



USAID
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USAID OFFICE OF FOOD FOR PEACE GUATEMALA BELLMON ESTIMATION

OCTOBER 2011

This publication was produced for review by the United States Agency for International Development. It was prepared by Fintrac Inc.

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Preface

During the months of June to August 2011, the Bellmon Estimation Studies for Title II (BEST) team undertook a study of the current state of agricultural markets in Guatemala to inform USAID food aid programming decisions.

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Acronyms and Notes

ACODIHUE	Association for the Cooperation of Integrated Development in Huehuetenango
AOTR	Agreement Officer Technical Representative
ARROZGUA	La Asociación Guatemalteca del Arroz
BCC	Behavior Change Communication
BEST	Bellmon Estimation Studies for Title II
CACM	Central American Common Market
CCS	Consejo de Cohesion Social
CCT	Conditional Cash Transfer
CDSO	Crude Degummed Soybean Oil
CFSAM	Crop and Food Security Mission
CIA	Central Intelligence Agency
CLT	Compañía de Logística y Transporte
COTONEB	Cooperativa Agrícola Integral para Todos los Nebajenses
CRS	Catholic Relief Services
CSB	Corn Soy Blend
DR	Dominican Republic
DR-CAFTA	Dominican Republic – Central America Free Trade Agreement
ECLAC	Economic Commission for Latin America and the Caribbean
ENSMI	Encuesta Nacional de Salud Materno Infantil
FAO	Food and Agriculture Organization of the United Nations
FEWS NET	Famine Early Warning System Network
FFA	Food For Assets
FFP	Food For Peace
FFPr	Food For Progress
FFP/W	Food For Peace/Washington
FFW	Food for Work
FY	Fiscal Year
GAIN	Global Agriculture Information Network
GDP	Gross Domestic Product
GMO	Genetically-Modified Organism
GoG	Government of Guatemala
HRWW	Hard Red Winter Wheat
IDB	International Development Bank
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IICA	Inter-American Institute for Cooperation on Agriculture
IMDI	Institucion Mam de Desarrollo Integral
IMF	International Monetary Fund
LRP	Local and Regional Procurement
MAGA	Ministry of Agriculture, Livestock and Food
MCHN	Maternal Child Health and Nutrition
MIFAPRO	Mi Familia Progresa
MYAP	Multi-Year Assistance Program
NGO	Non-Governmental Organization
OIRSA	El Organismo Internacional Regional de Sanidad Agropecuaria
P4P	Purchase for Progress
PCI	Positive Community Impact (formerly known as Project Concern)

	International)
PEPFAR	President's Emergency Plan for AIDS Relief
PLW	Pregnant and Lactating Women
PM2A	Preventing Malnutrition In Children Under 2 Approach
PROCOMIDA	Programa Comunitario Materno Infantil de Diversificación Alimentaria
PVO	Private Voluntary Organization
SADEGUE	La Asociación Servicios y Apoyo al Desarrollo de Guatemala
S-C-P	Structure-Conduct-Performance
SESAN	Secretaría de Seguridad Alimentaria y Nutricional
SINASAN	Ley del Sistema Nacional de Seguridad Alimentaria y Nutricional
SOSEP	Secretaría de Obras Sociales de la Esposa del Presidente
SPS	Sanitary and Phytosanitary Standards
SYAP	Single-Year Assistance Program
TERPAC	Terminal de Granos del Pacífico Limitada
TRQ	Tariff Rate Quota
USAID	United States Agency for International Development
USD	United States Dollar
USDA	United States Department of Agriculture
USG	United States Government
WFP	World Food Programme
WTO	World Trade Organization

Note: This Analysis uses an exchange rate of US\$1 = GQT 7.85, per 07/13-08/13 average (XE.com 2011).

Chapter 1. Executive Summary

This report presents findings to support a Bellmon Determination in advance of a Fiscal Year (FY)12 USAID Title II development program in Guatemala. Since monetization is likely to fund at least a portion of these activities, the Bellmon Estimation Studies for Title II (BEST) team conducted a market analysis of key commodities to assess the feasibility and appropriateness of monetization of Title II commodities. This study is based on a desk study and field work conducted during the period June to August 2011.

1.1. Food Aid Overview

Guatemala is a major receiver of US food aid for the purpose of combating food insecurity and overcoming malnutrition. The US Government (USG) distributes food aid through USAID and US Department of Agriculture (USDA) programs. The USAID Title II programs include: Title II development programs (formerly known as MYAPs), Single Year Emergency Assistance Programs (SYAPs), and Preventing Malnutrition in Children Under Two Years of Age Approach (PM2A). The USDA programs include: Food for Progress, McGovern-Dole International Food for Education and Child Nutrition Program (FFE), and Local and Regional Procurement (LRP). There is also some school feeding, disaster relief and food and cash transfer by the Government of Guatemala and to a lesser extent, World Food Program (WFP).

USAID. Current MYAP partners are Catholic Relief Services (CRS), working in San Marcos and Baja Verapaz; Save the Children in Quiché; and SHARE in Huehuetenango and Chimaltenango. The MYAP programs have reached 694 communities and over 35,500 beneficiaries. The MYAP programs began their five-year cycle in FY07, and are scheduled to end in FY11. USAID implementing partners use food aid rations for targeted supplementary feeding for children 6-36 months old and pregnant/lactating women (PLWs). The Food for Work (FFW) activities and additional resources, have intended to improve rural infrastructure and agricultural production (USAID, 2010).

Additionally, the PM2A MYAP Awardee is Mercy Corps in Alta Verapaz. The program targets communities in five municipalities, in efforts to reach children under age two and pregnant/lactating women. The PM2A program is very research-oriented and Mercy Corps and International Food Policy Research Institute are collaborating for monitoring of the study.

In the past two years, USAID SYAPs were instituted to respond to a variety of emergencies including droughts, heavy rains, food insecurity, and acute malnutrition. SYAPs include monthly food distributions and related FFW programming. SYAPs are not funded through monetization. The 2011 SYAP partners are CRS in Jalapa; SHARE in Jutiapa; Positive Community Impact¹ (PCI) in Huehuetenango; and Save the Children in Chiquimula.

In the past five years, over 35,000 MT of development food aid and over 11,000 MT of emergency food aid have been distributed.

USDA. Currently, PCI is implementing a FFE in six municipalities in Huehuetenango. SHARE is finishing up a FFE in Baja Verapaz, Chimaltenango and Huehuetenango, and in the coming

¹ The acronym for PCI formerly stood for Project Concern International.

year they will be adding Quiché. CRS has been implementing an LRP Pilot project with Caritas in Santa Rosa, which is scheduled to end in September 2012. The Food for Progress programs implement agricultural and economic development related programs, generally funded through monetizations of soybean meal and yellow maize.

Government of Guatemala. GoG programs include food and cash transfers. The Bolsa Solidaria, a program of the Ministry of Agriculture, distributes food rations to urban and rural areas. Beneficiary selection and frequency of ration distribution is not straightforward. Mi Familia Progresá, is a conditional cash transfer program of the Ministry of Education, that provides families cash for health and education related criteria.

Feed the Future. USAID/Guatemala has made a commitment to focus efforts in the western highlands, in the departments of Huehuetenango, Quetzaltenango, Quiché, San Marcos, and Totonicapán. These areas are of the largely indigenous populations where poverty and food insecurity are extensive. USAID has indicated that applicants should focus Maternal Child Health and Nutrition (MCHN) activities toward pregnant and lactating women and children under the age of two (“first 1,000 days”), and that agricultural activities should focus on strengthening small-scale production and diet diversity. The new MYAPs will work in coordination with other USG agencies and in effort to collaborate with all Feed the Future initiatives (USAID, 2010).

1.2. Adequacy of Ports, Storage, and Transport

Guatemala meets Bellmon requirements in terms of ports, storage, and transport. The country has two ports which are both capable of handling food aid. Main roads are in good condition, and secondary roads only occasionally experience delays due to rain. Private Voluntary Organization (PVO) storage capacity is adequate for current volumes of food aid, and warehouses visited were in generally good condition.

All distributed food aid destined for Guatemala is currently imported through Puerto Santo Tomás, as well as monetized shipments of Crude Degummed Soy Oil (CDSO).² Puerto Quetzal has received grain shipments for USDA monetizations, and will be used in the future if bulk grains are monetized under USAID. Both ports are well-equipped with few, if any, traffic delays. Delays in the customs process, however, is a current issue for PVOs importing food aid for distribution. Obtaining and processing proper tax and port fee exemption documents can take up to one month from the time the ship docks. PVOs appear to be doing everything they can to speed up the process, but the main Superintendencia de Administración Tributaria (SAT) office takes up to three weeks to issue tax exemption forms. This bottleneck increases the likelihood of delays in program implementation, the likelihood of infestation, and the likelihood of additional fees for waiting time at the port. The administrative burden of coordinating import procedures is significant for most PVOs, despite the fact that they have a customs clearance agent at the port, as well as a reliable transport partner, to assist in the process. Fumigation at the port can also add delay time, if inspection reveals an unidentified pest.

All PVO warehouses are rented, and most are located in secure compounds. The BEST team visited six³ PVO warehouses during July/August 2011, and found most in good condition. Main

² Santo Tomás also receives some food aid destined for El Salvador.

³ BEST visited a CRS warehouse in Villa Nueva, and its partner CARITAS warehouse in San Marcos, as well as SHARE's warehouse in Huehuetenango, Save the Children's warehouse in Zacapa, PCI's warehouse in Huehuetenango, and Mercy Corps' warehouse in Alta Verapaz.

warehouses appear to be well-maintained, well-staffed, clean, and organized. Warehouse staff reported losses of less than one percent. The recently-constructed Mercy Corps warehouse is especially well-kept, and benefits from a design customized for food aid storage. The single local counterpart warehouse visited by BEST was in poor condition. Although secondary storage facilities are only temporary holding points for food⁴, PVOs should still inspect facilities regularly to ensure minimum standards of cleanliness and commodity management are in place.

1.3. Monetized Food Aid

This Chapter is meant to inform USAID in its determination of the appropriateness of monetization in Guatemala during FY12. The BEST study team performed a desk review to identify an initial set of commodities for study in this report. The selection is based on available trade statistics, previous Bellmon studies, review of other relevant country reports, and interviews with key informants during a July/August 2011 field visit. For the purpose of this study, in order for a particular commodity to qualify for selection and possible recommendation for monetization, the following six “tests” were applied (further details in Chapter six):

1. Eligibility for export from the US.
2. Eligibility for import to Guatemala.
3. Significance of domestic demand.
4. Whether domestic supply shortfalls are filled through commercial imports and food aid.
5. Presence of adequate competition for the commodities.
6. Expectations that fair market prices can be achieved.

Six commodities were assessed for potential monetization: wheat grain, CDSO, yellow maize, soybean meal, rice, and Non-Fat Dry Milk (NFDM).

There are two overarching challenges PVOs face when attempting to monetize Title II food aid commodities in Guatemala. Both are related to the nature of the Guatemalan economy. First, commodity markets reflect Guatemala's status as a middle-income country; potential buyers of monetized commodities have well established supply chains, the ability to access credit and, access to high quality US commodities through their normal supply chains and, therefore, the typical advantages of participating in monetization (access to high quality US commodities, payable in local currency), are largely moot. Second, Guatemalan food imports and processing companies are controlled to a great extent by an oligarchy, which further constrains the ability of PVOs to issue open tenders and receive competitive bids. While the first disadvantage (inherently weaker bargaining position due to lack of knowledge on the PVO side) can be largely overcome with adequate market analysis, the second disadvantage reasonably warrants a reduction in the purchase price for Title II commodities.

A summary of the team's findings and recommendations follows.

Wheat grain. Despite Guatemala's dependence on maize as the primary staple, there has always been some consumption of wheat, even if primarily in urban areas and certain regions where soft wheat has traditionally been grown. That the largest milling company in Latin America was first built in Quetzaltenango more than 70 years ago speaks to the history of wheat consumption and importance of the wheat milling industry in Guatemala. As in many other developing countries, demand for wheat and wheat products has steadily grown in concert with

⁴ Most distribution-point warehouses store food for no more than a month.

population growth and increasing urbanization. Breads and pastas are widely available in municipal markets, as are cakes and cookies.

Nearly all of Guatemala's wheat supply is imported commercially, and wheat grain is among Guatemala's top commercial imports. While Guatemala has long been a net importer of wheat, domestic production of soft wheat has declined substantially in the last decades.

The Guatemalan wheat market is heavily concentrated. Though there are seven⁵ operational mills, the largest company, Molinos Modernos, owns four of those mills and has an estimated 70 percent market share. A fully vertically-integrated company, Molinos has its own vessels which allow it to procure grains for its own Group's businesses; in addition, Molinos resells to other Guatemalan mills. As with several of the other largest Guatemalan industries reviewed in this study, the Molinos Group is vertically integrated, with its own well-established supply chains to serve the Group's businesses.

Given the apparent lack of competition, the nature of the wheat market in Guatemala, the prospect of obtaining a fair market price appears low.⁶ At this time, the study team does not recommend monetization of wheat grain for FY12. However, should USDA secure a fair market price in upcoming wheat grain monetizations, future Title II Awardees may wish to review USDA experience to assess whether monetization beyond FY12 may prove worth consideration.

CDSO. Large-lot Crude Degummed Soybean Oil (CDSO) monetization has been the mainstay of the Title II monetization program in Guatemala for nearly ten years. Prior to a shift in USAID/FFP policy, Title II Awardees monetized primarily yellow maize and soybean meal, commodities which are commonly used for the manufacture of animal feed. However, FFP/W indicated that monetization of animal feed would no longer be allowed after 2002, which led the Consortium to switch to monetizing solely CDSO. Title II partners have long discussed the need to diversify the commodities for monetization because of the dependence on a single commodity in a market where, despite the presence of four refining companies, the Awardees face a sole buyer because of the nature of the market, and standard business practices of other potential buyers.

Monetized CDSO is currently purchased by only one buyer, Olmeca. For this company, Title II monetized CDSO represents 50-70 percent of the company's CDSO imports. CDSO is blended with locally produced palm oil to make vegetable oil. Despite the lack of competition and inherently weaker bargaining position, CRS has been able to employ a commercial-style "price-to-be-determined" contract to arrive at a final sales price, which is set on a C&F Puerto Santo Tomas basis. The contract mechanism sets a reference price based on Chicago Board of Trade (CBOT) Free on Board (FOB) Gulf prices for future delivery the month the vessel is anticipated. Sales prices reached an average of 100 percent of estimated import parity price (IPP) using a C&F Puerto Santo Tomas price for Argentine CDSO. Performance has been consistent throughout the nearly five-year period analyzed

⁵ Officially, there are 11 mills; however, of these only 7 are operational, with the other 4 idle as "a reserve for any growth in the market or to cover any unforeseen or technical failures in one of the major mills in each group" (Personal Communication, August 27, 2011).

