

Emergency Market Mapping & Analysis (EMMA) report

The Market System for Beans in Haiti

**International Rescue Committee (Lead),
American Red Cross, Haitian Red Cross, International Federation of the Red Cross,
Save the Children, Mercy Corps, Oxfam GB, ACDI/VOCA,
World Food Program and FEWS/NET.**

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1. Executive summary

On average, Haitians consume 70,000-80,000 tons of beans per year. The large majority of beans found in Haitian markets are produced locally. In 2009, Haitian farmers produced approximately 80% of beans consumed. Imports usually account for about 10-15%, and food aid accounts for the remaining 5-10%. Imports and food aid fluctuate depending on national production, for example food aid and imports increased in huge proportions following the 2008 cyclones. Imports from the Dominican Republic are limited and informal; the United States provides the majority of bean imports.

The primary impact of the earthquake on the bean market system has been a decline in consumer income, which translates into a sudden decrease in demand for beans. Implications of this decrease in demand have spread through the bean market system, and will have serious effects if they are not addressed in the immediate term. The first impact of the demand decrease is a tightening of formal and informal credit. A lack of credit affects the livelihoods of rural and urban Madame Saras, and constricts the bean trade. Many retailers have been forced to take on a second debt, where possible, to restock after earthquake damages. The second impact is linked to production: the March planting season yields the primary bean harvest in May/June. As farmers in the mountainous regions of Haiti view the sudden drop in demand, they may invest less in their upcoming planting season, which will directly impact the yearly national supply of beans.

The damage to infrastructure primarily affected the bean import system, though also has implications for national production. As the principal port is damaged, and its limited functioning is essentially reserved for aid, imports of beans are blocked. Importers are in tune with local markets, and bring in American beans between Haitian bean harvests. In this way, importers have control over bean supply and prices. With ports blocked, they are unable to perform this important function.

The earthquake damaged irrigation systems of farms in only a few departments (West, South, South East and Nippes). Despite this loss, the March harvest of beans is expected to produce above average yields; a 2009 USAID program planted an additional 3000 hectares of beans in November. Additionally, following the 2008 cyclones many interventions focused on support to agriculture. As a result, the 2009 harvest has left farmers with about 3,000-5,000 tons of beans in reserves. In February there will be a bean harvest which is expected to yield average results – approximately 15,000 metric tons. Additionally, there is a reserve from 2009 production of between 3,000 and 5,000 tons.

A few additional factors in the bean market chain system have been affected: security in markets is compromised. Many trucks will not offload in Croix-de-Bosselles, the main Port au Prince market, increasing transport costs for vendors as they must travel to pick up their purchases. Additionally, storage facilities are damaged and easily looted. Traders no longer leave stock overnight, which also adds to transport costs and decreases quantities in markets.

In considering the supply and demand of the market, the first recommendation is to stimulate demand (cash transfers or vouchers). If consumers were able to purchase at pre-earthquake levels, credit issues would ease, and farmers would continue to plant as normal. A second recommendation is to repair the port and allow for trade. Additional recommendations include implementing cash for work projects to repair infrastructure and damaged roads, paying trader debts, transferring cash to farmers for seed purchase and increasing market security. Food aid must not be the first response to this issue; if programs to restore the market chain fail, then food aid should be considered. When designing food aid programs, local and regional purchase should be considered. Unconfirmed sources indicate that thousands of tons of externally procured bean food aid are already in the pipeline, which will ease the strain on the market if LRP is selected.

As outlined above, a wide array of options exist in order to repair the bean market system. A combination of interventions along the market chain will ensure that the Haitian bean market system reintegrates properly and recovers fully.

2. Emergency context

On January 12, 2010 an earthquake of 7.0 magnitude hit the island of Haiti, approximately 25 km (16 miles) west of Port au Prince. The earthquake occurred at 16:53 local time. The Haitian government estimated that up to 230,000 died country-wide in the quake, and another 300,000 were injured. According to the UN approximately 800,000 have been displaced in Port au Prince, many of whom are living in spontaneous urban camps. Approximately 38% of all buildings in greater Port au Prince have been damaged or destroyed according to the UN. WFP has distributed food to more than 2.5 million people in Port au Prince and outlying areas.

