poor	64,000	0-1	8-10	3-5	0
Middle	59,000	1-4	10-12	5-7	0
Better-Off	21,000	2-6	3-5	0-1	6

Emergency-Affected Gap Analysis: During the floods, household needs and self-provisioning of wheat straw change. The number of livestock kept by each group decreases as a result of selling animals after the floods. Additionally, due to flood damage to wheat straw stored in the open, the poor and middle sub-groups experience significant losses to stocked straw, estimated at 80%. As a result, they must rely on markets to make up for their losses. In normal times, green fodder and grazing would become available in October/November through about February; however, due to the flooding, these green fodder crops are likely also affected and not available. As a result, Poor and Middle off will need to rely on markets for fodder for longer periods of time than normal. While some NGOs provided fodder assistance to affected livestock owners, we were not able to quantify this assistance for inclusion in this analysis. Fodder assistance would likely provide high-nutrition fodder to complement straw accessed through local markets, and may not affect the straw market much.

During floods, the straw market will need to be able to provide *the same amount* of straw as before the floods to meet the needs of the normal customers (the better off), as well as to *scale up the volume* of straw available to meet the needs of the Poor and Middle families who must now buy straw for 3-5 months to meet their needs from September onwards until green fodder becomes available.

Table 5: Emergency Gap Analysis, Sanghar and Ghotki Districts

Focus population sub-group	Number of people	Number of livestock owned	Number of months of straw remaining just before the floods (in September)	Number of months of straw remaining after the floods (estimate 80% losses)	Number of months rely on market for straw
Very Poor	68,000	0	0	0	0
Poor	64,000	↓	3-5	0-1	3-5
Middle	59,000	↓	5-7	1-2	4-5
Better-Off	21,000	↓	0-1	0	6

Badin

The population in rice producing districts like Badin more heavily rely on green fodder and grazing, with straw fodder as only a supplement. Because Badin is not a significant straw producer, few livestock owners keep their own stocks of straw, thus those livestock owners in Badin who do use straw must buy it from markets in both the baseline and emergency times. However, during and after the floods, green fodder and grazing is often not available for several months in Badin, so wheat straw becomes a key source of fodder for livestock during these months, meaning that livestock owners must purchase straw from markets earlier than they normally would. At the same time, owners are also selling livestock for coping strategies and livestock are dying as a result of the floods. Overall, the market system will need to provide roughly the same level of wheat straw in Badin as before the emergency, since more farmers will rely on straw fodder but there will be fewer animals.

Whereas in Sanghar and Ghotki, the market system must scale up to meet the straw needs of the population, the market system in Badin must continue to provide roughly the same amount of fodder as before the floods.

Key analytical question #2: Will the affected population be able to access the needed volume of wheat straw from the market system during the emergency?

Based on an analysis of the 2010/11 floods, the wheat straw market system by and large has the capacity to meet the anticipated demand for straw during future floods. In Sanghar and Ghotki, there will be significant losses to stored wheat at the household level and an increase in the number of farmers relying on the market for wheat straw. The number of livestock will decrease, so though the overall volume of straw required from the market will increase, it will not be an enormous increase. Markets will need to scale up to meet this increased demand for at least 3 to 5 months, from September until green fodder becomes available.

In Badin, stored wheat straw is not as common since it is not a wheat-producing area. There is greater reliance on green fodder than wheat straw, but green fodder is also affected by the floods. As a result, the market will need to provide roughly the same volume of straw as before the emergency for at least 3 to 5 months, from September until green fodder becomes available.

In both areas, government and humanitarian NGOs will likely distribute some straw and high-nutrition livestock fodder to support affected families. This assistance will reduce the overall volume required from markets, but there will still be an increase in straw required.

In both areas, market actors will likely be able to scale up supply to meet the demand by importing straw from other districts. All straw vendors reported being able to maintain adequate supplies in 2010/2011, and some even reported providing additional straw stocks to NGOs to distribute as humanitarian aid. In Ghotki, only the Katcha areas were affected by flooding, and the straw market systems in the Pakka were fully functioning and able to meet the increased demand.

The major limiting factor for households to access straw after the floods will be purchasing power. Because straw will need to be brought in from other districts or provinces, and roads will be inaccessible in many places, straw prices will increase.

VII. Main Findings

This section summarizes the main findings from the gap and market analyses in order to identify the key findings and the implications of those findings for programs. The table below identifies the main findings of the assessment, organized according to the relevant actor in the market system.

Table 6: Key Findings from the Wheat Straw PCMMA Study

Key actors	Findings	Implications for response
Grower	Growers of wheat straw were only affected if they had stocks being stored in their fields. Most growers had already sold their straw to the market system, meaning only the stock they had stored for their own consumption was affected. At the time of the flooding, no new straw production from the target areas is expected to be available from growers to feed into the market system.	<ul style="list-style-type: none"> • Cheap straw which farmers stocked will be sold to the market actors after the flooding, so farmers can get some income from their own stocks. • This availability of straw from distress sales to retailers will not be sufficient quantities. • Any expansion of the volume of straw available will need to come from outside the targeted districts. • Vouchers, cash transfers, support to traders to bring in more straw, or in-kind distributions of straw may be effective in enabling Traders to purchase from other districts/provinces
	Only a certain portion (Katcha) of district Ghotki was affected by super floods 2010. Hence the growers at pakka had not faced any losses.	Ghotki straw market is fully functional and can fill the gap at household/consumer level.
Trader	The number of traders and retailers increase during emergency in Ghotki and reduce in Sanghar and Badin.	<ul style="list-style-type: none"> • Because markets are likely not to be affected in Ghotki, there will remain current number of actors. • In Sanghar and Badin the number of straw traders may decrease due to the damage/losses sustained from the floods. • Price increases in Ghotki will likely be less than those in Badin and Sanghar.
	Traders import wheat straw from other districts in case of total loss in the district.	The rate goes much higher in Sanghar and Badin as traders import the straw from other districts. Ghotki is comparatively cheapest market among three districts during emergencies.
	The traders can expand as per the need.	Traders in Ghotki, Sanghar, and possibly also Badin can provide the required amount of straw.
	Immediately after flooding, retailers purchase straw from farmers who sell it to get some value before it is totally lost to flood waters. After about a month, this temporary spike in availability decreases and retailers must get more stock from traders.	<ul style="list-style-type: none"> • During the first month of the response when many roads are blocked, there is a high volume of straw available at the retailer level.

