

# A Rapid Seed Assessment in the Southern Department of Haiti

An examination of the impact of the January 12 earthquake on seed systems

Edward Walters - [ewalters@cfw.com](mailto:ewalters@cfw.com)  
Dina Brick - [gbrick@crs.org](mailto:gbrick@crs.org)



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## Executive Summary

The January 12, 2010 Haitian earthquake resulted in enormous death and destruction in Port-au-Prince and its environs. The effects of the quake have been felt throughout Haiti with important infrastructure destroyed, transportation and markets disrupted and a huge number of displaced people leaving Port-au-Prince and returning to the countryside.

These affected populations require massive support. Typically, aid consists of distributions of food and often donations of building supplies, seeds and tools. An alternative approach to restoring rural livelihoods is seed fairs and vouchers. If adequate supply of local seed remains post-catastrophe, the existing market channels are utilized by providing farmers with vouchers to obtain seed (and possibly tools, fertilizer, and other inputs). The approach provides a boost to farmers (both as consumers and suppliers) and does not disrupt the local market.

A rapid assessment was conducted in the South Department between February 17 and 26, 2010. The assessment collected information on seed supply and demand for 5 most common food security crops – bean, maize, sorghum, pigeon pea, and peanut. In addition, information was collected on the impact of Internally Displaced People (IDPs) on host communities and households.

78% of respondents reported hosting an average of 5.6 IDPs. This has put an enormous strain on household coping strategies with households eating less, selling off possessions, selling off livestock, selling grain reserves, selling labor, changing the diet, and felling trees to make charcoal.

The pressure has also resulted in shifts in agriculture. Farmers are reducing some inputs such as fertilizer and hired tillage, shifting to short season crops, and also shifting from high cost seed (such as bean) to lower cost seed (such as maize). Overall, land cropped remains the same, but land cropped per household member has dropped dramatically. These trends could result in dramatic drops in household income and food security.

In general, farmers do not make a distinction between grain and seed, although they express a preference for locally adapted varieties. Farmers and seed vendors report adequate overall levels of both household saved seed and seed in the market. Prices for maize seed have decreased in the South, in general; prices for beans has remained similar to pre-earthquake prices and to prices during this season last year. The key issue is access; with many cash strapped farmers having to resort to reducing amounts of seed planted, or shifting to cheaper seed.

Seed fairs are an appropriate response to the crisis in rural areas. The seed fairs will help alleviate immediate cash constraints and enable farmers to have access to seed of the type and quality that they want. Direct seed distribution should not take place given that seed is available in the local market and farmers' negative perceptions of imported seed

Seed fairs will only partially address the larger food and livelihood security issues. Food distribution will alleviate immediate needs and also reduce pressure on grain/seed reserves and other household resources. Food distributions to IDP households are already planned and this should reduce pressure to consume seed reserves. In addition, Cash for work (CFW) can provide an injection of money into these cash-strapped households and provide temporary employment to many of the IDPs.

In order to help restore liquidated reserves and enable farm households to start reinvesting in their productive capacity, we recommend that CRS implement livelihood fairs with vouchers prior to the next season. These fairs will enable farmers to obtain important inputs into their production systems such as tools, fertilizer and seeds. In addition, other materials such as housing supplies may also be made available. This will help those IDPs wishing to remain, resettle in the area.

A more in-depth seed system security assessment should take place country-wide examining both formal and informal seed sectors. This should be a prerequisite to rebuilding the formal seed system.

## Overview

The January 12, 2010 earthquake in Haiti killed over 200,000 people.<sup>1</sup> The effects of the disaster have been felt far beyond the area ravaged by the earthquake; almost 600,000 internally displaced people have left the capital and immediately affected areas to be taken in by relatives and friends in the outlying departments<sup>2</sup>. These IDPS have put enormous strains on the resources of the host families.

Traditional responses to natural disasters in an agricultural context include direct seed distributions (formerly called Seeds & Tools). The logic of this strategy is that the distributed seed will replace seed lost in the disaster and will enable farming populations to rapidly regain their livelihoods. Nevertheless, these strategies frequently weaken the very livelihoods the activities are meant to sustain. In many cases, local sources of food and seed remain undamaged by the disaster. The direct distribution of external seed undermines the local market and negatively affects those producers and sellers participating in these markets. Repeated distributions can have profound negative long-term effects on the local markets and producers. As a prerequisite to any seed intervention, a Seed System Security Assessment of local supply and demand should be undertaken.

CRS conducted a rapid seed assessment in the South Department between February 12 and March 1, 2010. The purpose of this assessment was to understand broadly the impacts of the January 12<sup>th</sup> earthquake on seed security in the South Department, including related production and food security impacts. The survey focused on immediate seed availability and household access for principal food security crops as well as basic production needs for improved food security and livelihoods, primarily for households affected by increased numbers of IDPs from Port-au-Prince. The assessment aimed to:

1. Determine appropriate and possible CRS interventions in the immediate and short-term. In addition to seed, these include food security interventions. Any contemplated interventions will be based on an analysis of whether seed interventions are appropriate, given the current demand as well as supply chain constraints in the wake of the earthquake, and/or whether fertilizer or other input support is appropriate. Interventions will also be based on the impacts of IDPs on household livelihoods.
2. Provide a critical analysis of the current seed situation to FAO and other actors who may be contemplating a seed intervention.
3. Determine whether a more in-depth seed system evaluation is warranted in the coming months, and provide basic information to inform such a study.

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<sup>1</sup> Associated Press, 2/9/2010

<sup>2</sup> OCHA 3/2/2010

## Background

Prior to the earthquake, Haiti was already ranked as the poorest country in the Western Hemisphere and food security was a major concern, with 78% of the population living on less than \$2 a day and 54% on less than \$1 a day.<sup>3</sup> The World Bank designated Haiti as a Low Income Chronic Food Deficit Country; forty seven percent of Haitians are undernourished and chronic food insecurity causes severe or moderate stunting among 42% of children.<sup>4</sup> These numbers are sure to increase dramatically in the weeks and months ahead.

CNSA and FEWSNET estimate that 2.5 million people are food insecure post-earthquake.<sup>5</sup> Food security in Port-au-Prince will be primarily affected by the loss of income due to a drastic decrease in employment, loss of property and income-generating opportunities.<sup>6</sup> Throughout the rest of Haiti, food security will be acutely affected by the mass movement of displaced populations to rural areas, placing significant pressure on host households as they struggle to provide enough food to feed additional relatives. In a study conducted by the Haitian Civil Defense, a reported 85,750 have already migrated to Grande Anse and 89,000 to the South Department<sup>7</sup>, posing a serious strain on host families. A Caritas study, focusing on the South Department, noted that 76% of the IDPs they'd interviewed to date (over 14,000) were planning to stay in these new areas.<sup>8</sup> CNSA and FEWSNET estimate that the most food insecure populations right now include the Port-au-Prince metropolitan area, the Northwest, and the more mountainous and isolated areas in the rest of the country that are generally poorer and thus more vulnerable to mass influxes of displaced populations.<sup>9</sup>

## Methodology

A rapid assessment was conducted in the South Department between February 17 and 26, 2010. A team of 11 household survey enumerators, 2 market enumerators, 3 data entry operators and 4 CRS supervisors were overseen by two outside professionals, in collaboration with a CRS/Cayes supervisor. The methodology utilized for this assessment was based on the CIAT/CRS/USAID guide *When Disaster Strikes: A Guide to Assessing Seed System Security*.<sup>10</sup>

The team developed four data collection instruments: an individual household survey, an individual survey of seed/input suppliers, a focus group guide, and key informant questionnaire (see Annexes).

The assessment was conducted in six (of 18) communes in the South Department: Torbeck, Cavaillon, Camp Perrin, Tiburon, Chardonnières, and Les Anglais. The market survey was also conducted in Les Cayes.

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<sup>3</sup> World Bank, 2006

<sup>4</sup> FAO, 2006

<sup>5</sup> FEWSNET, Feb 2010. <http://www.fews.net/pages/country.aspx?gb=ht&l=en>

<sup>6</sup> USAID Executive Brief in Haiti, January 26, 2010

<sup>7</sup> UN Coordination Mechanism Report, January 2010

<sup>8</sup> Caritas, draft study, Feb 2010

<sup>9</sup> FEWSNET, Feb 2010. <http://www.fews.net/pages/country.aspx?gb=ht&l=en>

<sup>10</sup> Sperling, Louise. "When Disaster Strikes: A Guide to Assessing Seed System Security." Cali, Colombia: International Center for Tropical Agriculture. 2008



Commune	Agro ecological zone	Comments
Cavaillon	Irrigated/non-irrigated plains	Surveyed Commune closest to Port-au-Prince
Camp Perrin	Non-irrigated plains	
Torbeck	Irrigated/non-irrigated plains/mountains	
Les Cayes	Irrigated/non irrigated plain	Market supports most markets in the South Department
Chardonnières	Mountain	
Les Anglais	Irrigated plain/mountain	Market supports Chardonnières and Tiburon
Tiburon	Semi-arid plains/ mountains	

Fifty-five household surveys were conducted in each commune. Because of the rapid nature of the survey, less accessible villages were by necessity left out of the selection pool. Therefore, most of the villages surveyed were relatively close to a road, and probably more well off than less accessible villages. Participating households were selected randomly within villages with enumerators selecting every third house to survey. Effort was made to ensure a broad sample of people from the mountains, arid plains, and irrigated plains, since demographics as well as agricultural needs can vary greatly.

In markets, enumerators interviewed each of the agricultural input stores in the town (except for Les Cayes with a larger number of stores). In the market place, grain/seed vendors were selected randomly.

Two focus groups were conducted in each commune. Participants were selected from existing associations or social groups. Emphasis was put on those who were hosting IDPs. Questions centered on the impact of IDPs on the households, communities, and agricultural and seed sectors. Participants were asked about coping strategies and agricultural production plans for this upcoming season. Key informants were selected in each commune. Participants included farmers, Ministry of Agriculture personnel, and NGOs. Questions focused on the seed system, as well as changes in demand and the supply of seed and other agricultural inputs, particularly fertilizer, before and after the earthquake.

Household and seed/input supplier surveys were entered on Access and analyzed on Access and Excel. While results cannot be considered statistically valid, they do provide a clear indication of the seed situation post-earthquake in the region.

## Results

Although the January 12 earthquake produced little physical damage in the Southern Department, the vast influx of IDPs from Port-au-Prince has caused severe disruption and placed enormous economic and social stresses on the households and communities that have welcomed these IDPs. All Haitian communities were affected directly or indirectly by the earthquake, and all have borne the resulting costs. The table shows the average number of IDPs reported by households interviewed during the rapid assessment.

Average Number of IDPs/household/commune						
Commune	Average household size pre earthquake	Households Surveyed	Households with IDPS	% Households with IDPs	# of IDPs	Avg # of IDPs / Host HH
Camp Perrin	6.2	55	34.0	62%	219.0	6.4
Cavaillon	7.3	55	47.0	85%	318.0	6.8
Chardonnières	7.4	56	50.0	89%	293.0	5.9
Les Anglais	6.9	55	41.0	75%	197.0	4.8
Tiburon	7.9	56	45.0	80%	181	4.0
Torbeck	6.8	57	45.0	79%	268	6.0
<b>Total</b>	<b>7.1</b>	<b>334.0</b>	<b>262.0</b>	<b>78%</b>	<b>1476.0</b>	<b>5.6</b>

A remarkable 78% of households report hosting IDPs, with an average of 5.6 additional people in these host households. In Cavaillon, the average household size has nearly doubled. In Chardonnières, 89% of households are hosting IDPs. The average size of the households hosting IDPs increased from 7 to almost 13 persons (56%). Even taking into account some possible exaggeration in the reports, the average number of IDPS being supported by host families and communities is enormous.

Focus group meetings in each of the communes provided a vivid glimpse of the impact of the IDPs on their communities. Most spoke of the difficulty in accommodating all of the refugees in the limited space available in their homes. The cost of feeding and supporting these newcomers is causing severe economic strains on the households as the refugees arrived with virtually nothing and most have no employment. Others spoke of price increases in the market due to the additional demand in the communities. The problem of schooling for the school age children was also a major concern. Unemployment and a spike in theft were common themes.

Caritas conducted parish-level interviews with IDPs in 11 Southern parishes; 75% of IDPs anticipate staying in their host communes.<sup>11</sup> About the same number indicated that they would like to continue the same activity they pursued in Port-au-Prince - petty commerce rather than engage in agriculture. This will be a challenge as NGOs and actors decide how best to support IDPs and IDP host families and communities. Focus group participants note the increase in vendors in the local markets due to the influx of IDP vendors from Port-au-Prince.

### Coping Strategies

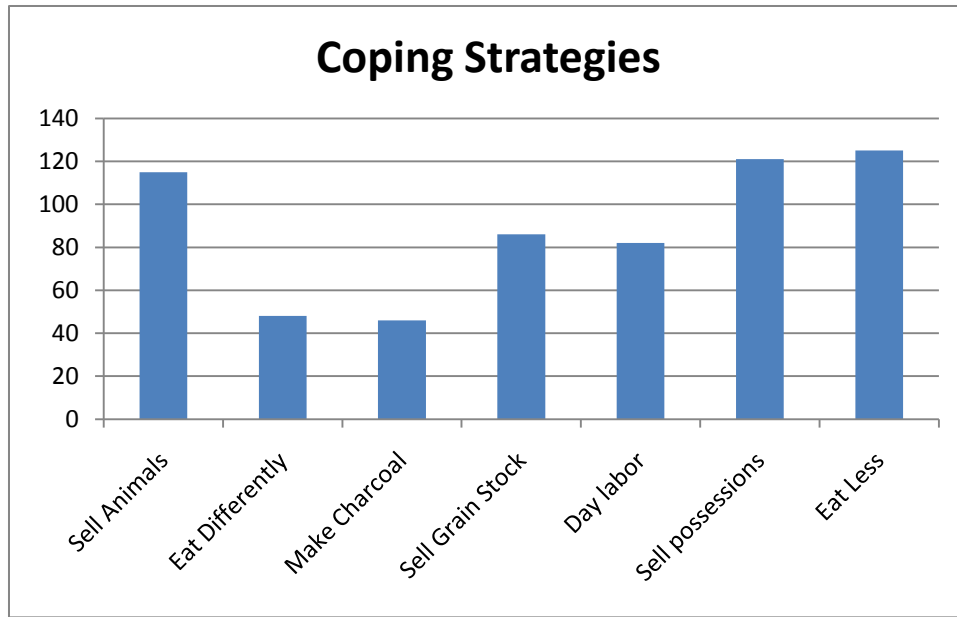
In order to cope with the situation, a variety of strategies have been adopted by households. All focus groups spoke of eating less by reducing the number of meals per day. This chart shows that the average number of meals per day post earthquake does not exceed 1.5 in any of the affected communes. Camp Perrin shows the most severe vulnerability in this sense, as families reported consuming only one meal per day.

