

Emergency Market Mapping and Analysis (EMMA)

Cement Market System, Kyrgyzstan

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International Rescue Committee

July 23-28, 2010

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Executive Summary

Cement is a key building material necessary for reconstruction of homes and businesses, but the cement market system is functioning on borrowed time. The factories in southern Kyrgyzstan are operating below capacity. The large, newly constructed factory at Kyzyl-kiya stopped production in April, and has just last week begun to produce at less than 10% of its capacity. Most of the cement available on the market is lower-quality product from the Aravan factory. Prices have risen and demand has fallen sharply in the wake of the June events. The supply chain linking the factories to retailers and consumers remains essentially intact, but commerce is at a low ebb, and an increase in demand is needed to head off potential threats to the livelihoods of market actors.

Because vulnerable consumers face higher prices and often issues of access to construction materials markets, cement is not readily available to the most affected populations. Retail sales are down about 50% across the region, meaning retailers are vulnerable because they depend on product turnover for income to continue the operation of their businesses and to support their families. Some factory-employed middlemen continue to be paid despite not working. Others are forced to find alternative sources of income, such as selling produce.

The internationally-managed construction of 2,000 transitional shelters will require up to 15,000 tons of cement, which can easily be provided by the local market system. Additional demand for self-help reconstruction and reconstruction of businesses can also be met without exceeding existing market capacity for production and transportation.

If coordinated well, the anticipated large-scale reconstruction effort to be undertaken in the coming months can have a significant positive impact on the revitalization of the market system and livelihoods of the market actors, particularly the cement retailers and vulnerable households. By undertaking the procurement of the thousands of tons of concrete necessary for reconstruction through existing market actors and structures the reconstruction effort will not just benefit those for whom houses are being built, but also retailers, transporters and factories who depend on the cement market system for their livelihoods.

Emergency Context

In June 2010, following April's political upheaval¹, the Central Asian state of Kyrgyzstan experienced ethnic violence and rapid displacement in the southern districts bordering Uzbekistan. Nearly 3,000 homes and businesses were damaged or destroyed in a 3 day period. Although the origins and perpetrators of the violence remain unclear, the violence predominantly targeted the Uzbek ethnic group². Government estimates of the number of fatalities are 330, although unofficial sources quote that number to be significantly higher. At the height of the unrest approximately 375,000 individuals were internally displaced and a further 92,000 crossed the border to Uzbekistan. At present about 2,000 households, or 30,000 individuals remain displaced.³

¹ On 7 April 2010, violent civil protests erupted in the capital city Bishkek and provoked the dismissal of the President, Bakiev. An interim 'caretaker' government was instituted headed by Rosa Otunbaeva, but tensions continued, leading to a vacuum of national counterparts in many institutions at central and local levels, freezing of bank assets, and closure of borders, and disruption of the spring planting season.

² Kyrgyzstan: Ensuring Security and Human Rights Required to Put Country Back on Course, Refugees International 29/07/2010.

³ Kyrgyzstan Complex Emergency; Factsheet #13, Fiscal Year (FY) 2010, Bureau for Democracy, Conflict and Humanitarian Assistance (DCHA), Office of U.S. Foreign Disaster Assistance (OFDA), 12/08/2010.

The violence against Uzbek neighborhoods in Osh and Jalal-Abad districts in southern Kyrgyzstan was accompanied by the looting and burning of houses, businesses and schools serving that population. Destruction in Uzbek-neighborhoods is significant. Homes have been destroyed, assets stolen or lost, public services damaged, and social and market linkages disrupted. Returnees are faced with immediate assistance needs in shelter, NFIs⁴, protection, and emergency economic interventions, as well as medium-term needs in education and economic recovery.

Economic Development and Livelihoods Context

The economic impact of the June events has been immediate. The overall damage to the local economy is as follows: 170 shops, six market areas containing hundreds of businesses, and more than 100 cafes and other sites damaged or destroyed in Osh alone.⁵ In addition to the direct damage to business sites, fear of reprisals has adversely affected nearly every market system. Transport of goods to and from the Southern regions of Kyrgyzstan has halted for most of June, and July from other regions of the country, and from other neighboring countries like China, Russia and Uzbekistan. This has had a negative impact on the agricultural sector, which contributed 27% of GDP in 2008 and remains an essential component of the economy as it employs 46% of the working population.⁶ The construction market has also been affected in particular for those goods, which have been heavily imported before the June events, a significant amount of which comes from neighboring China to the Karasu market and is then fed to local markets in southern Kyrgyzstan.