Education							Holidays		Education costs		
Remittances increase											
Planting Beans		Highlands					highlands			lowlands	
Harvest Corn/Beans											
Planting Rice											
Harvest Rice			small season				big season				
Holidays	King's Day	Carneval		Easter							Christmas/Marriage Season

5. Critical market systems

Rationale for selection of beans

Beans hold a significant role in the diet of Haitians. In most households, beans are consumed at least once a day; either pureed, cooked or mixed with a cereal (rice, maize, sorghum). Peas and beans are the main sources of protein consumed by less affluent households; 100kcal of beans is three times cheaper than the equivalent amount of milk and four times cheaper than the equivalent amount of chicken meat (FEWS NET, May 2009). The Haitian national dish consists of rice and beans. Because of its essential role in the diet of the Haitian family, EMMA retained beans among four products covered by this study.

The key analytical question that this study sought to answer was: *To avoid negative effects on the bean market system, what form should food aid take, and what is the timing for implementation?*

Background on beans in Haiti

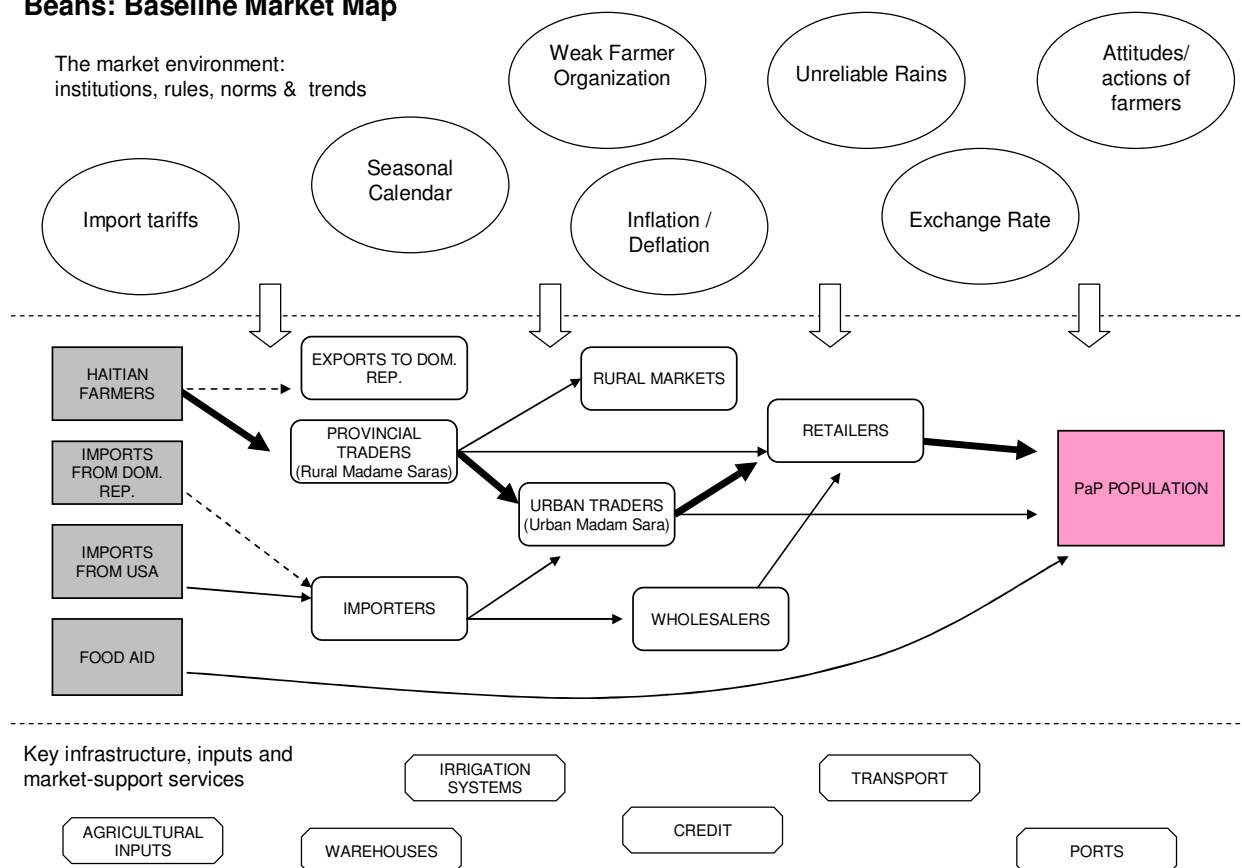
Numerous varieties of beans and peas exist in Haiti. Varieties are generally distinguished by color: black, red, white and green. Black beans are the most consumed, though red and white are preferred by the majority of the population. There is also a strong preference for locally produced beans over imported beans.