Key actors	Findings	Implications for response
		<ul style="list-style-type: none"> • Cash or voucher assistance may be appropriate at this time if the volumes of straw available are sufficient.
Stockers	Stockers may loss all stocks stored in affected areas.	<ul style="list-style-type: none"> • Local supply is very limited, and to meet need traders must get stock from outside the districts. • If roads are not open after the first month, markets may not function well enough for cash or voucher programming and in-kind assistance will be necessary.
Consumers	Consumers who have straw stored in open areas on their land lose 80% of stocks. Remaining stock is sold in distress sales to retailers at low rates. These consumers will eventually re-purchase that straw at later time during and after the flooding	<ul style="list-style-type: none"> • Temporarily creates high volume of straw available at local level, for about 1 month. • At this time, if the areas can be reached and the volumes available at the local retailers are sufficient, localized cash transfer programs may be appropriate in affected UCs.
	<ul style="list-style-type: none"> • Straw consumers also sell livestock as a coping mechanism, and some livestock die as a result of disease from flood water. Need for straw per household is decreased, but overall greater number of households require the market to provide straw. • “Growers that consume their own production and sell”, have lost so much stock they become consumers. They lost their stored fodder and need to buy from the market. • “Growers that consume all” have lost so much stock (80%) that they must purchase from the market. 	<ul style="list-style-type: none"> • Markets must expand and bring in MORE straw than in normal years to meet the needs of new consumer groups. • Cash and voucher programming is only appropriate if traders can bring in more supplies from outside the districts. • Monitoring availability of straw from Punjab will be useful to knowing if traders are able to access sufficient straw.
Exporters	Traders stop selling to exporters, and Exporters likely re-direct their straw supplies to meet needs of those in the affected districts.	Exporters become a new actor in the distict-level market systems. Due to their experience managing high volumes of trade, they may be an important source of straw for humanitarian agencies focused on in-kind distributions.

The duration of gap depends on the speed of flood water receding. The reclamation of land may take time and farmer may not be able to sow first Rabi crops after floods. In such situation the gap will prolong and poor and middle off growers and livestock rearers may need external support. The requirement may vary

from group to group. Those who have more live stock may require more support as compare to those who have limited livestock as shown in table above.

VIII. Main recommendations

Recommendations in response to Key Analytical Question #3: What are the appropriate market-sensitive programming options to meet the wheat straw needs of the affected population during floods?

For the first month of the emergency:

- **In Sanghar and Badin: In-kind distribution of fodder assistance to the affected population**
During the first month of flooding, the transportation connecting traders to retailers will likely be blocked. Retailers may have a short-term increase in supply of straw due to distress sales of straw affected by the waters, but this is not enough for the population. Livestock owners have lost their straw stocks and livestock are susceptible to flood-related diseases, requiring emergency assistance to preserve livestock assets. As such, in-kind distributions of straw are an appropriate intervention in the first month of the response, if relief efforts can reach the affected households. Additionally, the focus population expressed large preference for in-kind support for fodder assistance. Large actors, such as traders or exporters at district or provincial level are accustomed to dealing in large quantities of fodder, and will be able to provide straw to NGOs planning in-kind fodder distributions
- **In Ghotki: Cash or vouchers to the affected population**
In Ghotki the flooding is largely restricted to the low-lying areas and does not affect the pakka, outside the embankments. As a result, the market system for straw was functioning well even during the 2010 floods because it was not affected by the floods directly, but did experience greater number of consumers. In this situation, market-based assistance such as cash or vouchers are appropriate to enable the affected population to access straw fodder from the available markets. The focus population in Ghotki will lose the majority of their stocked wheat straw during floods, and cash or voucher assistance will enable them to purchase more from the functioning markets to meet their needs.

For the 3 to 5 months following the emergency, for Ghotki, Sanghar and Badin:

- **Cash or voucher assistance for straw**
After first month, as flood waters recede and roads become more passable connecting surplus straw producers with traders and retailers, cash or vouchers redeemable at local straw retailers can be phased-in to replace in-kind straw distributions. Because of the high number of straw losses, assistance will be required for about 3-5 months until green fodder becomes available. Cash or voucher assistance redeemable at local retailers or traders will incentivize traders to bring in more straw from other areas. As flood waters recede, traders will be able to re-connect with

local retailers as well as with surplus straw producers in Punjab or in other districts. Prices of straw will be high, due to transportation costs and the high demand, however markets will remain competitive and vouchers can be used to control price increases.

- **In-kind distribution of supplemental nutrition for livestock**

While straw is a main fodder staple, straw alone is not sufficient for livestock survival. Supplemental nutritional support will be required for livestock surviving on wheat straw until green fodder and grazing areas are drained and available. Additionally, due to prevalence of livestock diseases during flooding, additional nutritional support is important to preserve livestock assets. By combining in-kind supplemental fodder distributions with cash/voucher assistance for straw, less concentrate fodder is required for distribution, more livestock can be reached, and the cash/vouchers will support local fodder markets to recover faster.

- **Provide assistance for green fodder crops**

The duration of in-kind or cash/voucher assistance for fodder will depend on the availability of green fodder or grazing. In normal years, Rabbi green fodder crops become available in the October to December timeframe, and somewhat earlier in the southern areas such as Badin, meaning that livestock owners do not need to rely only on straw stocks during these times. In flood times, these fodder crops will be damaged, or water may not recede in time for the crops to be planted until later. As a result, humanitarian agencies should consider providing assistance as quickly as possible after flooding for farmers to produce the rabbi fodder crops, including barseem, loosan, etc. Further information and planning will need to be done to evaluate the best way to provide this assistance, and what type of assistance is required (cash, vouchers, in-kind, seeds, tools, etc.). Additionally, aid agencies should monitor the coverage of green fodder, and anticipate the duration of cash/voucher and in-kind assistance based on the availability of green fodder sources. Green fodder traders and retailers can be key informants to provide information on availability of these crops.

Recommendations in response to Key Analytical Question #4: What are the most appropriate ways to reduce the impact of the floods on the straw market systems?

- **Improve straw storage mechanisms at the household and retailer levels**

The impact of flooding on the straw market could have been significantly reduced with some low-technology, low-cost solutions to better protect the straw yields stored in open fields. Construction of small embankments around straw mounds, or storing straw on raised platforms could all be effective solutions. Additionally, identifying areas which are less susceptible to flooding, and locating straw storage on that land in anticipation of flooding could be a community-based solution to fodder shortages during floods. Training on improved storage techniques should be followed by development of village based disaster management plans which could include plans for positioning adequate amounts of fodder in less flood-prone areas for the village to use.

- **Planning for Green Fodder planting, after floods**

Rabbi fodder generally becomes available in the months following the flood season, if the land is not still flooded by water. As a result, it is essential to identify in advance of a flood areas where green fodder or grazing could be available, and to plant these lands as quickly as possible after the flood. Identifying and planning grazing areas will be critical for ensuring survival of livestock and reduce reliance on humanitarian aid.

- **Humanitarian and Government organizations pre-position supplier agreements with straw traders**

In-kind assistance will be needed in the beginning of flood emergencies in the affected areas. As such, humanitarian organizations should identify traders, exporters, and producers in straw producing areas to act as suppliers if rapid distribution of wheat straw fodder is needed. Traders and Exporters should be particularly targeted by humanitarians because they regularly deal in large volumes of straw, and have relationships with producers in other provinces as well.

