



## Emergency Market Mapping and Analysis (EMMA)

### Pilot Test 4, Pakistan

Jan 25 – Feb 8, 2009

## Key Findings and Recommendations

### Fire-wood Market-System

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This report has been produced for Oxfam, IRC and InterAction.

It contributes to the development of a toolkit (EMMA) for humanitarian agencies to better understand market systems in the aftermath of sudden-onset emergencies.

For further information please see [www.emma-toolkit.info](http://www.emma-toolkit.info)



**Acknowledgments:**

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IRC offered five, experienced and qualified staff to this EMMA pilot for three weeks in a very busy time. The success of this pilot is a result of their effort and genuine interest. Mercy Corps is also appreciated for donating time and logistics support to the effort.

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## 1. Introduction and Background to Crisis

Conflict between Taliban and Pakistan military forces in the North West Frontier Province (NWFP), including the Federally Administered Tribal Areas (FATA), has led to a mass movement of internally displaced persons (IDPs) to safer surrounding districts. In Swat district, fighting is on the rise with an estimated 50% of the total 1.8 million inhabitants severely affected by the conflict and a large number of individuals displaced within the district. Similarly, a staggering 20% of the total population (est. 850,000) of Bajaur agency in FATA has been displaced to NWFP, while an unknown number of people are likely to be affected within the Bajaur agency itself. Between October 08 and January, 2009, the UNHCR estimates 292,066 people displaced by the ongoing fighting have been registered in nine districts of NWFP. This includes over 231,705 individuals living outside the camps with host families or rented accommodation and almost 60,361 people living in 12 camps, which have been established in safer districts of NWFP. However, the total number of people in need of humanitarian assistance is higher, as registration outside the camps has only taken place so far in 70% of the affected northern districts. In addition, the UN foresees that the conflict in FATA and in Swat District in NWFP will continue to escalate throughout 2009, causing new displacements. Overall, it is estimated that the total IDP numbers could reach up to 625,000 people.<sup>1</sup> The duration of displacement cannot be predicted and estimates range from 1-5 years.

NWFP was the home for over 2 million refugees starting from the mid 1970s until only recently; the population increasing during times of insecurity. Many Afghans have integrated in to the Peshawar and NWFP communities. Through this time, the UNHCR, NGOS (local and international) and Commissionerate for Afghan Refugees (CAR) have provided and overseen humanitarian aid to these refugees CAR has again been appointed by the Government of Pakistan as the point, government agency to coordinate relief effort in the camps. Most cluster systems are active in identifying gaps and coordinating services to all camps but funding and responders are still limited. The overall socio-economic indicators in these camps are dismal at best, largely due to inadequate health facilities, insufficient education opportunities and poor hygiene and sanitation amenities, compounded with a host of protection issues.

IRC, with support from UNHCR, is now addressing the protection issues of the 5,984 IDP families (35,321 individuals) now residing in Jalozai and Katcha Garhi camps. In the water and sanitation sector (WASH), the IRC is partnering with UNICEF to provide emergency WASH services to 7,000 IDPs in Jalozai II camp. Also in Jalozai, IRC is initiating emergency education for over 4,000 IDP children. As of January 29, 2009, the IRC had already enrolled 2,036 students in the Phase I school. Each of these programs will provide additional support for coordinating and aligning interventions, while also gaining trust and confidence from the communities.

## 2. Target Population

Of the 292,066 displaced people, approximately 76% are from Bajaur Agency.<sup>2</sup> Following their displacement, the people of Bajaur will have little to return to; the military operation has caused severe damage to communication, health, education, public health engineering

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<sup>1</sup> Humanitarian Response Plan, UN 2008-2009

<sup>2</sup> UNHCR Pakistan IDPs report, 27/1/2009

infrastructure and civilian homes in six, administrative districts or *Tehsils* of Bajaur (Khar, Mamund, Utmankhel, Salarzai, Barang and Nawagay). The ongoing conflict has resulted in damages to standing crops on 16,630 ha of land. The maize crop was either cut by the army because it was seen as a security threat or could not be harvested due to the migration into camps. Estimates of 80,000 large animals, 120,000 small animals and up to 140,000 poultry has died or been displaced.<sup>3</sup>

Based on the IRC household economic survey it was found that the typical monthly household income of IDPs in the camps has dropped to 40% of the previous income in the camps. Crop production represented 32% of the typical IDP household income before the conflict, and now it is merely 4%. Most IDPs sold their livestock enabling them to move to the camps, but this money will soon be gone. The IDP families are incredibly vulnerable to shocks and without a productive asset or secure source of income these families will not be able to subsist on the meager camp distributions.