IDPs and Food Security			
Commune	IDPs	Number of Meals	Average number of meals /day
Camp Perrin	219	56	1.06
Cavaillon	318	65	1.20
Chardonnières	293	82	1.46
Les Anglais	197	71	1.29
Tiburon	181	74	1.32
Torbeck	268	66	1.16

The chart below shows that reducing meals is the most common coping strategy. That is followed by sale of possessions and sale of animals. Many commented on the fact that, as a result, the markets are inundated with livestock for sale. The net effect of the increased supply and the collapse of demand from Port-au-Prince is that livestock prices have plummeted. It is interesting to note that families report selling off possessions before they sell their stock of grain. Many are attempting to gain work as day laborers. Charcoal production is a typical method for meeting emergency cash needs in Haiti, exacerbating the already high level of deforestation. Finally families are modifying their diets, replacing more expensive foods with less expensive ones.

<sup>11</sup> Caritas, draft report, Feb 2010





Many families want to take out loans to make purchases, but vendors are now more reluctant to offer credit, realizing that the risk of nonpayment is extremely high during this crisis.<sup>12</sup>

Some households are selling the crops still in the field for extremely discounted prices. Others are harvesting crops early, particularly root crops – manioc, sweet potatoes, and yams.

Many families are taking positive steps to deal with the crisis such as communal collections to care for the injured, exchange of crops, cultivating fields in common, and sharing tools.

### Coping Strategies in Agriculture

It is clear that reserves are being used up rapidly and families are being forced to liquidate their capital (seeds, animals, etc) or their future earnings (credit). The economic stresses are forcing families to reduce investments in the upcoming crop production season. Despite the need to increase production to meet increased consumption needs, some families are choosing strategies that are likely to lead to a net drop in agricultural production. Families have been forced to cut back on inputs such as seed and fertilizer, and reduce land cultivated because of lack of cash to pay for plowing. Some families may be altering their crop mix to produce crops with a shorter growing season in order to have food quickly. They may also be shifting from crops with more expensive seed to those that are cheaper. They recognize that they may have additional labor from the IDPs but also may not possess the tools to adequately take advantage of this resource. In addition, many IDPs are not farmers.

<sup>12</sup> One large import supplier in Port-au-Prince noted an \$800,000 loss due to the physical destruction of one of the main markets in Port-au-Prince, an 80% loss for him there. While he continues to offer credit, other vendors are choosing to change their credit policies to reduce such risk. This trend was also corroborated by a CRS market study in the Northeast in Jan/Feb 2010.

One would also assume that farmers would shift to those cropping patterns that reflected changes in their factors of production (land, labor, capital). Fewer cash resources would mean shifting to those inputs that require less cash, e.g. shifting out of expensive fertilizer, machinery and animal traction rental, and even the relatively more expensive seed. With more labor available, one should see a shift to more labor intensive production patterns and possibly more extensive cropping of land if more land is available or if new areas from previously wooded land are cleared.

Average landholding and land cultivated (unit = sezièmes)				
Commune	Avg Worked Ha	Avg Held Ha	Avg Worked sezièmes	Avg held sezièmes
Camp Perrin	0.8	1.7	10.4	21.0
Cavaillon	1.1	1.6	13.9	19.8
Chardonnières	1.0	2.5	12.0	31.2
Les Anglais	0.8	1.9	9.8	23.0
Tiburon	1.0	1.8	11.9	22.0
Torbeck	1.4	1.8	16.8	21.8
<b>Total</b>	<b>1.0</b>	<b>1.9</b>	<b>12.5</b>	<b>23.1</b>

*Units : 16 sezièmes = 1 karo; 12.5 sezièmes = 1 hectare*

Nine different focus groups reported that farmers were going to increase area under cultivation. One group said farmers were reducing land use. Five groups reported planning for more labor use and four reported either planning to purchase more tools or needing more tools for the additional labor. Five groups reported reduction of input use or attempting to obtain more credit to purchase inputs.

The following charts from the household surveys show that most are expanding or maintaining land cultivated with the notable exception of Torbeck, where participants are planning a near 30% reduction in cultivated area. As can be seen from the above table, Torbeck has the largest average land worked and the reduction may reflect the lack of resources to rent machinery or animal traction to cultivate the larger parcel size.

Change in Land Planted 09 -10				
Commune	Surface 09	Surface 10	Change	% Change
Camp Perrin	562.5	520.5	-42	-7.47%
Cavaillon	780	779	-1	-0.13%
Chardonnières	671	907	236	35.17%
Les Anglais	526.5	649	122.5	23.27%
Tiburon	668.5	797	128.5	19.22%
Torbeck	1117.5	795.25	-322.25	-28.84%
<b>Total</b>	<b>4326</b>	<b>4447.75</b>	<b>121.75</b>	<b>2.81%</b>

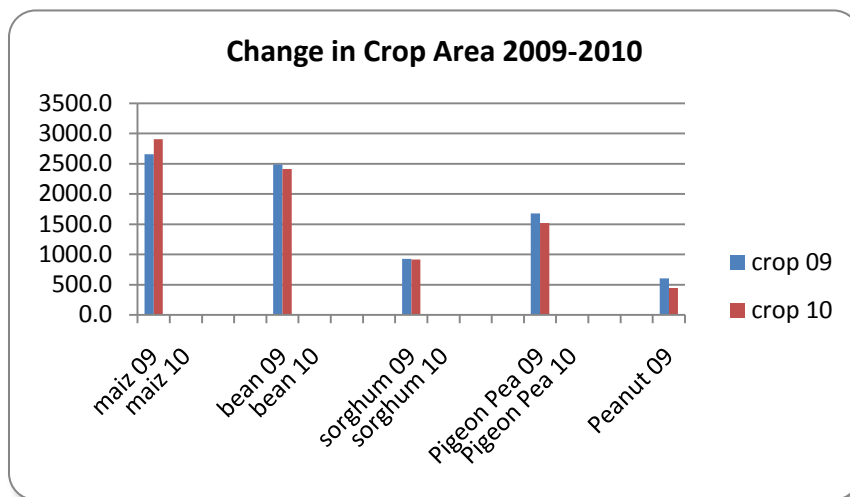
Communes showing increases in cropping area are those that have received seed support through CRS seed fairs (targeted at those most affected by last year's hurricanes) in February 2010. Two other communes show little shift in cropping area and Torbeck shows a dramatic decrease in cropping area. The results appear to show that if seed support is provided, households will plant more in order to cover needs of the IDPs. Those communes that have yet to receive seed support are not increasing cultivated area, or are even reducing the area.

Change in land cultivated per household member			
Commune	Land/hh member 09	land/hh member10	% difference
Camp Perrin	1.64	0.93	-44%
Cavaillon	1.92	1.07	-44%
Chardonnières	1.57	1.26	-20%
Les Anglais	1.39	1.13	-19%
Tiburon	1.53	1.29	-16%
Torbeck	2.96	1.23	-58%
<b>Total</b>	<b>1.83</b>	<b>1.16</b>	<b>-37%</b>

The table above shows that the three communes receiving seed support in February have reduced cultivated land area by between 16 and 20%. However, those not receiving support have experienced a net reduction in cultivated land per household member by between 44 and 58%.

The shift among crops is also notable. As the chart below indicates, for the two major crops, farmers are increasing surface area for maize (by almost 10%) and reducing surface area for beans (by around 3%).

Only two communes are increasing bean area – Chardonnières and Camp Perrin. All other communes have reduced bean area. All communes have increased maize area except for Torbeck. Beans are a major cash crop so this shift is significant. It demonstrates that cash-strapped farmers are shifting from more expensive bean seed to less expensive maize seed, and also shifting from a more market focus to a more subsistence focus as they try to feed their enlarged households. In Les Cayes, beans were selling at 200 gourdes (\$5) per marmite (coffee can size) and maize was selling at 90 gourdes (\$2.25) per marmite.



Five focus groups also reported shifting to short season crops in order to rapidly ramp up food production for the new population, e.g. sweet potatoes and short season corn. It is disconcerting to see that some farmers are planting fewer beans – both a high value and short season crop.

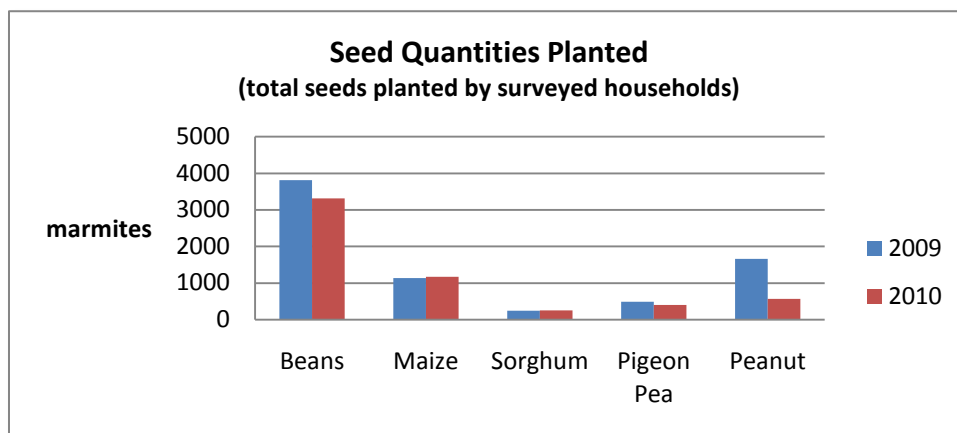
#### Seed availability and access:

Respondents reported that there was no shortage of local seed within their communities; 73% of respondents reported that they could find the seed they needed in the local market. Grain vendors report adequate supplies of seed. If seed is not available in the immediate area, seed is sought in neighboring zones of similar agro climatic conditions. The principal constraint to seed procurement cited by respondents is financial. Therefore, if saved or borrowed seed is not available, farmers may be shifting seed purchases from more expensive seed (such as bean) to less expensive seed (such as maize).

For beans, farmers typically sell off the harvest to pay debts and cover current expenses; seed for the next season is purchased prior to planting. There is a lively trade between the mountain regions and the plains. Harvests in one region coincide with planting in the other. Local varieties are adapted to these two different agro climatic conditions. Mountain and non-irrigated plains tend to face higher vulnerability in this sense, due in part to reliance on rainfall for production; in addition, higher percentages of these populations cover the majority of their food needs by selling their harvests for cash. (Please see annex for a map demonstrating this.)

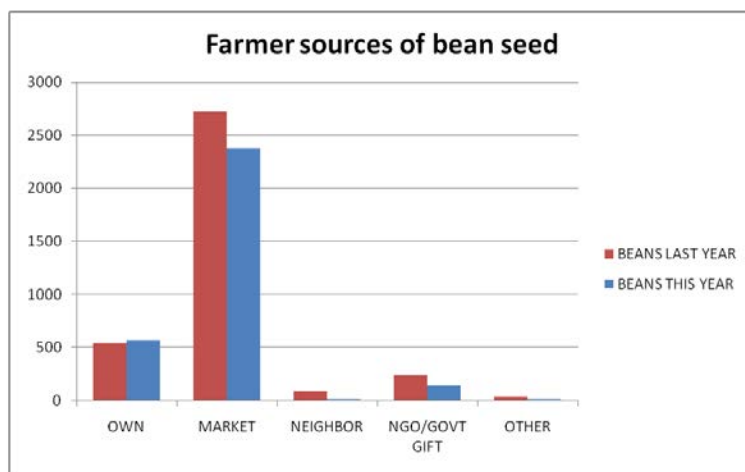
The overall quantity of beans that farmers intend to plant this year has decreased from last year (see chart below). Farmers, on average, report an overall decrease in the amount of land that will be under

bean production this season, as noted above.<sup>13</sup> At the same time, the overall quantities of maize intended to be planted have increased slightly for smallholders and medium-sized landowners; on average these farmers may plant 0.5 to 1 seizième more this season.



### Seed Sources

The amount of bean seed sourced from own reserves has increased slightly this season for medium and large landholders.<sup>14</sup> Smallholders, however, are sourcing approximately the same amounts from their own stock, on average. Since total quantities of beans planted this year have decreased, the overall percentage of farmers' seed sourced from their own reserves is higher (see tables in annex). Cavaillon has shown the most dramatic drop with purchases of bean seed falling by more than half. This corresponds to the 40% drop in land planted in bean.

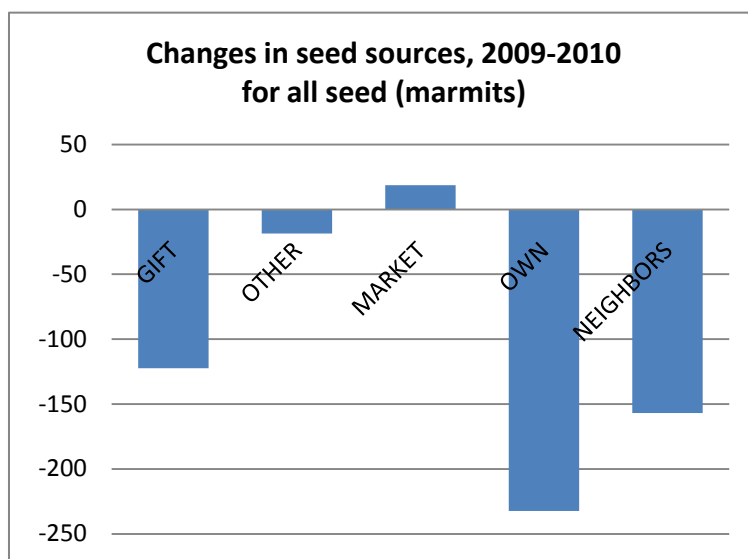


The recent EMMA report estimates that, due to agricultural aid following the 2008 hurricanes, farmers have 3000-5000 tons of reserves country-wide (EMMA, Feb 2010). Food aid in 2008 included almost 9,000 MT of pulses (CNSA, 2009). The EMMA results validate the results of this survey indicating that

<sup>13</sup> On average, farmers in all communes surveyed are planning on increasing their cultivated land for maize, except Torbeck. Cavaillon, Chantal, Les Anglais, Tiburon and Torbeck will reduce the amount of land planted with beans this year. On the other hand, Camp Perrin and Chardonnières will increase the amount of land planted to beans.