Table 7: Summary of Response Recommendations

Recommendation	Key Risks and Assumptions	Likely effect of the intervention on market system and target group	Appropriate timing of intervention	KAQ
Sanghar and Badin: In-kind distribution of fodder for the first month	Affected areas are accessible to humanitarian agencies; sufficient supplies of straw are available for procurement in unaffected areas	Will meet emergency needs of the focus population. Road infrastructure damages prevents markets from fully functioning until later in the flood period	Immediately after floods, continue for about 1 month	3
Sanghar and Badin: After first month of response, transition to cash or voucher assistance	Retailers are able to re-stock their straw supplies from traders; retailers have sufficient supplies available from local distress sales of straw and from traders; retailers are accessible to the affected population; prices are within a reasonable range	Will incentivize traders to bring in more straw from outside the districts to meet needs; will support local retailers and traders to continue providing goods/services during the flood period, not undermine them	After 1 month of flooding, and continue for 3-5 months	3
Ghotki: cash or voucher assistance for fodder	Ghotki markets continue to function normally during the floods, and can increase availability to meet the increase in need.	Enables local markets to continue to function; straw is accessible locally and should be used instead of provided as assistance	Immediately after floods, and continue for 3-5 months	3
All Districts: In-kind distribution of supplemental livestock fodder	Green fodder is not available during the floods; livestock susceptible to water-borne diseases;	Preserve the breeding livestock so that farmers can re-build their livestock assets after the floods are over	Immediately after onset of floods, continue for 3-5 months	3

All Districts: Assistance for green fodder production	Flood waters recede in time to prepare green fodder planting/harvests	Reduce need for in-kind or cash/voucher assistance if fodder crops can be planted early.	When flood waters recede, so farmers can plant	3
Training and village-level planning to improve straw storage	Different storage techniques actually work to prevent damage to stocks; sufficient time and resources at village level to change stock practice	Will reduce the loss of crops, meaning that during floods less people are reliant on the market to meet their needs; markets would require less straw from outside the area; market prices may not rise as high; livestock owners will be able to meet more of their fodder needs themselves; less humanitarian assistance required	Prior to wheat straw harvest, so stocks can be stored appropriately and safely for the next flood season	4
Plan for green fodder production after floods	Some land is elevated, and is common land for village households to use;	Livestock owners can plan how to allocate their resources for fodder; humanitarian agencies can better plan what assistance will be needed based on when rabbi crops will be available	Before onset of flooding	4
Pre-position supplier agreements with traders for the relief effort, before floods happen	Traders are willing to enter into future agreements;	Humanitarian and government organizations can more rapidly respond to the needs of the affected population.	At the time of straw harvest (March/April) in order to lock-in low prices for the coming flood season	4

Annexes

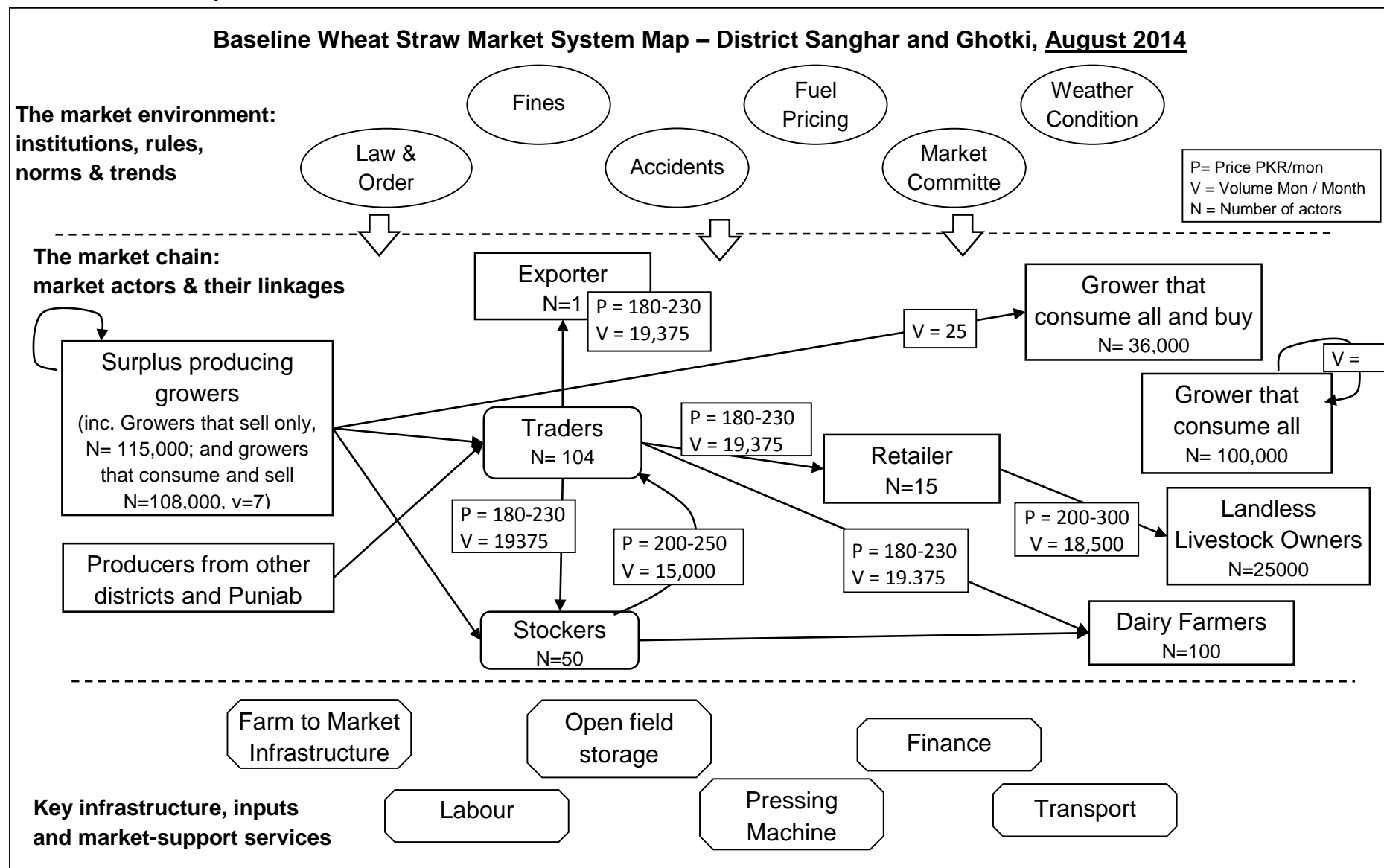
Annex A: PCMMA Team Member List

Name	Organization	Job title	Critical Market Team
Gregory Matthews	IRC	Senior Technical Advisor for Livelihoods	Assessment Leader
Emily Sloane	IRC	Emergency Markets Officer	Assistant Assessment Leader
Muhammad Attiq	IRC	Head of Office, Sindh Province	Markets Focal Point
BADIN DISTRICT			
Juergen Mika	WHH	Emergency Response Coordinator	water - TEAM LEADER
Muhammad Ali	ACF	Survey DPM	rice - TEAM LEADER
Sajan Dass	IRC	Sr. Training Officer	rice
Waqar Ali	Oxfam	MEAL Officer	fodder
Khalid Khan	ACF	Nutrition Surveys Data Analyst	water
Naseem Khan	Oxfam	DPM EFSL	fodder
Zeeshan Ahmed	ACTED	Community Mobilizer	rice
GHOTKI DISTRICT			
Muzafar Hussain	IRC	M&E Manager	fodder - TEAM LEADER
Ayaz Lakho	HWA Foundation	P.O.	water
Hafiz Manzoor	HWA Foundation	CEO	wheat flour
Himat Ali	Takhleeq Foundation	A.C.C.	fodder
Wasim Kolachii	Takhleeq Foundation	District Coordinator	fodder
Asif Imdad	IRC	Database Assistant	water
SANGHAR DISTRICT			
Khan Zada	Concern WW	Cash Project Coordinator	wheat flour - TEAM LEADER
Mehar Ali	IRC	Cash Transfer Officer	wheat flour
Nizakat Ali	IRC	Sr. CMO	fodder
Fida Hussain Bozdar	IRC	Community Mobilization Officer	water
Raza Ali Daudpota	RWF	Database Officer	fodder
Umair Said	CARE	FSL Monitoring Officer	fodder