Many in Bajaur communities are agrarian and therefore, see seasonal patterns for the majority of their income and expenses. Small businesses and daily labour are the main sources of income, followed by sales of agricultural and livestock sales (including milk and eggs). A typical Bajaur HH income would be in the Rs 21,000 (roughly \$300). Major,

agricultural-related income would generally be earned July-October, with sales of wheat and maize. Wheat alone makes up approximately 22% of the typical HH income in the months of July and August. (need data on rice) The Bajaur community relies on the NWFP-major markets based in Peshawar for this. Other vegetables such as tomatoes, peas, lady fingers and potatoes are mostly grown for self-consumption, off-setting HH expenses by up to 5% and this

<b>DATA Input Sheet- House Hold</b>					
<b>Jalozai IDP Camp, NWFP, Pakistan</b>					
<b>House Hold Income Sheet Per Month</b>					
		<b>Pre-crisis</b>		<b>Post-crisis</b>	
		<b>Total Price</b>	<b>% of total Income</b>	<b>Total Price</b>	<b>% of total Income</b>
<b>Total</b>	<b>Crop Production</b>	6741.45	31.68%	333.64	4%
<b>Total</b>	<b>Labour/Sm Business</b>	8330.91	39.15%	1065.45	13%
<b>Total</b>	<b>Salaries / Stipends</b>	1636.36	7.69%	1772.73	21%
<b>Total</b>	<b>Dairy/ Livestock</b>	2872.36	13.50%	1581.82	19%
<b>Total</b>	<b>Loans</b>	1681.79	7.90%	2363.61	28%
<b>Total</b>	<b>Charity</b>	18.18	0.09%	450.00	5%
<b>Total</b>	<b>Remittances</b>	0	0.00%	909.09	11%
<b>Total</b>	<b>Other</b>	0	0.00%	0.00	0%
<b>Grand Total</b>		21,281.06	100%	8,476	100%
		304.02		121.09	
<b>House Hold Expenditure Per Month</b>					
		<b>Pre-crisis</b>		<b>Post-crisis</b>	
<b>Expenses</b>		<b>Total Price</b>	<b>% of total Expense</b>	<b>Total Price</b>	<b>% of total Expense</b>
<b>Total</b>	<b>Food Items</b>	7899.03	46%	4151.03	62%
<b>Total</b>	<b>Fuel</b>	1106.36	6%	893.65	13%
<b>Total</b>	<b>Schooling</b>	155.30	1%	0.00	0%
<b>Total</b>	<b>Health</b>	875.00	5%	415.14	6%
<b>Total</b>	<b>Transportation</b>	461.82	3%	357.27	5%
<b>Total</b>	<b>Animal Inputs</b>	1012.73	6%	5.45	0%
<b>Total</b>	<b>Farm Input</b>	5289.39	31%	472.73	7%
<b>Total</b>	<b>Other Items</b>	402.64	2%	426.82	6%
<b>Grand Total</b>		17,202.27	100%	6,722.10	100%

<sup>3</sup> UNDP, Needs Assessment for IDP Early Recovery, Agriculture and livestock directorate FATA Secretariat, Nov-Dec 2008

benefit is spread throughout the year through crop diversification and drying/preservation techniques.

Similarly, expenses in Bajor households are primarily on farm inputs including seeds, fertilizers, labour and other such expenses. Money is also consistently spent on the well-being of livestock.

### 2.1. Seasonal Calendar

Crop Calendar for the Major Crops / in Bajur, Mumand, Peshawar												
Crop / Fruit / Activity	Rain Season		Mar	Apr	May	Jun	Jul	Mansoon		Oct	Nov	Rain
	Jan	Feb						Aug	Sept			Dec
Rain Season	[Red]							[Red]				[Red]
Wheat						[Green]		[Hatched]				[Blue]
Maize				[Blue]						[Green]		
potatoes		[Blue]								[Green]		
Re-forestation timber seedlings		[Blue]										
Peas										[Blue]		[Green]
Labour(wages)	[Cyan]		[Cyan]									
On farm labour									[Yellow]			
Holidays-Ramazana (2009)	[Smiley]		[Smiley]		[Smiley]			[Smiley]	[Smiley]		[Smiley]	[Smiley]
Temperature	15-20c	20c	30c			35c				25c	25c	15.0c
Cattle sales												
Schools holiday	[Orange]						[Orange]					
Floods												
Drought						[Cyan]						
Firewood Demand - Bricks (following rains)			[Brown]							[Brown]		
Firewood Demand - Tobacco Drying						[Green]	[Green]					
Firewood Demand - Heating	[Purple]	[Purple]										[Purple]

[Blue]	Sowing	[Smiley]	<b>Holidays</b>
[Hatched]	Conflict - start	1-Jan	New Year
[Green]	Harvesting	6-7 Jan	Yourn-a-Aashoor
[Orange]	Temperature	5-Feb	Kashmir Day
[Yellow]	On farm labour	9-Mar	Eid e-Melad-al-Nabi
[Cyan]	Flood	23-Mar	Pakistan Day
		1-May	Labour Day
		14-Aug	Pakistan Independence Day
		21-22 Sep	Eid Ul Fitr
		9-Nov	Iqbal day
		27-28 Nov	Eid-ul-Adha
		25-Dec	Christmas
		26-27 Dec	Yourn-e-Aashoor

### 3. Methodology

IRC has completed the Emergency Market Mapping and Analysis (EMMA) pilot to investigate the effect of the IDP crisis on critical market systems. The ultimate aim of EMMA is to improve the effectiveness of early humanitarian action taken to ensure people’s survival, protect their food security and their livelihoods; and to avoid doing harm. The tool helps to identify key market systems based on the needs of beneficiaries and sources of potential income, analyzes the entire market value chain, and enables humanitarian agencies to consider creative responses.