EMMA Methodology

The EMMA is a rapid market analysis designed to be used immediately after a sudden onset crisis. Its rationale is that a better understanding of the most critical markets in an emergency situation enables decision makers (i.e. donors, NGOs, government, other humanitarian actors) to consider a broader range of responses. It is not intended to replace existing emergency assessments, or more thorough household and economic analyses such as the HEA, but instead should add to the body of knowledge after a crisis.

The EMMA assessment on the ground in Kyrgyzstan focused on early recovery needs for four selected critical markets (wheat flour, early potatoes, CGI and cement), and the impact of humanitarian aid to date on the local market. The IRC EMMA team led by Benjamin Barrows and Eugenia Gusev arrived on the ground several weeks after the initial June violence events. Four other local team members were trained and carried out the assessment from three organizations with presence on the ground: Mercy Corps, and two local NGOs Mehr-Shavkat and TES center. The Assessment focused on Osh Oblast, particularly on Osh city, Aravan district (distinct because of 2 planting seasons) and Jalal-Abad oblast (city and surrounding villages). It is important to note that a large interagency livelihoods assessment has been conducted with ACTED, GTZ, German Agro Action (Welt Hunger Hilfe) in collaboration with local NGOs AMFIK and TES. The assessment interviewed 300 business owners, 300 MFI clients and 300 farmers/producers. The EMMA team has coordinated closely with ACTED to avoid geographic and programmatic overlap and ensure complementarity. Data from the assessment was not available at the time of the EMMA writing.

⁴ Non-food items.

⁵ Rebuilding Southern Kyrgyzstan, IWPR, July 31, 2010: <http://www.reliefweb.int/rw/rwb.nsf/db900SID/AZHU-87VNUX?OpenDocument>.

⁶ Duhr, Agnes, "Food Security Update and Nutrition Situation In the Kyrgyz Republic" UNWFP April 2010.

The enumerator team was recruited in the first week of the IRC assessment teams' arrival in Osh city. This was possible through networking at the UN Cluster meetings as well as during bilateral meetings with local and international NGOs present on the ground. It was also possible in part because Southern Kyrgyzstan has several very active local NGO's who were present at the Cluster meetings. This strong local capacity should be noted for any future programming in Kyrgyzstan. Following the initial recruitment the IRC EMMA team prepared the Russian language materials for a two-day induction of the local enumerators. The EMMA team, including drivers and the translators employed for the EMMA assessment were of Uzbek and Kyrgyz ethnicity which was helpful for obtaining balanced data and accessing both Kyrgyz and Uzbek market places, households and farms. This required a significant amount of coordination and sensitivity to the local context.

The Target Population

Target Group	Location	Essential Characteristics
Persons with damaged or destroyed homes/businesses	Urban and peri-urban areas of Osh city, Aravan village and Jalal-Abad city	Mostly ethnic Uzbeks and some ethnic Kyrgyz. 2,000 households have been displaced (UNOSAT), which is equivalent to approximately 30,000 individuals. 1,500 households in Osh oblast, 500 in Jalal-Abad oblast

Critical Market System

The critical market systems were selected after giving consideration to seasonality, the survival and livelihood needs of the affected population, current international interventions and other ongoing livelihood-oriented assessments.

Portland (OPC) Cement was selected as a critical market system because it is one of the most important building materials needed for reconstruction of homes and businesses damaged or destroyed during the June violence. Cement and bricks are the main building materials used in constructing homes and businesses, and will play an important role in self-help reconstruction and in construction financed as part of the international response. The EMMA team's interest with regard to the cement market was to understand the ability of the market to respond to the needs created by the crisis (and subsequent anticipated increase in demand) as well as how appropriate humanitarian procurement mechanisms can stimulate or support economic recovery in the area.



Kyrgyzstan has three main functioning cement factories. The largest, Kyzyl-kiya was recently opened, and was not working to its full capacity at the time of the June events. The Kyzyl-kiya and Kant factories had put a significant amount of their workforce on leave in April. Kyzyl-kiya employs over 700 people and can make over 950 thousand tons of cement annually when operating at capacity. Kyrgyzstan also imports cement from Uzbekistan (sulfate-resistant cement) and possibly some from China. Sulfate resistant cement is used to build dams or other waterproofed structures.