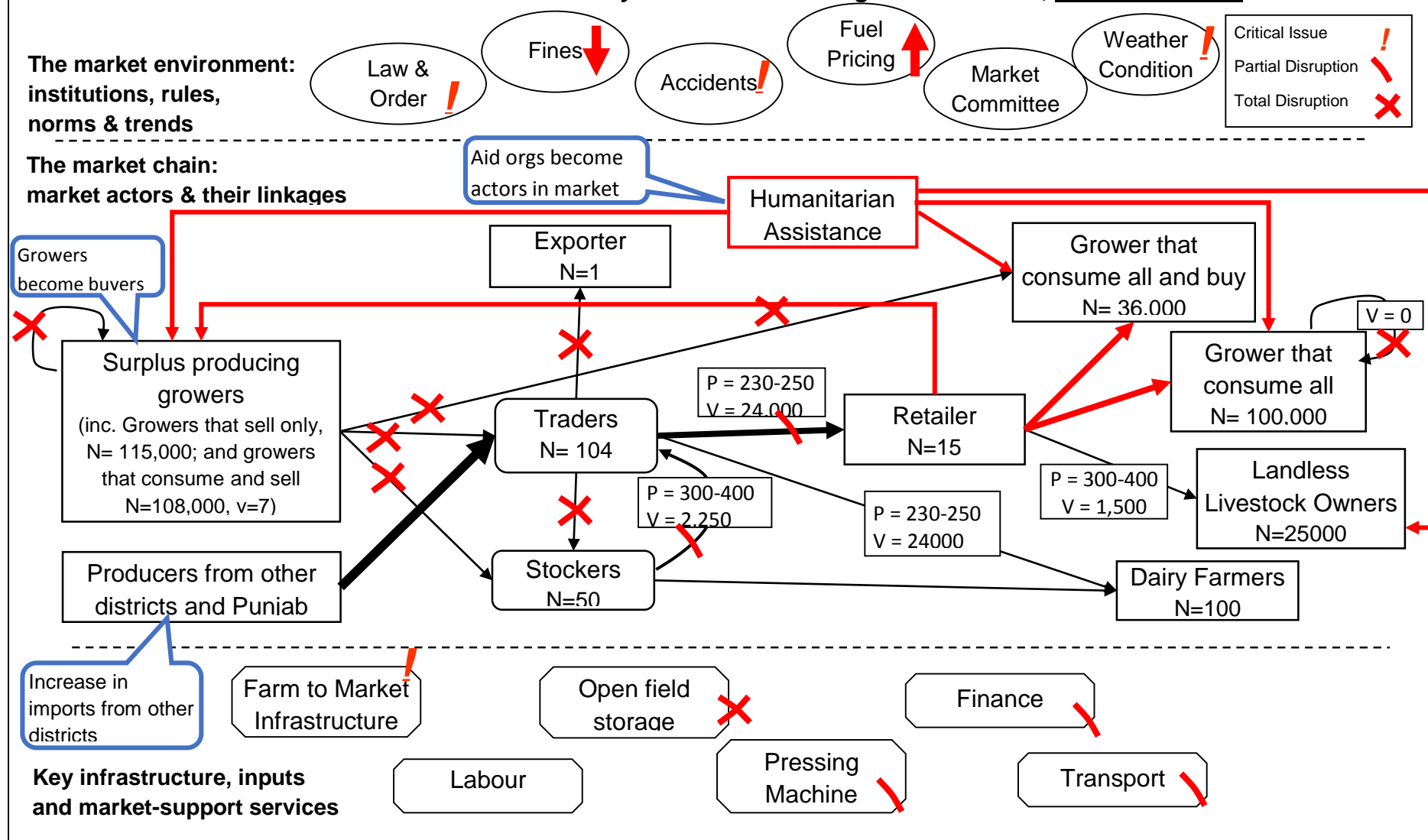
Annex B: Summary of interviews conducted, wheat straw market system

Type of interview	Location of interviewee		Number of interviews
	District	Specific locations	
Household	Badin	Seerani, Badin, Golarchi	9
	Ghotki	Abdullah Mirani, Ali Anwar Chachar, Dolatput, Janan Waso, Sabar Khan, Saeedu Chachar	8
	Sanghar	Suleman Khaskheli, Haji Mohammad Hashim Rajar, Imdadabad, Qalandar Bux Lashari, Saifal Chandio, Ranjho Talpur	11
TOTAL, Household interviews			28
Vendor	Badin	Seerani, Badin, Golarchi	4
	Ghotki	Shanti Nagar and Galla Mandi	4
	Sanghar	Tando Adam, Sanghar, Jhol, Khairo	7
TOTAL, Vendor interviews			15
Focus Group Discussion	Badin	Ahmed Raju (Mehar Dhandhal and Ahmed Raju), Bughra Memon (Ghaji Mallah and M. Khan Mallah)	4
	Ghotki	Hussain Bheli, Qadirpur	2
	Sanghar	not specified	1
TOTAL, Focus Group Discussions			7
GRAND TOTAL, Interviews Conducted (not including key informant interviews)			50

Annex C: Market Maps

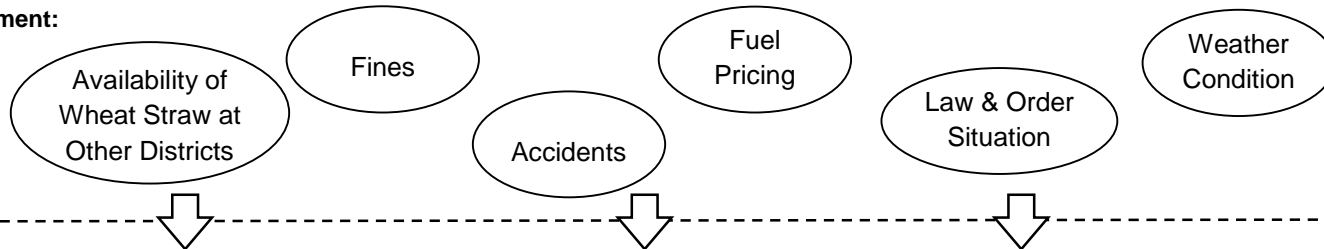


Flood-Affected Wheat Straw Market System – District Sanghar and Ghotki, September 2010