Based on specific criteria, the EMMA team selected the firewood and vegetable market systems for analysis, employing the tool to measure the shock of the IDP crisis in NWFP on each market. These market systems have been selected based on the priority needs of the IDPs, as well as an analysis of which markets are crucial for protecting their livelihoods. The firewood market was selected as an ‘supply’ market while the tomato/vegetable market was selected as the ‘income’ market for analysis. **This report focuses specifically on the supply market of firewood.**

The EMMA field team consisted of 6 people; the EMMA technical consultant, the Program Development Manager, the Youth and Livelihood Technical Advisor, the Peshawar office Field Coordinator and 2 IRC field staff employed in camp-based education and protection emergency programs. Unfortunately, the consultant and the Program Development Manager were unable to travel to the field due to the security risks. Two teams were established to concentrate on each market system, with equal gender breakdown (1 man/1 woman).

The initial five days in Islamabad concentrated on the preparation phase and the preliminary analysis. The teams traveled to the field for the next 5 days to conduct field work in Jalojai camp. Jalojai camp was selected because it is located 30km outside Peshawar, and therefore the IDP population is less integrated into the Peshawar markets providing a distinct opportunity for analysis.

The field work methodology consisted of the household economic approach, qualitative interviews and focus group discussions. Based on tools developed in the preparation phase, the teams conducted fieldwork in Jalojai during the day and performed data entry at night. Each afternoon the field teams would debrief over the phone with the Islamabad based team. The final 5 days in Islamabad were devoted to analysis, when the field teams and Islamabad team took time to review the fieldwork and analyze the findings.

**Actual assessment time can be broken down to:**

Preparation phase: 2 days (background information and preliminary analysis of markets)

Interviews / field: 4 days (HH, key informants, market actor interviews)

Data entry and analysis: 1.5 days

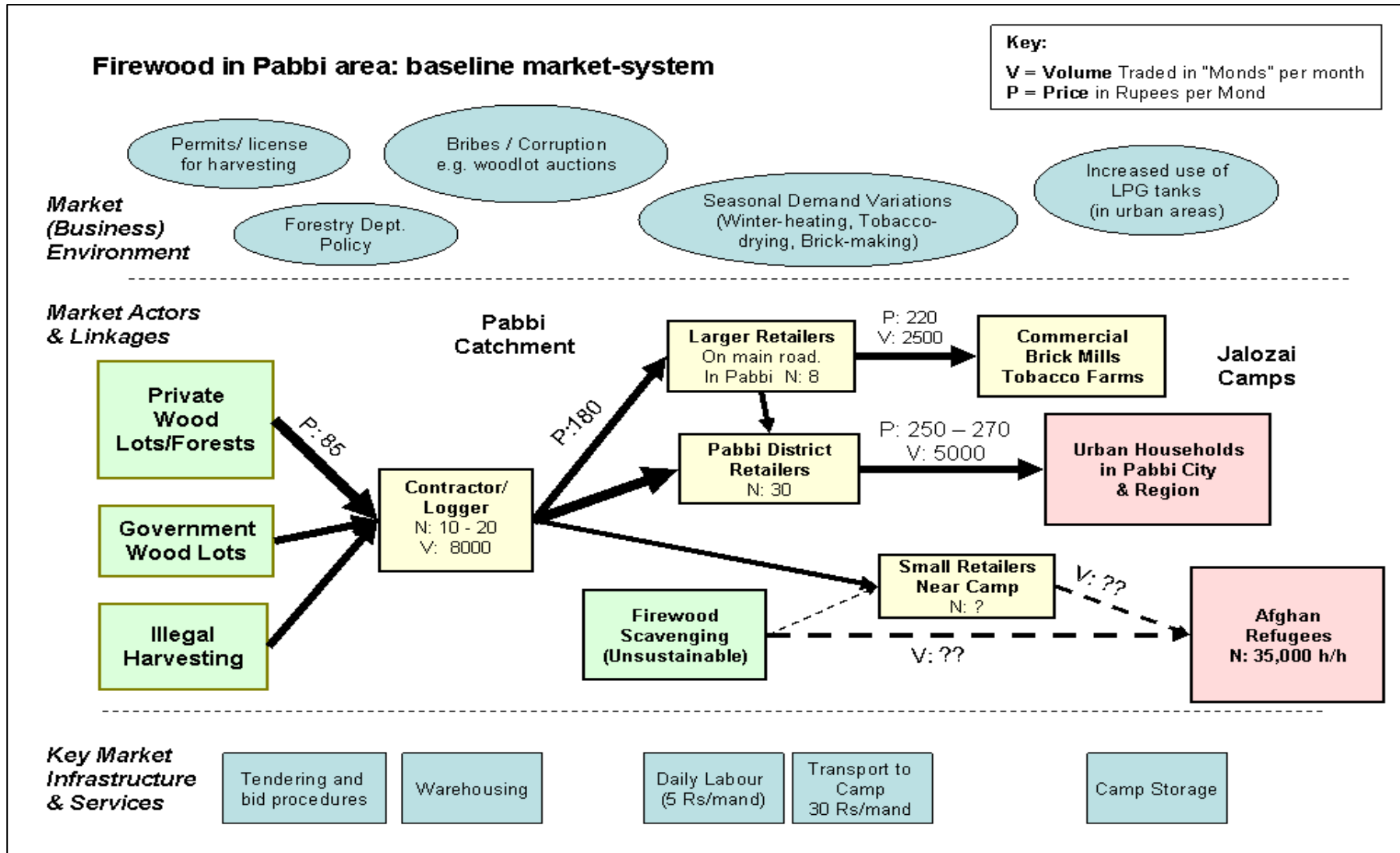
Total time processing the steps of the tool: 7.5 days (approximate)