Raw materials for producing cement are extracted from the ground in the areas around the two cement factories. The self-contained production process requires little or no input from importers or domestic suppliers, so the ability to produce cement has not been significantly reduced by the June events. Retailers of a size typical of those interviewed at building materials markets in Osh and Jalal-Abad oblasts keep 50 to 100 tons of cement in stock, and can have new supplies delivered daily with a phone call to a transporter. Transporters will deliver a large truck load (25+ tons) for 500 KGS.

Sales are down about 50% across the region. The price has risen from 5 KGS per kilo to around 5.60 KGS. Retailers report selling between 5 and 20 tons per day, which is an increase from June when many had little or no sales. The cement available on the market is almost entirely from the Aravan factory, which is an older factory that produces lower-quality cement than that produced by the Kyzyl-kiya factory. However, since the Kyzyl-kiya factory has not been operating, retailers and consumers are purchasing the Aravan cement. The Aravan cement is coarser, and is suited for mortaring and rougher work. The Kyzyl-kiya cement is finer and is suitable for pouring structural elements, walls, and more complex forms.

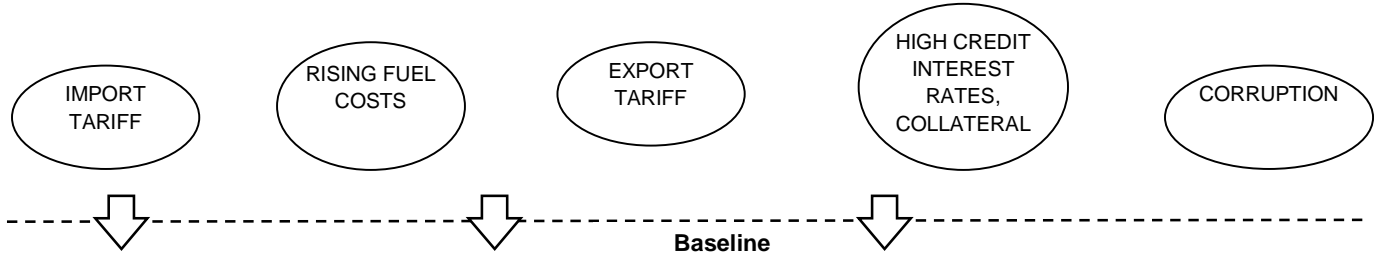
Vendors report their preference to keep a supply of both Aravan and Kyzyl-kiya cement in stock. Demand for cement is highest in the summer months, and falls sharply in the winter when the cold weather makes it difficult for cement to 'cure'.