<sup>14</sup> Smallholder = 08 seizièmes of land, medium = 9-16, large > 16

they can utilize a larger amount of seed from their own reserves. Nevertheless, overall, households source five times more bean seed from markets than from their own saved reserves. For all landholding groups, overall quantity of beans purchased from the market is also decreasing this season. For maize, with the exception of Torbeck, farmers noted that they will be increasing their seed purchase from the market with relatively smaller portion of their seed coming from their own stock.<sup>15</sup> This same trend is evident with sorghum. Few farmers reported planting improved seed (see “seed quality” section).



DIFFERENCE 2009-2010 OWN SOURCED SEED (marmites)					
Commune	BEAN	SORGHUM	MAIZE	PIGEONPEA	PEANUT
Camp Perrin	31	-42.55	-27	3.127	0
Cavaillon	-49	-15	5.75	-3	-12
Chantal	-43	-2	-52	1	0
Chardonnières	-52	-40.25	-34.75	-20.5	0.5
Les Anglais	-44	-17.5	-7.5	-6.75	-13
Rendel	0	-6	1	0	0
Tiburon	1	-25.45	-21.75	11.8	-10
Torbeck	194.5	-12	150.75	-2.75	-73
<b>TOTAL</b>	<b>38.5</b>	<b>-160.75</b>	<b>14.5</b>	<b>-17.1</b>	<b>-107.5</b>

<sup>15</sup> Camp Perrin and Torbeck increase the use of their own seed reserves for bean. The rest have decreased the use of reserves. In some cases, last season’s bean harvests were not strong, thus also affecting the amount of seed farmers have saved. Les Anglais recently has been affected by poor rainfall that has reduced bean harvests in the mountain zones. Focus groups indicate that Les Anglais will plant more maize and root crops this season, as they are more resistant to drought than beans.

DIFFERENCE 2009-2010 MARKET-SOURCED SEED (marmites)					
Commune	BEAN	SORGHUM	MAIZE	PIGEONPEA	PEANUT
Camp Perrin	40	19	8.5	-29.75	0
Cavaillon	-282.5	3.7	50.75	-1.21	-4
Chantal	56	0	40.25	0	0
Chardonnières	-39	34.25	25.25	6.75	14
Les Anglais	-36	21.5	-15	-5.75	21
Rendel	6.5	15	-3.25	3.25	-10
Tiburón	24	45.75	57.25	10.75	40.75
Torbeck	-123	-116	-13.25	-15	-11.75
<b>TOTAL</b>	<b>-354</b>	<b>23.2</b>	<b>150.5</b>	<b>-30.96</b>	<b>50</b>

Overall, farmers intend to source about three-quarters of their seed from the market, this year (similar to last year). In every commune surveyed, households noted that increased expenditure is the major impact of the increased number of people in households. With less cash available, this will affect the amount of seed they are actually able to purchase.

#### Seed supply.

In Rendel, in the Chardonnières commune, both larger vendors and smaller market sellers indicated that they have few problems accessing seed this season, and would not have difficulty accessing more. Prices for almost all seeds/ grains are lower at this point this season compared to last season; maize is being sold at 75 gourdes (last year it was about 100, although some vendors noted it was as low as 60 last year); beans are selling at 225-250, which is either the same or lower than this season last year. Most vendors indicated an increase in demand, noting that they think people are planting more this season.

In Cavaillon, 5 larger vendors were interviewed (sell 500-2000 marmites/ season) and 5 smaller vendors (sell 250-400 marmites/ season). Maize is being sold at 50 Haitian gourdes(HTG)/marmite, generally less than the 60 gourdes last year. Beans are being sold at 175 gourdes, less than the 200 gourdes/m last year. Almost all vendors noted that if demand were to rise, they would be able to source adequate seed; three noted between 50 and 100 marmites, and 3 noted 150 or 200 marmites. The few who specified the type of seed noted maize in particular. Vendors gave mixed responses as to whether demand was increasing or decreasing. One noted that people were eating their seeds due to more people in the household.

In Camp Perrin, 5 large boutique vendors were interviewed (9,000 to 45,000 marmites) and 3 medium-sized vendors at the market (1500 to 4000 marmites). Maize is mostly being sold at 50-60 HTG, lower than last year. Beans are being sold at 175 HTG, less than last year (200 HTG). All of the large vendors are able to access several thousand marmites of seed should demand rise, from 3-4,000 up to 20,000. It should be noted that prices in Camp Perrin may have been high last year due to hurricane damage. The small vendors can access 100-300 marmites of maize and beans if required. All vendors again gave mixed responses as to whether demand was increasing or decreasing.

Small seed sellers acquire seed from their own stock or from local markets. Those who differentiate between seed and grain choose the largest and most uniform to sell as seed. More often, however, grain is sold and the buyers themselves select what they will plant as seed. Larger vendors do differentiate in similar ways; some also treat grain or seed purchased before resale, and sell at a higher price.

In Tiburon, maize is being sold for 50-60 HTG, lower than last year (75-100). Beans are being sold from 175-200 HTG, with one vendor selling at 300. These prices are similar to last year – some a bit higher, some a bit lower. Almost all vendors in Tiburon noted that demand was higher this year. This could also be because there has been poor rainfall this winter in Tiburon, affecting the mountain bean crops. Still, they reported that they could access more seed if demand were higher.

Major food security crop – Les Cayes	Price Jan 2009	Price 1/11/2010	Price 1/18/2010	Price 2/8/2010
Black bean	170	180	200	200
Local maize	71	60	115	90
Sorghum	112	100	125	100
Local rice	229	250	300	300
<i>Source: FEWSNET</i>				

In Les Cayes prices reported were about the same as in the rural areas, but prices from last year ranged more; some were higher and some were lower than this year. One of the bigger distributors interviewed did not notice a big difference in the supply chain or in demand following the earthquake; he sources his seed from local farmers in the South. One smaller vendor did notice a difference. The above table shows that after a spike in prices immediately following the earthquake, prices for maize and sorghum have fallen, while rice and black bean prices have remained high. For black bean, this is normal given that this is the planting season with an increase in demand for bean as seed. A good maize harvest has helped keep maize prices relatively low.

### Seed Access

The increase in numbers of IDPs will strain household availability even further. The following table includes anticipated harvests for the February/ March planting season for all five crops, in marmites. A reduction in such amounts of harvest per household member results in both a decrease in food and seed supply and, if translated into cash (assuming immediate sale of some portion of the harvest), results in significantly less cash per person.



Av size of IDP host HH	Commune	Total average anticipated harvest, all crops	Average anticipated harvest per HH member, pre-earthquake	Average anticipated harvest per HH member in IDP HH, post-earthquake	% difference
12.6	Camp Perrin	303.9	49.0	24.1	-50.8%
14.1	Cavaillon	414.0	56.7	29.4	-48.2%
13.3	Chardonnières	209.4	28.3	15.7	-44.4%
11.7	Les Anglais	128.5	18.6	11.0	-41.0%
11.9	Tiburon	247.7	31.4	20.8	-33.6%
12.8	Torbeck	553.3	81.4	43.2	-46.9%
	<b>Total</b>	<b>309.5</b>	<b>44.2</b>	<b>24.0</b>	<b>-44.1%</b>
	<i>Units : 16 sezièmes = 1 karo; 12.5 sezièmes = 1 hectare</i>				

## Seed quality

Most farmers do not differentiate between “seed” and “grain”. Farmers will generally go through some sort of selection process while sorting through the grain – often selecting larger grains for seed and also discarding broken, wrinkled, or damaged seed. Farmers said they prefer seed from the local area because it is adapted to their soil and climatic conditions.

Four of the focus groups said that some farmers do use improved seeds, and five more said that farmers only use improved seeds when given by donors such as CRS, FAO and ORE, or vegetable seeds.<sup>16</sup> Five focus groups also mentioned specifically that they doubted the quality of improved seeds given by donors. The groups specifically mentioned that seed provided by FAO post hurricane last year either arrived too late to plant during the season or failed to germinate.

Some larger vendors purchase grain, select the larger ones, and treat them with homemade mixtures including soap and pepper for resale as seed.

There is not a structured or coordinated formal seed sector in Haiti, and few actors. Government efforts in seed research and production have been haphazard and mainly dictated by outside funding with little continuity once projects have ended. Key private actors are limited by funding while farmer demand

<sup>16</sup> Other local organizations mentioned in focus groups that work to multiply improved seeds include AID (Association des Irrigants Decis, in Torbeck) on bean; AIM (Association des Irrigants de Marseilles) and AIW (Association des Irrigants de Welch, in Torbeck) on rice; AIA (Association des Irrigants des Anglais) on beans and maize. These are supported in part by FAO. SEED was also mentioned; it is an agricultural school in Cayes that trains technicians; among other work they produce improved seeds, particularly in maize and rice.

remains weak with few willing to pay a premium for certified seed.<sup>17</sup> ORE (Organization for the Rehabilitation of the Environment) is an important producer of improved and certified seed for the Southern region. They work with about 200 contract farmers to multiply certified maize and bean seed.

Demand for seed from ORE has increased since the earthquake from international organizations, individual farmers (particularly in Leogane and Petit Goave), farmer organizations, and vendors in Port-au-Prince. Demand for certified seed this season outstrips supply. ORE lacks sufficient resources to boost seed supply to meet potential increased demand in the upcoming season. However, with sufficient resources, ORE has potential to make larger contributions to formal seed production in the South.

The Ministry of Agriculture in Cayes has noted that improving seed quality and a more robust system of seed multiplication, dissemination and management, including the re-establishment of more widespread formal seed sector is a priority. The MoA will be creating a seed working group in Cayes, based in part on discussions surrounding this report. As part of its MYAP, CRS partners with CIAT to work with farmer associations in Les Anglais to test, demonstrate, and multiply seed of improved varieties. CRS's collaboration with CIAT started in 2006. The project initially conducted farm level trials of black and red beans, manioc, and maize. The project trained farmer seed producers and has started a local association. The association (PESA) provides the farmers with certified starter seed and helps to market the harvest.

About 40% of farmers report planting bean seeds of varieties that are not called "local"; only about 12% report planting sorghum, maize, or pigeon pea of other varieties. According to farmers, many of these are crosses of local varieties and improved varieties. In focus groups, farmers reported that improved seed (meaning "certified") was available from NGOs, ORE, and associations such as AID, but few farmers actually purchase and grow them. In the table below, "improved" means any variety other than local.

CHANGE IN NUMBER OF HOUSEHOLDS (HH) PLANTING "IMPROVED" VARIETIES, 2009-2010										
	BEANS		SORGHUM		MAIZE		PIGEONPEA		PEANUT	
	% of HH last year	% change this year	% of HH last year	% change this year	% of HH last year	% change this year	% of HH last year	% change this year	% of HH last year	% change this year
<b>none</b>	16.2%	9.3%	69.8%	3.3%	10.2%	5.4%	40.7%	3.9%	80.5%	0.9%
<b>"local" (includes "chicken corn" for maize)</b>	42.5%	7.2%	17.4%	0.3%	77.5%	6.0%	45.8%	2.4%	18.9%	0.6%
<b>Non-"local" varieties</b>	41.3%	2.1%	12.9%	3.6%	12.3%	0.6%	13.5%	1.5%	0.6%	0.3%

BEAN VARIETIES: Tamaso lapa, Awoyo, Italie negwo, de souche, ti piten, tyokanela

SORGHUM VARIETIES: panache, ponpon, madan blanc, madan blure, gwo ponyet, madan Michel, beau sejour

MAIZE VARIETIES: makina, tilevi

PIGEONPEA VARIETIES: Gwo ponyet

<sup>17</sup> In the 1980s there was a program called CIPSA (Commission Intersectoriel pour la Production des Semences Améliorés), which ended due to lack of funding. Still, improving seed quality remains a priority of the MoA in Cayes.

## Fertilizer use

About 1/3 of farmers surveyed use chemical fertilizer. Fertilizer is generally used on higher valued crops and vegetables, mostly on irrigated plains. In the South fertilizer is used almost exclusively on beans and maize. During this season last year, farmers surveyed used a total of over 4,000 marmites of fertilizer for beans, 3,200 marmites for maize, and only 136, 46, and 0 marmites for sorghum, pigeon pea, and peanut. Note that little fertilizer is used on low-value sorghum.

In general, farmers are planning on using less fertilizer this year, as shown in the chart below (based on 112 of 333 farmers using fertilizers in 2009, and 101 of 333 using fertilizers in 2010). Most likely this is due to their stretched financial means.

### Difference in total amounts of fertilizers used per commune (marmites), from 2009-2010

Difference in total amounts of fertilizers used per commune (marmites) from 2009-2010					
Commune	Beans	Sorghum	Maize	Pigeon pea	Peanut
Camp Perrin	30	0	-269	78	0
Cavaillon	-163	20	193	0	24
Chantal	-153	0	-161	0	0
Chardonnières	-68	0	-4	0	0
Les Anglais	-47.5	9	31	1	0
Tiburon	0	0	0	0	0
Torbeck	65	-52	-54.5	-28	0
<b>TOTAL</b>	<b>-336.5</b>	<b>-23</b>	<b>-264.5</b>	<b>51</b>	<b>24</b>

## Fertilizer supply

Fertilizer import and sale is a government monopoly, with the Ministry of Agriculture selling fertilizer at a 50% subsidy. The Ministry sells fertilizer at \$375 gourdes/sack. Resale is permitted, but prices are capped by law at 500 gourdes/sack. These price controls are frequently ignored by traders. Even before the earthquake, supply chain ruptures were common. The Ministry of Agriculture in Les Anglais reported a 6-month delay in fertilizers; they had just received fertilizers in their stock a few days before our interview. Another trader in Les Anglais reported that she had been forced to acquire fertilizers from Cayes for last November's season, since she hadn't received her shipment from the MoA. (She paid 625 gourdes despite the cap.)

In Camp Perrin, 3 vendors who sold fertilizers were interviewed. They acquire fertilizers from Cayes, from the Ministry of Agriculture, or from suppliers in nearby towns. They noted ruptures in the supply chain, notably the frequent shortages in MoA depots. In Cayes, both vendors sourced fertilizers from Port-au-Prince. One vendor in Cayes did note that he had experienced supply problems from Port-au-Prince since the earthquake. In general, vendors said they could access fertilizer if demand were to increase, but it would require that the Ministry of Agriculture mobilize appropriate fertilizers quickly.

In Les Anglais, the Ministry of Agriculture had just received their shipment of almost 800 sacks of NPK. One of the two large vendors they had also received a supply of about 750 sacks, and the other large vendor said he was expecting his shipment by the end of the week.