**3.1. The interview schedule for this assessment:**

Field Interviews	
HH Econ	11
HH Qualitative	11
Small vendor - camp	1
Vendor-city/hub	2 (indv interview) 6 (focus group)
Whole salers	2
Transporter	3
Key informants	CAR, UNHCR, Forestry Department,, Fata Secretariat; ICRC, Pakistan Red Crescent, Islamabad Wholesaler

#### 4. Baseline Map

The firewood market in Peshawar-Pabbi area prior to the influx of 50,000 IDPs to Jalozai camp



#### 4.1. Key Features: Actors and Map Features:

**Definition: Mond:** Firewood is generally sold in Monds, a unit representing approximately 40kg.

**Government Forests:** The Ministry of Forestry has curbed sales and forestation of government land in recent years. This is due to mainly to ecological reasons. Some government wood lots do exist for sale – but are only sold when “they are in need of funds” The sale of government wood lots is done through a tendering process. The Ministry of Forestry prohibits sale of timber between provinces.

Department of Forestry indicates they auction off excess supplies of confiscated illegally logged wood, and wood recovered from river beds or in clean-up processes yearly.

**Private Wood Lots and Forests:** Private Wood Lots and Forests are the main sources of formal, production of firewood. It takes from three to five years to produce acceptable quality firewood. The production of this kind of wood requires very little effort and input on the part of farmers and thus a lucrative business for them. Given the lower profit margin, there is little incentive to incur high transport cost and private wood lots are usually sold locally or within a close district. The production of private wood is common amongst the city landlords, who stay in a city but maintain land in their villages. This way they keep the productivity of their land with a crop needing little supervision and make reasonable money. **TYPES of FIREWOOD**

Estimates on the cost of production at private wood lots is up to RS 50/mand (50 kg). The final retail price for high-quality wood can be as high as 150/mand. Firewood appears to always be in demand and with recent concerns of deforestation on government lands, the demand for private wood lot production has increased and farmers appear to be in a good, bargaining position. This is attributed to demand and not any type of monopoly on the market. There appears to be a steady increase in price per mond and a stable demand.

**Contractor /Logger:** Contractor / Logger are wholesaler and main dealers in the firewood market. When working with government wood lots, they enter in to tendering processes where there is often price fixing and corruption. There are many Contractor/Loggers in the NWFP and it is believed that prices are fair. They usually sell wood to retailers and main buyers including the tobacco and brick makers. No changes are reported to their volumes since the arrival of new IDPs. Their costs of production can reach up to PKR 85/mand, and they sell it for up to PKR 150-180/mand. They have major input costs including the initial cutting, subsequent splitting, transport and forestation licenses. Skilled labour is required in cutting of trees (saw, equipments) as well as loading and unloading commodity at the storage area.

**Retailers:** Retailers bring the firewood closer to the Pabi area. Five (%) retailers are close to the camp areas with another 30 in the city. Aside from their transport services, other inputs include drying (storage or rental fees) and splitting wood for household use. Labour and tools for cutting, splitting and stacking is required. Some retailers indicate a decrease in supply of scavenged wood due to the departure of afghan refugees, who sell scavenged, illegal wood.

Pabbi Retailers sell firewood to the final produce. They make a profit of PKR 20-30/mand. They usually own a piece of land where they use to have stall, a few laborers, and some of them have an electric saw machine. Generally they buy their produce from contractors and wholesaler, but at times, they get a bargain from the farmer and the scavenger. In urban areas, they provide almost all of the firewood to a HH as scavenging is not common; however in rural areas, they provide only 1 / 4 of the total household fire needs



Overall, retailers and wholesalers report a decrease in sales over recent years with the departure of Afghan refugees and the increase of LPG use for cooking. LPG tends to be used by households in urban areas and not yet become common in rural communities. Despite the decrease in sales, the demand for wood still exists from both households and industry.

**Brick Makers / Tobacco Factories:** Brick makers usually buy wood for their factories from the contractors and wholesalers. As they buy in large quantities, they get a better bargain and get the whole sale prices from the contractors.

**Transport:** Transporters are a key feature in the wood market market. Their asking prices are affected by increase in oil prices. On average, it cost PKR 15 / mand for wood transportation within a district from farm to wholesaler to retailer. There appears to be ample transportation in the NWFP area.

#### **Volumes of Firewood – Pabi area:**

Total approx volume: 8184M/month, of firewood in this local market.

- 2240-2500M/mo: Lg retailers (selling mainly to factories)
- 700-1000M/mo: Sm city retailers
- 5040M/mo: other, Sm regional retailers (other, 30 retailers)
- 64M/mo: camp retailers

#### **4.2. Market Conduct/Performance**

The wood markets appear to be fairly efficient in terms prices, supply and demand. There is no apparent monopoly at either the producer, suppliers or retailers. There are no large, jumps in prices that appear to be unfair or unmerited. Infrastructure such as labour and transport are adequate.

Some restrictions do exist on the wood market regarding high quality timber (hardwood trees). It is comparatively easy to trade in firewood market. The MoF reported that in the past, inter-district trading of firewood was allowed from Punjab during times of high need and demand, indicating the government is willing to loosen restrictions. Most of this wood was brought in from Punjab, about 100KM from Jalozai IDP Camp.