Market-system Maps

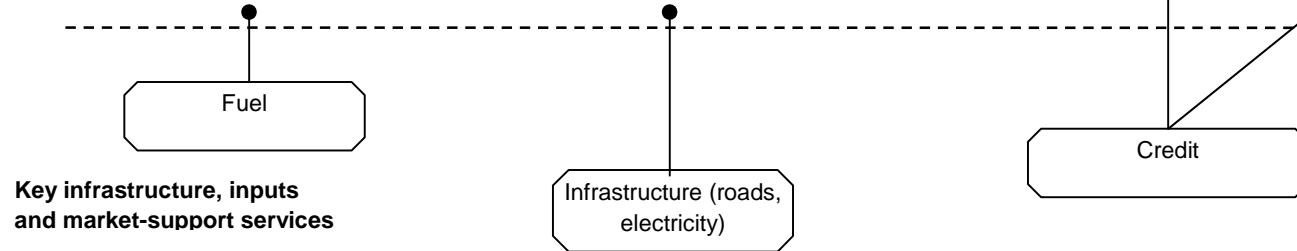
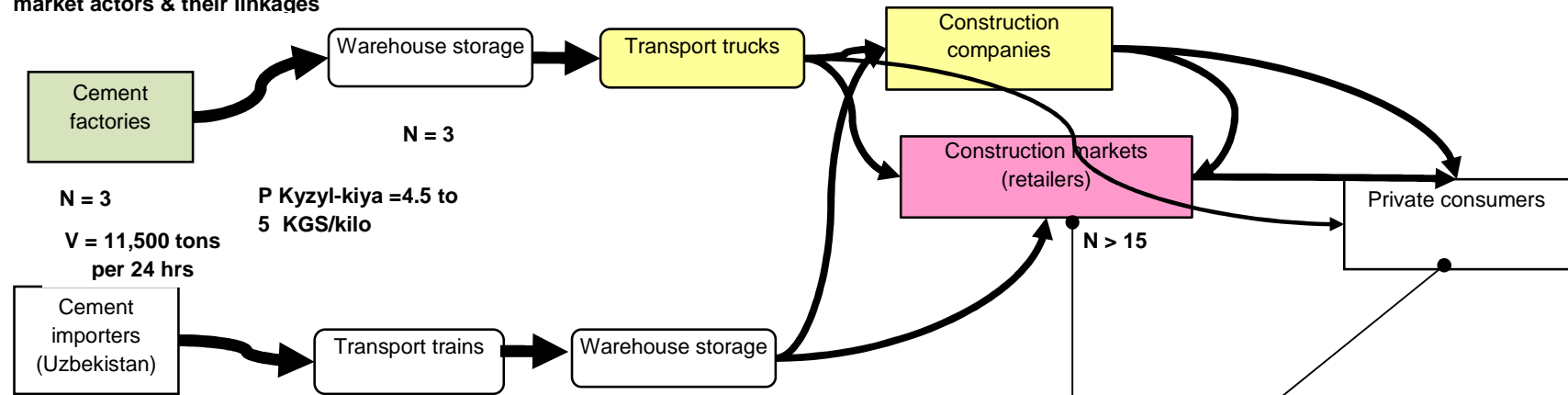
The main tool for the EMMA is the Market Map which is used to analyze how the cement market has been affected by the June violence in Southern Kyrgyzstan. Specifically, the EMMA team conducted an analysis in the cities of Osh and Jalal-Abad and the surrounding villages. Each map features elements of the market environment that affect how the supply chain functions, how the infrastructure and inputs that enable market interactions have been impacted, and the effects on market actors themselves. The market maps shown in this section compare the system before and after the emergency. This comparison helps isolate the broken linkages in the market system and show where weaknesses may have already existed prior to the emergency.