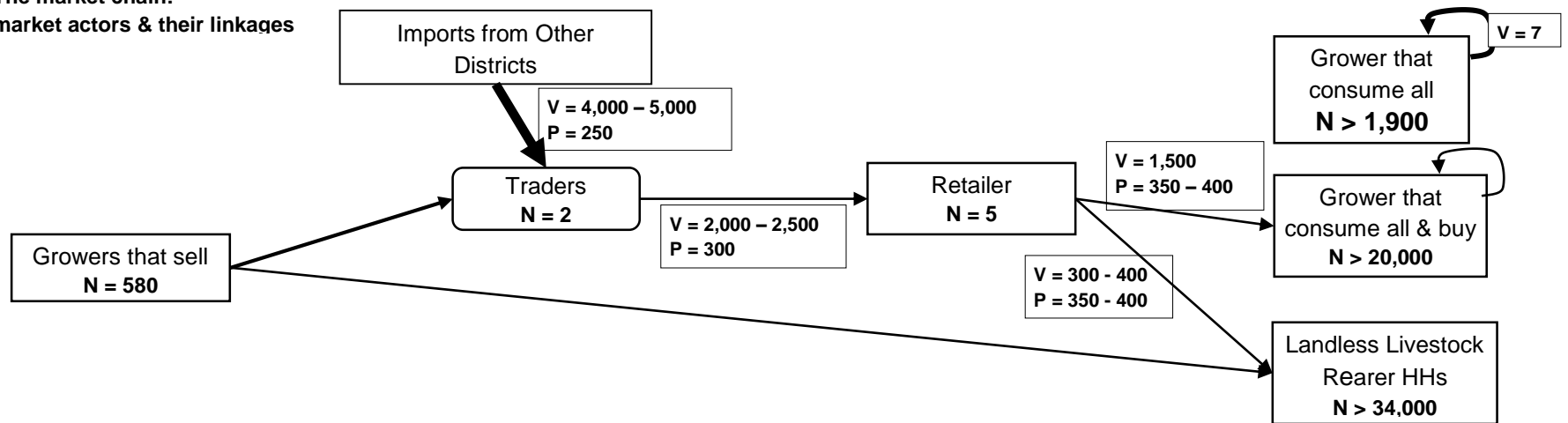


Baseline Wheat Straw Market-system Map – Badin – September 2014

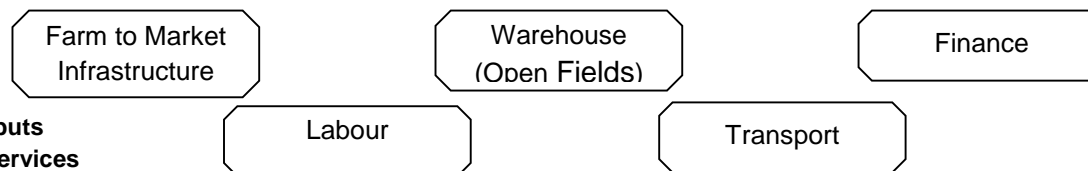
**The market environment:
institutions, rules,
norms & trends**



**The market chain:
market actors & their linkages**

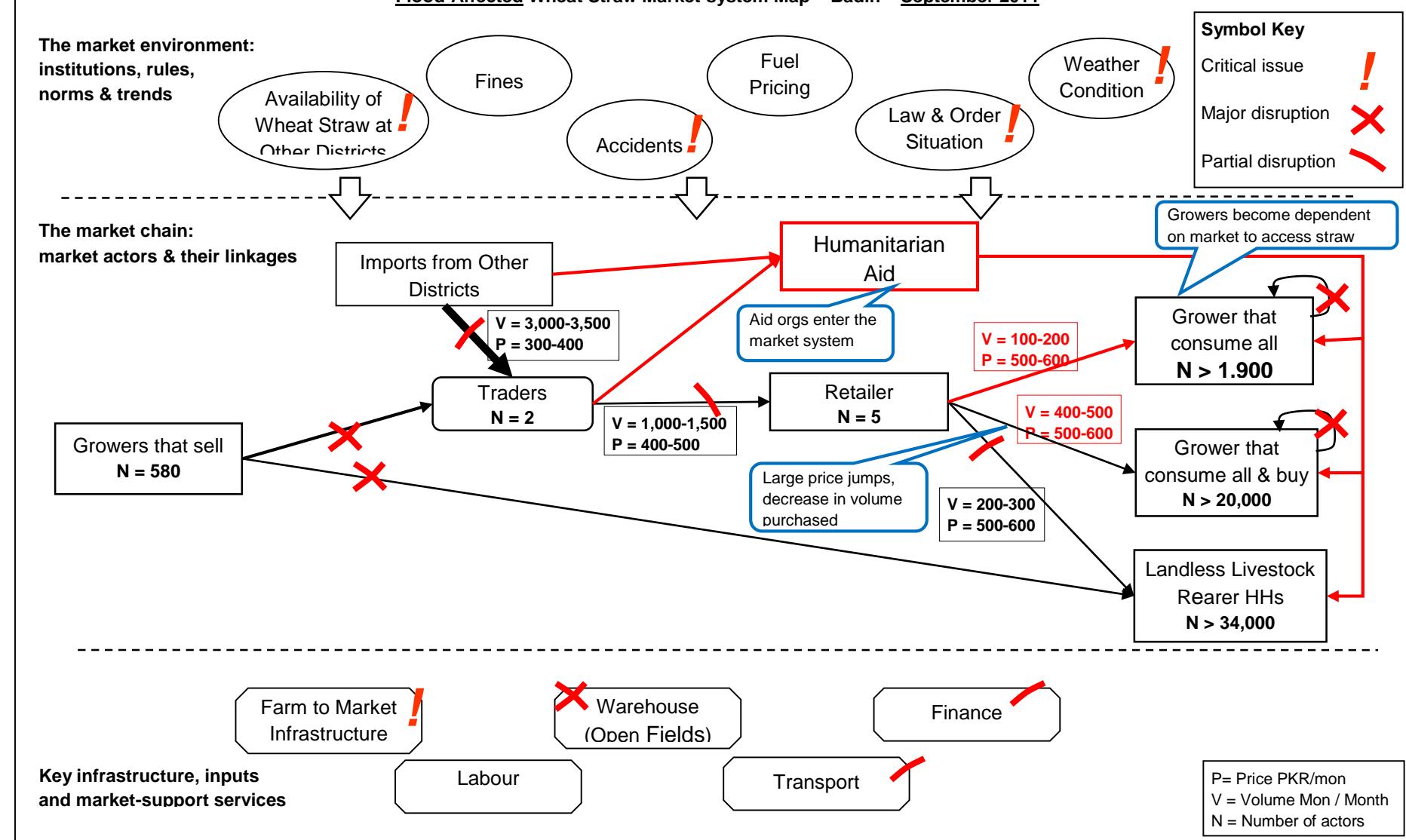


**Key infrastructure, inputs
and market-support services**



P= Price PKR/mon
V = Volume Mon / Month
N = Number of actors

Flood-Affected Wheat Straw Market-system Map – Badin – September 2011



Annex D: TOR for the PCMMA in Pakistan

Pakistan Pre-Crisis Market Mapping and Analysis PCMMA Terms of Reference

Assessment dates: May 18-June 3, 2015

Host agency: International Rescue Committee

Participating agencies: This will be a multi-agency endeavor to which staff from selected NGOs that operate in the assessment area will be invited to participate. Please express interest in participating in this PCMMA by contacting Emily Sloane, Emergency Markets Officer, IRC (Emily.Sloane@rescue.org)

PCMMA Overview and Objectives:

The Pre-Crisis Market Mapping and Analysis (PCMMA) is a practical, step-by-step resource to guide market analysis practitioners and team leaders to conduct market assessments prior to emergencies in order to anticipate how markets will respond after a shock occurs. The PCMMA was developed in 2014 by the IRC and Oxfam with the support of the European Union through the Enhanced Response Capacity Mechanism and the American People through the United States Agency for International Development (USAID), and builds on earlier experiments with market baseline mapping and analysis conducted in pre-crisis settings. Although based loosely on the EMMA methodology, the PCMMA does not replace existing market analysis tools, rather it is intended to provide a guide to applying those tools in pre-crisis contexts, particularly in contexts that are prone to recurring humanitarian crises.