The main problems that appear to be with this market are

- 1) Deforestation and subsequent limitations on availability through government/public lands and deforestation (although the private farming appears to have increased since awareness was raised and cutting restricted. The government and popular belief offer conflicting thoughts on deforestation in NWFP.
- 2) Gradual decrease of demand due to LPG tanks for household cooking (seen mainly in urban areas)
- 3) Wide-spread scavenging of wood in rural or poor areas. Consumers illegally sourcing

In conclusion, we see the problems with source and end user. All of the mechanisms in-between appear to be functioning.

#### 4.3. Seasonal Trends – Firewood

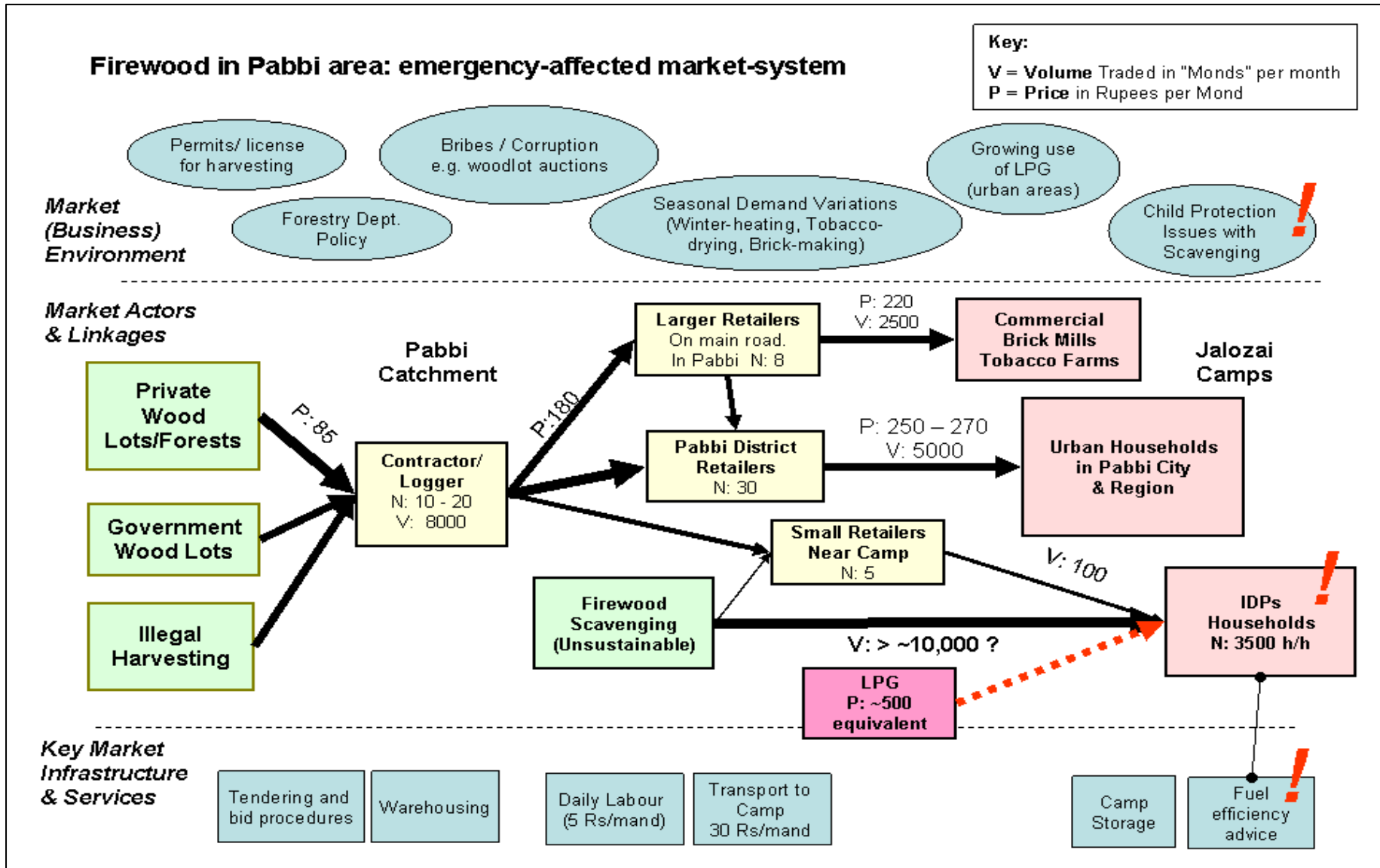
Seasonal Trends - Firewood												
Firewood	Jan	Feb	March	April	May	June	July	Aug	Sep	oct	Nov	Dec
Aggregate Demand	High	High	High	Med	Med	High	Med	Med	Med	Low	Med	high
Supply( dry wood)	Low	Low	Low	High	High	High	High	Low	Low	Low	Low	Low
Consumption by IDPs/local household	High	High	High	Low	Low	Low	Low	Low	Low	Low	Med	High
Consumption by local factories	Low	Low	High	Low	Low	High	High	Low	High	Low	Low	High
Cost of Production for high quality fuel wood /mound (In PKR)	85	85	85	85	85	85	85	85	85	85	85	85

Some seasonal changes in demand and supply affect the price – this is due to weather and need. Firewood is mainly harvested in the spring and early summer when roads are dry and before transport is diverted to crops. Firewood generally takes about three months to dry before use and is stored at both loggers and retailers.