Baseline Market-system Map – Cement

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

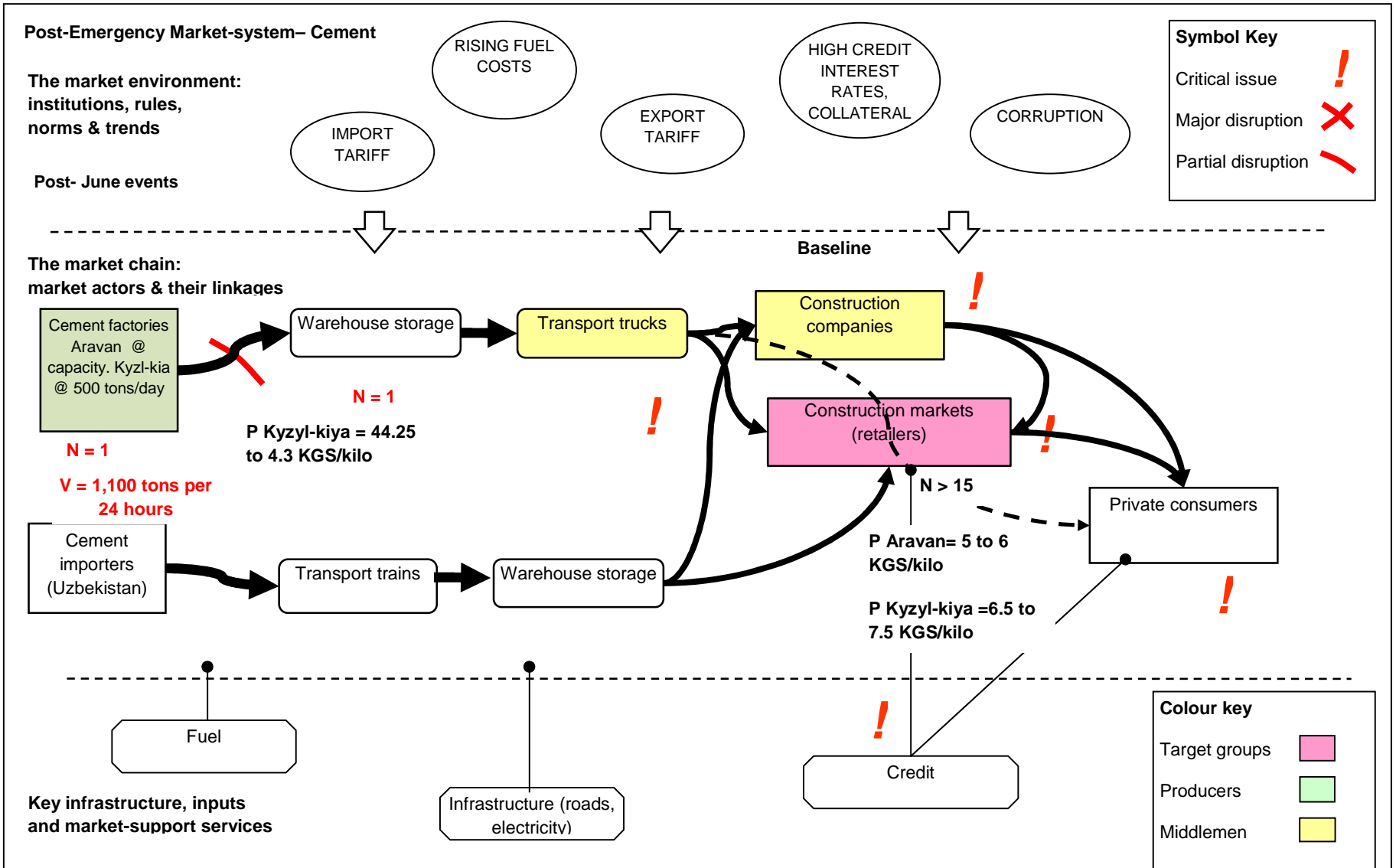


**The market chain:
market actors & their linkages**



Color key

- Target groups
- Producers
- Middlemen



Key Market Actors

Cement producers:

The three main cement factories in Kyrgyzstan are:

- 1) The Aravan cement plant in the south of Kyrgyzstan, Osh Oblast' (Yuzhno Kyrgyzskaya): max capacity output per 24 hours is 500 tons of cement, or 200,000 tons per year.
- 2) Kantskiy factory (near the city of Kant which is close to Bishkek), produces high quality cement suitable for construction of buildings, poured forms, etc: maximum output is nearly 1 million tons of cement per year (2.5 thousand tons per 24 hours).
- 3) Kyzyl-kiya plant, UKZ (Also in the South near the city of Kyzyl-kiya): Maximum output per 24 hours is 2.5 thousand tons, which is nearly 1 million tons per year. The UKZ plant started working in March and halted its activities from April on through July. This plant only has the capacity to sell wholesale cement with the minimum purchase of 30 tons of cement per buyer, so currently the clients are small companies who then in turn resell the cement to construction markets, builders, and other consumers. Retailers and some consumers also buy directly from the factory.

The cement producers have reduced production because of political instability, not because of mechanical or supply issues. The factories are fully capable of ramping up production to meet whatever needs might arise from internationally-funded and self-help reconstruction from affected households and businesses. The Kyzyl-kiya factory is best suited for supplying large quantities of cement to reconstruction areas. It is geographically closer to the emergency-affected areas than the Kantskiy factory, and produces larger volumes and higher quality cement than the Aravan factory. It also has a robust transport network of trucks and drivers that can deliver cement to retailers or directly to job sites. Cement factories operate their own warehouses, capable of holding several thousand tons of cement. However, the quality of cement starts to decline after 60 days in storage, so as warehouses begin to fill up, factories slow their production. With the warehouses near capacity factories can rapidly respond to spikes in demand without having to immediately increase production.

Importers: Importers bring cement mostly from Uzbekistan. Imported cement is mostly of the sulfate-resistant type used in building structures like dams. Imports are done by train or truck, but are not currently a market factor due to the closure of the borders.

Retailers: Most construction material in Southern Kyrgyzstan is sold at construction material markets. Bags of cement are delivered by transport hired by the cement factories themselves according to the amount the retailers have ordered. Retailers do often use credit from MFIs or sometimes suppliers to purchase the cement and pay it back as profits come in during the peak construction months. Retailers keep a small stock of cement – often between 50 and 100 tons – which represent 2-5 days of typical sales.