**Impact of intermediaries on overall trade.**

Some vendors and key informants indicated that fewer traders were moving between Port-au-Prince and the other towns. In Les Anglais, animal prices are low right now; in part this could be because people are selling animals to have cash, but farmers also indicated that fewer big traders are coming to the South from Port-au-Prince to purchase livestock for sale in Port-au-Prince or other communes. The Ministry of Agriculture in Cayes commented that fewer Madame Saras, the local term for female petty traders, were coming from Port-au-Prince to Cayes, an observation echoed by another trader in Les Anglais.

One of the major potential changes in availability of many commodities after 12 January is in terms of credit. Many suppliers are reducing the amount of credit they're offering to buyers in order to reduce their risk, with a drop in demand and general shortage of liquidity throughout the market system. Many wholesalers also experienced heavy losses of inventory during the earthquake and simply do not have the ability to offer credit. One trader in Les Anglais confirmed that she was still able to buy goods on credit from Cayes and Port-au-Prince, but in more limited quantities. The tightening of credit is occurring throughout the supply chain and could potentially reduce supply of goods, particularly those imported from Port-au-Prince.

## Conclusions

1. Households in the South have, on average, almost doubled in size since the earthquake of Jan 12, 2010. Hosting the large number of IDPs has forced families to utilize reserves and liquidate capital, threatening future production. Farmers would like to expand production to meet the increased needs, but many do not have the cash resources to do so. Farmers are changing cropping patterns as a result of these pressures. Farmers are focusing on short term crops to obtain quick yields and income. Potential cultivation of marginal land, cutting of firewood, and production of charcoal (for cash) threatens to exacerbate unsustainable levels of deforestation and soil erosion. Therefore, a rapid response is needed to quickly replace depleted cash reserves and address longer term livelihood issues. Efforts are needed to address immediate needs and boost productivity on farmland in order to reduce pressure on sensitive land. Given that many IDPs will not return to Port-au-Prince, it is critical that they are properly settled and reestablish sustainable livelihoods.
2. Large numbers of IDPs who were engaged in petty commerce in Port-au-Prince plan on continuing these activities in their host communities. This emphasizes the need to undertake interventions that reinforce market mechanisms rather than bypassing the market.
3. Good quality seed of the varieties that farmers' prefer is available in the areas surveyed. The household survey shows that farmers are utilizing similar levels of own seed stock as in previous years. Vendors in the market report normal levels of seed for sale. The key issue is access. Families simply do not have resources available to make the usual investments in agriculture. This has led, in some instances, to decisions to actually cultivate less because of inability to acquire inputs (including seed, fertilizer, and animal traction). Households on average plan to buy 75% of their bean and maize seed on the market this season.
4. Food aid in 2008 included almost 9,000 MT of pulses. (CNSA, 2009). Local bean supply is sufficient, but producer prices could be threatened by poorly targeted food aid containing bean substitutes (such as peas or other pulses). (This was corroborated by EMMA report, Feb 2010.) While food aid will prevent seed stock from being consumed, CRS should ensure that any food aid that includes pulses does not compete with locally-produced beans during the harvest period.
5. Prices for maize seed have decreased in the South, in general; prices for beans has remained similar to pre-earthquake prices, and to prices during this season last year. Prices for imported food and other household commodities, on the other hand, have increased, probably due to ruptures in supply from Port-au-Prince.
6. Some vendors are not able to access as much seed on credit as before the earthquake, and the same is true for other food commodities; this may affect their ability to maintain large supplies of seed for the coming seasons, or other foodstuffs.

## Recommendations

1. Direct seed distribution should not take place given that seed is available in the local market and farmers' negative perceptions of external seed. This emergency is not the appropriate time to try to introduce improved varieties on anything more than a small scale for farmer evaluation. Efforts to improve seed quality should be undertaken through long term investments into seed development, production, and extension systems with farmers remaining as managers of their own seed. If donated seed is made available, it should be made available through seed fairs or voucher systems and sold by existing seed vendors allowing farmers a choice.
2. Seed fairs are an appropriate response to the crisis in rural areas. The seed fairs will help alleviate immediate cash constraints and enable farmers to have access to seed of the type and quality that they want. An initial round of seed fairs should be undertaken quickly in order to catch the latter part of this planting season (Feb-March). These fairs will make available maize, black bean, sorghum, and other seed. WFP has expressed interest in purchasing bean for distribution in Port-au-Prince. CRS should facilitate contacts between WFP and farmer associations with whom they work. Given that credit may be a constraint to suppliers, CRS could provide inventory credit to retail seed vendors to purchase seed before the fairs and then to repay the loans when they redeem the vouchers that they have collected. If some of these vendors are also IDPs, the program would provide a double boost to both farmers and those IDPs trying to reestablish themselves in petty commerce.
3. Seed fairs will only partially address the larger food and livelihood security issues. Food distribution will alleviate immediate needs and also reduce pressure on grain/seed reserves and other household resources. Food distributions to IDP households are already planned and this should reduce pressure to consume seed reserves. Care should be made when including pulses in the food ration around the time of bean harvest in order not to jeopardize producer prices. We suggest a 2 month suspension of pulse distribution around the time of bean harvest.
4. Cash for work (CFW) can provide an injection of cash into these cash-strapped households and provide temporary employment to many of the IDPs. The impacts of these projects should be carefully thought out. If CFW is used in the Agriculture and Natural Resource domain (e.g. Watershed Management), it should not be used on those activities where farmers are already working without incentives e.g. installing anti-erosive measures and planting trees on their own land. CFW would be appropriate on larger communal structures such as check dams.
5. We recommend that CRS implement livelihood fairs with vouchers prior to the next season which will enable farmers to obtain important inputs into their production systems such as tools, fertilizer and seeds. In addition, other materials such as tin roofing may also be made available. The intent of the livelihood fairs is to help restore liquidated reserves and enable farm households to start reinvesting in their productive capacity. Fertilizer should only be made available in those irrigated areas on the plains where farmers are accustomed to applying this input to their crops. By no means should it be introduced in areas where farmers have no experience with its use. Formal seed system actors such as ORE should be informed of the plans for the livelihood fairs so they can boost seed production now in order to meet the increased demand that seed fairs will bring next season.<sup>18</sup>

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<sup>18</sup>Given ORE's own resource constraints, some form of advance may be required in order to guarantee ORE's participation in the fairs. However, ORE's seed should be sold at near market rates without the 50% subsidy that is usually provided to local farmers. This would probably lead ORE to not participate in zones with easy access to ORE, since farmers could easily obtain the subsidized seed at the ORE outlet.

6. A further more in-depth seed system assessment should be undertaken as a prerequisite to a longer term intervention in the seed system. The study will be able to better identify structural constraints and make recommendations to improving the seed system. The study can also analyze further the information collected in this rapid assessment.
7. The seed system assessment is a prerequisite to providing support to reorganize the formal seed sector enabling larger scale research, trials, demonstrations, multiplication, and extension. These efforts can be similar to CIAT/CRS collaboration in the South and build on the capacity already demonstrated by ORE.
8. While education is not within the purview of this study, education expenses are typically a large part of many household's budgets. With all the displaced students, consideration of some sort of support to enable them to return to school (e.g. scholarships, school vouchers) would be appropriate.

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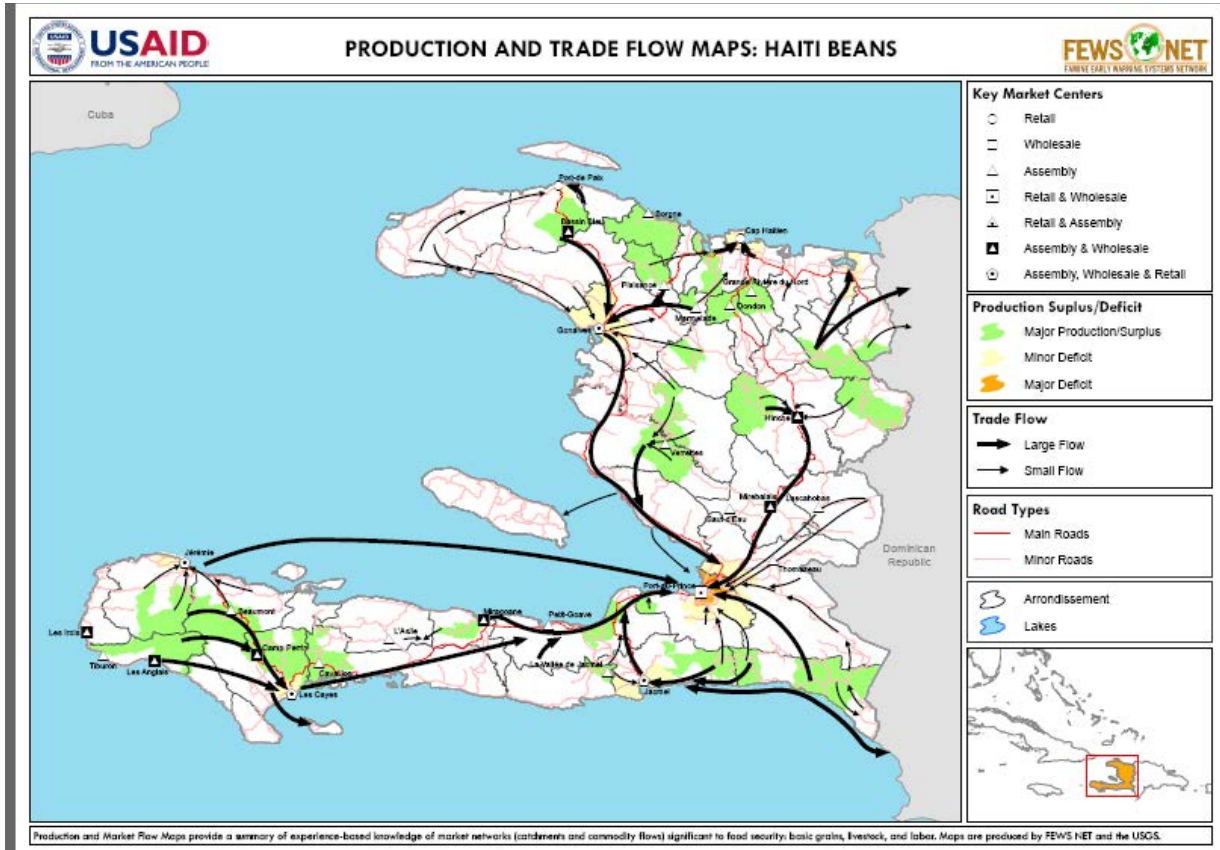


## Contacts

NAME	ORGANIZATION	LOCAL PHONE	EMAIL
Gaye Burpee, DRD PQ	CRS/LACRO	+509 3902 6159	<a href="mailto:gburpee@gt.crs.org">gburpee@gt.crs.org</a>
Laura Dills, Head of Emergency Programming	CRS/Haiti	+509 3491 7810	<a href="mailto:ldills@crshaiti.org">ldills@crshaiti.org</a>
Ludger Simon, Head of Food Security	CRS/Cayes	+509 3648 1325	<a href="mailto:ljsimon@cay.crs Haiti.org">ljsimon@cay.crs Haiti.org</a>
Yon Fernandez De Larrinoa, Agriculture Cluster Lead	FAO , Port-au-Prince	+509 3763 2298	<a href="mailto:Agricluster.haiti@gmail.com">Agricluster.haiti@gmail.com</a>
Dick Trenchard	FAO		<a href="mailto:Richard.Trenchard@fao.org">Richard.Trenchard@fao.org</a>
Phil Gelman	OFDA		
Arne Fritz	FAO, Cayes		<a href="mailto:rftzarne@yahoo.fr">rftzarne@yahoo.fr</a> <a href="mailto:arnefritz@hotmail.com">arnefritz@hotmail.com</a>
Debalio Jean Jacques, Head	Ministry of Agriculture, Cayes		<a href="mailto:theojak@yahoo.fr">theojak@yahoo.fr</a>
Saintus Jean Raymond	Ministry of Agriculture, Cayes		<a href="mailto:Jsaintus10@yahoo.com">Jsaintus10@yahoo.com</a>
Joseph Jean Juillo	Ministry of Agriculture, Cayes		<a href="mailto:juillojoseph@yahoo.fr">juillojoseph@yahoo.fr</a>
Duclona Pierre	World Concern, Cayes	+509 3485 4864 +509 2286 0955	<a href="mailto:pduclona@hotmail.com">pduclona@hotmail.com</a>
H. Michel Léonard	Caritas, Cayes	+509 3648 8376 +509 3405 9638	<a href="mailto:leonahmich@yahoo.fr">leonahmich@yahoo.fr</a>
Muscadin Edrice	Caritas, Cayes	+509 3657 8844	<a href="mailto:emuscadin@yahoo.fr">emuscadin@yahoo.fr</a>
Mousson Finnigan, Director	ORE	+509 3758 7565 (c) +509 3604 9424 (o)	<a href="mailto:mail@oreworld.org">mail@oreworld.org</a>
Eliassaint Magloire, Technician	ORE	+509 3792 1718 (c)	<a href="mailto:mail@oreworld.org">mail@oreworld.org</a> <a href="mailto:eliassantm@yahoo.com">eliassantm@yahoo.com</a>
Paul Andre Norpelus	CIAT		
Astrel Certoute	CATI (Coopératif Agricole Tiburon)		

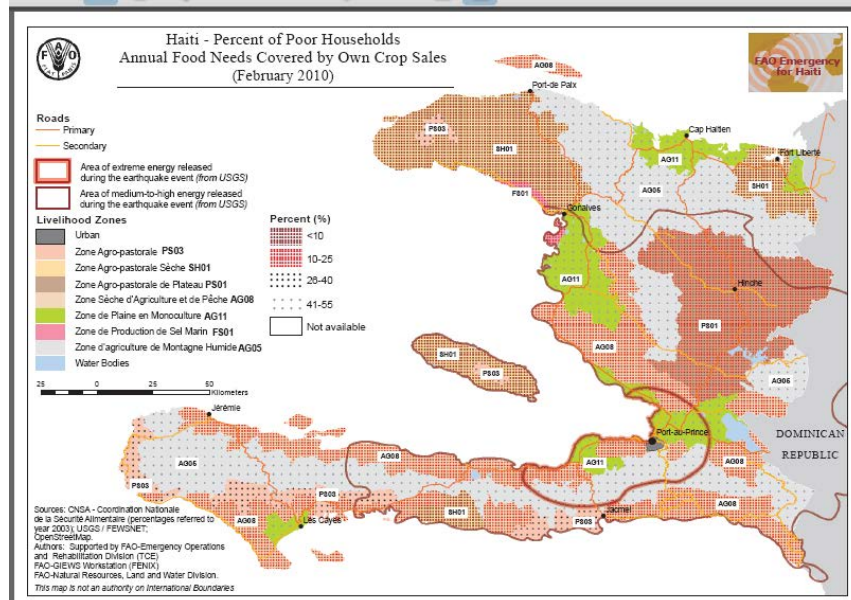
## Appendix 1: Maps

Les Cayes is a center for bean trade in the South department. As trade to Port-au-Prince lessened, more supply has remained local.