⁶ As a reference, August 26, 2011 prices can be estimated on a base of 36/MT, freight of \$26 to \$30 per MT and insurance of US\$1.5 per MT. Current futures prices are: (1) HRS 404 for a CIF Puerto Quetzal price of US\$468 per MT, (2) HRW 354 for a CIF Puerto Quetzal price of US\$418 per MT, and (3) SRW 285 for a CIF Puerto Quetzal price of US\$349 per MT.

The Title II monetization lead has effectively developed a contract instrument which successfully mimics a commercial transaction, with one exception. The Title II Awardees are unable to negotiate a fair freight rate (having already accepted C&F rates despite that the buyer enjoys assurance that he will pay only for the tonnage actually delivered⁷), because the Awardees have a weak bargaining position when negotiating with what is in effect a single buyer with monopsony power.

The team recommends a renegotiation of freight rates based on actual freight rates for similar tonnages of CDSO from Argentina. Barring the availability of more informed freight rates, the team suggests opening the sales via placement of detailed tenders in newspapers to increase awareness.

The team finds that monetization of up to 10,115 MT of CDSO would have no discernible negative impact on the Guatemalan edible oil market, and could generate funds of just under US\$12.9 million annually, assuming a C&F Puerto Santo Tomas of approximately US\$1,275 per MT. The recommended sales platform is tender/bids to negotiated or multiple buyers. This will enable the smaller, medium-scale buyers to participate and may help increase competition.

Rice. Guatemala's rice production meets only one-fifth to one-third of its rice supply, with commercial imports comprising the bulk of supply, and food aid imports accounting for the small remainder (approximately 5 percent of the total supply). In order to support local rice production and discourage speculation in the rice market, current Government of Guatemala (GoG) policy requires Guatemalan rice millers to first purchase all of the local rice crop before they may be issues certificates to import rice commercially.

To the best of the study team's knowledge, neither paddy (aka "rough rice") nor milled rice have been previously monetized in Guatemala. Therefore, there are no past sales to inform an assessment of past performance in achieving a fair market price.

The study team recommends US #2 long grain paddy rice for monetization for FY12 for the following reasons:

- There is a substantial commercial market for US long grain paddy rice, with growing commercial imports already sourced almost exclusively from the US.
- Trade policies favor the import of paddy rice from the US without bumping up against a quota or tariff. Specifically, the Tariff Rate Quota (TRQ) for paddy rice is 75,000 MT for 2011, and should rise to 77,500 MT for 2012, and an additional 2,500 MT each year thereafter.
- The professional association which represents both producers and millers, ARROZGUA, is willing and appears able to assist with a monetization sale in such a way as to encourage/ensure competitive process, which is key to ensure a fair market price is achieved from the sale and that local market actors are not disrupted.
- Monetization of a small volume of paddy rice would have no discernible impact on normal trade relations between the Guatemala and its usual trading partner in the rice market (the US), but would simply substitute for a very small volume of normal US commercial sales in support of food security activities in Guatemala.

⁷ Prices are set on a C&F Puerto Santo Tomas basis. This results in the USG effectively subsidizing the insurance coverage the buyer enjoys. This is reasonably offset by a discount for the uncertainty related to precise timing of deliveries

The team recommends PVOs issue open tender through ARROZGUA. While the most promising potential buyers may be the three largest millers, because it represents both producers and millers, ARROZGUA has an incentive to ensure an open and competitive tender process.

Provided the monetization is conducted through an open and competitive process, the BEST team finds that monetization of up to 8,000 MT per year would have no discernible negative impact on the Guatemalan rice market, and could generate approximately US\$2.8 million in funds for food security activities in Guatemala assuming a CIF Puerto Quetzal of US\$350 per MT.

At the time of this writing, paddy rice ("rough rice") is not a commodity available for use under U.S. Government food assistance programs.

Yellow maize. Yellow maize (aka corn) is primarily for animal feed (about 95 percent), and for processed snack foods (remaining five percent). The animal feed industry is composed of a variety of companies (see Chapter 5 for a full list of companies) of all sizes, from vertically-integrated poultry producers to companies that focus on both livestock rearing and marketing to businesses engaged exclusively in the manufacture and marketing of feed. The same companies also import soybean meal, which they combine with the yellow maize to manufacture animal feed.

Yellow maize was monetized in FY06 and FY10 by USDA partners.

The study team recommends US No. 2 yellow corn for monetization for FY12 for the following reasons:

- There is a substantial commercial market for US No. 2 yellow corn, with growing commercial imports already sourced almost exclusively from the US.
- Trade policies favor the import of US yellow corn from the US without bumping up against a quota or tariff. Specifically, the TRQ for yellow maize is 650,000 MT for 2011, and should rise to 675,000 MT for 2012, and an additional 25,000 MT each year thereafter.
- Monetization of a small volume of yellow maize would have no discernible impact on normal trade relations between Guatemala and its usual trading partner in the yellow maize market (the US), but would simply substitute for a very small volume of normal US commercial sales in support of food security activities in Guatemala.

Provided the monetization is conducted through an open and competitive process, the team finds that monetization of up to 62,450 MT per year would have no discernible negative impact on the Guatemalan yellow maize market, and could generate approximately US\$22.5 million¹ in funds for food security activities in Guatemala assuming a Cost, Insurance, Freight (CIF) price Puerto Quetzal of US\$360 per MT.

Soybean Meal. Soybean products are used for two primary purposes in Guatemala: soybean meal for the manufacture of animal feed and, to a much lesser extent, as a source of vegetable protein in the production of nutritional supplements for human consumption. Within the feed industry, as a general rule, yellow maize and soybean meal are consumed in a 2:1 ratio (two units of yellow maize to every one unit of soybean meal).

¹ As of this writing, CIF Puerto Quetzal reference price for delivery in October 2011 is between US\$360 to US\$365 per MT.

There is no domestic production of soybean meal. The entire supply of soybean meal is met through commercial imports and monetized food aid. USDA Awardees frequently monetize soybean meal.

The study team recommends bulk US soybean meal (48 percent protein) for monetization in FY12 for the following reasons:

- There is a substantial commercial market for US soybean meal, with growing commercial imports already sourced almost exclusively from the US.
- Trade policies favor the import of US soybean meal, as there are no quotas or tariffs for soybean meal from the US.
- Monetization of a small volume of soybean meal would have no discernible impact on normal trade relations between Guatemala and its usual trading partner in the soybean meal market (the US), but would simply substitute for a very small volume of normal US commercial sales in support of food security activities in Guatemala.

Provided the monetization is conducted through an open and competitive process, the team finds that monetization of up to 25,315 MT per year would have no discernible negative impact on the Guatemalan soybean meal market, and could generate approximately US\$11.3 million annually⁹ in funds for food security activities in Guatemala assuming a CIF Puerto Quetzal of US\$447 per MT.

NFDM. Consumption of milk and milk products is low in Guatemala relative to many of its Central American neighbors. Powdered milk is the main form of milk consumed in the country, but they compete with maize-based, or maize/soy-based powdered products for making atols (e.g., Incaparina). Although both consumption and domestic milk production have grown in recent years, Guatemala's production and consumption are among the lowest in the region. There is no domestic production of powdered milk (fat, non-fat, or skim milk powder).

The market for NFDM is limited, and monetization of a reasonably small volume would generate just under US\$563,000, assuming monetization of ten percent of average annual commercial volumes (i.e., 169 MT at US\$3329 per MT).¹⁰ Given the lack of experience in the NFDM market, and the apparent disinterest of potential buyers, the study team recommends against considering monetization of NFDM in FY12, or for the foreseeable future.

General recommendations. The lead agent should continue to monetize CDSO under contract with the current buyer (Olmeca), but future Title II Awardees need to take a market basket approach if only to increase their bargaining power, and ensure sufficient funds are available for food security programming.

Diversification of the commodity basket for monetization will complicate life for Title II partners, and will add to the administrative and logistical burden associated with raising funds through food aid monetization. One logical option available to Title II PVOs is to outsource the monetization of one or more additional commodities (soybean meal, yellow maize, and/or rice)

⁹⁹ As of this writing, CIF Puerto Quetzal reference price for delivery in September 2011 is US\$447per MT.

¹⁰ As of September 1, 2011, the current price for US NFDM Grade A is US\$3,328.98 per MT (per <http://marketnews.usda.gov/portal/da/>.) Price from Chicago CME time series data available here: http://future.aae.wisc.edu/data/monthly_values/by_area/21.csv?area=Central%2CEast

to a knowledgeable broker. A broker would very likely charge the same or only slightly more than the consortium fee (1 percent or 1.5 percent).

Sales should be made CIF, with the buyer taking possession at the relevant Guatemalan port (Puerto Quetzal or Puerto Santo Tomas). Sales prices through a broker could be determined according to the same (or nearly the same) practice as current Title II CDSO sales (e.g., developing a reference price based on CBOT future prices for US commodities, with freight charges determined by the broker's investigation of current freight rates for similar commodities/tonnages at the time of the sales).

Should PVOs consider soybean meal and/or yellow maize, whether or not sales are made through a broker, PVOs should ensure offerings are published as widely as possible to attract the maximum number of bidders, and to continually assess the viability of monetizing using competitive bids. Additionally, there may be an advantage in monetizing a combination of yellow maize (65 percent) and soybean meal (35 percent) in a single sale shipment.

1.4. Distributed Food Aid

In order to provide guidance for distributed food aid interventions, to ensure any potential negative impact on production incentives and markets is minimized, this analysis provides: 1) an overview of available evidence of food deficits, market integration, and private market capacity to meet those localized food deficits; 2) considerations for all distributed food aid interventions in Guatemala; and 3) guidelines for the most likely modalities for distributed food aid during the upcoming Title II development programs.

Guatemala is a domestic food consumption deficit country and is a net importer of beans, rice, beef, yellow maize, eggs, and milk. There are strong consumer preferences for maize and beans, and little dietary diversity among food insecure households. White maize is so frequently consumed that Guatemalan producers limit the diversification of production to other crops. At this time, families across Guatemala are struggling with high maize prices. Families are decreasing their consumption of other goods, such as proteins and vegetables, in order to purchase maize.

Food aid stakeholders should note that Guatemalan markets are generally well-integrated, particularly for key staple foods such as maize, beans, and rice. When markets are well-integrated, relative price differences associated with localized deficits or surpluses are quickly transmitted across geographic space as traders respond by moving commodities; this dilutes the impact of any temporary price decrease or increase related to a change in the local food supply.

For this reason, an increase in the local food supply on Guatemalan markets due to food aid is less likely to have a pronounced effect on any one local market, but will affect a wider swath of local markets through price transmission. Donors and implementing partners should incorporate more market monitoring outside of their immediate local market catchment area to appropriately assess the impact of their programs.

Field work interviews suggest that cross-border markets are also well-integrated, particularly those with Mexico. The ability of Mexico to supply the western highlands with food and non-food items increases food availability on the market, improves access by increasing supply and lowering market prices, and smoothes gaps in local food availability.

In the upcoming time period, the overall strategic objective for future USAID/Guatemala's Title II development programming is to support MCHN programs to combat infant malnutrition and

food insecurity, and agricultural development to increase family incomes. Programming will be targeting the western highlands (San Marcos, Huehuetenango, Quiché, Totonicapán, and Quetzaltenango) through MCHN and Food for Work (FFW) activities. The focus of future MCHN activities will be towards pregnant and lactating mothers (PLWs) and children under the age of two (“first 1,000 days”).

The BEST team visited Guatemala in July/August 2011, and visited with beneficiaries and market actors across 15 departments, with some concentration on the western highlands. The team made the following observations: 1) limited to no apparent leakage of Title II commodities into markets visited in either rural or urban areas; 2) current MYAP programming appears to minimize any negative impacts on production incentives and markets, however, a greater emphasis is needed on nutrition education and dietary diversity to increase the effectiveness of distributed food aid commodities to ensure programs result in improvements in family health and infant and young child nutrition; and 3) current commodity selection of beans, Corn Soy Blend (CSB), vegetable oil, and rice appears appropriate for local populations.

To mitigate market impacts, the BEST team proposes a renewed focus on family nutrition and diet in food security programming. It is apparent that households are reducing market purchase with the presence of food aid commodities and supplementing with poor choices in food purchases that fail to enhance dietary diversity. Potential awardees should understand the effects of ration size for program impact on food security, as well as on any impact on local markets. The potential long-term effects of poor nutrition and poor food utilization could lead to chronic health problems that the country's health system simply cannot support.

To enhance programming effectiveness, and minimize inefficiencies, standardization of MCHN growth-monitoring methodologies and practices across Awardees is critical. Height and weight monitoring should be encouraged as frequently as possible, preferably in collaboration with the local health centers. Greater program and resource emphasis on hygiene, water, and sanitation infrastructure projects will support food security objectives, and enhance the utilization of food aid. The provision of food without the availability of potable water will never reap intended benefits. Poor hygiene and sanitation practices around food preparation and child feeding are ongoing challenges to infant health and malnutrition.

Current MYAP holders do not address the lack of family planning that exists in many program areas. Given Guatemala's poor land tenure system, large household size is an especially critical threat to families with little land to produce their own food. Thus, household size directly and indirectly impacts food security, and should be addressed in holistic food security programming.

Potential awardees must require that field staff speak local language, in order to effectively communicate with beneficiaries. Additionally, potential Awardees should consider the use of external, independent midterm evaluations and make a greater effort to share lessons and best practices. Routine meetings among all awardees are encouraged, and a regular meeting schedule should be established. USDA Awardees, with experience and knowledge of their own to share, should be encouraged to share lessons and best practices as well.

Chapter 2. Country Background

2.1. Introduction

Geography. Guatemala is located in Central America, with access to both the Pacific and Caribbean coasts. The country shares borders with four countries: Honduras and El Salvador to the southeast, Belize to the northeast, and Mexico to the north and west. The Pacific coast and the Gulf of Honduras provide multiple outlets to international waterways.

Demography. Guatemala's current population is estimated at 14.4 million, and the country struggles with the highest population growth in the Central America region (Population Reference Bureau, 2011). Compared to its neighbors, Guatemala still has a relatively high proportion of people living in rural areas, estimated at 51 percent of the population (IFAD, 2011). Additionally, the population is relatively young; 42 percent of the total population is under the age of 15 (Population Reference Bureau, 2011). The country is divided into 8 regions, 22 departments and 333 municipalities. Guatemala is a multilingual country that recognizes 23 different indigenous languages (ENSMI, 2010).

Recent history. Guatemala suffered a 36-year civil war that came to a Peace Agreement in 1996. The years of conflict weakened governance, hindered institutional development, and deepened historical divisions. Part of the Peace Agreement intends to establish social policies that target traditionally marginalized populations, as well as reduce income inequality; however, the design and coordination of these tasks has proved challenging, and the goals have yet to be met (IDB, 2007).

Food security. Food insecurity in Guatemala, and in other Central American countries, closely relates with natural disasters and poverty. Guatemala is among the top five disaster-prone countries in the world, in terms of exposure, susceptibility, coping capacities, and adaptive capacities of national disasters, according to the World Risk Index of the UN Institute.