Beans are grown in the humid mountainous regions and in the irrigated plains. The mountains produce two or three harvests per year. The first harvest is in May-June, and the second in October-November. In the plains, harvest takes place in February-March. The *pois congo* is planted in all regions of the country, and the harvest extends from December to February. *Le pois inconnu (niébé)* matures in June and July. The *pois de souche* and *petits pois* are grown on a smaller scale.

6. Market-system maps

Bean Market System before the Earthquake

Beans: Baseline Market Map



Market Environment

Before January 12th, the market system functioned well. Trade between the markets of Port au Prince and the rest of the country was normal. Agencies working in food security (FEWS NET, CNSA) observed clear integration of the market system and stable prices reflecting the standard seasonal calendar. The continued harvest (until the end of February) of the *pois congo* helps stabilize bean prices.

Merchants felt that markets were safe, which eased transactions. Buyers regularly went to the main Port au Prince market, Croix-des-Bossales, to purchase goods and carriers unloaded goods without risk.

It should be noted that government raised tariffs in November, however this decision did not have an overall impact on market functioning. Imported beans were affected by this measure, though the decrease in imports in 2009 was largely due to high levels of local production.

Bean Market System Actors

The bean market chain involves about 350,000 producers, thousands of wholesalers, Madame Saras, transporters and retailers. In Port au Prince, there are about 50 wholesalers involved in bean sales, and 100 Madame Saras per wholesaler (though Madame Saras may work with more than one wholesaler, and many actually perform the function of wholesalers themselves). The number of vendors and street side traders is difficult to quantify.

Beans in Haiti are primarily supplied from four sources: national production, imports from the Dominican Republic, imports from the United States, and food aid. National production accounts for approximately 70%-80% of beans. Imports account for approximately 10-15%, and food aid approximately 5-10%. These figures shift annually (for example, food aid and imports increased in huge proportions following the 2008 cyclones), but Haitian farmers consistently provide the large majority of beans in the country.

National Production

The Ministry of Agriculture estimates an annual bean production volume of about 60,000 metric tons. According to a 2005 study by the Ministry of Agriculture and the InterAmerican Development Bank, this volume reaches 100,000 metric tons if all edible legumes are taken into account (*pois congo, pois de souche, les petits pois, pois inconnu*).

According to a December 2008 FEWSNET study, the South produces the majority (about 20%) of national bean production. See Table 1 for percentage breakdown by department. The plains produce one harvest per year, and the mountains produce two harvests per year. The primary harvest of the year is in May/June, and is planted in March. See Seasonal Calendar for further details.

Imports

According to the Bilan Alimentaire 2008, a document published by CNSA in February 2009, there is a correlation between the volume of local production and the volume of importation. As an example, in 2007 total imports were 10,234 tons. However, following the hurricanes of 2008 which severely damaged local production, imports shot up to 27,939 tons (CNSA, 2009).

Trade in beans between Haiti and the Dominican Republic is informal, and switches directions depending on availability and demand in each country. The informality means that exact figures are very difficult to obtain. According to a conversation with a customs official along the border between the Dominican Republic and Haiti, there was no trade in beans recorded in 2009. However, conversations with others living in the border region indicate that about 240 tons of beans per year are brought in as contraband. This suggests an extremely small influence on the market, though this should be further investigated.

As previously mentioned, Haitian consumers prefer beans produced locally, and consider them to be of higher quality. As quantities are relatively small, most importers of American beans are also importers of other goods. Beans can be difficult to stock and maintain, so are often imported in small quantities. This requires frequent importing to maintain stocks. Three major importers control this trade in Port au Prince. Importers sell American beans to wholesalers and Urban Madame Saras, who sell the majority of their stock to vendors, and some small quantities directly to consumers. Prices vary depending on the seasonal calendar; i.e. when Haitian beans are available, demand for American beans is low so prices drop. However, in times of decreased availability of local beans, the prices for imports increase.