Consumers: Due to lack of large construction companies in the South of Kyrgyzstan, most consumers of cement are individuals and small construction companies which are hired to build houses or to lay foundations. Consumers may also rely on credit from MFIs to purchase some of their cement. Credit is also theoretically available from banks, but the terms are prohibitively onerous for households, so MFIs the only significant actors in the household level of the credit market. Home improvements are usually

done piecemeal as and when households (or a compound of households) can afford the materials. The actual construction is self-help, often with the assistance of skilled laborers who are experienced in a particular construction discipline.

How the Market System Has Changed Since the June Events

Just one month after opening, Kyzyl-kiya cement factory halted production due to social and economic instability after former president Bakiyev was deposed in April. Limited production has only just restarted. The same was true of the Kant cement factory which was closed in July during the EMMA assessment. The political instability that began in April, as well as the reduced demand in the market is still such that the large factories are not yet ratcheting up production. Retailers were also impacted due to slower sales. Currently most markets are sourcing their Portland cement from Aravan (which is a poorer quality than Kyzyl-kiya or Kant cement), although demand is down by 40-60% across the region.

The tensions at construction markets were more apparent in Osh city than other areas covered by the EMMA. Not all of the vendors were present, and some of those of Uzbek origin generally left before lunch because of discomfort and fear of harassment. As in the case of the CGI market, livelihoods are threatened by the violence and resulting social fallout, but not due to direct damage to the stock or market infrastructure, since the construction market suffered little or no direct physical damage. This is a critical point in regards to reconstruction; local market structures have the ability to absorb increased demand. It is therefore important for international agencies to use local market actors for the reconstruction effort in order to avoid distorting and otherwise negatively impacting the market.

Cement producers:

The Kyzyl-kiya cement factory was reopening at the end of July and was ready to reach operational capacity very quickly if demand were to rise. Most of its staff had been on unpaid or partially paid leave during the four months of closure.

Aravan factory was also working but not to its full capacity. The Kant factory remains closed for the time being. The closure is not due to infrastructural damage or to lack of raw materials, since they are sourced on the spot, but rather due to the instability and the uncertainty of the business climate in the country. If demand were to rise, and stability were maintained, the factories would be able to provide for new construction projects. However, if instability were to return it is foreseeable that the factories would close again.

Retailers:

Retailers suffered a general loss of business due to drop in demand for construction materials. They were also closed for a certain period of time after the June events. Retailers reported a 40 to 60% decrease in business. Most retailers do rely on credit from MFIs and/or suppliers, and keeping up with payments will be a challenge faced by many. Retailers often receive their cement directly from producers via factory-employed transporters.

Consumers: Consumers who have lost their houses completely currently don't have the means to rebuild. The very basic 3-room transitional shelter designed by the shelter cluster is estimated to cost an average of \$3,158 USD. The 2-room transitional shelter is estimated at around \$3,500 USD.

Typically, home improvements are usually made piecemeal, as and when households can afford materials. The cost of rebuilding an entire home in a short period of time is not feasible for most

households. A family compound often includes several households representing different generations of the same family. For example, the land may have been originally received by an older generation – the plot designated as one ‘household.’ But as a second generation was born, married and began to have children, additional single-family dwellings are often constructed on the same plot of land. The cost of home improvements is often shared by multiple households in the compound. Even consumers who have not lost assets in the June events tend to be affected by fear and are averse to making costly investments in home improvements in a tense and uncertain climate.

Consumers mostly purchase cement from retailers, but can also purchase directly from the factory, often using a hired transporter.

Seasonal Calendar

Key:	
Crop season:	Harvest (H) and Planting (Pl). Specific about crop culture for example Pl, Wh= Planted Wheat/ or H, Rice (Harvest Rice). Harvested Wheat and Potatoes (H, Wh,P).
Snow seasons:	Mountain (Mt), Valley
Holidays	Wedding (W), Religious (R)
Household expenses	Construction (const), W (weddings), S (school fees), w.prp (winter preparation)
Cost of Fuel	High Price (H\$) and High Demand (HD)