Guatemala has three of the world's most active volcanoes, and the Caribbean coast is extremely susceptible to hurricanes and other tropical storms. Poverty-induced deforestation, soil erosion, and water pollution further put Guatemala at risk (CIA World Factbook, 2011). The country's poorest communities tend to suffer from consecutive shocks. In recent years, high food prices, the global economic crisis, droughts caused by the El Niño phenomenon, and excessive rainfall and flooding have further compromised the country's already precarious and vulnerable food security situation (WFP, 2011).

Guatemala is subject to both high rates of poverty and malnutrition. According to the 2006 National Study of Livelihoods (ENCOVI, "Encuesta Nacional de Condiciones de Vida") study, 51 percent of the Guatemalan population is categorized as living in poverty, and 72 percent of this population lives in rural areas (ENCOVI, 2006). Guatemala has the highest malnutrition rate in all of Latin America: 43 percent of the population is chronically malnourished (FAO/WFP, 2010).

Poverty and malnutrition are related; in the short-term, poverty can lead to malnutrition, and in the longer-term, malnourished children may be likely to face poverty. Indigenous populations, in rural areas especially, suffer from both poverty and nutrition more so than other populations.

Rural indigenous populations are most highly-concentrated in the north and the western highlands (ENCOVI, 2006).

Additionally, the rural indigenous population suffers from years of inadequate land tenure policies and increasingly smaller plots for production. Currently, 2.5 percent of farms occupy 65 percent of the land, while 88 percent of farms occupy 16 percent of agricultural land (USAID, 2011). In the western and northwestern highlands, farm size ranges from 0.5-2 hectares per family. Large producers of sugar, banana, coffee, and palm have gradually seized control of most of the country's prime, fertile farm land. Land tenure disputes continue to be a vital issue of concern and a fundamental cause for internal strife (USAID, 2011).

Land availability, high food prices, high population growth, and importantly, poverty and malnutrition, all contribute to the country's food insecurity, especially in the western highlands area.

2.2. Economic Overview

2.2.1. Macroeconomic Trends

According to the Inter-American Development Bank (IDB) report, *Tearing Down the Wall: Growth and Inclusion in Guatemala*, the last 50 years of Guatemala's growth process can be divided into three broad phases:

- 1951-1975, reasonably healthy growth rates (average real GDP (Gross Domestic Product) growth rate of 4.8 percent per year)
- 1975-1985, characterized by external shocks and the internal conflict, with a slowdown that started shortly after the international oil crisis and the major 1976 earthquake (average real GDP growth rate of 2.2 percent per year)
- Around 1985, mild economic recovery, shortly after the transition to democracy, (average real GDP growth rate of 3.5 percent per year)

Since the 1980s, countries in Latin America and the Caribbean have been searching for strategies to improve economic growth and reduce poverty. These countries have yet to find an apparent successful strategy, as displayed by the region's economic performance. Latin America and the Caribbean have fallen behind most of the rest of the developing world, especially in comparison to the emerging economies of Asia and Eastern Europe. Guatemala is considered a middle-income country, but it suffers from slow growth and skewed income distribution (IDB, 2007).

Economic policies in Guatemala have closely followed trends observed in other Latin American countries. During the 1950s and 1960s, the country invested heavily in infrastructure, similar to its neighbors. During the past two decades, Guatemala has followed other countries in the region by introducing import substitution policies, controls on interest rates, a fixed exchange rate, and credit targets. As observed in other Central American/Caribbean countries, import substitution turned out to be unsustainable for the economy. Policy reforms resulted in an altered growth balance; the service sector has been growing rapidly as a percentage of GDP, whereas manufacturing and agriculture have declined. The services sector currently includes the most dynamic activities in the Guatemalan economy: commerce, transport, power,

telecommunications, and banking (IDB, 2007). However, agriculture still continues to be an important sector in the economy, particularly for employment generation.

The global financial crisis of 2008-2009 diminished incomes for agricultural and rural populations. These populations' lowered incomes primarily resulted from reduced remittances, a decline in the volume of international trade of agricultural products, and a slowdown in the values of those exports.¹¹ Research has proven that a decrease in remittances leads to a significant increase in rural poverty, from the inability to access and to consume goods and services.

2.2.2. GDP

Guatemala is the largest economy in Central America, representing about one-third of the population and one-quarter of the GDP of the Central American Common Market (CACM) (WTO, 2009). GDP per capita in 2008 was US\$2,850 (IMF, 2010). In recent years the real annual rate of growth of GDP has decreased due to diminished growth in the United States, Guatemala's main trading partner and primary source for remittances. Per capita GDP fell by 1.9 percent in 2009 (ECLAC, 2009-2010). Guatemala still faces major challenges in achieving income growth and equality and sustainable poverty reduction.

Guatemala has been falling behind internationally as a result of slow growth. Its share on the world GDP is today 21 percent below the share in 1980 (IDB, 2007). The comparison is even less favorable when looking at high-growth emerging economies. For example, at the end of the 1950s, Guatemala and Singapore had similar GDP per capita, now Singapore's GDP per capita is almost seven times that of Guatemala's GDP per capita. Costa Rica, the fastest growing country in Central America, grew by 54 percent between 1975 and 2000 (real GDP per capita), whereas in that same period Guatemala grew by only 20 percent (IDB, 2007).

Poverty indicators. Guatemala has been repeatedly ranked the second-poorest country in the Western Hemisphere, just behind Haiti. According to the 2009 World Bank Guatemala Poverty Assessment, Guatemala has made progress in reducing poverty and, in many instances, has achieved large average annual changes in many key social indicators. However, because the levels of these criteria were initially so low, improvements still bring the country to a relatively low rank. Thus, the country's level of poverty currently remains high and the level of social indicators remains low.

Between 2000 and 2006, Guatemala was able to reduce poverty by five percentage points, from 56-51 percent (World Bank, 2009). Although this overall reduction of poverty is positive for the country, specific categories of poverty remained constant, or worsened over this time period. The extremely poor, the indigenous, and those living in the northeast experienced little, if any, improvement. Poverty among indigenous populations has not decreased at all. Although southeast regions have experienced significant declines in poverty levels, northeast regions have suffered an equally significant increase in extreme poverty level. Extreme poverty levels have not improved, and in urban areas, extreme poverty has increased. Prices of food have risen at a rate higher than general inflation, and any increases shown in real consumption levels of the extremely poor are likely overestimates (World Bank, 2009). However, moderate poverty levels have improved (World Bank, 2009).

¹¹ In 2009, remittances reached US\$3.9 million which was 9.33 percent less than 2008 (IICA, 2009).

Remittances. Remittances are currently the main source of foreign currency in Guatemala; their importance to food security in Guatemala cannot be understated. The value of remittances in Guatemala is equivalent almost to 49 percent of the total value of exports in 2010 (BANGUAT, 2011). The 2010 survey on remittances conducted by the International Organization for Migration (IOM) and UNICEF estimated that 4.5 million people benefit from remittances in Guatemala; nearly 60 percent of these recipients live in rural areas (BANGUAT, 2011). Remittances grew an average of six percent annually, from 2001-2010. During the height of the financial crisis in 2008, remittances reached a peak of over US\$4.3 billion (BANGUAT, 2011); the only decline in amount of remittances occurred during 2009, when they fell by 9.33 percent (BANGUAT, 2011).

2.2.3. Key Regional Economic Linkages

DR-CAFTA. The Dominican Republic-Central American Free Trade Agreement (DR-CAFTA) is a comprehensive trade agreement between Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and the United States. DR-CAFTA is the first free trade agreement between the US and a group of smaller developing economies.

CAFTA initiations began in 2002 in an effort to revitalize faltering negotiations for a Free Trade Area of the Americas. Official negotiations were completed in December 2003 between the US, El Salvador, Guatemala, Nicaragua, and Honduras. Costa Rica joined in January 2004, and all six countries formally signed the agreement in May 2004. In August 2004, the Dominican Republic was added to the core agreement, thereby creating DR-CAFTA. The DR-CAFTA Agreement became effective in July 2006 (World Bank, 2008).

DR-CAFTA intends to spark new economic opportunities through eliminating tariffs, opening markets, reducing barriers to services, and promoting transparency (Office of the US Trade Representative, 2011). As a result of the DR-CAFTA agreement, for all countries in the agreement, 80 percent of US consumer and industrial good exports to DR-CAFTA countries are no longer subject to tariffs. Tariffs on remaining products currently subject to tariffs will be phased out during the 10 years following the 2006 agreement. To be eligible for tariff-free treatment under the agreement, products must meet the relevant rules of origin (Export.Gov, 2011).

DR-CAFTA is of particular importance for Guatemala, as 3/4 of the country's trade in goods is with parties DR-CAFTA countries (WTO, 2009). According to the World Trade Organization's Trade Policy Review of Guatemala in 2008, the implementation of DR-CAFTA has required Guatemala to "adopt and implement large-scale reforms of its trade regime." The IDB reported Guatemala's main benefits from participation in DR-CAFTA is growth potential, by taking advantage of DR-CAFTA as incentive for investment and as a vehicle for change (IDB, 2007).

After DR-CAFTA implementation, the relationship between Guatemala and the US changed little regarding Guatemalan exports, mostly because the Caribbean country paid little, if any, tariffs on its exports to the US before the 2006 agreement. Before DR-CAFTA, Guatemala followed the Caribbean Base Initiative of 1984 and the Caribbean Basin Economic Recovery Expansion Act of 1990, which included low tariff policies (BANGUAT, 2011).

US exports to Guatemala have increased 57 percent since the DR-CAFTA agreement (Export.Gov, 2011). The DR-CAFTA region was the 15th-largest US export market in 2010, and the 3rd-largest US export market in Latin America, behind Mexico and Brazil.

The Bank of Guatemala's figures on trade between Guatemala and the US since the DR-CAFTA agreement shows that Guatemalan imports from and exports to the US grew at approximately the same rate during the first year following the agreement. During 2007-2009, however, Guatemala's imports from the US were triple the amount of Guatemala's exports to the US. All trade between the two countries decreased in 2008-2009, and increased in 2010.

Central American Common Market. The CACM is a free trade agreement among Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua. The treaty was established in 1960 (SICE, 2011) and aims to benefit local products by granting them trade tariff exemption. The list of products not eligible for tariff-free status has changed and decreased over the years; currently, currently coffee, sugar, alcoholic beverages, and petroleum products do not receive tariff free status (SICE, 2011). The SICE, a foreign trade information system, claims that the CACM "is presently somewhere between an almost perfect free trade area and an imperfect customs union."

CACM has helped to harmonize external tariffs and increase intraregional trade (SICE, 2011). However, in 2005 Guatemala was the only CACM country where public accounts worsened, as tax revenue fell and expenditures increased because of spending on natural disaster repairs. Furthermore, CACM countries are expected to lose revenue under the decreased tariffs per DR-CAFTA (SIECA, 2007).

2.3. Agricultural Sector Overview

Agriculture is a major subsector in the Guatemalan economy, and generates some 14 percent of GDP. The sector employs 40-50 percent of the workforce, and accounts for more than 50 percent of foreign exchange revenues from exports (FAO/WFP, 2010). The Guatemalan agricultural sector can be divided into four groups: 1) traditional agriculture, including the production of coffee, bananas, and sugar; 2) non-traditional agriculture, including the production of pineapples, fruit, ornamental plants, vegetables, root-crops, and tubers; 3) cattle farming, including meat and dairy products; and 4) basic grain production (IDB, 2008).

2.3.1. Production

Staple crops. Guatemala's major cereal crop is maize; annual production of over one million MT is increasing. Even though Guatemala produces so much maize, the country still relies heavily on maize imports to meet human and animal consumption needs. The country imports 600,000-700,000 MT of maize annually. Rice and wheat production are quite limited; however, rice production is growing.

White maize and beans are the main crops produced across Guatemala for domestic consumption. White maize and black beans are traditional staple foods among rural populations, and are extremely sensitive commodities in the public consciousness. White maize makes up some 80 percent of Guatemala's total maize production, and yellow maize accounts for the remainder. Yellow maize is used for animal feed throughout most of the country, but is a preferred staple food among some indigenous communities in the western highlands.

Table 1. Guatemala: Cereal Production, 2006-2010 (MT)

Commodity	2006	2007	2008	2009	2010
Maize	1,116,950	1,342,280	1,395,600	1,100,000	1,200,000
Wheat	11,339	8,500	8,000	8,571	9,000

Commodity	2006	2007	2008	2009	2010
Rice	23,190	16,087	14,373	15,035	16,000

Source: FAOSTAT, USDA-FAS

Production of grains is almost exclusively rain-fed, and crop quality and production levels are vulnerable to the country's highly variable climatic conditions which include recurrent droughts, excessive rains, and mudslides.

Guatemala has two main agricultural production cycles: The *de primera* season which begins in April/May and is harvested in August/September, and the *de postrera* season which begins in August/September and is harvested from November onwards (FAO/WFP, 2010).

Production levels for all types of farmers depend on size, location, and quality of land. Four types of farmers in Guatemala produce the majority of the basic grains:

1. Sub-subsistence farmers that meet household food requirements by farming small parcels of land and producing maize and beans. These farmers complement their output with market purchase using the income generated by sale of labor.
2. Subsistence farmers that meet all household food requirements by farming small parcels of land and producing maize, beans, and sorghum.
3. Surplus-producing farmers that are able to produce enough to meet household requirements, and are able to market some surplus production.
4. Commercial farmers that produce solely for trading and commercial purposes (FAO/WFP, 2010).

Table 2 presents broad categories of productive activities based on farm size, ranging from subsistence to large commercial farms. Small subsistence farmers are mostly concentrated in production of basic grains and livestock, and least concentrated production of non-traditional agricultural exports. Small commercial farmers are the most engaged in non-traditional agricultural exports, a nearly 40 percent of household value added (Taylor et al, 2006). Nontraditional crops present opportunities for small farmers to transition from subsistence to commercially-viable farming through productive diversification (Taylor et al, 2006).

Table 2. Productive Diversification in Rural Land-Owning Households in Guatemala

Productive Activity	Small Subsistence Farmers	Small Commercial Farmers	Medium Commercial Farmers	Large Commercial Farmers
Basic Grains	32.2%	34.2%	21.5%	15.8%
Livestock	43.7%	9.7%	49.3%	47.9%
Traditional Crops	14.9%	13.0%	15.6%	26.3%
Non-traditional	9.2%	39.8%	13.6%	10.0%
Non-agriculture	0.0%	3.3%	0.0%	0.0%
Total Value Added	100.0%	100.0%	100.0%	100.0%

Source: Taylor, et al. IDB, 2006

The central and western highlands, the semi-arid regions, and some areas in the north have production deficits of maize and black beans. Generally, subsistence and sub-subsistence

farmers in the western highlands and elsewhere, plant their crops on hillsides because they do not have other land available.

The dry corridor is an arid, rainfall-deficient belt of land in the eastern and central part of the country. Small farmers in this area practice detrimental land use practices, such as slash and burn methods (FEWS NET, 2011). Furthermore, these farmers struggle against fungal disease; tar spot (*mancha de asfalto*) affects maize in Quiché, Huehuetenango, and Izabal (FAO/WFP, 2010).