[http://www.fews.net/docs/Publications/ht\\_fullmap\\_beans\\_norm.pdf](http://www.fews.net/docs/Publications/ht_fullmap_beans_norm.pdf)

Lighter areas indicate more vulnerable areas, where households in normal years cover much of their food needs by selling their crops for cash. These areas tend to be in the more mountainous zones.



<http://onerresponse.info/Disasters/Haiti/Agriculture/publicdocuments/annual%20food%20needs%20covered%20by%20own%20crop%20sales%20%5BFAO%5D.pdf>

## Appendix 2: TABLES

Comparison of surface area planted 09, 10

Commune	maiz 09	maiz 10	Change	Maiz % change	bean 09	bean 10	change	Beans % change	sorghum 09	sorghum 10	Change	Sorghum % change
Camp Perrin	355.5	378.5	23.0	6.5%	406.0	446.0	40.0	9.9%	136.0	137.5	1.5	1.1%
Cavaillon	461.0	505.0	44.0	9.5%	297.0	180.0	-117.0	-39.4%	170.0	132.0	-38.0	-22.4%
Chantal	84.0	106.0	22.0	26.2%	65.5	62.0	-3.5	-5.3%	4.0	2.0	-2.0	-50.0%
Chardonnières	418.5	495.0	76.5	18.3%	367.0	467.0	100.0	27.2%	187.5	260.0	72.5	38.7%
Les Anglais	348.0	387.0	39.0	11.2%	405.0	370.0	-35.0	-8.6%	101.0	123.5	22.5	22.3%
Rendel	104.0	119.0	15.0	14.4%	104.0	111.0	7.0	6.7%	76.0	48.0	-28.0	-36.8%
Tiburon	353.5	418.3	64.8	18.3%	328.0	316.0	-12.0	-3.7%	157.0	180.0	23.0	14.6%
Torbeck	529.5	495.8	-33.8	-6.4%	516.0	460.0	-56.0	-10.9%	97.0	31.0	-66.0	-68.0%
<b>Total</b>	<b>2654.0</b>	<b>2904.5</b>	<b>250.5</b>	<b>9.4%</b>	<b>2488.5</b>	<b>2412.0</b>	<b>-76.5</b>	<b>-3.1%</b>	<b>928.5</b>	<b>914.0</b>	<b>-14.5</b>	<b>-1.6%</b>

Pigeon Pea 09	Pigeon Pea 10	Change	Pigeon Pea % Change	Peanut 09	peanut 10	Change	Peanut % change
168.7	150.5	-18.2	-10.8%	0	0	0.0	0.0%
173.0	155.0	-18.0	-10.4%	6	15	9.0	150.0%
5.0	3.0	-2.0	-40.0%	1	0	-1.0	-100.0%
490.0	456.0	-34.0	-6.9%	95	109	14.0	14.7%
387.0	327.0	-60.0	-15.5%	78	72	-6.0	-7.7%
84.0	60.0	-24.0	-28.6%	48	40	-8.0	-16.7%
309.0	281.5	-27.5	-8.9%	263.75	206	-57.8	-21.9%
61.1	85.1	24.0	39.3%	110	5	-105.0	-95.5%
<b>1677.9</b>	<b>1518.1</b>	<b>-159.7</b>	<b>-9.5%</b>	<b>601.8</b>	<b>447.0</b>	<b>-154.8</b>	<b>-25.7%</b>

Seed Quantity

komin	beans 09	beans 10	change	%	maiz 09	mayi 10	change	%	Sorghum 09	Sorghum 10	change	%
Camp Perrin	661	685	24.0	3.6%	188	169.5	-18.5	-9.8%	34.25	36.2	2.0	5.7%
Cavaillon	586.5	332	-254.5	-43.4%	196.75	229.75	33.0	16.8%	58	46.7	-11.3	-19.5%
Chantal	143	112	-31.0	-21.7%	43	73.75	30.8	71.5%	3.25	1.25	-2.0	-61.5%
Chardonnières	478.75	393	-85.8	-17.9%	141.75	138.25	-3.5	-2.5%	35.75	48	12.3	34.3%
Les Anglais	568.5	480	-88.5	-15.6%	104.5	99	-5.5	-5.3%	18.5	24	5.5	29.7%
Rendel	65.5	80	14.5	22.1%	25.25	24.75	-0.5	-2.0%	11.5	4	-7.5	-65.2%
Tiburon	417.5	377	-40.5	-9.7%	152.25	186	33.8	22.2%	32.5	63.75	31.3	96.2%
Torbeck	894.5	858.5	-36.0	-4.0%	281.9	251.65	-30.3	-10.7%	50	25	-25.0	-50.0%
<b>Total</b>	<b>3815.25</b>	<b>3317.5</b>	<b>-497.8</b>	<b>-13.0%</b>	<b>1133.4</b>	<b>1172.65</b>	<b>39.3</b>	<b>3.5%</b>	<b>243.75</b>	<b>248.9</b>	<b>5.2</b>	<b>2.1%</b>

Pigeon Pea 09	Pigeon Pea 10	change	%	Peanut 09	Peanut 10	change	%
45.75	39.14	-6.6	-14.4%	0	0	0.0	0.0%
98.93	40.86	-58.1	-58.7%	6	3	-3.0	-50.0%
1	2	1.0	100.0%	11	0	-11.0	-100.0%
102	99.25	-2.8	-2.7%	85.5	98	12.5	14.6%
118.75	93.5	-25.3	-21.3%	78	90	12.0	15.4%
9	14	5.0	55.6%	21	16	-5.0	-23.8%
91.6	93.2	1.6	1.7%	337.75	344.5	6.8	2.0%
26	18.25	-7.8	-29.8%	1124	12	-1112.0	-98.9%
<b>493.03</b>	<b>400.2</b>	<b>-92.8</b>	<b>-18.8%</b>	<b>1663.25</b>	<b>563.5</b>	<b>-1099.8</b>	<b>-66.1%</b>

Differences in Market Source of Seed 09-10

komin	pwa4	pwa9	Dpwa	%	pitimi4	pitimi9	Dpitimi	%	mayi4	mayi9	Dmayi	%
Camp Perrin	469	501	32	6.8%	12.5	31.5	19	152.0%	147	157.5	10.5	7.1%
Cavaillon	493.5	211	-282.5	57.2%	28	31.7	3.7	13.2%	158.5	209.25	50.75	32.0%
Chantal	71	127	56	78.9%	0	0	0	0.0%	28.5	68.75	40.25	141.2%
Chardonnières	371	332	-39	10.5%	8.25	42.5	34.25	415.2%	91	116.25	25.25	27.7%
Les Anglais	498	462	-36	-7.2%	2	23.5	21.5	1075.0%	107.5	92.5	-15	-14.0%
Rendel	75.5	82	6.5	8.6%	0	15	15	100.0%	22	18.75	-3.25	-14.8%
Tiburon	331	355	24	7.3%	5.5	51.25	45.75	831.8%	112.25	169.5	57.25	51.0%
Torbeck	425	302	-123	28.9%	124.5	8.5	-116	-93.2%	116.4	103.15	-13.25	-11.4%

Total	2734	2372	-362	13.2%	180.75	203.95	23.2	12.8%	783.15	935.65	152.5	19.5%
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pKongo4	pKongo9	Dpkongo	%	pistash4	pistash9	Dpistach	%
55.25	29.5	-25.75	-46.6%	0	0	0	0.0%
29.68	28.47	-1.21	-4.1%	5	1	-4	-80.0%
0	0	0	0.0%	0	0	0	0.0%
75.75	82.5	6.75	8.9%	71.5	85.5	14	19.6%
73.75	68	-5.75	-7.8%	74	95	21	28.4%
11.25	14.5	3.25	28.9%	24	14	-10	-41.7%
75.25	86	10.75	14.3%	229.25	270	40.75	17.8%
25.5	10.5	-15	-58.8%	23.75	12	-11.75	-49.5%
346.43	319.47	-26.96	c	427.5	477.5	50	11.7%

Differences in Saved Seed 09-10

komin	pwa4	pwa9	DiffPwa	%	pitimi4	pitimi9	DPitimi	%	mayi4	mayi9	DMayi	%
Camp Perrin	13	38	25	192.3%	38.75	0.2	-38.55	-99.5%	36	3	-33	-91.7%
Cavaillon	58	9	-49	-84.5%	31	16	-15	-48.4%	21.75	27.5	5.75	26.4%
Chantal	58	15	-43	-74.1%	2	0	-2	-100.0%	55	3	-52	-94.5%
Chardonnières	67.25	15.25	-52	-77.3%	43.25	3	-40.25	-93.1%	55.75	21	-34.75	-62.3%
Les Anglais	63	19	-44	-69.8%	18	0.5	-17.5	-97.2%	19.5	12	-7.5	-38.5%
Rendel	0	0	0	0.0%	6	0	-6	0.0%	3	4	1	0.0%
Tiburon	4	5	1	25.0%	25.45	0	-25.45	-100.0%	28.75	7	-21.75	-75.7%
Torbeck	271	465.5	194.5	71.8%	16	4	-12	-75.0%	54	204.75	150.75	279.2%

Total                    534.25   566.75   32.5   6.1%   180.45   23.7   -156.75   -86.9%   273.75   282.25   8.5   3.1%

pKongo4	pKongo9	DPkongo	%	pistash4	pistash9	DPistach	%
1.5	4.627	3.127	208.5%	0	0	0	0.0%
7	4	-3	-42.9%	12	0	-12	-100.0%
1	2	1	100.0%	0	0	0	0.0%
38.25	17.75	-20.5	-53.6%	4.5	5	0.5	11.1%
34.75	28	-6.75	-19.4%	18	5	-13	-72.2%
0	0	0	0.0%	0	0	0	0.0%
18.7	30.5	11.8	63.1%	21	11	-10	-47.6%
14	11.25	-2.75	-19.6%	73	0	-73	-100.0%

115.2   98.127   -17.073   -14.8%   128.5   21   -107.5   -83.7%

SOURCES OF SEED, 2009-2010, BY COMMUNE AND CROP TYPE  
GIFT

komin	pwa4	pwa9	Dpwa	pitimi 4	pitimi 9	Dpiti mi	mayi4	mayi9	Dmay i	pKong o4	pKong o9	Dpkon go	pistas h4	pistas h9	Dpista ch	mounAn plis
Camp Perrin	44	72	28	0	0	0	0	12	12	0	0	0	0	0	0	217
Cavaillon	32	20	-12	0	0	0	13	0	-13	1	0	-1	0	0	0	322
Chantal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46
Chardonnières	77.5	11	-66.5	0	0	0	2	0	-2	2	0	-2	0	0	0	238
Les Anglais	65	26	-39	0	0	0	2.25	1	-1.25	11.75	0	-11.75	0	0	0	197
Rendel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55
Tiburón	20	6	-14	0	0	0	4	0	-4	0	0	0	0	0	0	181
Torbek	0	5	5	0	0	0	1	0	-1	0	0	0	0	0	0	222
<b>TOTAL</b>			<b>-98.5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22.25</b>	<b>13</b>	<b>-9.25</b>	<b>14.75</b>	<b>0</b>	<b>-14.75</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>122.5</b>

OTHER

komin	pwa4	pwa9	Dpwa	pitimi 4	pitimi 9	Dpiti mi	mayi4	mayi9	Dmay i	pKong o4	pKong o9	Dpkon go	pistas h4	pistas h9	Dpista ch	mounAn plis
Camp Perrin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	217
Cavaillon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	322
Chantal	6	0	-6	0	0	0	0	0	0	0	0	0	0	0	0	46
Chardonnières	8	0	-8	0	0	0	2	0	-2	0	0	0	0	0	0	238
Les Anglais	17	8	-9	0	0	0	0	5	5	0	1	1	0	0	0	197
Rendel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55
Tiburón	2	6	4	0	0	0	1	0	-1	0	0	0	0	0	0	181



Torbec k	1.5	0	-1.5	0	0	0	1	0	-1	0	0	0	0	0	0	222
<b>TOTAL</b>			<b>-20.5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-18.5</b>

MARKET

komin	pwa4	pwa9	Dpwa	pitimi 4	pitimi 9	Dpiti mi	mayi4	mayi9	Dmay i	pKong o4	pKong o9	Dpkon go	pistas h4	pistas h9	Dpista ch	mounAn plis
Camp Perrin	461	501	40	12.5	31.5	19	149	157.5	8.5	59.25	29.5	-29.75	0	0	0	217
Cavaillon	313.5	211	102.5	28	31.7	3.7	158.5	5	209.2 50.75	29.68	28.47	-1.21	5	1	-4	322
Chantal	71	127	56	0	0	0	28.5	68.75	40.25	0	0	0	0	0	0	46
Chardonnières	371	332	-39	8.25	42.5	34.25	91	116.2 5	25.25	75.75	82.5	6.75	71.5	85.5	14	238
Les Anglais	498	462	-36	2	23.5	21.5	107.5	92.5	-15	73.75	68	-5.75	74	95	21	197
Rendel	75.5	82	6.5	0	15	15	22	18.75	-3.25	11.25	14.5	3.25	24	14	-10	55
Tiburon	331	355	24	5.5	51.25	45.75	112.2 5	169.5	57.25	75.25	86	10.75	229.2 5	270	40.75	181
Torbec k	425	302	-123	124.5	8.5	-116	116.4	103.1 5	13.25	25.5	10.5	-15	23.75	12	-11.75	222
<b>TOTAL</b>			<b>-174</b>	<b>180.7</b> <b>5</b>	<b>203.9</b> <b>5</b>	<b>23.2</b>	<b>785.1</b> <b>5</b>	<b>935.6</b> <b>5</b>	<b>150.5</b>	<b>350.4</b> <b>3</b>	<b>319.4</b> <b>7</b>	<b>-30.96</b>	<b>427.5</b>	<b>477.5</b>	<b>50</b>	<b>18.74</b>