PCMMA is designed to help agencies to improve preparedness, feed into contingency planning efforts and contribute to the design of disaster risk reduction programs by identifying certain parts of market systems which may be vulnerable to shocks. Increasing the speed of emergency responses or strengthening market systems ahead of emergencies would potentially reduce the disaster impact on lives and livelihoods, and begin to address the longer term or chronic nature of poverty and vulnerabilities. As it is still a relatively new approach, the IRC has devoted resources to conducting three pilot PCMMA assessments in disaster-prone countries in 2015 in order to generate learning that can be used to refine the approach and the guidance document, while providing information that can help various humanitarian agencies' strategic and operational planning efforts. The pilots will also serve as opportunities to develop market analysis capacity within the humanitarian community.

In Pakistan, monsoon-related flooding leads to humanitarian crises of varying scale on an almost annual basis, at the bottom of the Indus River basin. Since 2010, flooding has adversely affected at least half a million people *per year* in Sindh Province, located at the bottom of the Indus River Basin. Some years are particularly devastating; 2011 saw almost 5 million Sindh residents affected. Flooding destroys crops, livestock and agrarian infrastructure and in a highly agriculture-dependent region, results in loss of human life and damages homes and public infrastructure. Thus far, markets have by and large managed to continue supplying goods following floods, albeit at inflated prices.

The IRC has actively responded to flood-related humanitarian crises since 2010 in the FSL, WASH and Health sectors, and will continue to do so in the future. In 2010, the IRC participated in a multi-agency EMMA exercise in Sindh with an eye to developing more market-aware programming. This PCMMA will build on that effort to help identify ways to help prepare markets and residents to better withstand floods in the future. This PCMMA will focus specifically on those

markets that are critical for supporting the basic needs and livelihoods recovery of vulnerable Pakistani people whose lives may be disrupted by future flooding.

The objective of the analysis will be to identify appropriate market-based programming options for emergency and longer-term basic needs and livelihood assistance for both IDP and host community populations alike. The analysis will focus on identifying both direct programming options targeting IDPs or host community members as well as indirect responses targeting key market actors to improve capacities to provide basic needs and livelihoods opportunities to IDPs and host community families. The specific market systems to be analyzed during the assessment will be determined based on inputs and level of interest from participating agencies, feasibility of undertaking the analysis and potential programming, and appropriateness to the context in Pakistan. The exercise will further explore ways to better integrate gender considerations in the emergency market assessment process.

Main Objectives:

- To identify through a pre-crisis market analysis appropriate responses to meet early livelihood recovery and other basic emergency needs, with a particular emphasis on market support activities.
- To strengthen the market analysis capacity of both national and international IRC staff and of relevant members of the broader humanitarian community
- To build the IRC's experience in applying market analysis to response analysis and design within contingency planning
- To generate substantive, practical learning on how to integrate gender into market analyses

Desired Results of the PCMMA

- Market Maps of selected critical markets
- Seasonal calendar for critical markets
- Report of key findings and recommendations for each critical market system analyzed
- Brief report on learning related to the PCMMA approach and guidance document and on the integration of gender in market analysis

Key findings and recommendations will be presented widely at the close of the assessment. Presentations by assessment team members at field and Islamabad-level coordination structures will be encouraged, and the final reports will be made available online through the UNHCR Web portal, EMMA website (emma-toolkit.org), and the Markets in Crises Dgroup list serve.

Geographical Area of Assessment

The PCMMA assessment will take place in district and sub-district-level markets in selected areas of Sindh Province that are likely to be affected by future flooding. Specific locations and markets to be assessed will be identified in further consultation with both the country team and the different agencies participating in the exercise.

Critical Markets for Analysis

Due to the logistical, financial, and analytical limitations, the number of critical markets to be analyzed during this exercise will be limited to 3 different market systems. Before the start of the PCMMA, participating agencies will decide

on 2 to 4 critical markets to be the focus of the fieldwork and analysis. The type of critical markets to analyze depends on the sectoral interests of participating agencies and the number of participants available to partake throughout the assessment process. If necessary, different critical markets can be selected for different parts of Pakistan based on the specific market realities in each geographical area.

Potential market systems for analysis include:

- Construction materials
- Manual labor (agricultural and/or non-agricultural)
- Agricultural inputs (e.g., seeds for key crops)
- Staple food items
- Livestock

Assessment team members

The assessment team composition will reflect the fairly ambitious scope of the exercise. The assessment will be co- led by two technical staff from HQ. It is expected that 10-20 additional people will participate in the exercise; these people will be divided into 2-3 sub-teams to analyze the specific market systems identified. Each critical market team will be led by a critical market team leader and a national or expatriate mentee (to be identified by ERD staff). Market team members should have a good understanding of humanitarian programming and basic market principles, analytical and writing skills and experience with field-level data collection. Crucially, a member of IRC's Pakistan country team will serve as a market focal point leading up to and during the exercise; this individual will oversee the country team in preparatory analysis before the assessment and will apply his/her local knowledge to assist guide the assessment design and data analysis and interpretation processes. Finally, a gender specialist from the IRC's HQ will participate in the assessment to ensure that gender-related learning objectives are met.

Each market-specific sub-team will be expected to analyze assessment data and to prepare a draft report of findings and recommendations in line with the PCMMA Methodology (see below). Significant support for this analysis will be offered by the critical market team leaders; however staff or personnel participating in the assessment must be strong in data analysis and capable of writing complete assessment reports independently.

Having previously attended an EMMA training is not a requirement to participate in this assessment, but previous market analysis training or experience is highly desired. The training and facilitation will take place in English.

Agencies interested in participating in the PCMMA are asked identify staff members to be a part of the assessment. Agencies and individual staff must be willing and able to commit to being a part of the PCMMA team for the duration of the assessment, including pre-assessment training, field-based data collection, and analysis stages of the process. Additionally, agencies providing staff are asked to cover the costs of personnel (including salaries, per diems, etc.) and contribute to logistical support for those personnel (communications, vehicles and fuel, field overnights, etc.).

Duration of assessment and working Hours

- 18 days from mid-late May 2015. Please see schedule below.
- Participants should anticipate long working hours and be prepared to work outside normal business hours.

- All participants should agree to work the length of assessment, without a break if necessary to complete the work on time. Team members should expect to work weekends. Please inform us immediately if this is likely to be difficult or if there are any outstanding issues that need addressing.