Activity, Food or Income Source	J	J	A	S	O	N	D	J	F	M	A	M
Seasons	Hot	Hot	Hot	Hot	cool	cool	cold	cold	cold	cool	cool	Hot
Rainy season					Rain	Rain				Rain	Flood	Flood
Dry season	Dry	Dry	Dry									
Snow seasons						Mt	Mt/Valley	Valley	Valley	Valley		
Holidays			W, R	W,R	W	W						
Household expenses			\$ W,S, const	\$ W,S, const	\$ w.prp	\$ w.prp						
Labor (\$\$ when hot, effected by border closings), P 2/3 days, H 2 weeks	\$	\$	\$									
Food Prices (L: Low, H: High)		L	L	L	L	L			H	H	H	H
Hungry time										H	H	
Home improvement												
Credit: for S, W. Demand is high, suppliers have to take credit to buy stocks												
Fuel High \$ and High Demand			H\$HD	H\$HD	H\$HD					H\$, HD	H\$HD	

Key Findings

If political stability is maintained, the cement market is fully capable of responding quickly to a rise in demand. The supply chain is sufficiently functional that retailers have the ability to increase their stock of products – without significantly raising prices in the market – if demand does increase. The internationally-managed construction of 2,000 transitional shelters will require up to 15,000 tons of

cement⁷, which can be covered entirely by local retailers as it represents only a small percentage of the total local production capacity. Even when factoring in additional demand from self-help and reconstruction of businesses, the cement production capacity of Kyrgyzstan is ample to service all reconstruction needs.

In order to preserve the livelihoods of cement market actors, it is best to procure cement from construction markets rather than to bypass the value chain and source directly from the cement factories. The international community should be extra sensitive to committing to their order of cement in order to make sure that they do not default on the order they have commissioned which would create a large financial burden on the factories who cannot store produced cement for long periods of time without it losing its quality. Cement should not be imported from outside the country as this would further impact the already decreased demand in the cement market.

Main Recommendations

The cement market system is healthy enough to not warrant direct intervention from the international community. The strength of the market system notwithstanding, it is critical that international organizations closely coordinate the aspects of their response that deal with the purchase and/or distribution of cement. The only appropriate direct intervention would be to issue vouchers to affected populations. However, the international effort to reconstruct houses obviates much of the need for purchasing cement at the household level. Nevertheless, it is something to bear in mind when addressing the reconstruction of small businesses and market areas.

It is recommended that cement used in reconstruction be of domestic origin and purchased in the Kyrgyz market. Sourcing imported cement for large-scale reconstruction will negatively impact the market system and make the cement market system's recovery to pre-emergency functionality longer and more difficult.

The shelter cluster and other coordinating bodies are encouraged to provide strategic oversight and policy parameters for the purchasing of cement for reconstruction anticipated in the coming months. It is also important to note, due to the nature of this conflict, aid agencies have to be extra sensitive in making sure that aid distributed to the affected populations is accessible to all affected parties regardless of their ethnicity, since the direct and indirect impact of the June violence reaches beyond ethnicity, and the perception of bias in the response can further exacerbate communal tensions

⁷ Maximum amount of cement needed in INGO-managed reconstruction of homes calculated from Danish Refugee Council bill of quantity for reconstruction of 2 and 3-room homes. 15,000 tons is only necessary if all 2,000 homes to be constructed are the 3-room shelters specified by the shelter cluster. Given that the shelter cluster is constructing 1,350 shelters, some of which will be 2-room, and CRS is constructing 350 shelters to different specifications the amount of cement required for the shelters will likely be significantly less than 15,000 tons.

	Response Option	Feasibility & Timing	Advantages	Disadvantages
1	Make bulk purchases at fixed price from local vendors.	High – funding and vendor/supply identification already underway by shelter cluster members. -Supply chain will likely be responsive to increased demand. -Producers could respond to demand w/in 2-3 weeks	-Quantifies amount of cement available in the market and stimulates increased productions. -Secures a fixed price -Guaranteed volume of sales may entice factories to increase production, which would make more cement available for consumers and possibly lower prices.	-If factories don't respond by significantly increasing production, intervention may deny supply to individuals seeking cement for self-help reconstruction -Demand with limited supply could drive up prices
2	Issue vouchers to those who have had homes/businesses damaged or destroyed.	High Feasibility; can be implemented rapidly to already identified households.	-Least disruptive to the market; voucher recipients would purchase cement through local retailers, reinforcing up stream market actors -Consumers can make own decisions about quantity, timing -Would entail negotiation of price terms, protecting consumers from price gouging	-leaves vulnerability and access issues unaddressed -may need to be updated in the event of price fluctuations