OWN

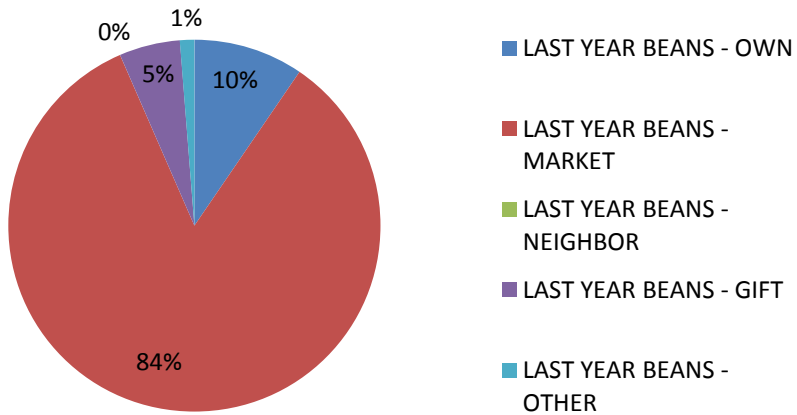
komin	pwa4	pwa9	DiffP wa	pitimi 4	pitimi 9	DPiti mi	mayi4	mayi9	DMay i	pKong o4	pKong o9	Dpkon go	pistas h4	pistas h9	DPista ch	mounAn plis	
Camp Perrin	7	38	31	42.75	0.2	-	42.55	30	3	-27	1.5	4.627	3.127	0	0	0	217
Cavaillon	58	9	-49	31	16	-15	21.75	27.5	5.75	7	4	-3	12	0	-12	322	
Chantal	58	15	-43	2	0	-2	55	3	-52	1	2	1	0	0	0	46	
Chardonnières	67.25	15.25	-52	43.25	3	-	40.25	55.75	21	34.75	38.25	17.75	-20.5	4.5	5	0.5	238

Les Anglais	63	19	-44	18	0.5	-17.5	19.5	12	-7.5	34.75	28	-6.75	18	5	-13	197	
Rendel	0	0	0	6	0	-6	3	4	1	0	0	0	0	0	0	55	
Tiburon	4	5	1	25.45	0	25.45	28.75	7	21.75	18.7	30.5	11.8	21	11	-10	181	
Torbeck	271	465.5	194.5	16	4	-12	54	5	204.7	150.7	14	11.25	-2.75	73	0	-73	222
<b>TOTAL</b>			<b>38.5</b>	<b>5</b>	<b>23.7</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>14.5</b>	<b>115.2</b>	<b>7</b>	<b>3</b>	<b>128.5</b>	<b>21</b>	<b>-107.5</b>	<b>232.3</b>	

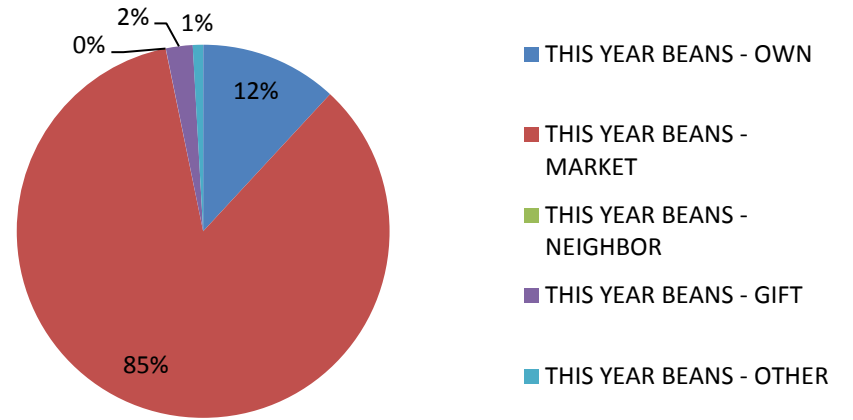
NEIGHBORS

komin	pwa4	pwa9	Dpwa	pitimi4	pitimi9	Dpitimi	mayi4	mayi9	Dmayi	pKongo4	pKongo9	Dpkongo	pistas h4	pistas h9	Dpistach	mounAnplis
Camp Perrin	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	217
Cavillon	10	0	-10	0	0	0	30	0	-30	0	0	0	0	0	0	322
Chantal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46
Chardonnières	0	7.5	7.5	0	2.5	2.5	0.5	0	-0.5	1	1.5	0.5	5	0	-5	238
Les Anglais	0	0	0	0	0	0	0	0	0	0	0.5	0.5	0	0	0	197
Rendel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55
Tiburon	0	0	0	0	0	0	80.5	2	-78.5	60	0	-60	0	0	0	181
Torbeck	3	6	3	0	0	0	0	10	10	0	0	0	0	0	0	222
<b>TOTAL</b>			<b>0.5</b>	<b>0</b>	<b>2.5</b>	<b>2.5</b>	<b>111</b>	<b>15</b>	<b>-96</b>	<b>61</b>	<b>2</b>	<b>-59</b>	<b>5</b>	<b>0</b>	<b>-5</b>	<b>-157</b>

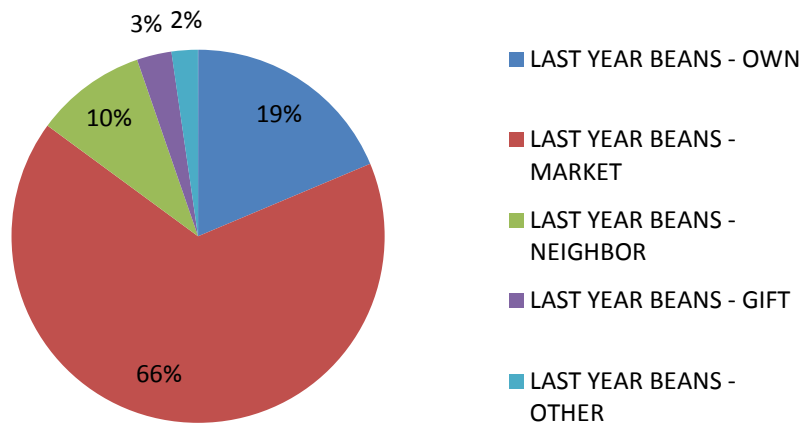
### Bean sources last year, smallholders



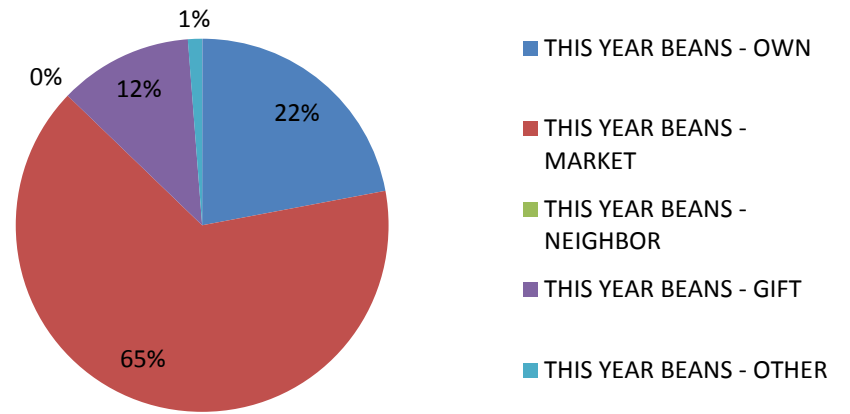
### Bean sources this year, smallholder



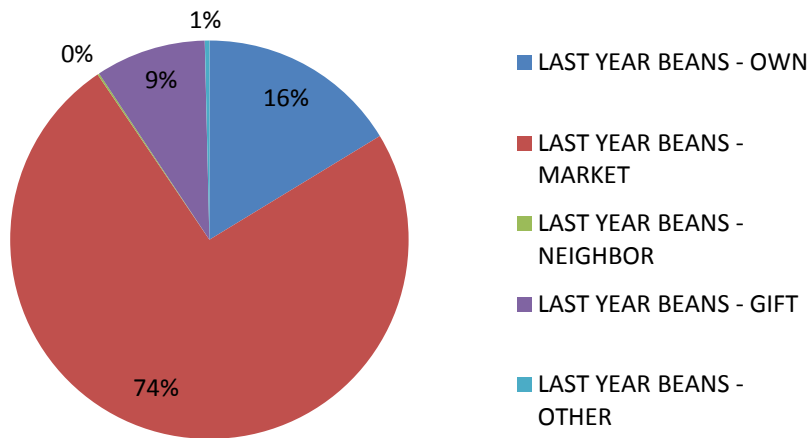
### Bean sources last year, med holders



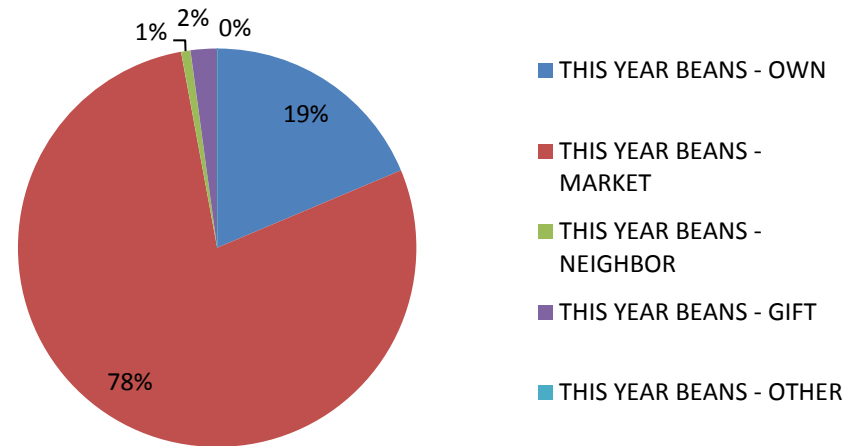
### Bean sources this year, med holders



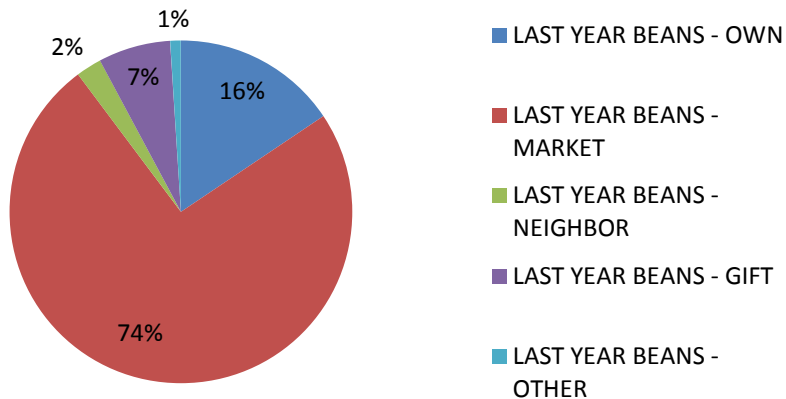
**Sources of beans 2009, larger landholders**



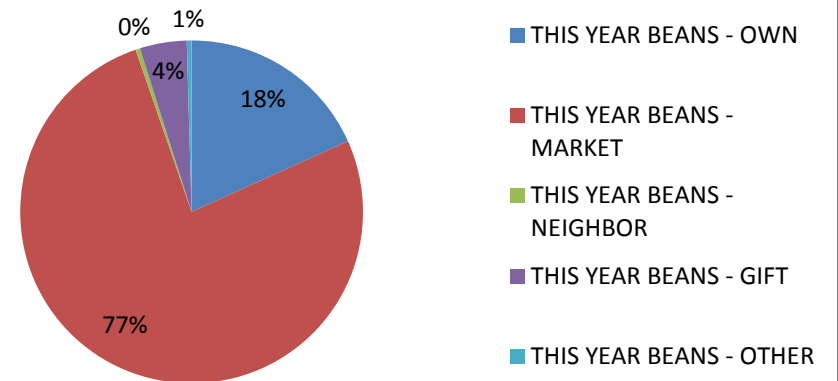
**Sources of bean 2010, larger landholders**