The demand for firewood is seasonal and increases during:

- winter season (heating in the winter)
- brick making (following the rains of Jan/Feb and Aug)
- tobacco drying season. (June/July)

5. Emergency Affected Market Map



## 5.1. New Market Actors

### Emergence of Camp Retailers:

These retailers only fulfill their 1/4 of total need as for the remaining they rely on scavenging.

**Scavenger:** Scavenger collects firewood for their own use and as well as a source of their livelihood. In a typical household, they consume up to  $\frac{3}{4}$  of the collected firewood. They collect this firewood from private and community owned land. Most of the scavenging is carried out by children and women. Given the very high number of scavenger in an area, they put high pressure on natural resources and disturb the whole eco-system. Usually, they convert the land in and around the camps into barren fields with no vegetation.

**IDP Households:** Jalozai camp alone has approximately 3000 HH, all living in tents, relying on distributions and with few options for income.

Most HHs appear to be surviving from monies earned during the emergency sales of their livestock. The typical, monthly, HH income dropped from Rs 21,281 to Rs 8,476 - only 40% of the previous income level. Loans and remittances now make up over 30% of the typical, HH income; up sharply from the 7.9% prior to the crisis. Expenses on fuel (firewood, dung and LPG refills) doubled to being over 13% of monthly expenses.

Routine food distributions equaling Rs450/month in value are occurring. Some of the IDP households buy their perishable products from IDP retailers and from Pabbi retailers while others are buying from the small shops that have opened within the camp.

IDPs are living within a "purdah" area, an extended area of 10 HH tents (usually occupied by extended family members) that is partitioned by a curtain or block. Because of the traditional restriction to movements for women, most cannot leave the purdah area or even their tent. Cooking is done on open fires and families have limited cooking equipment. There are some, communal cooking areas in the camp, but these cannot be accessed by women and are generally used to cook bread by bakers. To date, there have been inconsistent distributions of firewood by a Saudi NGO. Each family has also received a one-time donation of an LPG tank for cooking – but with the understanding that subsequent refills are at the expense of the individual.

## 5.2. Key Findings – Interviews

- No real changes are reported to the volumes or prices since the influx of IDPs. This is largely due to the amount of scavenging. Pabi retailers indicate that approximately 20% of their sales are going to the camp inhabitants or camp retailers.
- The UNHCR and CAR have indicated that the rate of firewood consumption per HH is 5kg/day. (equaling 3.5M/month)
- Camp retailers selling 1M at Rs 220-250. Monthly costs (3.5M/month) would be about Rs800/month.
- Note: Our HH Econ survey shows the typical family having approx Rs900/month expenditure on fuel (13% of HH expenditures) – but report this to be kindling, cow dung and gas refills. Indicating firewood is not the preferred item.
- Camp retailers indicate that sales of firewood are small – most individuals buying 1-2 logs at a time (4kg) or enough for one meal.

- Bushes and brush also selling for approx 150/M
- LPG tank refills are approximately 2x the rate of firewood for the volume required to cook the same amount of food.
- Many IDPs buying wood directly from city retailers at a lower rate but must supply their own transport. (approx ½ the legal firewood coming in to the camps is from city retailers)
- Following the crisis, IDPs in the camp claim their expenses to fuel and firewood remains comparable, but now represents over double the percentage of income.
- Prices increases with dryness of wood but weight decrease
- IDPs claim to be (temporarily) supplementing the wood needs with the donated LPG tank. (using the tank to cook tea) They claim to be cooking once a day.
- IDPs currently sourcing most firewood for free – scavenging from local, private and government land.
- IDPs prefer cash over distribution – but we believe this would likely not be spent on wood as illegal scavenging is still rampant.
- Prices are set according to seasons and demand. Greater demand in winter (Dec-Feb) March and September (brick making / following the rains) and June/July (tobacco drying following the harvest).
- Trees for firewood are mostly cut from in June-July (easier to transport) and this is when stocks are highest. Vendors indicate that stocks are adequate all year round, however.
- Green (non-dried wood) sells cheaper than dried wood. Prices increases with dryness of wood but weight decrease.
- Adequate labour is said to be available throughout the year

### 5.3. Analysis – Emergency Market

Lg. retailers claim no increase in sales. Overall trend is that IDPs have had little impact on market. Most vendors still have an overall decline in sales over last year due to departure of 2million Afghan refugees.

#### Volumes/Availability & Stocks:

Forrest Department indicates the Peshawar market does not have enough wood to supply for 50000 IDPs. Vendors say there is enough – likely indicating more access to farmed and illegal wood. At the current rate, there is little demand for more volume.

Actual firewood needs of camp population (2527HH) 9476M/month (116% more than current, regional volumes of firewood)

- Actual sales in camps estimated at: 214M/month (less than 3% of current, regional sales)
- Significant deficit of: 9200M/month
- Deficit attributed to: illegal scavenging, random wood and gas cylinder distributions and sharing of fuel at communal stoves within the purde area.

- Research indicates large trend of deforestation in NWFP area. Although much of the firewood is farmed, we believe a firewood program (alone) is not sustainable in terms of the environment.

#### **Prices:**

- The arrival of the IDPs has not resulted in a price increase. No market change.
- Random fuel distributions in Feb estimated at: at least 3500M. No concrete, long-term plans
- 5kg Gas cylinders were distributed to each HH representing roughly 1.5 M of wood. Refills will not be provided and are approximately 2x the price of wood giving the same output. Gas preferable to IDPs as it is significantly easier to work with and cleaner.
- LPG and firewood are not affordable to people in the current situation. (limited to no income) Although HH do have some money now from last year's savings, this will run out in the coming 6 months.