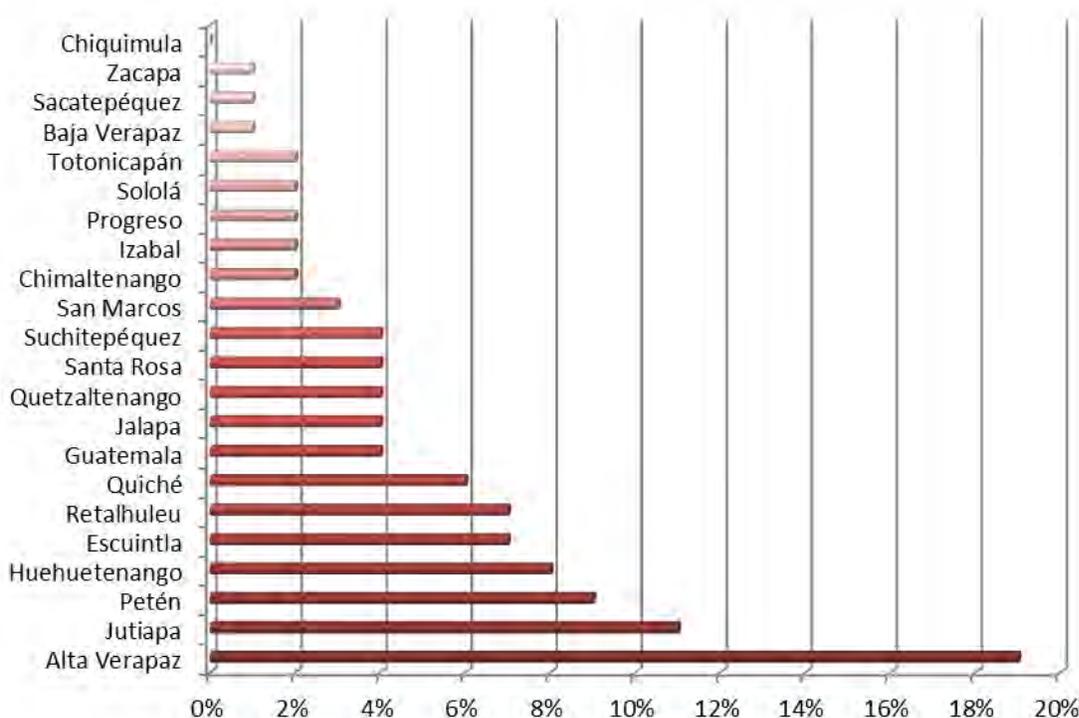
Subsistence and sub-subsistence farmers in the central highlands, western Guatemala, and the dry corridor produce maize with traditional seeds. Surplus and commercial farmers tend to use improved hybrid maize seeds (HB-83, DK 357, Valle Verde, Del Trópico).¹² Purchasing improved seeds is costly and inaccessible for subsistence and sub-subsistence farmers; the practice of relying on traditional seeds further perpetuates poverty, especially in indigenous communities (USDA GAIN Report, 2010). Furthermore, the plethora of micro-climates in the western highlands makes the production and use of improved seeds for this area particularly challenging (FAO/WFP, 2010).

Not only is traditional seed use an economic disadvantage for small farmers, but also a potential health risk. Traditional seeds contain high levels of mycotoxin, a toxic chemical produced by fungi that appears on maize crops. National rates of neural tube defects are unavailable, but it has been noted that Guatemala has the highest rates in the world (USDA GAIN Report, 2010). In the indigenous communities of the Guatemala highlands, USDA reported that neural tube defect rates are about ten times higher than the world average. This is a significant health issue, especially for infants and pregnant and lactating women (PLWs) considering maize is a main staple in the Guatemalan diet (USDA GAIN Report, 2010).

Ever-increasing input and fertilizer prices contributes to higher production costs. Subsistence and sub-subsistence farmers have reported applying smaller amounts of fertilizer in response to rising prices (and, therefore, decreasing yields). Surplus and commercial farmers, on the other hand, have maintained fertilizer applications with a consequent rise in production costs. In the past three years, prices for maize have not risen to the same degree as price rises for inputs, hurting producers. The Food and Agriculture Organization (FAO) states that producers are pressured to sell their crops as soon as they harvest, no matter how low they must sell. This pressure is a result of high production costs, limited to no facilities for grain storage, inadequate access to forecasting data, and no technological capacity to produce more efficiently (FAO/WFP, 2010).

Production figures for white and yellow maize from the 2009/2010 agricultural season show that Alta Verapaz leads maize accounts for nearly 20 percent of Guatemala's maize production (see figure below).

¹² Traditional seeds are saved from previous harvests to use in future plantings. Improved seeds are purchased each planting.

Figure 1. Maize (White and Yellow) Production 2009/2010, by Department

Source: Author's calculations, based on data in CFSAM, 2010

Marketing of local maize production. The country's three wholesale markets for maize (La Terminal, La Central de Mayoreo, and La 21 Calle) distribute to markets around the country. These wholesale markets collect surplus maize from the southern coast, some eastern areas, Alta Verapaz, Petén, and Quiché. These markets supply maize to deficit areas, mostly in the central regions (department of Guatemala) and to the western highlands. Smaller volumes of maize flow between regions without passing through wholesale markets. International maize flows and exchanges with Mexico and El Salvador (FAO/WFP, 2010).¹³

Production of cash crops. Since the early 1980s, Guatemalan sugar producers have more than doubled the area of land dedicated to sugar cane production and more than tripled production levels (Krznicar, 2005). Sugar was Guatemala's top export commodity, in value, in 2010, and has continued to grow in importance for the national economy. The sugar agro-industry ownership structure is highly concentrated. In 2005, there were 17 sugar mills, based in plantations, that provided around 80 percent of cane production (Krznicar, 2005). Almost all of the mills and plantations are controlled by a small number of long-established landowning families. The independent sugar cane productions, not owned by mills, supply the remaining 20 percent of production to the mills are also generally large landowners.

A limited amount of smallholders produce sugar cane, and some small mills process *panela* and *melcocha* (not refined sugar) for local consumption. As noted previously, land tenure is a challenge to small-scale producers, who basically cannot enter the sugar market apart from offering their labor (Krznicar, 2005).

¹³ Often times these exchanges are not registered.

The sugar industry absorbed many laborers from the declining cotton industry in the 1980s, and currently employs about 60,000 people. About 2/3 of these employees are seasonal assistance, from November to May. Sugar plantation owners generally pay wages which include the provision of meals. By improving the health and diet of the harvest workers, plantation owners have increased production per worker. The number of females working on plantations has decreased, as typically-female tasks such as fertilization and irrigation have now been taken over by modern machines (Krznicaric, 2005).

Thousands of small coffee growers in the western highlands partake in a global market niche for high-quality, “specialty” coffees.¹⁴ The Guatemalan coffee industry creates an estimated two million jobs every year for rural families,¹⁵ and coffee harvests are an important time for migratory labor opportunities.

High-value agricultural exports crops are increasing in production as households recognize these crops' higher financial yields than staple crops. Still, high-value export crops require investment and risk that may deter potential producers who are already vulnerable and/or cannot access land, financing and credit, or markets.

Seasonality. The dry season (summer) starts late November and goes through April. The rainy season (winter) starts in May and goes through early October. Table 3 shows the two planting seasons for maize and beans (April through June, and August). The annual hunger season is mid-March through August (FEWS NET, 2011).

Table 3. Seasonal Agricultural and Climatic Calendar (F = Frost, H = Hurricanes)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Weather Conditions	F	F				H	H	H	H	H	H, F	F
Maize - Planting				X	X	X		X				
Maize - Harvest		X	X	X				X			X	X
Beans - Planting				X	X	X		X				
Beans - Harvest		X	X	X				X			X	X
Rainy/Dry Season					Rainy	Rainy	Rainy	Dry	Rainy	Rainy	Rainy	

Source: FEWSNET

In the highland areas, soils are deep and able to retain moisture. Frost is most prominent in December through February, when maize and beans are harvested; thus, production and planting are not affected by cold temperatures.

Climate change has negatively affected Guatemala. In 2009, Guatemala suffered from severe drought, affecting harvests (especially for maize and beans) in the dry corridor.¹⁶

Land pressure. There are two primary pressures on land for staple production: land tenure practices, and a shift from staple crops to cash crops.

Guatemala has one of the region's most inequitable land tenure systems. The 2008 agricultural census reported that 560,904 farms, smaller than 2 manzanas¹⁷, represent 67.5 percent of all

¹⁴ Starbucks obtains over 30 percent of its coffee from Guatemala, for example.

¹⁵ ANACAFE estimates

¹⁶ Spans across the departments of El Quiché, Baja Verapaz, Chiquimula, Zacapa, El Progreso, Santa Rosa, Jutiapa and Jalapa.

farms. Micro-farms (less than 1 manzana/0.7 hectares) and sub-family units (less than 10 manzanas/7 hectares) comprise 94.1 percent of Guatemala's 1.4 million farm units, but only comprise only 18.6 percent of land under cultivation. The remaining family farm units listed at more than 45 hectares occupy 62.5 percent of the land base (USAID, 2008). This decreasing household land size alongside a growing household size makes it consistently difficult for families to produce adequate amounts and types of food.

As stated earlier, the country's most fertile soils are dedicated to production of palm, banana, sugarcane, coffee and in some cases, cattle. The increase of land dedicated to non-staple food crops may further pressure food security. In the northern regions, African palm cultivations have substituted maize plantings while in the southern region, sugar cane and tobacco production expanded at the expense of maize production (FAO/WFP, 2010).

Farm labor. Farm labor is an important element in rural livelihoods, affecting both household purchasing power and farm owners' production costs. Generally, subsistence and sub-subsistence farms are not able to contract farm laborers for maize and bean production. These producers barter with each other, and rotate labor within the community's fields. Surplus and commercial producers will hire farm labor by day, when needed.

Sugar cane and coffee plantations regularly employ laborers. The use of hybrid seeds has reduced labor needs; hybrid melons for example, mature more evenly and thus reduce both harvest time and labor needs. In February 2010, the daily rate for farm labor ranged from US\$4.22 to US\$7.55, according to region. The eastern regions have the lowest labor rates (FAO/WFP, 2010).

2.3.2. Imports

Guatemala relies heavily on imports to meet its grain needs, as well as manufactured goods. Guatemala's imports include fuels, machinery, transport equipment, construction materials, plastics, grain, fertilizers, and electricity. The major trading partners are the US, followed by Mexico and China.

Major US imports include yellow maize (for animal feed) and wheat flour (for human consumption). The U.S. supplies almost 100 percent of Guatemala's import maize needs (USDA GAIN Report, 2007). In 2009, Guatemala imported, primarily from the US, US\$120 million in coarse grains, most of which was U.S. No.2 Yellow Corn used for animal feed, with some amounts dedicated to production of snack foods and breakfast cereals. Some of these imports, however, were also white maize for human consumption. The US is the main supplier of white maize, as well as the main buyer for Guatemala's white maize exports (USDA GAIN Report, 2010). Between 2002 and 2007, total imports grew approximately 70 percent with manufactured products dominating total imports (WTO, 2009). Table 4 highlights Guatemala's top trading partners, and the value of imported goods. Table 5 lists the top imported products, in terms of value, for the five main importing partners.

¹⁷ 1.43 manzanas equals 1 hectare.

Table 4. Guatemala's Top Sources for Imported Goods (Values in US Dollars)

	2006	2007	2008	2009	2010
USA	4,115.1	4,642.7	5,242.3	4,211.9	5,124.0
Mexico	950.8	1,184.3	1,411.6	1,185.6	1,542.6
China	594.3	776.2	839.4	607.5	983.6
El Salvador	544.8	620.8	692.1	590.0	676.1
Costa Rica	372.0	405.9	422.7	394.2	427.7
Panama	401.5	400.3	412.5	366.9	440.4
Colombia	196.2	214.8	289.2	325.7	394.0
South Korea	579.5	444.0	365.0	317.8	387.5
Curacao, Netherlands Antilles	220.0	448.6	460.8	300.0	159.0
Honduras	183.3	279.8	353.4	262.3	307.0
Brazil	391.0	308.7	268.1	233.3	232.9
Other Countries	3,366.0	3,849.6	3,789.4	2,736.1	3,161.5
TOTALS	11,914.50	13,575.70	14,546.50	11,531.30	13,836.30

Source: Bank of Guatemala, 2010

Table 5. Top Five Imported Products by Country, 2010

USA	Percent	El Salvador	Percent
Diesel fuel	14.1%	Plastic materials and products	11.6%
Machinery	9.2%	Cereal based products	10.4%
Gas fuel	7.4%	Paper and cardboard products	10.2%
Vehicles	7.4%	Iron and steel	8.1%
Manufactured Plastics	5.6%	Threads and yarns	5.7%
Mexico		Costa Rica	
Plastic materials and products	8.9%	Chemical products	9.6%
Electronic machinery	8.8%	Milk and other milk products	8.2%
Cosmetic products	7.1%	Steel sheet and wires	8.2%
Other chemical products	6.5%	Cardboard and paper products	7.4%
Paper and cardboard products	5.3%	Plastic materials and manufactures	6.6%
China		Panama	%
Textiles	13.6%	Pharmaceutical products	28.5%
Transmitters and receivers	10.5%	Electronic machinery	13.3%
Electro-mechanical machinery	10.5%	Apparel	6.6%
Vehicles and transportation	6.3%	Shoes	6.1%
Other chemical products	5.7%	Fish and seafood	5.9%

Source: Bank of Guatemala, 2010

Guatemala's WTO Schedule of Commitments includes tariff quotas for 22 agricultural products; despite this, tariff quotas are applied only to imports of: rice, wheat flour, yellow maize, and apples. Quotas are activated only in the event of a domestic market shortfall, although Guatemala normally imports volumes greater than those bound (WTO, 2009). International trade is also affected by trade policy described in section 2.2.3.

As described in section 2.3.1, Guatemala has shifted production emphasis toward cash crops and away from staple crops. Thus, the country increasingly relies on imports of staple foods to fill its needs. In 2003-2005, the import dependency ratio (defined as imports over consumption (equal to production – exports + imports)) was 68 percent for rice, 35 percent for yellow maize, 98 percent for wheat, 18 percent for soybeans, and 9 percent for beans (FAO/WFP, 2010). Guatemala is a net importer of maize, black beans, rice, beef, chicken meat, pigmeat, chicken eggs, and milk (FAO/WFP, 2010).

Of these staples, maize accounts for the highest percent of total consumption, at 71 percent. Wheat is the second-most consumed commodity, at 20 percent of total consumption, followed by rice (5 percent) and beans (4 percent). The major welfare shocks coming from rising domestic prices should thus be due primarily to maize (which has a high share in consumption) and wheat (which has a high import dependency) (Janvry & Sadoulet, 2009).