Methodology

The assessment will use the methodology in the PCMMA guidance document, comprising 15 steps. To the extent possible, Steps 1-6 will be conducted before the full field team assembles in country. While a plan for Step 13 will be outlined during the PCMMA, it will be the responsibility of in-country staff to ensure that monitoring continues after the official exercise ends.

1. <i>Understanding the context</i>	Identify the likely crisis scenario; target population needs & profiles
2. <i>Setting scope and objectives</i>	Set objectives and operational questions for PCMMA; identify knowledge gaps; ensure relevance of PCMMA
3. <i>Ensuring managerial and organizational buy-in</i>	Determine composition of assessment team, including Market Focal Point; identify and confirm availability of in-country resources needed for assessment; secure country team management approval of the exercise and resulting potential response strategies; confirm that results will be integrated into contingency planning
4. <i>Critical market selection and key analytical questions</i>	Pre-selection of critical market-systems; identification of draft key analytical questions for each system; select geographic area to be covered by the assessment
5. <i>Mapping and gathering existing information</i>	Gather information on selected critical markets, target groups, livelihoods in assessment areas; identify information gaps
6. <i>Preparing and planning for the market assessment and analysis</i>	Confirm team composition; develop timeframe and draft agenda; set budget; finalize TOR
7. <i>Finalizing the frame of the analysis</i>	Review and validate steps 1-6 with full assessment team; finalize assessment locations with team; identify markets to visit and market actors to interview with team
8. <i>Preliminary analysis and mapping</i>	Production of initial profiles, seasonal calendars, maps of the market-system; identification of key informants or leads.
9. <i>Data collection</i>	Develop questionnaires; conduct fieldwork activities and regular debriefings
10. <i>Final mapping</i>	Finalize baseline & emergency maps, seasonal calendars; description of key features, bottlenecks, constraints
11. <i>Gap and market analysis</i>	Comparison of household economic profiles, analysis of priority needs, access and gaps
12. <i>Selection of response options</i>	Exploration of response options, cash and other intervention feasibility; response recommendations and their logic
13. <i>Market monitoring</i>	Determine different market indicators to monitor; develop monitoring plan

14. <i>Communication of results</i>	Prepare and disseminate results via report and in-person presentation(s)
15. <i>Updating a PCMMA</i>	Conduct follow-up assessments as needed

Communications

Most national staff have local mobile phones, and these will be used during the exercise. Team leaders will be provided with phone credit. International participants will seek the necessary SIM cards and/or will be provided phones by the IRC's Pakistan office as needed. At the start of the field work, all participant mobile numbers shall be collected and shared.

Administration and resources required:

The IRC's ERD unit will cover the cost of international travel and per diem of international IRC staff participants. It will also pay for accommodation of all international participants, including mentees, if IRC expatriate housing is not available. The agencies sponsoring any mentees involved will be responsible for the mentees' international travel and per diem while in Pakistan.

The IRC's Pakistan office will provide logistical and administrative support related to procuring visas, arranging for accommodation, training spaces, food and refreshments for the assessment team and in-country transportation. While the ERD unit has some limited funds available for in-country costs such as training supplies and transportation, these funds are insufficient to cover the full cost of the assessment, and so the country team will be asked to contribute to these needs to the best of its ability. The ERD may request documentation of any financial or in-kind contributions to the assessment from the IRC country team for donor reporting requirements.

Other participating agencies are asked to contribute staff and logistical support to defray the costs of the assessment. In addition to personnel costs (salary, per diems, etc.), the assessment will depend on contributions of vehicles, drivers and fuel from participating agencies to transport personnel for data gathering.

If your agency will be able to provide personnel or logistical support to the assessment, please indicate the level of support available when expressing interest in being a part of the PCMMA. To express interest, please contact Emily.Sloane@Rescue.org.

Tentative Assessment Schedule

Date	Agenda
1 April-16 May	Identification of assessment team; desk research and initial analysis
17 May	Assessment team arrives at training site
18-20 May	Introduction to PCMMA; training on PCMMA in practice; Developing data collection tools and preparing for fieldwork
21-28 May	Data collection at field level – household, market actor, and key informant interviews
29 May-1 June	Preliminary Analysis of field data and development of recommendations
2-3 June	Presentations of key findings and recommendations

Annex E. Household questionnaire

Questionnaire wheat straw for flood affected Consumer/HHs

PCMMA – Pakistan– May 22-30, 2015

Name of interviewee:	
District/ village	
Contact number:	
# of people in HH:	
Name of interviewer:	

Query	Response
1. Number of livestock in HH now	
2. Number of livestock on Aug. 2010/11	
3. How much Wheat Straw does your HH produce in an average year?	
4. Of the Wheat Straw that you produce, how much do you keep for own consumption?	
5. <i>if you are a sharecropper</i> : what % do you give to the landlord?	
6. Of the Wheat Straw you produce, how much do you sell?	
7. Who in your HH sells the Wheat Straw produced and who keeps the money? (men/women)	
8. Do you have a secure place to store the straw?	
9. How long your own stock of Wheat Straw lasts and which are the months when you don't have any stocks with you?	
10. Who in your HH does most of the farm work required to produce Wheat Straw? (men/women/youth/ children)	
11. What price do you get per 40 kg of Wheat Straw at the time of harvesting time?	
12. Does the selling price vary depending on the time of year, and if so, how much?	
13. How much Wheat Straw does your HH require in an average month?	
14. Is your HH able to access this volume of Wheat Straw as and when required through your own	

resources? If not, how much more would you need to meet this quantity?	
15. If needed do you purchase Wheat Straw and what is the average price and how does the price vary depending on the time of year?	
16. Where from you get the deficit quantity of the Wheat Straw required?	
17. If your HH buys Wheat Straw, from whom do you buy it? Where is this actor located?	
18. Did you have stocks of Wheat Straw when the floods (2010 for Ghotki, 2011 for Sanghar) started? If yes, how much did you have, and what happened to those stocks?	
19. During the one month right after the flood (2010 for Ghotki, 2011 for Sanghar), how much Wheat Straw did your livestock consume?	
20. Of the Wheat Straw that your livestock consumed in that month, how much came from your own production?	
21. Of the Wheat Straw that your livestock consumed in that month, how much did you buy?	
22. If you bought Wheat Straw during that month, where from did you buy it?	
23. Did your HH receive any livestock assistance during the month after the flood? If yes, what kind of aid did you receive, and how much was it? For how many months you got this?	
24. For how many months were you in need of assistance for your livestock following the flood?	
25. If a similar flood were to happen in the future and once again your HH did not have enough wheat straw, how would you prefer to receive livestock assistance? (In-kind, cash, vouchers) and why?	