#### **Qualitative Impacts on the Market-System**

- Scavenging is an unhealthy coping skill on many levels – scavengers are generally vulnerable groups like women and children. Children are skipping school. Scavengers have to cross the main road outside the camp to reach the wood. Scavenged wood usually belongs to someone – and is resulting in animosities. Scavenged wood can be ecologically not sound and additionally, has no benefit to the market actors in the region.
- We believe that given the circumstances in which people are living, work should be done to decrease HH need for cooking fuel.

#### **Impact on services and infrastructure**

- None Observed

#### **Changes to institutions, rules and norms**

- None noted yet – other than one-time distribution of LPG tanks from the government at the recommendation of CAR
- There is limited discussion in the CCCM cluster re the need to distribute fuel to the IDPs

#### **Change in Market Performance**

- None noted

#### **Supply Side / Demand side Constraints**

We feel this is a mixture of both.

- The most obvious, current need being the immediate need for cooking and heating fuel for the IDPs.
- The sustainability of available volume at the source is in questions, - but appears it will have no immediate effect on prices or availability. We fear that increased need will result in more deforestation and illegal harvesting.

**6. Key Analytical Questions:**

1. Does the Peshawar firewood market have the capacity to supply the 100,000+ IDPs ?

**No. appears not to be sustainable. However, with LPG, there are other options**

2. What type of assistance to the IDPs is preferable? Cash? In kind?.

**Cash**

3. Where can an INGO enter this market system to ensure sustainable & affordable firewood to IDPs?

**End user (cash or conservation techniques) and with source (promote reforestation)**

## 7. Response Options Matrix

Response option	Feasibility to implement	Timing
<p>1. <u>Distribution</u> of spare supplies from Forest Department                       (confiscated or illegally logged wood. Odds and ends of various qualities)</p>	<p><b>Feasibility:</b> Low</p> <p><b>Advantages:</b> would have immediate, economic and environmental impact. Would utilize existing/useless stocks; for the short-term, will slow deforestation; simple distribution program.</p> <p><b>Disadvantages:</b> Warehouses, distribution staff, little integration with the Pabi and camp shops, wood may be sold at lower rates – as people not seeing a big need (because they are scavenging). It is likely that there is a lot of corruption in this stock. Legalities of moving this wood through regions/district borders?</p> <p>Would need to be coupled with a community awareness program re: deforestation, education/protection and fuel conservation</p> <p>Need to determine: Market rate for purchase and quantity. advocacy</p>	<p>2-3 weeks</p>
<p>2. Linking IDPs with forest contractor.                       RC will provide transport                      Voucher system. Per family standard</p>	<p><b>Feasibility:</b> Medium – but not smart programming for the long-term.</p> <p><b>Advantages:</b> Brings wood to IDPs at a lower rate. Immediate impact/immediate supply of wood available. Deter child labour (wood collection), do it without storage</p> <p><b>Disadvantages:</b> Not integrated with market; no exit strategy (unless community development with it) open to fraud; supports deforestation (increases the demand on a limited supply). Would take time to start up – with procurement and beneficiary identification process</p>	<p>2 months to implement</p>
<p>3. Distribution involving camp based retailers                       Voucher system</p>	<p><b>Feasibility:</b> Medium</p> <p><b>Advantage:</b> brings money to the camp area = a lot of secondary and tertiary beneficiaries; would create more local vendors</p> <p><b>Disadvantage:</b> Very few, camp retailers with any capacity, no storage or infrastructure inside camps, open to fraud. Would take time to start up – with procurement and beneficiary identification process</p>	<p>2 months to implement</p>



Response option	Feasibility to implement	Timing
4. Fuel efficient techniques	<p><b>Feasibility:</b> High</p> <p><b>Advantages:</b> Transferrable skills, will result in savings at the HH level – without bypassing the market; positive effect on protection issues with children/women; good for the environment; very practical and sustainable; clear exit strategy ; could easily be integrated with other programming – such as distribution of fuel efficient stoves or pressure cookers</p> <p><b>Disadvantages:</b> Community Development/Mobilizer-heavy. Requires lots of training &amp; materials; potential to fail because it requires behaviour change over a long time; hard to monitor</p>	Behavioural change, the longer the better
5. Plantation of trees/bushes near camps  Advocacy with Govt for land allocation	<p><b>Feasibility:</b> Low</p> <p><b>Advantage:</b> local supply, lower prices, not being part of larger, deforestation issues.</p> <p><b>Disadvantage:</b> long-term project : impact at earliest in 3 years. Ownership issues: who does the work etc. Government permission and cooperation required</p>	2-3 years
6. Gas supply to communal kitchens.  To existing, communal kitchens IRC pays or subsidizes the bill	<p><b>Feasibility:</b> Low</p> <p><b>Advantages:</b> clean, does not increase demand on forests, more environmentally friendly, Communal kitchen is fuel-efficient; would likely reduce child labour in collection of firewood in camps.</p> <p><b>Disadvantage:</b> No gas supply pipeline in Jalojai; pipelines can be dangerous and are exposed to high risk; Far away. Kitchens are not in a purdah area (culturally inappropriate)</p>	3 months
7. “Firewood for Work” on farm forest.  Firewood for reforestation work or on private farms.	<p><b>Feasibility:</b> Medium / low</p> <p><b>Advantages:</b> promotes aforrestation or reforestation; social integration, immediate savings for IDPs (saved Rs. 600-1000/month) Protection issues</p> <p><b>Disadvantages:</b> Limited number of participants. Likely require travel; needs buy-in from local elders/landlords; chance of exploitation</p>	2-3 months