Food Aid

Food Aid comprises only about 5%-10% of beans in Haiti. Quantities brought in as aid are dependent on national production and importation.

Madame Saras

Madame Saras are traders who are essential for the functioning of the bean market chain. The name comes from a bird, thus not all "Madame Saras" are women. However, the vast majority are female traders who provide the connection between producers and markets. There are two distinct categories of Madame Saras: rural and urban. Rural Madame Saras buy local produce and sell in markets; they travel shorter distance and earn less. Urban Madame Saras provide the link between rural areas and city markets. They purchase primarily from rural Madame Saras, travel long distances, and sell goods to market vendors. Some urban Madame Saras act as wholesalers when availability is high, and some act as vendors and sell directly to consumers.

Wholesalers

Wholesalers manage large quantities of beans primarily sourced from imports. As the quantity of imported beans is small relative to local production, most wholesalers of beans also stock other goods. In Port au Prince, there are approximately 50 wholesalers involved in the bean trade. Each wholesaler links to approximately 100 Madame Saras (though the amount of overlap is uncertain; i.e. one Madame Sara may link to multiple wholesalers). As the import of Dominican beans is so unstructured and unregulated, the majority of bean wholesalers focus on American imports. Wholesalers are attuned to the seasonal calendar, and therefore do not purchase imports while the market is saturated with local, preferred varieties of beans. In this way, wholesalers manage the supplies and prices of beans in the markets.

Retailers

Small retailers purchase beans from wholesalers and Madame Saras. They sell smaller quantities directly

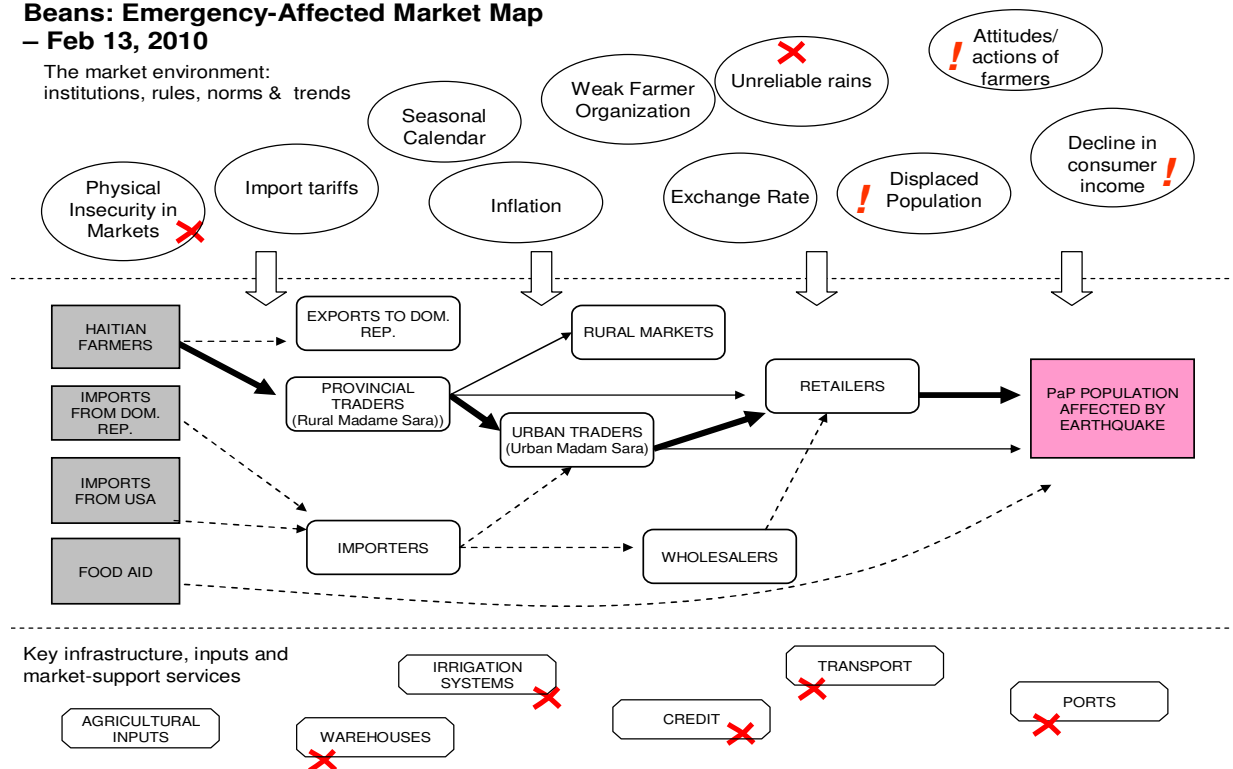
to consumers. It is difficult to quantify the numbers of bean retailers and street traders within Port au Prince. Note that many Madame Saras also sell directly to consumers, and therefore also fall under the category of retailers.