2.3.3. Exports

Guatemala's main exports are bananas, sugar, coffee, and apparel. The US continues to be Guatemala's main trading partner, followed by Central America and the European Communities. Trade in goods and services represents approximately 57 percent of Guatemalan GDP (WTO, 2009). Between 2002 and 2007, *maquila* (manufacturing) exports, which represent about one third of total merchandise exports, grew by about 40 percent; during the same timeframe, other non-manufacturing exports grew by two thirds (WTO, 2009). Non-traditional agricultural exports (snow peas, french beans, pineapples, oranges, exotic fruits, ornamental plants, tilapia, etc.) have grown rapidly (IDB, 2008). This growth is generally attributed to: 1) previous agricultural policies to promote diversification; 2) access to long-term financing from public credit programs; and 3) investments in infrastructure such as irrigation, roads, and electricity (IDB, 2007).

Guatemala is a net exporter of in the category of all agricultural goods and food (but not a net exporter of staple foods, as noted above); however, the country's exportable surplus of both food and agriculture has declined over the last 25 years (Janvry & Sadoulet, 2009). Total exports fell by 6.6 percent from 2008-2009 during the global financial crisis. Traditional agricultural exports rose by 4.6 percent, driven mainly by increased exports of cardamom (46.2 percent), bananas (34.9 percent), and sugar (34.5 percent) recently. Non-traditional exports (which define exports other than bananas, sugar, coffee, and apparel) have declined by 10.2 percent in recent years. Exports suffered lower sales of natural rubber (-30 percent), wood and wood products (-18.5 percent), garments (-15.3 percent), food products (-15.2 percent), and chemicals (-14.6 percent). Exports to other Central American countries declined by 15.9 percent, led by the drop in manufactures. Exports to the rest of the world fell by 4.5 percent (ECLAC, 2009-2010).

Table 6. Guatemala's Top Destinations for Exported Goods (Values in US Dollars)

	2006	2007	2008	2009	2010
USA	2,783.2	2,903.8	3,014.4	2,924.4	3,258.6
EL Salvador	699.6	842.1	973.3	817.5	994.7
Honduras	481.6	593.4	737.1	606.5	700.2
Mexico	354.4	464.1	509.2	425.7	448.5
Costa Rica	227.8	257.8	318.9	283.7	347.1
Nicaragua	235.3	267.6	327.6	281.8	352.7
Panama	98.2	119.5	161.6	183.9	222.0
Canada	99.6	111.4	110.8	110.2	136.0

	2006	2007	2008	2009	2010
Netherlands	87.3	71.9	107.3	115.7	106.2
Japan	45.0	59.1	113.3	107.9	146.8
Dominican Republic	78.5	92.1	113.8	107.2	134.0
Other Countries	822.3	1,114.9	1,250.1	1,249.2	1,619.4
TOTALS	6,012.8	6,897.7	7,737.4	7,213.7	8,466.2

Source: Bank of Guatemala, 2010

Guatemala's cash crops are sugar cane (25 million MT in 2009) and coffee (249,000 MT in 2009). However, further expansion of coffee exports is presently limited, mainly by production and compliance with Sanitary and Phytosanitary Standards (SPS) constraints, rather than markets (USAID, 2011). Among the top 20 crops produced, in volume terms include bananas, melons, pineapples, oranges, papayas, watermelons, lemons, limes, mangos, mangosteens and guavas (FAOSTAT).

Table 7. Top Exports (Values in US Dollars)

	2006	2007	2008	2009	2010
Bananas	215.5	298.8	314.9	411.5	349.5
Cardamom	83.4	137.1	208	304.1	308.1
Coffee	463.6	577.3	646.2	579.5	705.6
Petroleum	233.2	249.1	373.7	191.7	227.8
Sugar	298.5	358.1	378.1	507.7	726
TOTALS	1294.2	1620.4	1920.9	1994.5	2317

Source: Bank of Guatemala, 2010

2.4. Policy Overview

Agricultural policy 2008 - 2012. The GoG Ministry of Agriculture, Livestock and Food (MAGA, "Ministerio de Agricultura, Ganadería y Alimentación") is responsible for formulating and implementing policy in the agricultural sector. Current agricultural policy is based on four main sectors: 1) production and marketing; 2) socio-cultural sectors and livelihoods; 3) ecological environments; and 4) institutional politics. The national agricultural policy states the importance of agricultural sector as a contribution to food security, through both production and employment generation. The policy emphasizes the transformation and modernization of the agriculture sector in an effort to increase production, productivity, and profitability. Improving the competitiveness of agribusinesses, especially small and medium enterprises, in national and international markets is also an area of focus. The policy also notes efforts to support populations whose livelihoods depend on agriculture, through the provision of extension education, trainings, and technical assistance. Additionally, the policy calls for the participation of the public sector, civil society, NGOs, universities, and associations in order to coerce sustainable development across institutions (MAGA, 2008).

The BEST field visit included interviews with GoG, Private Voluntary Organization (PVO), and private sector informants, who all cited lack of funding as a common restraint to the vast majority of government initiatives, especially during election years.

Government plan. The Government Plan of President Alvaro Colom Caballeros focuses on enhancing quality of life and reducing poverty. The basis of the agenda is competitiveness-led

economic growth with equity-boosting measures. The official plan envisions the country as "free, democratic, fair, equitable, prosperous, inclusive, and participatory, affording opportunity for all and ensuring that the fruits of progress are shared by all; a nation that honors equality and in which peace and harmony prevail, in perpetual pursuit of the common good" (IDB, 2008). The Government Plan takes a long-term approach (2008-2032) and is rooted in eight cross-cutting principles: priority to the nation's poorest; gender equity; investing in children; multiculturalism; ethics and moral conduct; environmental conservation; citizen engagement; and respect for human rights.

Four pillars have been developed to deliver the principles of the Government Plan: Solidarity, Governance, Productivity, and Regional Relations. The Solidarity pillar addresses improvements in education, reduction of infant and maternal mortality rates, and fulfillment of nutritional needs for poor pregnant women and children in rural and peri-urban areas. Economic development policies are addressed in the Productivity pillar. The plan assures preserving macroeconomic stability with a focus on job creation and poverty reduction through strengthening the *maquila* industry, tourism, and forestry clusters. Another goal of this pillar is to take advantage of DR-CAFTA opportunities, access new international markets, and promote Central American integration. The Governance pillar aims to strengthen the justice system and legislative policy. The fourth pillar, Regional Relations, promotes external relations policies that match the new agenda (IDB, 2008).

2011 presidential elections. Presidential elections in September 2011 have the potential to change the political landscape for 2012 and beyond. Many of the social safety net programs, including GoG food aid transfers and conditional cash transfers of *Bolsa Solidaria* and *Mi Familia Progresada* are initiatives of the current administration. For details on these programs, see Chapter 6. The government's social safety net programs may potentially cease or change according to differing political agendas. In BEST interviews, SOSEP reported that they hope to maintain all social programs, but anything could change with a turnover in administration. Traders reported that they hope political demonstrations through the pre- and post-election time are minimal, as these demonstrations delay the flow of goods.

National Food Security and Nutrition Secretariat (SESAN). In recent years, nutrition has received much political and humanitarian interest in Guatemala. This interest, apparently, is not something that existed in years past. International institutions and Non-Governmental Organizations (NGOs) that have recently acknowledged nutrition as an important step to overcoming food insecurity and the high levels of malnutrition. President Colom's administration has increased its emphasis on decreasing malnutrition rates through two main efforts: 1) the preparation of a proposal for food security and nutrition in 2004, as inspired by the Mesa Nacional Alimentaria and manifested in the Law of the National System of Food Security and Nutrition (SINASAN, "Ley del Sistema Nacional de Seguridad Alimentaria y Nutricional") in 2005; 2) the preparation of two programs, El Programa para la Reducción de la Desnutrición Crónica, coordinated by the Secretary of Food Security and Nutrition (SESAN, "Secretaría de Seguridad Alimentaria y Nutricional"), and the program Creciendo Bien.

Bio-safety laws. Guatemala has no Genetically Modified Organism (GMO) regulation in place that can affect commodity imports or food aid imports. There are no restrictions for GMO foods, and they freely circulate through markets. The Ministry of Agriculture reported that there are no plans for changing the current status of this policy. The main concern of the Guatemalan

Government is related to the planting of modified crops that could potentially risk the country's biodiversity (USDA GAIN Report, 2008).¹⁸

¹⁸ Guatemala has been declared by the United Nations as a center of biodiversity for many species, including maize.

Chapter 3. Food Aid Overview

3.1. Introduction

This Chapter covers distributed food aid, monetized food aid, and related programming activities. This Chapter provides a summary of current and planned food aid programs and activities. Details are provided on USAID, USDA, WFP, Government of Guatemala (GoG), and partner programs.

The majority of US food aid to Guatemala over the past five years has been used in a development context to combat food insecurity and, in particular, malnutrition. The US Government (USG) distributes food aid through USAID and USDA initiatives. USAID Title II programming includes Title II development programs (formerly known as Multi-Year Assistance Programs (MYAPs)), Single Year Emergency Assistance Programs (SYAPs), and a research-oriented Preventing Malnutrition in Children Under Two Years of Age Approach (PM2A).

USDA programming includes Food for Progress, McGovern-Dole International Food for Education and Child Nutrition Program (FFE), and Local and Regional Procurement (LRP). GoG initiatives include school feeding, disaster relief and family food and cash distributions.

3.1.1. Total Annual Monetized Food Aid

Since 2003, USAID Awardees have been solely monetizing Crude Degummed Soybean Oil (CDSO). Catholic Relief Services (CRS) manages the monetized sales on behalf of itself, Save the Children, SHARE, and Mercy Corps. During the July/August 2011 BEST field visit, all PVOs reported satisfaction with CRS' handling of the monetization process, and are pleased with the commodity choice of CDSO, a high-value commodity. To cover program expenses, the current MYAP Awardees need to earn about US\$10 million per year.

In addition, for the past two years CRS has generated about an extra US\$5 million per year through monetized sales in order to cover program costs for Mercy Corps' PM2A program. See Chapter 5 for more information on monetization.

Table 8. FFP: Monetized Food Aid FY06-FY10, MT

	FY06	FY07	FY08	FY09	FY10	Total
CDSO		10,410	5420	6730	13780	35730

Source: AMEX

3.1.2. Total Annual Distributed Food Aid

Development. Over 35,000 MT of development food aid has been distributed in Guatemala in the past five years. During this time period, SHARE accounts for the largest amount of distributed commodities. In FY09-FY10, distributed food aid totals increased significantly as a result of the Mercy Corps PM2A program.

Milled rice has been distributed in the largest amounts, followed by beans. The majority of beans distributed as food aid in Guatemala are pinto beans, though PVOs distribute small amounts of kidney and black beans. Table 9 shows distributed food aid tonnages under MYAP programs for the past five years, according to AMEX and PVO data.

Table 9. FFP: MYAP Distributed Food Aid FY07-FY11, MT*

	FY07	FY08	FY09	FY10	FY11	Total/Commodity
Beans	1260	1290	2423	3110	1800	9883
Vegetable Oil	1080	770	1381	1650	610	5491
CSB	1850	1840	2503	3070	2410	11673
Milled Rice	1850	1460	3,297	4100	1490	12197
Total/Year	6040	5360	9604	11930	6310	39244

Source: CRS, SHARE, Save the Children, Mercy Corps

	FY07	FY08	FY09	FY10	FY11	Total/Commodity
Beans	1100	1540	2790	3110	1080	9760
Vegetable Oil	770	1050	1490	1040	260	4610
CSB	1850	2340	2860	2970	1380	11900
Milled Rice	1660	2020	3550	4100	1160	12490
Total/Year	5380	6950	10690	11220	3880	38760

Source: AMEX

*For the purpose of this report, all bean types (black, kidney, pinto, etc.) have been compiled together, as all data sources are not specific to bean variety.

*Discrepancies exist between AMEX data and PVO-reported data on food aid tonnages. In most cases, this report shows PVO figures, accompanied by a footnote to show AMEX data.

Emergency. Guatemala has received over 11,000 MT of emergency food aid in the past five years. In FY06, Food For Peace (FFP) allocated commodities to SHARE for emergency programming, and in FY07, FFP awarded SHARE, as well as WFP, with commodities for emergency programming. In FY10, as a result of poor climatic conditions and rising food prices, PVOs distributed emergency food aid under USAID SYAP programming. CRS received 4,270²⁰ MT (including food aid for its sub-grantee, SHARE), and Save the Children received 3,190 MT (including food aid for its sub-grantee, Mercy Corps). WFP received 2,220 MT of beans, corn soy blend (CSB), and vegetable oil in FY10 for emergency distribution in areas with droughts and flooding. Additional SYAP programming is planned for 2011.

Table 10. FFP: Emergency Distributed Food Aid FY06-FY10, MT

	FY06	FY07	FY08	FY09	FY10	Total/Commodity
Beans	310	430			3150	3890
Vegetable Oil		150			680	830
CSB		420			3160	3580
Milled Rice		340			2690	3030
Total/Year	310	1340	0	0	9680	11330

Source: AMEX

¹⁹ Email was sent to USAID regarding their preference for BEST to report AMEX data or PVO data. Since a response was not received at the time of report submission, both are being reported.

²⁰ CRS reported 4440 MT.

3.2. Current Initiatives

3.2.1. USAID Programming: MYAP

Introduction. The USAID Guatemala Food Security Program is one of the largest FFP programs in the Western Hemisphere. To address food security the MYAP coordinates with other USAID programs in health, local governance, enterprise, and trade, as well as with the GoG's Food Security and Nutrition Secretariat (SESAN, Secretaria de Seguridad Alimentaria y Nutricional), the GoG's Ministry of Public Health and Social Assistance (MSPAS, "Ministerio de Salud Pública y Asistencia Social"), FAO and WFP, and local organizations, to reduce food insecurity.

The USAID MYAP addresses food utilization, access, and availability in vulnerable communities, and is implemented by three partners: CRS, Save the Children, and SHARE. These partners currently work in: Quiché, Huehuetenango, San Marcos, Chimaltenango, and Baja Verapaz (USAID, 2010). The current Guatemala MYAP programs began their five-year cycle in 2007, and are scheduled to end in 2012. USAID implementing partners use food aid rations for targeted supplementary feeding for children 6-36 months old and pregnant/lactating women (PLWs). Additional activities include the improvement and diversification of family agricultural production, micro-enterprise, and marketing. Using Food For Work (FFW) and other resources, activities are intended to improve infrastructure in food insecure areas, to ease communities' access to markets, and to lower business transaction costs (USAID, 2010).

CRS has been targeting the poorest and most vulnerable sectors of the Guatemalan society since 1963. Initially, CRS programs focused on humanitarian assistance to alleviate poverty; over the years, CRS has expanded its scope by undertaking a variety of development-oriented programs (CRS, 2011). CRS implements field projects through its partner organization, Pastoral Social-Caritas, in program areas of San Marcos and Baja Verapaz. Current CRS MYAP activities are located in the department of San Marcos (municipalities of Tacana, Tajumulco, and Sibinal) and in the department of Baja Verapaz (municipalities of Cubulco, Rabinal, and San Miguel Chicaj). CRS programming covers 272 communities and 10,752 families (Personal correspondence with PVO, August 2011). Table 11 summarizes CRS food aid tonnages for the current MYAP.