Response option	Feasibility to implement	Timing
8. Distribution to H/H to with incentives “firewood for school attendance” (Will give family firewood for complete attendance of children in school)	<p><b>Feasibility:</b> High</p> <p><b>Advantages:</b> IDPs can save on firewood. Standardized packages: quality and quantity. Gives incentive for sending children to school. Decreases protection issues. Decrease distribution of wood in time as exit strategy.</p> <p><b>Disadvantages:</b> Increase dependency on aid; makes school attendance linked to reward, instead of intrinsic worth; not sustainable.</p>	1-2 week in procurement & supply
9. Refilling of gas cylinder with incentives “gas for school attendance”	<p><b>Feasibility:</b> High</p> <p><b>Advantages:</b> Less firewood usage, Time saving, can cook using less flame. Gives incentive for sending children to school. Decreases protection issues. Decrease distribution of gas in time as exit strategy.</p> <p><b>Disadvantages:</b> Twice the price of firewood; risky using inside tents; IDPs cant afford refilling on own Increase dependency on aid; makes school attendance linked to reward, instead of intrinsic worth; not sustainable.</p>	Can be started soon
10. Cash	<p><b>Feasibility:</b> Low</p> <p><b>Advantages:</b> Inject money into the camps; Positive effect on HH economies but no affect on firewood market; gives HH choices</p> <p><b>Disadvantages:</b> Potential for inflation; corruption; no exit strategy; no way to ensure that cash is used for firewood; people could continue to send child for firewood collection instead of buying it.</p>	Quick response

## 8. Response Recommendations

Response Combinations ACTIVITIES	Key assumptions & risks	Timing issues	Likely impact (on market-system, & affected groups )	Indicator <i>(it may be helpful to include indicators that can be measures through an EMMA-related, monitoring plan)</i>
Fuel efficient techniques <ul style="list-style-type: none"> <li>• Stove distribution</li> <li>• Cooking techniques</li> <li>• Sensitization on fuel efficient tech, forestation, child protection.</li> </ul>	<ul style="list-style-type: none"> <li>- people are willing to learn new things.</li> <li>- people are willing to use learn and use the stoves properly</li> <li>- we can find properly trained staff</li> <li>- access to the camps</li> </ul>	1-2 month to have impact	<ul style="list-style-type: none"> <li>- Decrease the firewood expenses using fuel efficient techniques</li> <li>- Increase fuel efficiency at a HH level</li> <li>- Small – but important – positive effect on the environment</li> <li>- improved protection issues (less kids collecting wood)</li> <li>-Reduce amount of HH income spent on fuel.</li> </ul>	<ul style="list-style-type: none"> <li>• # of stoves distributed and used by IDPs (Pre post interviews; Entrance/exit tests)</li> <li>• Amount of wood used in old stove compared with the new stove</li> <li>•</li> </ul>
“Fuel for school attendance”  Combination of Gas refilling & incentives for school attendance  Sensitization on fuel efficient tech, forestation, child protection	<ul style="list-style-type: none"> <li>-IDPs are willing to send children to school</li> <li>-IDPs practice safe cooking techniques</li> </ul>	2-3 weeks	<ul style="list-style-type: none"> <li>- Reduce amount of HH income spent on fuel</li> <li>- Students attendance increases</li> </ul>	<b>Indicator:</b> <ul style="list-style-type: none"> <li>• % increase in number of students with complete attendance</li> <li>• % decrease in amount of HH income spent on fuel</li> </ul>

Response Combinations ACTIVITIES	Key assumptions & risks	Timing issues	Likely impact (on market-system, & affected groups )	Indicator <i>(it may be helpful to include indicators that can be measures through an EMMA-related, monitoring plan)</i>
Distribution of forest dept wood & building linkages with forest department to promote plantation of trees in adjacent space.  Sensitization on fuel efficient tech, forestation, child protection.	-Bureaucratic/ corrupt system  -Environmental factors	Long term	- Promote planting or replanting - Adjacent barren land will be utilised - Good for the environment -More firewood available	<ul style="list-style-type: none"> <li>• # of acres planted or replanted.</li> <li>• # of trees planted</li> <li>• Increase in supply of firewood</li> </ul>

### 8.1. Monitoring Plan

Based on the Step 8 response recommendations matrix a project strategy will be established. This matrix identifies activities, risks and assumptions, impact and indicators, all of which will be included in the project strategy or logical framework (logframe) (Please see attached annex).

Therefore, the EMMA assessment will become a part of the project, with the initial EMMA creating the baseline of many of the indicators and helping to establish monitoring tools. A performance monitoring and evaluation plan will be developed from a project logframe in the proposal stage but specifically, we envision that the measurable indicators of EMMA will include:

Indicator	Means of Verification
% Monthly expenses for cooking fuel in a typical HH	HH econ survey at 6 mo and 12 mo.  Measured against baseline (EMMA Jan/Feb 2009)

*More program specific indicators (not necessarily EMMA related) can be found on the program logframe.*