6.1 Bean Market System after the Earthquake

The earthquake on January 12th, 2010 had considerable impact on the functioning of the bean market. The post-disaster situation has affected, either directly or indirectly, all actors in the bean market chain.

Beans: Emergency-Affected Market Map – Feb 13, 2010

The market environment:
institutions, rules, norms & trends



Post-Earthquake Market Environment

The bean market environment has incurred significant disruptions as a result of the earthquake. Immediately following the shock, the price of beans increased. Due to a decrease in demand, prices stabilized and began to decrease. They are lower than pre-earthquake prices.

According to interviews with market actors, the primary concern among these environmental shifts is a significant security issue. The physical market insecurity means that trucks will no longer offload goods in the primary Port au Prince market – Croix-de-Bosselles. As a result, urban Madame Saras and other small vendors are forced to travel outside the Metropolitan area of Port au Prince to purchase beans. This additional distance is time consuming and increases transport costs. The extra travel is compounded by the fact that many market storage facilities have been damaged and are now easily looted; vendors can no longer leave stock overnight. As such, vendors are limiting purchases to ensure the total quantity is sold within the day.

Population changes have caused another major environmental shift in the bean market system. The government of Haiti estimates that over 200,000 people have died. The population of the Metropolitan Area of Port au Prince is estimated at slightly over 2 million, so deaths of this magnitude will have a significant impact on every market system.

However, the most significant impact on the bean market system has been the sudden decline in consumer income. Deaths, population displacement and loss of consumer income all translate into a sudden decrease in demand for beans.

Post-Earthquake Key Infrastructure, Inputs and Market Support Services

Physical damage has been sustained to ports, roads and irrigation systems. Port damage means that imports from the United State (normally 10-15% of Haitian beans) are blocked. Roads linking the South and SouthEast to Port au Prince have been damaged, which hinders transport of national produce to the capital city.

Finally, the earthquake destroyed irrigation systems of farms in some zones, primarily in the West. The earthquake struck just before harvest time in the plains, which has affected bean yields.

Post-Earthquake Market Actors

National Production

Damage to infrastructure, as described above, has impacted bean yields in a limited number of farms. The drop in bean prices will have a direct impact on farmers' incomes. The March planting season leads to the principal harvest of the year in May/June. As farmers note the huge drop in consumer demand, Haiti risks decreased farmer investment in this essential planting season.

Population displacement may also have significant impact on bean yields. Immediately following the earthquake, nearly 500,000 people left Port au Prince to settle in other areas of the country. This influx may cause farmers in mountainous regions to eat beans they would have invested in the March planting season, which will decrease productivity in the May-June harvest

Imports

As mentioned above, the damage to ports means that bean imports are currently blocked. Additionally, many warehousing and storage facilities were damaged in the earthquake. In conversations with importers, many noted that they would be hesitant to purchase at this moment given the current lack of demand. This implies that port damage may not be the only constraining factor in American bean importation to Haiti.

Food Aid

As of mid-February, there have been limited amounts of beans brought in as food aid. However, unverified sources have indicated that thousands of tons (specific numbers unconfirmed) of externally procured beans are in the pipeline to be distributed in March. Additionally, sources indicate that over 3,000 tons of bean seeds have been ordered to be distributed to farmers.