Annex F. Wheat Straw Vendor Questionnaire

District : _____ Name of Business: _____ Contact Number : _____

Date: May 22-30, 2015

Critical market item: Wheat Straw	Business location:			Type of market actor :		
Time period in question (e.g. one, two or three months):						
Type of information	Curent Situation (August/September 2014)			Emergency Situation (2011 flood for Sanghar, 2010 for Ghotki)		
26. How much Wheat Straw did you sell during the different time periods?	Unit	Quantity	How often (daily, weekly, monthly)	Unit	Quantity	How often (daily, weekly, monthly)
27. What is the selling price for Wheat Straw?	unit	Price		Unit	Price	
28. What was the selling price of Wheat Straw before the floods in 2010/11						
29. Did the prices increase or decrease in emergency during the 2011/2010 floods, why?						
30. If the same level of flooding happens again, will the prices decrease/increase the same way as 2011 Sanghar/2010 Ghotki)?						
	August/September 2014 (BASELINE)			August/September during floods (EMERGENCY) 2010/11		

31. How much Wheat Straw did you have in stock during the times specified?		
32. How frequently did you need to re-order your stock?		
33. How long did it take to get the same Wheat Straw stock you were already maintaining?		
34. Would it be possible for you double or triple stock if needed? if not why?		
35. If you can increase your stock by double or above how long would it take?		
36. Where did you purchase your supply from (who, where?)		
37. Who are your customers and where they are from?		
38. How much % of your sales is on credit?		
39. Did you have any problems replenishing your stocks? (Transportation/shortages/ government restrictions/ financial constraints/damaged infrastructure/increased prices, etc.)		
40. Are there any restrictions on movement of Wheat Straw for selling/buying? Are these restrictions related to the flooding?		
41. How many customers do you have? (number of transactions daily/or per week)		

42. Do you provide Wheat Straw on credit to your customers, if yes to what percent of customers?		
43. Do you get credit from your suppliers?		
44. Did the emergency affect your customers' demand for Wheat Straw? How & why?		
45. Would you say that price competition exists in the market?		
46. How many similar scale traders are and selling similar items in the same local area as you?	47. Did this change during the floods, and if so, how?	
48. Are there any areas nearby that are not getting regular market supplies?	49. Are there any additional areas that did not get regular market supplies during the flood?	
50. Is there anything stopping you from growing your Wheat Straw sales further? If yes why?		
51. What support will the market need to maintain the needed supply of Wheat Straw to people affected by the floods in the future?		
52. Can you provide contact information for people we could interview (your suppliers, or traders you sell to?)		
Any observations		

Annex G. Questionnaire for Government

District:	Taluqa:	UC:	Villages covered:
Date of Interview:	Name of person interviewed:	Designation:	1 = MALE , 2 = FEMALE
Department:		Contact Tel No:	

1.	Is there any regulatory authority to control price and trade of wheat straw?	_____
2.	Is there any policy that has effect on wheat straw?	
3.	Will the policy of government remain same in case of a disaster? <u>0 = no, 1 = yes</u>	
4.	Is there any coordination mechanism in place for emergency to monitor the situation of market? <u>0 = no, 1 = yes</u>	_____
5.	Is there any coordination mechanism in place to monitor the market for wheat straw during emergency? <u>0 = no, 1 = yes</u>	_____
12 (b)	If yes, please provide details here:	
6.	How much land is cultivable in the flood prone area of the district?	_____ Acres
7.	What is normal per anum production of wheat straw from the said area?	_____ Muns
8.	How much area has been projected by government to suffer from next floods?	_____ Acres
9.	How much cultivable/cultivated land has been projected by government to suffer from next floods?	_____ Acres
10.	How many large animals (buffalo and Cow) are available in flood prone area?	
11.	In case of a new supplier of wheat straw entering into market, what will be the requirement from concerned department?	
12.	How long does the process of licensing take if any? (<u>Choose one options from below</u>)	_____
1 = Within a week, 2 = 1-2 weeks, 3 = 2-3 weeks, 4 = 3-4 weeks, 5 = more than 4 weeks (Specify) _____		

13.	Is there any regulation in place to check the fare rates of transportation? <i>0 = no, 1 = yes</i>	_____
20 (b)	If yes, please provide details here:	
14.	Are any disruptions in fuel supply expected during a disaster? <i>0 = no, 1 = yes</i>	_____
15.	If yes, How will it affect fuel pricing? (<i>Choose one options from below</i>)	_____
1 = Increase in price, 2 = decrease in price		
16.	Are warehousing facilities situated within the district expected to be damage by floods? <i>0 = no, 1 = yes</i>	_____
17.	What is the current availability of labour in the Fodder market? (<i>Choose one options from below</i>)	_____
1 = Enough labour available, 2 = Shortage of labour in market, 3 = Enough labour available but too expensive to afford, 4 = Other (Specify) _____		
18.	What is the wage rate per day for unskilled worker currently in your area?	_____ PKR
19.	What is the wage rate per day for skilled worker currently in your area?	_____ PKR
20.	Were the affected areas easily accessible through alternative routes during the last disaster? <i>0 = no, 1 = yes</i>	_____
21.	What support does government provide during emergencies to the affected population for livestock?	
Observations, Comments and Suggestions		

Annex H. Questionnaire for Money Lender

District:	Taluqa:	UC:	Villages covered:
Date of Interview:	Other business if any:		Contact Tel No:
Name of person interviewed:	1 = MALE , 2 = FEMALE		

22.	What are credit limits you offer?	Minimum _____ , Maximum _____
23.	What is the interest rate on cash?	_____
24.	Does the rate differ in certain conditions?	_____
3.b	And if so, what are these conditions?	
25.	In case of late payment, what is the penalty? Is there any relaxation during emergencies? If so, what?	
26.	What is the standard time duration for a loan?	_____
27.	What is the mode of return? (<i>Choose one options from below</i>)	_____
1. Cash, 2. Barter, 3. Other (Specify) _____		
28.	During emergencies do you give any relaxation to your clients? <u>0 = no, 1 = yes</u>	_____
7. b	If yes, please provide details	_____
29.	Do you have capacity to provide enough cash during emergencies if required by community or traders? <u>0 = no, 1 = yes</u>	_____

30.	On what conditions do you give loan?
10.	The process?
Observations, Comments and Suggestions	

Annex I. Questionnaire for Transporter

District:	Taluqa:	UC:	Villages covered:
Date of Survey:	Surveyor name:		Contact Tel No:
Name of person interviewed:	1 = Small Transporter, 2 = Big Transporter	1 = MALE , 2 = FEMALE	
The area s/he covers:			

31.	What mode of transport do the producers use normally for transportation of wheat straw to market?	Small Producer _____ Big Producer _____
32.	What sort of vehicles do you have for wheat straw transportation? How much can you transport at a time?	
33.	Do you also hire vehicles for transportation?	
3(b)	If transport is hired, please specify the source	_____
34.	What is the cost of transportation per 40KG (In Rupees), was there in change recorded during floods 2010.	_____
35.	How many vehicles (Both owned and hired) are used for transportation of wheat straw in peak season?	_____
36.	What quantity of wheat straw a vehicle, you have, can carry maximum?	_____
37.	How many muns are you transporting now, per day?	_____
38.	Maximum how many muns can you transport, per day?	_____
39.	What kinds of challenges are usually faced during transportation?	

40.	Do you have your own labour for loading/ unloading? <u>0 = no, 1 = yes</u>	_____
10 (b)	If no, how do you arrange labour? (Now and in emergency)	
41.	How much wage per day you pay to a labour? Any change during emergency?	_____
42.	Do you have any experience of transportation during emergencies (floods) <u>0 = no, 1 = yes</u>	_____
12 (b)	If yes, what challenges did you face during emergency supply?	
43.	What is the mode of payments by vendors to you	
Observations, Comments and Suggestions		