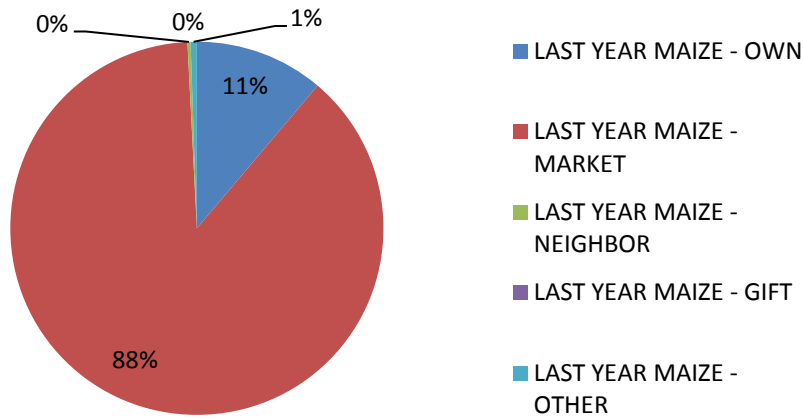
**Sources of bean seed, last year**



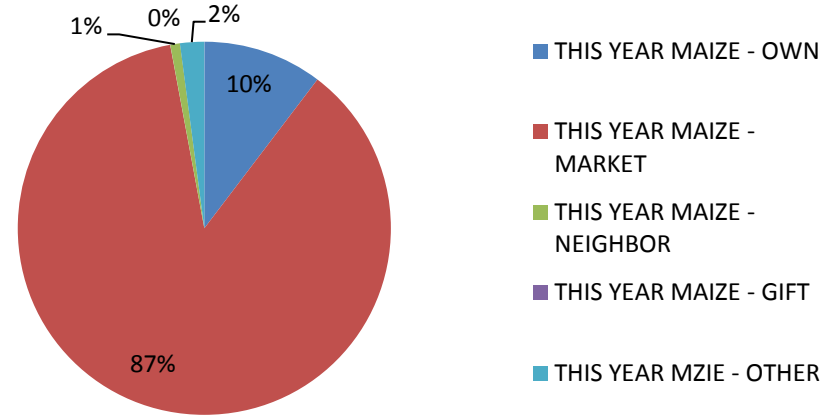
**Sources of bean seed, this year**



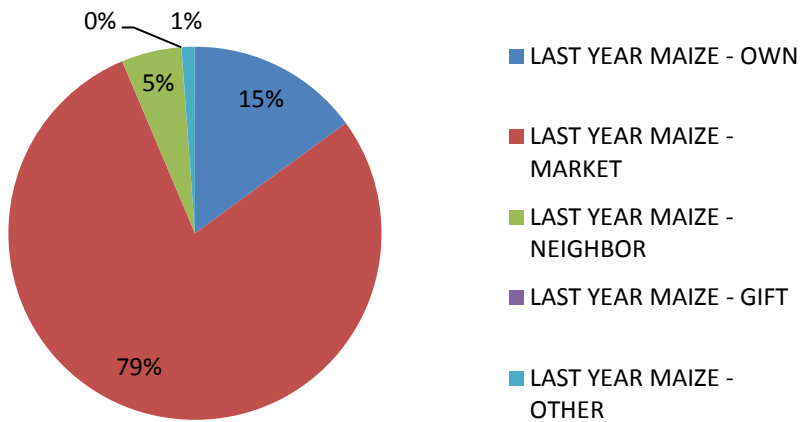
### Maize sources last year, poor



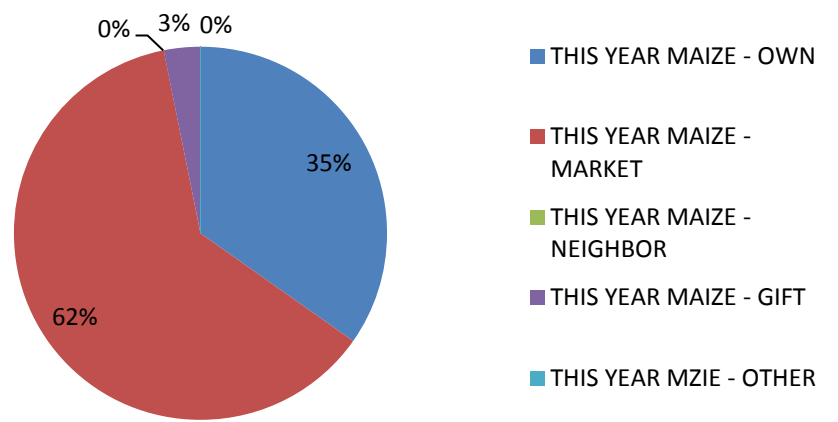
### Maize sources this year, poor



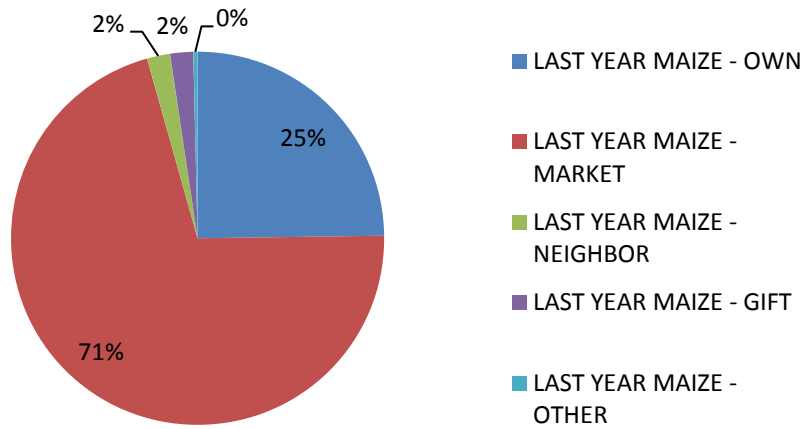
### Maize sources last year, med wealth



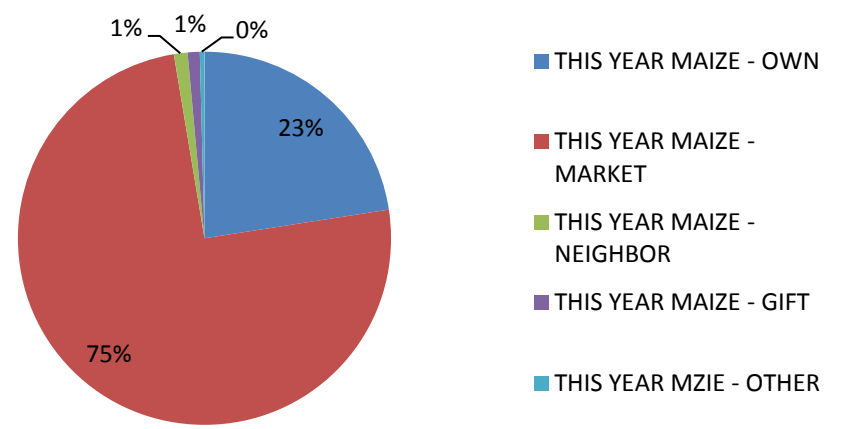
### Maize sources this year, med wealth



### Sources of maize seed, last year



### Sources of maize seed, this year



BEAN AND MAIZE SOURCES BY LANDOWNING CLASS

	LAST YEAR BEANS - OWN	LAST YEAR BEANS - MARKET	LAST YEAR BEANS - NEIGHBOR	LAST YEAR BEANS - GIFT	LAST YEAR BEANS - OTHER	THIS YEAR BEANS - OWN	THIS YEAR BEANS - MARKET	THIS YEAR BEANS - NEIGHBOR	THIS YEAR BEANS - GIFT	THIS YEAR BEANS - OTHER
TOTAL	534.25	2544	83	233.5	34.5	566.75	2375	13.5	137	14
AVER	1.633792	7.685801	0.251515	0.705438	0.103916	1.717424	7.153614	0.040909	0.412651	0.042169
TOTAL POOR	65	561.5	0	36	8.5	66.5	474.5	0	13	5
TOTAL MED	155.25	552.5	80	25	19	162	479	0	85	9
TOTAL BETTER	314	1430	3	172.5	7	338.25	1421.5	13.5	39	0

	LAST YEAR MAIZE - OWN	LAST YEAR MAIZE - MARKET	LAST YEAR MAIZE - NEIGHBOR	LAST YEAR MAIZE - GIFT	LAST YEAR MAIZE - OTHER	THIS YEAR MAIZE - OWN	THIS YEAR MAIZE - MARKET	THIS YEAR MAIZE - NEIGHBOR	THIS YEAR MAIZE - GIFT	THIS YEAR MAIZE - OTHER
TOTAL	273.75	783.15	22	22.25	4	282.25	936.65	15	13	5
AVER	0.824548	2.358886	0.066465	0.067221	0.012048	0.860518	2.821235	0.045181	0.039157	0.01506
TOTAL POOR	20.75	163.4	0.5	0	1	24.75	207.65	2	0	5
TOTAL MED	38.75	203.75	13.5	0	3	132	235.5	0	12	0
TOTAL BETTER	214.25	416	8	22.25	0	125.5	493.5	13	1	0

Surface area planted last year vs this year

komin	Total land	last year	this year	Difference	%	qtF
Camp Perrin	1131.5	562.5	520.5	-42.0	-7.5%	55.0
Cavaillon	1127.0	784.0	787.0	3.0	0.4%	56.0
Chantal	218.0	160.0	147.0	-13.0	-8.1%	10.0
Chardonnières	1355.0	559.0	804.0	245.0	43.8%	46.0
Les Anglais	1243.0	526.5	649.0	122.5	23.3%	55.0
Rendel	393.0	112.0	103.0	-9.0	-8.0%	10.0
Tiburon	1230.0	666.5	795.0	128.5	19.3%	55.0
Torbeck	1242.0	957.5	648.3	-309.3	-32.3%	47.0

Total                      7939.5            4328.0            4453.8            125.8            2.9%

Change in Land Planted 09 -10										
Commune	Surface 09	Surface 10	Change	% Change	# hh members 09	# hh members 10	Land/hh member 09	land/hh member10	qtF	Land Holding
Camp Perrin	562.5	520.5	-42	-7.47%	343.0	562	1.64	0.93	55	1131.5
Cavaillon	780	779	-1	-0.13%	407.0	725	1.92	1.07	55	1111
Chardonnières	671	907	236	35.17%	427.0	720	1.57	1.26	56	1748
Les Anglais	526.5	649	122.5	23.27%	378.0	575	1.39	1.13	55	1243
Tiburon	668.5	797	128.5	19.22%	437.0	618	1.53	1.29	56	1232
Torbeck	1117.5	795.25	-322.25	-28.84%	377.0	645	2.96	1.23	57	1460
Total	4326	4447.75	121.75	2.81%	2369.0	3845	1.83	1.16	334	7925.5



DIFFERENCE IN FERTILIZER USE, MARMITS, 2009-2010

Commune	Pwa lastyear	Pwa thisyear	Beans	Pitimi lastyear	Pitimi thisyear	Sorghum	Mayi lastyear	Mayi this year	Maize	Pkong o lastyear	Pkongo thisyear	Pigeon pea	Pistach lastyear	Pistach thisyear	Peanut
Camp Perrin	812	842	30	0	0	0	655	386	-269	0	78	78	0	0	0
Cavaillon	464	301	-163	0	20	20	398	591	193	0	0	0	0	24	24
Chantal	387	234	-153	0	0	0	392	231	-161	0	0	0	0	0	0
Chardonnières	105	37	-68	0	0	0	12	8	-4	0	0	0	0	0	0
Les Anglais	169.5	122	-47.5	12	21	9	79	110	31	0	1	1	0	0	0
Tiburon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Torbeck	2116	2181	65	124	72	-52	1748	1693.5	-54.5	46	18	-28	0	0	0
<b>TOTAL</b>	<b>4053.5</b>	<b>3717</b>	<b>336.5</b>	<b>136</b>	<b>113</b>	<b>-23</b>	<b>3284</b>	<b>3019.5</b>	<b>264.5</b>	<b>46</b>	<b>97</b>	<b>51</b>	<b>0</b>	<b>24</b>	<b>24</b>

AVERAGE ANTICIPATED HARVEST THIS SUMMER SEASON 2010 (marmits) – totals and averages for 2010

COMMUNE	Pwa total	BEANS av	Pitimi total	SORGHU M av	Mayi total	MAIZE av	pKong o total	PIGEONPE A av	Pistas h total	PEANUT av	Total anticipated harvest, all crops	Av HH size pre-earthquake	Av # IDPs per host HH	Av size of IDP host HH
Camp Perrin	7616	141.0	869.0	16.1	7616.0	141.0	312.0	5.8	0.0	0.0	16716.9	6.2	6.4	12.6
Cavaillon	9736	173.9	1625.0	29.0	9736.0	173.9	1865.0	33.3	220.0	3.9	23596.0	7.3	6.8	14.1
Chardonnières	3601.25	65.5	1757.5	32.0	3601.3	65.5	1697.0	30.9	857.8	15.6	11724.1	7.4	5.9	13.3
Les Anglais	1976	36.6	1192.0	22.1	1976.0	36.6	1104.0	20.4	690.0	12.8	7066.5	6.9	4.8	11.7
Tiburon	3903	69.7	1594.0	28.5	3903.0	69.7	1325.0	23.7	3147.0	56.2	14119.7	7.9	4	11.9
Torbeck	14986	262.9	1076.0	18.9	14986.0	262.9	271.0	4.8	216.3	3.8	32088.5	6.8	6	12.8

**CHANGE IN NUMBER OF HH PLANTING "IMPROVED"  
VARIETIES, 2009-2010**

	BEANS						SORGHUM						MAIZE					
	BEANS LAST YEAR	% of HH last year	BEANS THIS YEAR	% of total surveyed this year	DIFF BEANS	% change this year	SORGHUM LAST YEAR	% of HH last year	SORGHUM THIS YEAR	% of total surveyed this year	DIFF SORGHUM	% change this year	MAIZE LAST YEAR	% of HH last year	MAIZE THIS YEAR	% of total surveyed this year	DIFF MAIZE	% change this year
<b>none</b>	54	16.2 %	85	25.4%	31	9.3%	233	69.8 %	244	73.1 %	11	3.3%	34	10.2 %	52	15.6%	18	5.4 %
<b>local (includes "chicken corn" for maize)</b>	142	42.5 %	118	35.3%	-24	-7.2%	58	17.4 %	59	17.7 %	1	0.3%	259	77.5 %	239	71.6%	-20	-6.0 %
<b>not "local" varieties</b>	138	41.3 %	131	39.2%	-7	-2.1%	43	12.9 %	31	9.3 %	-12	-3.6%	41	12.3 %	43	12.9%	2	0.6 %

	PIGEONPEA						PEANUT					
	PIGEONPEA LAST YEAR	% of HH last year	PIGEONPEA THIS YEAR	% of total surveyed this year	DIFFERENCE PIGEONPEA	% change this year	PEANUT LAST YEAR	% of HH last year	PEANUTS THIS YEAR	% of total surveyed this year	DIFFERENCE PEANUTS	% change this year
	136	40.7%	149	44.6%	13	3.9%	269	80.5%	272	81.4%	3	0.9%
	153	45.8%	145	43.4%	-8	-2.4%	63	18.9%	61	18.3%	-2	-0.6%
	45	13.5%	40	12.0%	-5	-1.5%	2	0.6%	1	0.3%	-1	-0.3%

**BEAN AND MAIZE DATA, BY LANDHOLDING CLASS, based on answers to questions #4 and #9**

"poor" = 0-8 sezieme; "med" = 9-16 sezieme; "better" or "wealthy" = 17 or more sezieme

beans last year

	<i>area</i>	<i>qt</i>	<i>harvest</i>
TOTAL POOR	455	671	2310.25
TOTAL MED	594	831.75	4693.5
TOTAL WEALTH	1441.5	2106.5	9200.5

AV POOR	4.840426	7.138298	24.57713
AV MED	6.061224	8.401515	47.89286
AV BETTER	10.44565	15.15468	66.67029

maize last year

	<i>area</i>	<i>qt</i>	<i>harvest</i>
TOTAL POOR	476	185.65	3765
TOTAL MED	570	259	5380.25
TOTAL WEALTH	1599	660.5	23206.25

AV POOR	5.06383	1.975	40.05319
AV MED	5.757576	2.616162	54.34596
AV BETTER	11.5036	4.751799	168.1612

beans this year

	<i>area</i>	<i>qt</i>	<i>harvest</i>
TOTAL POOR	409	559	2632.5
TOTAL MED	510	735	5261
TOTAL WEALTH	1721	1812.25	16001

AV POOR	4.351064	5.946809	28.00532
AV MED	5.204082	7.424242	53.14141
AV BETTER	12.38129	13.03777	115.1151

maize this year

	<i>area</i>	<i>qt</i>	<i>harvest</i>
TOTAL POOR	475.5	239.4	4346.5
TOTAL MED	652.75	379.5	9303.75
TOTAL WEALTH	1784.25	633	28168

AV POOR	5.058511	2.546809	46.23936
AV MED	6.593434	3.833333	93.97727
AV BETTER	12.83633	4.553957	202.6475

**ALL CROP SEED DATA, BY LANDHOLDING CLASS, based on answers to questions #1 and #5**

"poor" = 0-8 sezieme; "med" = 9-16 sezieme; "better" or "wealthy" = 17 or more sezieme

beans last year

	<i>area</i>	<i>qt</i>	<i>harvest</i>
TOTAL POOR	455	756	2310.25
TOTAL MED	594	904.75	4693.5
TOTAL WEALTH	1441.5	2149.5	9200.5