Wholesalers

The majority wholesalers focus on imported beans. As imports are currently limited, they are not able to renew their bean stock. Many wholesalers suffered damages to their storage facilities, which will have implications once trade reopens.

Rural and Urban Madame Saras

A decrease in consumer demand has left them with poor sales. This demand decrease has constricted credit: producers are limiting the amount of in-kind credit they issue to rural Madame Saras, which gives rural Madame Saras less space to give in-kind credit to Urban Madame Saras. These Urban Madame Saras are also facing a tightening in formal credit from financial institutions, as they are aware of the lack of consumer demand.

Insecurity in markets means Madame Saras must travel farther to pick up their stock. Finally, damaged roads into Port au Prince make their trade routes more dangerous than normal.

Vendors

The decrease in consumer demand has led to minimal bean sales. Insecurity in markets means they have to travel farther to pick up goods, and cannot leave their stock overnight in markets. Finally, many vendors purchased stock on credit, and lost goods in the earthquake (due to direct damage or post-earthquake looting). Where credit is available, many have been forced to take a second debt to restock.

7. Key findings – results of the gap and market analyses

7.1 Gap Analysis

Discussions with key informants in camps and in markets indicated a significant decrease in bean consumption following the earthquake. The average household indicated a consumption of 3 kg per week until the January 11th. Following the earthquake, this consumption level has fallen by about 50%.

A brief survey of vulnerable households indicates that income of the average household has fallen by 60-70% as a direct result of the earthquake. Before the shock, food accounted for approximately 35% of total expenditure. With the significant decrease in income, food costs now account for approximately 85% of total expenditure. This means that any environmental shifts that may increase the price of beans would have more significant implications on households.

To calculate the gap in bean demand versus resources available to purchase demands, more accurate income and expenditure data would be required. The group faced significant challenges gathering quantitative income information, due to difficulties in accurately stratifying the affected population in Port au Prince.

7.2 Bean Market System Capacity to Respond to Demand

The following observations are evidence that the bean market system is capable of supplying an increase in demand stimulated by humanitarian interventions:

- The earthquake directly affected only a few departments within the country. The majority of bean production is predicted as normal.
- Imports from the USA are usually flexible and will reflect demand. Some interventions will be required for this part of the market to operate properly.
- Imports from the Dominican Republic are minimal, though may increase with demand.
- The earthquake's effect on traders is based almost entirely in a tightening of credit. These credit constraints are primarily a reflection of the demand decrease.
- Damage to bean market system infrastructure was minimal. A few targeted interventions could quickly mitigate the impact on the market system.

In sum, the decline in consumer income is the most significant impact of the earthquake on the bean market system. This decrease in demand has implications throughout the bean market system, which could be mitigated by re-stimulating demand. A few timely interventions should be programmed to ensure that the market system is able to supply increased demand.

8. Main recommendations and conclusions

To summarize with reference to the original EMMA Key question:
To avoid negative effects of humanitarian earthquake relief programs on the bean market chain system, what forms should programs take, and what is the timing for implementation?

Demand

As previously explained, the decline in consumer income is the most significant impact of the earthquake on the bean market system. Implications of this decrease in demand have spread through the bean market system, and will have serious effects if they are not addressed in the immediate term. Therefore it is absolutely crucial that humanitarian interventions stimulate demand immediately. These programs must enable consumers to purchase beans. In the short term, this should involve cash transfers (conditional and unconditional) and/or vouchers. In the medium and long term, this should involve the creation of and support to a variety of income generating activities.

Summary of recommended activities:

- Unconditional Cash Transfers and/or vouchers to consumers – Immediate
- Creation of Income Generating Activities – Short to long term

National Production

Although overall harvests are predicted as normal, some programs should focus on immediate reparation of irrigation systems to mitigate further declines in bean productivity.

Some programs should also seek to address the market strain caused by population displacement. By the end of February, seeds available in markets in mountainous regions will originate in the plains, so will be more expensive. Programs should provide cash or vouchers so smallholder farmers can purchase seeds. Another possible option is for organization to purchase certified seed externally, and distribute to farmers. This will reduce demand in the market, so must be programmed in conjunction with other interventions aimed to increased demand.