Table 11. CRS: MYAP FY07-FY11, MT

	FY07	FY08	FY09	FY10	FY11	Total/Commodity
Total Beans	270	310	580	710	480	2350
Vegetable Oil	280	210	360	380	260	1490
CSB	650	440	650	830 ²¹	480 ²²	3050
Milled Rice	800	470	820	890	480	3460
Total/Year	2000	1430	2410	2810	1700	10350

Source: CRS

Save the Children began working in Guatemala in 1999, three years after the Peace Accords were signed. Save the Children Guatemala focuses on helping poor populations to overcome the impact of that civil conflict through integrated programming in education, health, nutrition,

²¹ AMEX reported 730 MT.

²² AMEX reported 520 MT

asset growth and protection, livelihoods, disaster risk reduction, natural resource management, and democracy and governance.

Save the Children targets rural, poor, and indigenous populations in three departments of the western highlands: Quiché, Huehuetenango, and Sololá (Save the Children, 2011). Save the Children collaborates with three local institutions for on-the-ground implementation: 1) Cooperativa Agrícola Integral para Todos los Nebajenses (COTONEB), a health service provided in Quiché; 2) Génesis Empresarial, a microfinance organization; and 3) Kiej de los Bosques, a private consulting firm which provides market linkage assistance.

Save the Children MYAP activities are located in the department of Quiché (municipalities of Chajul, Cotzal, Nebaj, Sacapulas, Cunen, and Uspantan). Save the Children MYAP programming spans 120 communities to reach about 9,005 families (Personal correspondence with PVO, August 2011).

Table 12. Save the Children: MYAP FY07-FY11, MT

Commodity	FY07	FY08	FY09	FY10	FY11	Total
Beans	460	390 ²³	590 ²⁴	740	400 ²⁵	2580
Vegetable Oil	550	270	410 ²⁶	420	80 ²⁷	1730
CSB	340	440	610 ²⁸	870	530 ²⁹	2790
Milled Rice	550	450	650 ³⁰	640	440 ³¹	2730
Total	1900	1550	2260	2670	1450	9830

Source: Save the Children

SHARE is a Guatemalan NGO that has been working since 1987 in community development. The organization works in 700 communities in the departments of Baja Verapaz, Huehuetenango, Guatemala, Jutiapa, Chimaltenango, Sacatépequez, and El Quiché. SHARE implements projects in health, education, disaster risk management, agriculture, and community development.

In Huehuetenango, SHARE collaborates with the following partners: 1) the Association for the Cooperation of Integrated Development in Huehuetenango (ACODIHUE), in the municipalities of Aguacatán and San Antonio Huista; 2) The Association for Development Services and Support in Guatemala (SADEGUE, “La Asociación Servicios y Apoyo al Desarrollo de Guatemala”), in the municipalities of Nentón and Santa Bárbara; 3) The Mam Institution for Integral Development (IMDI, “Institucion Mam de Desarrollo Integral”), in Todos Santos Cuchumatán; and 4) El Mirador, in Chiantla. In the department of Chimaltenango, SHARE implements projects in the municipalities of San Martín Jilotepeque, Tecpán Guatemala, and San Juan Comalapa. SHARE MYAP programs reach a total of 302 communities and 15,776 beneficiaries.

²³ AMEX reported 640MT

²⁴ AMEX reported 860MT

²⁵ AMEX reported 600 MT

²⁶ AMEX reported 520 MT

²⁷ AMEX reported 0

²⁸ AMEX reported 960 MT

²⁹ AMEX reported 860 MT

³⁰ AMEX reported 880 MT

³¹ AMEX reported 680 MT

Table 13. SHARE: MYAP FY07-FY11, MT

SHARE	FY07	FY08	FY09	FY10	FY11 ³²	Total/Commodity
Total Beans	530 ³³	590 ³⁴	500	680	620	2920
Vegetable Oil	250 ³⁵	290 ³⁶	140	240	270	1190
CSB	860 ³⁷	960 ³⁸	620	760	1000	4200
Milled Rice	500 ³⁹	540 ⁴⁰	340	580	570	2530
Total/Year	2140	2380	1600	2260	2460	10840

Source: SHARE

3.2.2. USAID: MYAP PM2A

Mercy Corps is implementing the PM2A program in Alta Verapaz. The program, titled PROCOMIDA ("Programa Comunitario Materno Infantil de Diversificación Alimentaria," Food Diversity Program for Mothers and Children), targets preventative rations to children under two years of age and PLWs in five municipalities in Alta Verapaz. The PM2A program is heavily research-oriented around PM2A programming, and includes six research components (including one control group) of differing ration types and sizes. The International Food Policy Research Institute (IFPRI) is conducting the longitudinal study alongside Mercy Corps, which follows mothers from the time they enter the program, which is generally the time they recognize pregnancy until the infant is two years old (Personal correspondence with PVO, July 2011).

PROCOMIDA uses a combination of social and behavioral change communication, social marketing, and non-violent communication techniques. Mercy Corps repackages Title II commodities into ration-size bags which are printed with imagery serving as take-home educative reminders. The messages and drawings emphasize the importance of hand-washing, exclusive breastfeeding, and CSB consumption. Trainings, education sessions, and home monitoring visits on diet diversity, nutrition, and growth monitoring are carried out in local languages. Mercy Corps warehouse staff in Coban, Alta Verapaz, stores, weighs, and repackages the food. In addition to the program-specific ration bags, Mercy Corps also provides special bags to carry the rations from the pickup locations beneficiary houses (from Mercy Corps presentation at Food Security and Nutrition Network conference, May 2011).

Table 14. Mercy Corps: PM2A FY09-FY14, MT

Commodity	FY09	FY10	FY11	FY12	FY13	FY14	TOTAL	\$/MT	Value
CSB	623 ⁴¹	610	400	1,200	1,200	840	4,872.9	728	\$ 3,547,489
Rice	1,487 ⁴²	1,990	0	840	1,680	1,710	7,706.7	638	\$ 4,916,875
Beans	753 ⁴³	980	300	1,200	1,200	920	5,352.7	853	\$ 4,565,810

³² AMEX did not report anything for FY11

³³ AMEX reported 370 MT

³⁴ AMEX reported 1150 MT

³⁵ AMEX reported 150 MT

³⁶ AMEX reported 570 MT

³⁷ AMEX reported 650 MT

³⁸ AMEX reported 1460 MT

³⁹ AMEX reported 310 MT

⁴⁰ AMEX reported 1100 MT

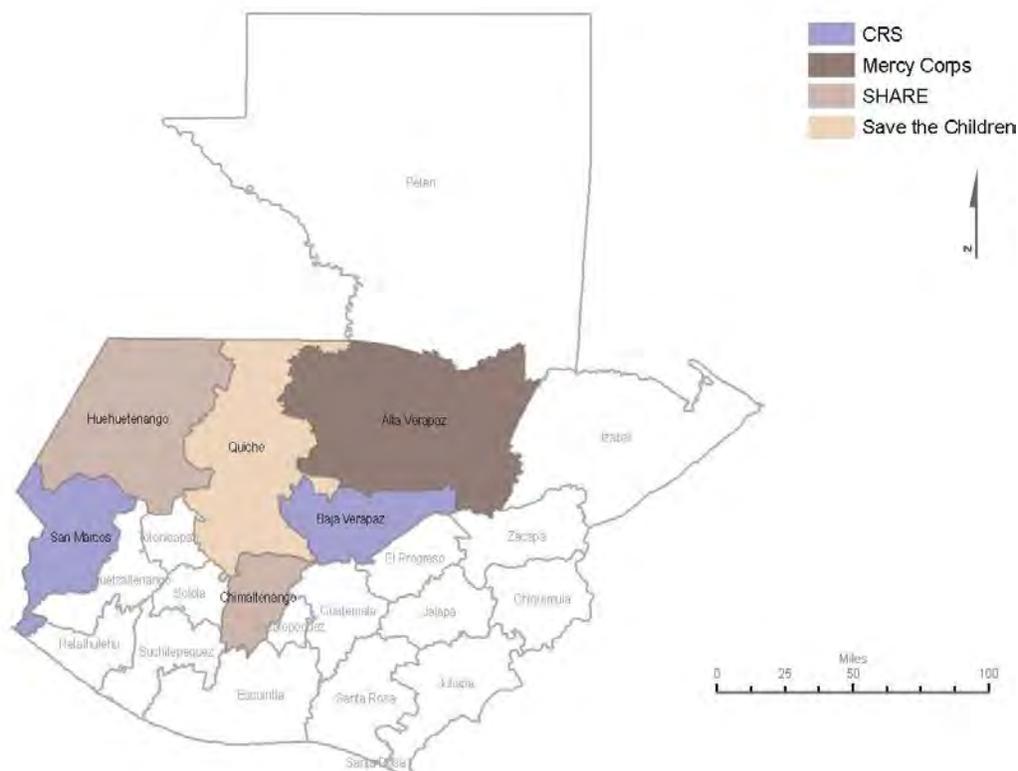
⁴¹ AMEX reported 630 MT

⁴² AMEX reported 1510 MT

Commodity	FY09	FY10	FY11	FY12	FY13	FY14	TOTAL	\$/MT	Value
Veg Oil	471	610	0	280	560	430	2,351.4	1,542	\$ 3,625,851
TOTAL Direct Distribution	3,334	4,190	700	3,520	4,640	3,900	20,283.7		\$ 16,656,025

Source: Mercy Corps, July 2011

Figure 2. MYAP Locations



Source: USAID, Fintrac/BEST compilation

3.2.3. USAID Programming: SYAP

Introduction. USAID SYAP programs respond to a variety of emergencies including droughts, heavy rains, food insecurity, and acute malnutrition. SYAPs include monthly food distributions and related programming. SYAPs are not funded through monetization.

CRS began a SYAP in late 2009 in the department of Jalapa with a sub-grant to **SHARE** for the department of Jutiapa. The SYAP was a direct response to drought in 2009 and resulting food insecurity. In 2010, CRS and SHARE distributed a total of 4,440 MT of food between these two departments. There was no food distribution in 2009. In July 2011, CRS (with another sub-grant to SHARE) began carrying out another SYAP in the same departments due to continued poor climatic conditions and heavy rains. Under the current SYAP, CRS and SHARE benefit 7,000 and 6,000 families, respectively, with food aid and assistance. Distributed food aid for the 2011 SYAP (CRS and SHARE) is projected at 3,120 MT (Personal correspondence with PVOs, July 2011).

⁴³ AMEX reported 760 MT

Table 15. CRS and SHARE: SYAP 2010-2011, MT

Year	Rice	CSB	Oil	Beans	TOTAL
2010	1710	1200	340	1190	4440
2011	980	980	180	980	3120

Source: CRS and SHARE

Positive Community Impact (PCI)⁴⁴ began a SYAP in June 2011, in the southern tip of Huehuetenango in response to poor climatic conditions. The program provides emergency response and aid to the most affected families and communities by the droughts and in Malacatancito, San Juan Atitán, Santiago Chimaltenango, and San Ildefonso Ixtahuacan. The program expects to target 26,400 direct beneficiaries and 4,400 families. Program activities are divided into four categories: 1) Food for Action; 2) Nutrition and Health; 3) Agricultural Production; and 4) Disaster Risk Mitigation. PCI is targeting families who have children under five years of age and/or PLWs, families that lost harvest, families in extreme poverty, and families with handicap members (Personal correspondence with PVO, July and August 2011). Table 16 shows PCI SYAP commodities and tonnages amounts.

Table 16. PCI: SYAP 2011-2012

	Vegetable Oil	Beans (pinto/black)	Rice	CSB
Total Commodities Requested	80 MT	360 MT	360 MT	360 MT
Commodity Ration/Family/Month	2 liters	18 lbs	18 lbs	18 lbs

Source: PCI

Save the Children began an 18-month SYAP in 2009, in the department of Chiquimula with a sub-grant to **Mercy Corps** for the departments of El Progreso and Zacapa. The SYAP targeted vulnerable families who had suffered production deficits and acute malnutrition from widespread drought in 2009.

In 2011, Save the Children began another SYAP in Chiquimula as a result of heavy rainfall. Save the Children does not have a sub-grant in its 2011 SYAP. The SYAP targets 9,000 families that have children under five years old and/or PLWs in seven municipalities. The 58 lb monthly family ration includes: 18 lb rice, 18 lb beans, 18 lb CSB, and 2 liters vegetable oil. SYAP activities include monthly growth monitoring, home visits, nutritional assistance, agricultural production, and other FFW activities, including the construction of water harvesting tanks, improved stoves, and other livelihoods activities (Personal correspondence with PVO, July 2011). Table 17 summarizes the Save the Childrens' SYAP commodities, tonnages, and ration size.

Table 17. Save the Children: SYAP FY11

	Vegetable Oil	Beans (pinto)	Rice	CSB
Total Commodities Requested	180 MT	770 MT	770 MT	770 MT
Commodity Ration/Family/Month	2 liters	18 lbs	18 lbs	18 lbs

Source: Save the Children

⁴⁴ PCI previously stood for Project Concern International.

3.2.4. USDA: Food for Education

PCI began a three-year USDA McGovern Dole FFE program in September 2010. The program is designed to increase enrollment, retention, and attendance rates of preschool and primary school students through provisions of daily school breakfasts in the department of Huehuetenango (PCI, 2011). The program works in six municipalities (Barillas, Cuilco, San Gaspar Ixchil, San Pedro Necta, Santa Eulalia, and Soloma) and reaches 164 schools. Commodity tonnages depend on each school's population size, as well as each school's parent association capacity to help prepare meals. The PCI FFE agreement calls for the distribution of 2,960 MT of commodities (see table below) over the three-year program.

PCI reported that the program has generally gone smoothly, with the exception of delays due to teacher strikes and school closures. Losses from school warehouses during these periods are reportedly low, and the program was able to move forward once the schools were back in session.

PCI also monetized 1,000 MT of soybean meal to help cover the cost of programming and transporting the distributed food aid. (Personal correspondence with USDA Food Assistance Division, July 2011 and PVO, July 2011). For more information on PCI's monetization, see Chapter 5.

Table 18. PCI: Food for Education 2010-2011, MT

	Black Beans	CSB	Milled Rice	Vegetable Oil	Flour	Soybean Meal
Direct Distribution	320	270	180	310	880	
Monetization						1,000

Source: PCI

SHARE's current FFE program in Huehuetenango, Chimaltenango, and Baja Verapaz began in 2008 and is scheduled to end in December 2011. SHARE targets 70,000 students through the school meal program.

SHARE has been awarded a new FFE program to begin in 2012. The program will target Huehuetenango,⁴⁵ Chimaltenango, Baja Verapaz, and El Quiché, with a goal of reaching 140,000 students. SHARE has been distributing rice, kidney beans, vegetable oil, and CSB to the schools (see table below for quantities). CRS monetized soybean meal on SHARE's behalf to support the program.