AV POOR	4.840426	8.042553	24.57713
AV MED	6.061224	9.138889	47.89286
AV BETTER	10.44565	15.46403	66.67029
TOTAL	2490.5	3810.25	16204.25
AVER	7.54697	11.54621	49.10379

maize last year

	<i>area</i>	<i>qt</i>	<i>harvest</i>
TOTAL POOR	476	203.9	3765
TOTAL MED	570	374.5	5380.25
TOTAL WEALTH	1599	720	23206.25

AV POOR	5.06383	2.169149	40.05319
AV MED	5.757576	3.782828	54.34596
AV BETTER	11.5036	5.179856	168.1612
TOTAL	2645	1298.4	32351.5
AVER	7.966867	3.910843	97.73867

## beans this year

	<i>area</i>	<i>qt</i>	<i>harvest</i>
TOTAL POOR	409	540.5	2632.5
TOTAL MED	510	828	5261
TOTAL WEALTH	1721	1959	16001

AV POOR	4.351064	5.75	28.00532
AV MED	5.204082	8.363636	53.14141
AV BETTER	12.38129	14.09353	115.1151
TOTAL	2640	3327.5	23894.5
AVER	7.975831	10.02259	71.97139

## maize this year

	<i>area</i>	<i>qt</i>	<i>harvest</i>
TOTAL POOR	475.5	196.15	4346.5
TOTAL MED	652.75	306.75	9303.75
TOTAL WEALTH	1784.25	674.75	28168

AV POOR	5.058511	2.086702	46.23936
AV MED	6.593434	3.098485	93.97727
AV BETTER	12.83633	4.854317	202.6475
TOTAL	2912.5	1177.65	41818.25
AVER	8.77259	3.547139	125.9586

## sorghum last year

	<i>area</i>	<i>qt</i>	<i>harvest</i>
TOTAL POOR	144.5	45	972
TOTAL MED	168	56	1031
TOTAL WEALTH	622	143.75	4715.5

AV POOR	1.537234	0.478723	10.34043
AV MED	1.69697	0.565657	10.41414
AV BETTER	4.47482	1.034173	33.92446
TOTAL	934.5	244.75	6718.5
AVER	2.814759	0.737199	20.23645

## pigeonpea last year

	<i>area</i>	<i>qt</i>	<i>harvest</i>
TOTAL POOR	286.75	72.5	569
TOTAL MED	314.125	180.28	945.25
TOTAL WEALTH	908.25	239.25	2615.25

AV POOR	3.050532	0.771277	6.053191
AV MED	3.17298	1.82101	9.54798
AV BETTER	6.534173	1.721223	18.81475
TOTAL	1509.125	492.03	4129.5
AVER	4.545557	1.482018	12.43825

## sorghum this year

	<i>area</i>	<i>qt</i>	<i>harvest</i>
TOTAL POOR	164.5	52.7	1248
TOTAL MED	146.5	52.45	1334
TOTAL WEALTH	615	145.75	5631.5

AV POOR	1.75	0.560638	13.2766
AV MED	1.479798	0.529798	13.47475
AV BETTER	4.42446	1.048561	40.51439
TOTAL	926	250.9	8213.5
AVER	2.789157	2.389524	24.73946

## pigeonpea this year

	<i>area</i>	<i>qt</i>	<i>harvest</i>
TOTAL POOR	288	67	851.5
TOTAL MED	376.625	94.71	2461
TOTAL WEALTH	1019.23	240.49	3246.5

AV POOR	3.06383	0.712766	9.058511
AV MED	3.804293	0.956667	24.85859
AV BETTER	7.33259	1.730144	23.35612
TOTAL	1683.855	402.2	6559
AVER	5.071852	1.211446	19.75602

HH (TOTAL SURVEYED) BY LANDHOLDING CLASS AND NUMBER OF IDPs

<b>Smallholders, &gt;5 IDPs</b>		<b>Med holders, &gt;5 IDPs</b>		<b>Larger holders, &gt;5 IDPs</b>	
8	Torbeck, poor, >5 IDPs	6	Torbeck, med, >5 IDPs	6	Torbeck, better, >5 IDPs
1	Tiburon	3	Tiburon	5	Tiburon
4	CP	5	CP	7	CP
2	Cavaillon,	6	Cavaillon,	10	Cavaillon,
8	Chardonniere	3	Chardonniere	12	Chardonniere
2	Les Anglais	4	Les Anglais	2	Les Anglais
<b>Smallholders, 1-5 IDPs</b>		<b>Med holders, 1-5 IDPs</b>		<b>Larger holders, 1-5 IDPs</b>	
8	Torbeck, poor, 1-5 IDPs	4	Torbeck, med, 1-5 IDPs	10	Torbeck, better, 1-5 IDPs
10	Tiburon	10	Tiburon	16	Tiburon
10	CP	8	CP	4	CP
9	Cavaillon,	13	Cavaillon,	10	Cavaillon,
2	Chardonniere	10	Chardonniere	14	Chardonniere
8	Les Anglais	8	Les Anglais	18	Les Anglais
<b>Smallholders, 0 IDPs</b>		<b>Med holders, 1-5 IDPs</b>		<b>Larger holders, 1-5 IDPs</b>	
5	Tor, poor, 0 IDPs	3	Tor, med, 0 IDPs	7	Tor, better, 0 IDPs
3	Tiburon	7	Tiburon	1	Tiburon
5	CP	3	CP	8	CP
2	Cavaillon,	2	Cavaillon,	2	Cavaillon,
4	Chardonniere	1	Chardonniere	2	Chardonniere
5	Les Anglais	3	Les Anglais	5	Les Anglais

## Appendix 3: Focus Group Guide

### Discussion Focus Group

- 1) Qu'est-ce qui est changé dans vos ménages et dans la communauté depuis que les gens sont venus de Port-au-Prince après le tremblement de terre ? (question ouverte)
- 2) Comment vous avez répondu à ces changements? (strategies de survie)  
*(prompts/ questions pour creuser):*
  - a. Les dépenses?
  - b. Le stock de semences ou graines?
  - c. La ventes des actifs?
  - d. La planification de l'agriculture (production, semis, intrants) pour cette saison?
  - e. La changements des habitudes de manger ?
  - f. Les sources additionnelle de l'argent?
  - g. Autre?
- 3) Quel est votre plan pour l'agriculture cette saison (production, semis, entrants, etc) ?
  - a. Labour (avoir/ utiliser plus)
  - b. Intrants: semences, engrais, pesticides
  - c. Est-ce qu'il y a assez de semences disponible dans le zone? Où?
  - d. La terre (utiliser plus)
  - e. Equipement
  - f. Outils
  - g. Eau
  - h. Cultures (plus les high value, labour-intensif)
- 4) Est-ce que la qualité des semences que vous obtenez de ces sources variées (vous-mêmes, le marché, les voisins, les ONGs, les dons) est suffisante pour la plupart des agriculteurs?
  - a. Si non, quelles sont les problèmes liés à la qualité?
  - b. Est-ce qu'on utilise les semences améliorées ? Certifiées ?
    - i. Si non, pourquoi ? Ils sont pas disponibles ? On n'a pas d'accès (cash ou crédit) ? On ne voit pas l'importance/ la qualité suffit?
- 5) Est-ce que le marché a changé depuis le tremblement de terre?
  - a. Où est-ce que vous obtenez la nourriture normalement? Pour quels genre de choses dépendez-vous sur le marché ?
  - b. Est-ce que la disponibilité ou le cout des biens dans le marché a change depuis le tremblement de terre?
  - c. Est-ce que votre acces aux marches a change depuis le tremblement de terre? Comment?
  - d. Est-ce que la capacité des gens d'acheter les biens au marché a change depuis le tremblement de terre? Pourquoi ?

## Appendix 4: Household Survey

ID \_\_\_\_\_

### ENQUETE RAPIDE DES MÉNAGES DE LA SÉCURITÉ SÉMENCIÈRE

Commune		Nom de participant	
Village		Sexe de participant (H/F)	
Nom d'enquêteur		Date	

### INFOS SUR LA PRODUCTIONS ET LES SEMENCES AU COURS D'UNE ANNÉE NORMALE/ L'ANNÉE DERNIÈRE

1. Quelles cultures avez-vous plantées au cours de cette saison l'année passée, et en quelles quantités ?

CULTURE	Variété a.	Superficie plantée (seizième) b.	Quantité des semences planté (marmit/pot) c.	Récolte (marmit/pot) d.	Utilisation des engrais chimique ou organique		
					Type e.	Quantité f.	Source (lieu d'achat) g.
Haricots							
Petit mille							
Mais							
Pois Congo							
Arachide							
Autre							
Autre							

2	Quelle superficie totale avez-vous cultivé pendant cette saison l'année passée ?	(unité = seizième)	
3	Quelle superficie cultivable possédez-vous en totale ?	(unité = seizième)	
4	Au cours d'une année normale, comment accédez-vous aux semences pour cette saison de plantation (fév/mars) ? (Indiquer comme pourcentage de vos besoins semenciers totaux)	Remplissez le tableau ci-dessous	

CULTURE	Variété a.	Propres semences – sauvegardé b.	Marché c.	Voisin/ famille/ échange d.	L'aide (ONG/gouv.) e.	Autre f.
Haricots						
Petit mille						
Mais						
Pois Congo						
Arachide						
Autre						
Autre						

### LES INFOS SUR LA PRODUCTION ET LES SEMENCES AU COURS DE CETTE SAISON

5. Comment vous avez planifié la plantation pour cette saison ? Remplissez le tableau.

CULTURE	Variété a.	Superficie d'être cultivée (seizième) b.	Quantité des semences exigée (marmit/pot) c.	Récolte attendue (marmit/pot) d.	Utilisation planifiée des engrais chimique ou organique		
					Type e.	Quantité f.	Source (lieu d'achat) g.
Haricots							
Petit mille							



Mais							
Pois Congo							
Arachide							
Autre							
Autre							

6	Si vous utilisez les quantités de semences qui sont différents cette année par rapport à l'année passée, pourquoi ?		
7	Quelle est la superficie totale que vous allez planter cette année ?	(unité = seizième)	
8a.	Est-ce que la superficie totale que vous cultiverez sera différente cette saison par rapport à l'année passée ?		
8b.	Si la superficie total qui est cultivé sera différent cette saison par rapport à l'année passée, pourquoi ?		
9	Cette saison, comment vous aurez accès aux semences ? (Indiquer comme pourcentage de vos besoins semencières totaux)	Remplissez le tableau	

CULTURE	Variété	Propres semences – sauvegardé	Marché	Voisin/ famille/ échange	L'aide (ONG/gouv.)	Autre
	a.	b.	c.	d.	e.	f.

Haricots						
Petit mille						
Mais						
Pois Congo						
Arachide						
Autre						
Autre						

10a	Pouvez-vous accéder aux assez de semences pour couvrir vos besoins du marché ?	<i>(oui/ non)</i>	
10b	Si les sources desquelles vous avez accédé à vos semences ont changé cette saison par rapport à cette saison de l'année passée, pourquoi ?		
11	Est-ce que vous vendez ou échangez vos propres semences ?	<i>(oui/ non)</i>	

### LES INFOS SUR LE BIEN-ETRE ET LES MÉNAGES

12	Combien de personnes habitaient dans votre ménage avant le tremblement de terre ?		
13a	Est-ce qu'il y a des personnes additionnelles qui logent chez vous actuellement à cause du tremblement de terre ?	<i>(oui/ non)</i>	
13b	<b>Si OUI</b> , combien de personnes additionnelles ?		
14	Quels sont TROIS choses qui ont changé depuis la présence de ces personnes additionnelles dans votre ménage ? <i>Ecrire les trois les plus importants.</i>		
15	Dans les périodes difficiles, qu'est-ce que vous faites pour assurer que le ménage a assez à		

	manger ? <i>(Vente des bétails, vente de charbon; main d'œuvre; manger moins, manger ou vendre les stocks de semences ou grains; vendre les autres actifs, etc)</i>		
16	Qu'est-ce qui vous empêche d'avoir plus de production agricole au cours de cette saison ?		
17	Combien de bêtes possédez-vous, et de quelle quantité ?	<i>Remplissez le tableau</i>	

<b>Animaux</b>	<b>Quantité</b>
Boeufs	
Cabris	
Moutons	
Poules	
Cochons	

18a	Est-ce que les membres de votre ménage ont assez de manger aujourd'hui ?	<i>(Oui/ non)</i>	
18b	<b>Si NON</b> , combien de fois est-ce que les membres de votre ménage mangent par jour ?		

## Appendix 5: Seed and Fertilizer Vendor Survey

### Enquête Vendeurs de Semence

1. Dans quelles marches vendez-vous normalement?
2. Quelles semences vendez-vous normalement pendant cette saison (Fév.-Mars)?

Semences	Variété	Unité (marmite, pot)	Quantité vendu pendant cette saison normalement	Prix/ (marmite/pot)		Source:		
				L'année dernière	Cette saison	Soi-Même	Paysans	Commerce (spécifier)
Mais								
Haricot								
Pois Congo								
Sorgho								
Pistache								
Autres								

3. Avez-vous assez de semences cette saison pour couvrir la demande normale? Oui/Non
4. Y-a-t-il des difficultés pour procurer des semences cette saison? Oui/Non
  - a. Si oui, pourquoi?
5. Est-ce que la demande est différent cette saison par rapport a cette saison l'année dernière? Oui/Non
  - a. Si oui, quelle est la différence?
  - b. Si oui, pourquoi pensez-vous y-a t'il une différence?
6. S'il y a demande additionnelle pour semences dans les prochaines semaines, quelle quantité des semences pouvez-vous procurer?
  - a. D'ou?
7. Faites-vous distinction entre semences et grènes? Oui/Non
  - a. Si vous faites la distinction quand vous achetez des semences, quelles sont les critères que vous utilisez?

- b. Si vous faites la distinction quand vous vendez des semences quelle est la différence dans la façon que vous vendez semences et grènes? [prix, emballage, quantité]

8. Vendez-vous d'engrais chimique?

Type d'engrais	Unités (sac 50kg, marmite, pot)	Price/ unité		Quantité vendu normalement cette saison	Source d'achat:
		Année dernière	Cette saison		

9. Avez-vous assez d'engrais pour couvrir la demande normale? Oui/Non

10. Avez-vous des difficultés pour procurer d'engrais cette saison? Oui/Non

a. Si oui, pourquoi?

11. Est-ce que le prix que vous payez pour l'engrais a beaucoup changé pendant l'année? Oui/Non

a. Si oui, pourquoi?

12. S'il y a de la demande additionnelle, quelle quantité d'engrais pouvez-vous procurer?

a. D'ou?