To combat decreased investment in the upcoming planting season, programs to stimulate bean demand must be immediate, widespread and well publicized.

The design of earthquake response programs should also be viewed as an opportunity to increase baseline productivity of Haitian bean farmers. The South, which annually produces approximately 20% of Haitian beans, suffered crop loss due to insufficient rains and a viral illness in plants. Their March harvest is expected to be about 85% of normal production levels. Humanitarian interventions should provide support to smallholder farmers who are essential to Haiti's bean production. This support could involve providing cash/vouchers for seeds, providing certified seeds, or providing tools. Tools are generally ordered in Port au Prince, and are then imported. These interventions paired with well publicized stimulation of consumer demand will maintain or increase bean yields.

Summary of recommended activities:

- Provision of cash/vouchers/certified seeds to smallholder farmers in mountainous regions – Immediate (though consideration must be given to other demand stimulus programs)
- (Publicizing demand stimulation programs)
- Cash for Work to repair irrigation systems
- Purchase of tools in Port au Prince for distribution to smallholder farmers in the south – medium term (development objective)

Imports

Interventions should seek to repair the port, and the Government of Haiti should allow for normal imports to continue to the extent that markets can sustain. In the bean market system, importers are functioning at pre-earthquake levels, so the government should ensure that normal levels of trade are not blocked.

Summary of recommended activities:

- Reparation of ports – Government of Haiti or other programming - Immediate
- Ensuring ports are open for trade – Government of Haiti - Immediate

Food Aid

Further food aid (pulses) should not be brought in until it has been determined that national production cannot sustain demand. If the market chain cannot be restored and demand reinstated, then food aid will be required. Organizations should consider locally procured beans. This will require a thorough market analysis to ensure that local procurement does not shut out the population who still have means to purchase beans. Other programs should also be considered – i.e. organizations should reconsider local procurement if mass demand stimulation programs are ongoing. However, if it is determined that sufficient quantities of Haitian beans available, the humanitarian community should prioritize these.

Summary of recommended activities:

- Refrain from food aid until it has been determined that the market system cannot be restored by other interventions.
- If food aid is found to be necessary, consider local procurement.

Credit

The majority of credit constraints would ease if demand were stimulated. Therefore if the humanitarian community could successfully stimulate demand back to pre-earthquake levels, credit would be a minimal market constraint.

For those traders burdened by double-debts, some interventions should seek to pay off trader debts. The size of the debts varies with different levels of traders. Small trader grants should be between \$100 and \$500. Medium trader grants should be between \$500 and \$1500. Larger traders like shopkeepers and wholesalers may require interventions beyond the scope of NGOs – this requires further investigation, and possible coordination with the Government.

Summary of recommended activities:

- (Publicize stimulation of demand)
- Provide business support grants of \$100-\$500 for small traders - Immediate
- Provide business support grants of \$500 to \$1,500 for medium traders - Immediate

Infrastructure

Damage to infrastructure such as roads and warehouses is currently constraining the transport segment of the bean supply system. Interventions should seek to repair key roads in the bean market system and aid wholesalers and vendors with storage systems.

Summary of recommended activities:

- Cash for Work to repair roads, irrigation systems and storage depots– Short term

Security

Additional security must be provided in marketplaces to decrease looting.

Summary of recommended activities:

- Implementing agencies should look for creative measures to provide security to markets. – short term

9. Follow up and Knowledge Gaps

- Targeting: before program implementation, organizations must do thorough analysis of the specific targeted population, with a focus on income/expenditure. This will enable better targeting for cash

grants, support to traders, for vouchers, tec.

- Dominican Republic Imports/Exports: volumes traded, amount of regulation, amount exported which returns to Haiti, effects of demand surges.
- Stronger baseline data: volumes imported/exported, prices, numbers of traders and their interaction
- Credit system: more thorough analysis of formal credit to vendors, and informal credit to Madame Saras.

Table 1 Estimates of Distribution of crops by departments according to focus groups December 2008 (in %)

Fewsnet/CNSA

Départements	Beans and cow peas
Sud	20
Centre	12
Artibonite	11
Nord	7
Ouest	12
Nord'Ouest	3
Nord'Est	5
Grand'Anse	10
Sud'Est	15
Nippes	5
Total	100