Table 19. SHARE: FFE 2009-2011, MT

Year	Rice	Red Beans	CSB	Vegetable Oil	Powdered Milk	Monetized Soybean Meal
2009	560	560	500	280	65	5,340
2010	580	580	520	300	0	5,990
2011	600	600	540	300	0	7,020
TOTAL	1,740	1,740	1,560	880	65	18,260

Source: SHARE

⁴⁵ The municipalities in Huehuetenango do not overlap with PCI's programming.

3.2.5. USDA: Food for Progress

Introduction. **USDA Food for Progress** programs implement agricultural, economic, and/or infrastructure development activities, and are usually supported by monetized food aid funds. USDA Food for Progress programs in Guatemala have monetized soybean meal, yellow maize, and tallow in the past five years. See table below for details.

There are no scheduled Food for Progress monetizations for 2011.

Table 20. USDA: Food for Progress Monetizations 2006-2010

Year	Partner	Commodity	Quantity
2006	Finca	Tallow	2,000 MT
2006	Government of Guatemala	Yellow Maize	18,000 MT
2006	Texas A&M University	Soybean Meal	15,000 MT
2007	Finca	Soybean Meal	8,000 MT
2008	Texas A&M University	Soybean Meal	15,000 MT
2010	Universidad del Valle	Yellow Maize	9,750 MT

Source: Personal Correspondence with USDA Food Assistance Division, July 2011 and CRS, July 2011

3.2.6. USDA Programming: LRP

CRS, with funding from USDA, is currently piloting a one-year LRP project in Guatemala, as authorized by the 2008 Farm Bill. LRP is based on the principle that providing cash for food purchases from surplus markets in the region may allow for a quicker and more cost-efficient response to food crises (USDA, 2011).

The CRS pilot is intended to inform a study which examines the timeliness and effectiveness of using LRP as a response to food crises as well as examines the enhancement of USG food assistance programs. CRS is working with local partner Caritas Santa Rosa to distribute the food, and with Cornell University, which is a sub-recipient for market monitoring assistance. The program serves 3,000 households in 70 communities.

CRS procures maize and beans in the departments of Izabal and Santa Rosa and maize/soy fortified flour (Incaparina⁴⁶) in Guatemala City. All commodities are distributed to households in Santa Rosa through FFW activities which include the reparation of roads, schools, health posts, and churches, as well as the establishment of tree nurseries, soil conservation structures, and home gardens. The table below shows tonnages procured as of July 2011. As the table shows, CRS still needs to procure 540 MT of maize to fulfill the program agreement, which may not happen due to commodity price increases. All program activities, including procurements and distributions, must be completed by September 30, 2011 at the close of the program (Personal correspondence with USDA Food Assistance Division, July 2011).

Table 21. CRS: LRP Procurement, 2010-2011

Commodity	Amount in Agreement	Total Procured as of July 2011	Procurement Dates
Maize	1,224 MT	680 MT	October 2010; February 2011
Black Beans	147 MT	147 MT	October 2010; February 2011

⁴⁶ Incaparina is a nutritious fortified blend of maize, soy, vitamins and minerals commonly used for hot drinks and other dishes. Incaparina is processed in Guatemala by Alimentos S.A and is widely available in markets around the country.

Commodity	Amount in Agreement	Total Procured as of July 2011	Procurement Dates
Maize/Soy Fortified Flour	160 MT	160 MT	October 2010; February 2011

Source: Personal Correspondence with USDA Food Assistant Division, July 2011

3.2.7. WFP: Development, Emergency, Purchase For Progress (P4P)

WFP is currently implementing disaster relief and development programs.⁴⁷ For development programming, WFP uses a FFW model with entire community targeting in the dry corridor area for projects related to agricultural development, environment, crop diversification, and infrastructure. WFP also collaborates with MSPAS' health extension service in the western highlands to undertake blanket distributions of a fortified blend called Vitacereal⁴⁸ to families with chronically undernourished children. WFP's P4P is a five-year pilot project (2009-2014) intended to support smallholder farmers with local purchases.

The majority of the food that WFP distributes is purchased in Guatemala; however, the organization does purchase Plumpy'nut from the Dominican Republic, fortified biscuits from Honduras and Ecuador, and is expecting a shipment of donated rice and beans from Brazil in October 2011 (Personal correspondence with WFP, August 2011). See table below for a list of commodities distributed from 2005-2010.

Foods bought through the P4P program are given to beneficiaries in the FFW and nutrition programs. WFP has a list of P4P vendors that the organization is accredited to buy from on a regular basis, which includes associations, small producers, and markets, including large traders. P4P purchases are based off international market prices, and are generally made at the warehouse according to pre-determined quantity and quality standards. Challenges to the P4P program include: delays in approval for purchase from WFP Rome headquarters, and lack of participation from some producers due to the fact that local prices may be higher than international prices which creates a disincentive to participate in sales to WFP (for example, black bean prices) (Personal Correspondence with WFP, August 2011).

For the past 10 years, WFP has strongly supported school feeding activities with food rations. However, WFP has declined school programming over the past few years according to program goals, which include the transition of school feeding from WFP to the GoG. WFP does not have any school feeding activities planned for 2011, despite the fact that the government's school feeding program has been less than successful (Personal Correspondence with WFP, August 2011). The table below shows commodities and tonnages distributed by WFP through its various development and emergency activities. See the following section for an overview of GoG programs.

Table 22. WFP: Distributions 2005-2010, MT

Commodity	2005	2006	2007	2008	2009	2010	Total
White Maize	8,969.234	19,850.162	3,760.451	3,675.217	4,024.958	9,177.100	49,457.122
Rice	10.850						10.850
Skim Milk	25.100	3.268	254.178	54.864	40.000		377.410
Whole Milk	38.550	139.016	29.484	150.700	50.500		408.250

⁴⁷ WFP also implements capacity-building programs which do not include a food aid component. These programs are centered on emergency prevention, gender, nutrition, and HIV/AIDS.

⁴⁸ Vitacereal is being processed by 3 Guatemalan companies: Alimentos S.A., Nutrica S.A., and GRUMA-MESECA.

Commodity	2005	2006	2007	2008	2009	2010	Total
High Energy Biscuits	47.607						47.607
CSB	1,929.855	4,776.725	831.375	753.750	1,052.875	2,663.050	12,007.630
Vita Cereal		1,692.146	3,149.620	3,783.075	4,318.431	3,101.471	16,044.743
Fortified Biscuits	18.079				19.866		37.945
Ready to Use Foods					2.122	5.878	8.000
Sugar					3.989		3.989
Oil	524.074	1,060.054	286.807	244.848	234.177	656.065	3,006.025
Black beans	1,210.270	2,823.293	724.635	618.383	594.817	2,107.250	8,078.648
Peas	150.000						150.000
Split peas	95.300	79.850					175.150
TOTAL	13,018.919	30,424.514	9,036.550	9,280.837	10,341.735	17,710.814	89,813.369
Beneficiaries⁴⁹	613,160	798,763	478,225	512,006	613,277	707,104	3,722,535

Source: WFP

3.2.8. GoG: Council of Social Cohesion

The **Council of Social Cohesion** (CCS, Consejo de Cohesion Social) was created in early 2008 by the current Colom administration. The CCS is based on social democrat ideology and intends to improve the livelihoods of poor populations. Members of the CCS include: Ministry of Education; MSPAS; Secretariat of the First Lady for Social Assistance (SOSEP, Secretaría de Obras Sociales de la Esposa del Presidente); and Secretariat of Food and Nutrition Security (SESAN, Secretaría de Seguridad Alimentaria y Nutricional).⁵⁰ CCS aims to create a social protection network across the country using select public interest programs in each ministry (Personal correspondence with SOSEP, August 2011).

The CCS is defined as a non-implementing agency which focuses on coordination and promotion among ministries and the public. A variety of agencies implement the social protection programs. See table below for information on the ministries involved in CCS.

Table 23. GoG Distributed Food Aid/Cash Transfer Overview

Program	Implementing Agency	Type of Transfer
Mi Familia Progresa	Ministry of Education	Conditional Cash Transfer (CCT) - Education and Health
Bolsa Solidaria Urban	Ministry of Agriculture - VISAN	Food aid distributions
Bolsa Solidaria Rural	Ministry of Agriculture - VISAN	Food aid distributions
Refacción Escolar	Ministry of Education	Cash transfer to parent associations for meal preparation
Comedores Solidarios	Department of Social Welfare	Subsidized prepared meals
Escuelas Abiertas	Department of Social Welfare	Arts and sports activities after school and weekends

Source: Personal Correspondence with CCS, August 2011

Ministry of Education: Conditional Cash Transfer Programs. Conditional Cash Transfer (CCT) programs are social safety net programs that provide money transfers, generally to poor households, based on the premise that a predetermined behavioral action has been or will be met with the funds. Typically, conditional requirements to receive CCTs center around education

⁴⁹ Beneficiaries are represented as individuals.

⁵⁰ SESAN includes the Ministry of Agriculture, the Ministry of Communications and Public Works, the Ministry of Finance and others.

and/or health, such as school attendance, vaccination, or health center check-ups. Cash transfers aim to increase household consumption in the short-term and build human capital in the long-term. The CCT program in Guatemala, **Mi Familia Progresiva (MIFAPRO)**, began in April 2008, as an initiative by President Colom.

It is recognized that the success of a CCT program depends on targeting, which is based on geographical and/or household criteria. As Guatemala has extremely high rates of malnutrition, MIFAPRO includes health-related behavior requirements as a way to address household nutrition. Guatemala also struggles with plummeting school enrollment in each grade of primary school. Almost 15 percent of children do not enter first grade at the appropriate age, 21.5 percent of first grade students do not attend second grade, and by sixth grade enrollment rate is just 40 percent (World Bank, 2009). MIFAPRO includes an education component as an incentive for children to enroll and stay in school.

Two types of CCTs are distributed by MIFAPRO. One health transfer of US\$18 (which is equal to 10 percent of average monthly consumption for an extremely poor household) is distributed to families with PLWs or children under the age of 15 (Stromgren, 2011). The main conditionalities associated with this transfer are health centers visits and compliance with MSPAS-established health protocols.⁵¹ The second transfer of US\$18 is intended to promote education and is distributed to families with children 6-15 years old who have not yet completed primary school. The conditions for receiving this transfer are school attendance (at a minimum level of 80 percent), and a maximum of one year of school repetition (Stromgren, 2011).

MIFAPRO is expanding rapidly. At the end of 2008, 280,939 families participated in the program, and the value of the cash transfers was US\$13 million (equal to 0.2 percent of government spending and 0.03 percent of Guatemala's GDP). In 2010, 814,625 families participated in the program at a cost of 0.34 percent of GDP, which represents 1.94 percent of total government expenditure. These figures indicate that roughly 28.5 percent of Guatemalan families participate in the program (Stromgren, 2011).⁵²

VISAN: Bolsa Solidaria. The **Bolsa Solidaria** is a GoG food security program that has been in place since June 30, 2008. The program is split among rural and urban areas, as described below. According to the Bolsa Solidaria website, food aid rations are distributed to families on a monthly basis, in exchange for participation in community development workshops. Details of the workshops were not described by any of the interviewees. The monthly ration per family is: 10 lbs rice, 10 lbs beans, 5 lbs maize flour, 5 lbs of a nutritional supplement,⁵³ and 1/2 gallon of cooking oil. The ration is intended to support an entire family, and especially children and PLW family members.

The **Bolsa Solidaria Urbana** distributes about 50,000 family rations each month to peri-urban and marginalized zones in the department of Guatemala. The website states that targeting criteria are based on a family census and a mathematical model to ensure beneficiaries fit selected profiles. Staff at CCS were not able to provide further details on the selection criteria. Beneficiaries include: families that live in high-risk zones, handicapped persons, widows, and the elderly (Bolsa Solidaria). The Bolsa Solidaria food rations seem to be well-received by

⁵¹ It appears the established health protocols include visiting health centers and speaking with health officials. More details are not available. It is widely known that health centers are understaffed and poorly-funded.

⁵² The BEST study team spoke with both beneficiaries and non-beneficiaries in CCT program areas and the beneficiaries could not define why or how they were or were not selected.

⁵³ One interviewee said she received Bienestarina, which is a fortified blend used for hot drinks and comes in a variety of flavors.

beneficiaries, though beneficiaries interviewed by BEST in July/August 2011 could not cite targeting criteria or regularity of arrival of goods. For example, one interviewee stated that she appreciates the Bolsa Solidaria food which helps feed her five children, and does not mind consuming broken rice, which she uses in soups. However, the beneficiary noted that her rations arrive either bi-monthly or monthly, and without any set date. Regarding targeting, the interviewee stated that rations are simply distributed to everyone on her block (located in Zone 7), all of which are of the same political party. She noted that the Bolsa delivery staff, which are from the military, have been telling beneficiaries to expect milk and sugar in upcoming rations, but she has yet to receive either of these goods.

The **Bolsa Solidaria Rural** reaches 44,650 families. The program distributes food 5-6 months per year, and aims to coordinate with periods when families do not have temporary work in the sugar and coffee industries. As of August 2011, the program has only been able to distribute rations twice for the year due to budget constraints (Personal Correspondence with CCS, August 2011).

Market impact. In BEST interviews during July/August 2011, rice industry members noted that Bolsa Solidaria rations negatively impacted the rice processing market.⁵⁴ According to Guatemalan Rice Association (ARROZGUA, "La Asociación Guatemalteca del Arroz") per capita rice consumption in Guatemala is 16 lbs *per year* (Personal correspondence with ARROZGUA, July 2011). In comparison, Bolsa Solidaria rations include 10 lbs of rice *per month*. Resulting self-monetization and market leakage could be expected. For minimal market impact is it necessary for ration sizes to appropriate to family size.

VISAN: general distributions. In addition to the Bolsa Solidaria, VISAN implements MAGA's nutrition and food security policies and programs. Programs support vulnerable populations with food aid distributions. In 2010, VISAN distributed maize, beans, rice, sugar, Bienestarina, maize flour, and vegetable oil to 403,386 families in 22 departments.⁵⁵ Additionally, VISAN distributed food in Baja Verapaz on behalf of the Government of Taiwan in 2010. The Taiwanese aid included 50 lbs white maize, 15 lbs black beans, 10 lbs rice and 1.8 lbs oil, and reached 15,000 families. Frequency of this distribution was not recorded.

In addition to distributed food aid, VISAN also promotes family gardens, urban agriculture, organic farming, and seed and fertilizer distributions (VISAN, 2010).

3.3. Planned Initiatives

3.3.1. USAID

USAID/Guatemala is carrying out several initiatives including Feed the Future, Global Health Initiative, President's Emergency Plan for AIDS Relief (PEPFAR), Global Climate Change Initiative, and Food for Peace Title II.

FFP has funds available for Title II development programs in Guatemala in FY12. USAID/Guatemala has made a commitment to focus its funding and efforts toward the five highest-need departments (Huehuetenango, Quetzaltenango, El Quiché, San Marcos,

⁵⁴ ARROZGUA noted that the distributions did not negatively impact the rice production market, however, because of the unique pricing mechanism for domestically produced rice.

⁵⁵ Figures on total tonnage of food and/or ration sizes were unavailable.

and Totonicapán) of the largely indigenous and rural western highlands, where poverty and food insecurity are extensive. Title II programs will target the most vulnerable households, communities, and municipalities in these departments. Resources will provide essential support through activities that integrate health and nutrition, agriculture and sustainable environmental practices, animal husbandry, micro-enterprise, and improved local governance, in select municipalities. USAID has indicated that applicants should focus MCHN activities toward PLWs and children under the age of two (“first 1,000 days”), and that agricultural activities should focus on strengthening small-scale production and diet diversity. The agricultural component will also focus on increasing family income. Programming should be designed based on expected effectiveness, past experience and lessons learned, and be appropriate to the implementation area. The new Title II development programs will work in coordination with other USG agencies (USAID, 2010), and in an effort to collaborate with Feed the Future, Title II programming will work with local communities and municipalities to prevent and respond to food emergencies.

3.3.2. USDA⁵⁶

In 2012, Guatemala will be a priority country for USDA. Programming activities will focus on the pacific coasts and highlands, and will center around improving agricultural production, use of alternative crops, and building trade capacity (Personal correspondence with USDA Food Assistance Division, June 2011).

According to the FY12 Food for Progress solicitation, priority regions are El Quiché, Huehuetenango, Totonicapán, San Marcos, and Quetzaltenango. Upcoming Food for Progress program objectives will be: 1) increase access to financial services (including microcredit and crop insurance) to farmers and agriculture-related businesses, and market information systems; 2) crop improvement through agricultural technology (breeding, biotechnology, seed banks, irrigation, plant nutrition); 3) agricultural extension services, provided by universities, educational institutions, and the GoG (USDA, 2011).

A new FFE program with SHARE will start in FY12 in Huehuetenango, Chimaltenango, Baja Verapaz, and El Quiché with a goal of reaching 140,000 students. According to the USDA office in Guatemala City, future activities that rely on monetization sales will be funded solely through the sale of wheat.

⁵⁶ This language was sent to USDA for approval. At time of report submission a response had not been received.

Chapter 4. Adequacy of Ports, Storage, and Transport

4.1. Introduction

The Bellmon Amendment requires that adequate storage facilities are available in the recipient country at the time of exportation of the commodity to prevent the spoilage or waste of the commodity. The BEST team investigated Guatemala's ports, storage facilities, and transport routes in July and August 2011, and found them capable of handling current food aid tonnages.

4.2. Major Ports

4.2.1. Puerto Santo Tomás de Castilla

Overview. All distributed food aid destined for Guatemala is currently imported through Puerto Santo Tomás, as well as monetized shipments of Crude Degummed Soy Oil (CDSO).⁵⁷ The publically-owned port is located in Izabal, on the Atlantic coast. Santo Tomás handles roughly 4,088,549 MT per year (Puerto Santo Tomás, 2010)⁵⁸, and currently operates at about 75 percent of its total capacity (Personal communication, port authorities, July 2011). In the month of June 2011, the port received 345,270 MT. Of this total tonnage, 63 percent was containerized (Puerto Santo Tomás, 2011). Roughly four to five vessels offload at Puerto Santo Tomás per day and each ship takes about three to five hours to offload. Traffic is steady throughout the year, but slightly heavier during November and December, when the country exports melons.

The port has six berths with a total dock area of 677,640 m², and an average depth of 11 meters. The port is fully-equipped with tugboats, mobile cranes, forklifts, and trucks. Most services are managed by the port, but private actors own some services such as crane operation and transport. The port also offers a total storage area of 289,256 m², which includes container yards (about 97,200 m²) and covered storage (about 28,700 m²) (Puerto Santo Tomás, 2010).

Port authorities stated that there is no prioritization of cargo, except for cruise ships or ships with perishable cargo. Port authorities and PVO staff agreed that the average time to offload and clear food aid shipments at Santo Tomás is about one month.

Offloading. Once the vessel berths, drug enforcement and health representatives inspect the ship, which can take up to two hours. Then port employees offload the containers with the help of cranes (Kent, 2003). Next, the cargo's seal is inspected before it is handled by customs and the Ministry of Agriculture, Livestock, and Food (MAGA, "Ministerio de Agricultura, Ganadería, y Alimentación"), as described in the section below.

Inspection and Fumigation. The Ministry of Public Health and Social Assistance (MSPAS, "Ministerio de Salud Pública y Asistencia Social) and MAGA are in charge of inspection and fumigation of commodities, though the International Regional Organism for Animal Health

⁵⁷ Santo Tomás also receives some food aid destined for El Salvador.

⁵⁸ Of this, average import volumes account for slightly over half, at 2,281,968 MT.

(OIRSA, "El Organismo Internacional Regional de Sanidad Agropecuaria) actually undertakes inspection and fumigation activities.

Almost all food imports undergo fumigation at Santo Tomás; however, port authorities noted that food aid shipments tend to be more frequently infested than normal commercial shipments. The reason for such frequent need for fumigation of food aid remains unclear.

According to FAO's phytosanitary guidelines (Taylor, 1996), infestation of food aid can result from any of the following:

- Country of origin: Pests can be carried into the postharvest system if not controlled, and are likely to increase with prolonged storage time.
- Ship and freight: If vessels and/or trucks are not thoroughly cleaned between routes, pests from previous shipments may damage goods. If goods are traveling to warmer climates, chances of infestation increase.
- Cross infestation: Vessels calling at other ports along the route may pick up pests at these mid-point destinations.
- Destination port: Pests are common in transit sheds and storage areas of many ports. Infestation of cargo which sits more than two days at the port can be expected (Taylor, 1996).

Almost all of the above reasons for infestation were cited as possible causes for infestation of food aid in Guatemala.

If an uncommon pest is identified during inspection, identification and treatment may take up to three weeks. MAGA must send information and photos of unknown pests to the Universidad de Valle for further guidance. Puerto Santo Tomás only allows 45 days of free waiting time at the port; after this, port fees are roughly US\$50 per day.

Awardees noted that they often need to re-fumigate commodities upon warehouse arrival. Although OIRSA fumigates at the port, Awardees noted that this fumigation is not always thorough or sufficient after the additional time lapse from storage and transport.

Taxes and customs. Guatemala's Superintendencia de Administración Tributaria (SAT) office and port customs office handle documentation for imports. The customs office at Santo Tomás is open from 8 AM-11 PM, every day of the year.

Upon arrival at the port, customs randomly⁵⁹ marks containers red or green with a randomized "traffic light/go-or-stop" system, and red containers are subject to additional inspection.⁶⁰ In addition to a thorough inspection of red containers, all commodities must be cleared according to proper documentation.

⁵⁹ Although the selection of red and green containers is done by a computerized system, this system takes characteristics such as country of origin and type of cargo into consideration.

⁶⁰ The system's operation manual claims that 15 percent of cargo is marked red; during BEST interviews, port authorities estimated that 30-40 percent of cargo is marked red; a 2003 report on the inefficiencies of Santo Tomás estimated that 90-100 percent of cargo is marked red (Kent, 2003).

In order to clear distributed food aid commodities, the PVO must procure the documents listed in Table 24. The most time-consuming documents to procure and process are the tax exemption ("franquencia") and the port fee exemption.

Tax and Port Fee Exemption. To receive a tax exemption, the PVO must first file the shipment's original Bill of Lading, among other documents (listed in Table 24) with the SAT office in Guatemala City. The original Bill of Lading is sent by mail the day the ship departs from the US, and the ship sometimes arrives before the mail does.⁶¹ Once SAT grants the tax exemption (which takes about two to four weeks to issue), the PVO then mails the waiver to the customs office at Santo Tomás. From there, the Santo Tomás office may begin filing exemption and clearing the goods. PVOs noted that they would like to start the paperwork process earlier (before the ship arrives), but SAT regulation will not allow the process to start before the ship lands in Guatemala.

PVOs are eligible for exemption from publically-offered service fees at the port. For port fees exemption, PVOs must undergo a similar process with Empresa Portuaria Nacional de Santo Tomás de Castilla (EMPORNAC). Once paperwork is submitted to EMPORNAC, the office takes about three weeks to issue port fee exemption.

As noted above, some services at Puerto Santo Tomás are privately-owned; these costs are not covered by port fee exemption documents. Current Awardees reported different ways of handling the payment of private services, and all emphasized that there is no standard payment process among PVOs for private port services (such as crane use and transport within the port). Although the US Government (USG) and the GoG have a written agreement and decree⁶² ensuring that the GoG will handle payment of imported food aid, the agreement has been implemented to varying extents in the past years. For the past two years, Save the Children has had success waiving private fees, though processing the GoG/USG agreement with EMPORNAC was difficult. CRS, on the other hand, has had third parties (shipping companies, customs agent, etc.) pay for the private services.⁶³ Mercy Corps uses the same strategy, and has its shipping agent pay the private fees.

Current Awardees rank the port fee exemption and customs clearance process as the most time-consuming portion of the food aid pipeline. Port authorities and PVOs both noted that the SAT office is understaffed, and has a high employee turnover rate, which frustrates attempts to build regularity and consistency in communication. The Guatemala City SAT office can take two weeks to a month to issue tax exemption forms.⁶⁴

Table 24 shows an average timeline for importing distributed food aid into Santo Tomás. Food aid usually waits at the port for a total 43 days before it is released; the majority of this time is spent obtaining tax and port fee exemption documents. Note that some of the processes

⁶¹ The ship takes about four days to arrive at Santo Tomás from the US, whereas the Bill of Lading can take up to one week from departure to arrive at the PVO's office.

⁶² This law, Decreto 78-1954 states: "7. El Gobierno de Guatemala conviene en hacerse cargo de una participación equitativa del coso de los programas y proyectos de cooperación técnica." The agreement, Enmienda 8 Convenio de Objetivo Estratégico, reads: "the Grantee [USG] will permit the entry of the donation free of custom duties, warehousing, national lighterage, and wharfage, port fees, sales taxes and any other tax or tribute in force at the date of the entry of the commodities."

⁶³ Of course, CRS is practically assuming the cost for private services, as these third parties include private fees in their charge to CRS.

⁶⁴ This wait time is actually about two weeks less than what it was a few years ago. The USAID Mission intervened with SAT to speed up the process to its current state.

described below may happen simultaneously, whereas some may not begin until another has been completed.

Table 24. Average Timeline for Food Aid Shipment to Puerto Santo Tomás

Activity	Average # of Days	Documents Required
US port departure to port arrival at Santo Tomás	5	Crew List Provisions List Voyage Memo Certificate of Registry International Tonnage Certificate Crew Personal Effects List Clearance from Last Port Negative Passenger List Passenger List International Ship Security Certificate List of Cargo Bill of Lading Check Notebook Stevedore Plans Export Declaration Export License
MAGA/MoH inspection/fumigation	15	Phytosanitary Certificate
Landed containers released from port	43	
Payment to shipping company* (*This is not a standard practice for food aid imports, but may be asked of PVOs importing food aid for the first time.) ⁶⁵	13	ATC (Temporary Admission of Containers) Port Fee Exemption
Port Fee Exemption	23	Original/Certified Copy of Bill of Lading Standard Customs documentation* Request for Exemption letter* Copy of Port Fee Exemption Resolution* (*these documents are not required by SAT, but may help speed process)
Release letter	4	Original Bill of Lading USAID Endorsement Letter* Port Fee Exemption (*This letter is only required for PVOs who have yet to establish a bilateral agreement between the USG and GoG, which permits future Release Letters to be processed directly between the PVO and SAT, instead of through the PVO, USAID, and SAT)
Tax Exemption ("franquicia")	18	Request for Tax Exemption Original Bill of Lading Commercial Invoice Packing List Letter of Donation Certificate of Origin Export Certification

⁶⁵ Freight contracts require that "contracted freight rate must include any operational/administrative costs/expenses/fees charged by the ocean carrier, the carrier's local representative or terminal operators."

Activity	Average # of Days	Documents Required
		Original or copy of Phytosanitary Certificate and/or Inspection Customs Certificate Form
Customs Certificate	1	Phytosanitary Certificate Tax Exemption Original/Certified Copy of Bill of Lading Commercial Invoice
Recovery of Containers (Containers declared abandoned after 20 days at port)	1	Customs Certificate Tax Exemption Copy of Bill of Lading
Tax Stamp Exemption Letter	6	Draft letter
Phytosanitary Certificate	2	Exemption for Tax Stamps Letter Phytosanitary Certificate request form

Source: Mercy Corps, Puerto Santo Tomás website, Comisión Portuaria Nacional Guatemala

For monetized goods, the buyer assumes responsibility for all import procedures once the ship has landed. As monetized goods are handled like a normal commercial transaction, tax and port fee waivers are not necessary. The current monetized CDSO buyer (Olmecca) has adequate facilities at the Santo Tomás to handle imports.

4.2.2. Puerto Quetzal

Overview. Puerto Quetzal handles the majority of all commercial bulk grain shipments, as well as bulk grains for USDA monetizations. The port is located along Guatemala's Pacific coast, in the department of Esquintla. In 2010, the publically-owned port handled 7,577,810 MT, of which imports accounted for 69 percent. Port authorities estimate that the port currently operates at 70-80 percent capacity. Puerto Quetzal can handle all types of cargo, though solid bulk shipments account for the majority of operations.

Puerto Quetzal is modern, efficient, and handles more cargo than Santo Tomás. Although the two ports are not directly comparable because they specialize in handling different types of cargo (Quetzal, bulk grains, and Santo Tomás, containers), the BEST field visit revealed that Puerto Quetzal offers more in terms of efficiency, equipment, and staffing than Santo Tomás. Quetzal benefits from private investments and an overall larger capacity than Santo Tomás.

Puerto Quetzal has eight berths, which total 1,330 meters in length (Puerto Quetzal, 2011).⁶⁶ Five berths are dedicated to general cargo, including liquids. Average depth is 11.5 meters. Port authorities are currently in the design phase of a future expansion of berths and improved tracking technology.

Puerto Quetzal offers a full range of services including stevedoring, offloading, transport, storage, and fumigation. The port is fully equipped with forklifts, container stackers, cranes, trucks, and tugboats. Puerto Quetzal is open 24/7 during most days of the year,⁶⁷ though administrative services are only open Monday through Friday, 8 am - 5 pm (Puerto Quetzal, 2011). Some services (stevedoring, anchorage, unloading, cranes, and transport) are only offered by private companies.

⁶⁶ These include one berth for coal/fuel (10.67 m), one berth for cruise ships (285 m), four berths for general cargo and solid/liquid general cargo (total 810 m), an additional berth for general cargo on shallow-draft vessels (170 m), and one berth for gas (58 m).

⁶⁷ The port has limited operation hours on New Year's eve and day, International Worker's Day (May 1-2), Christmas day, and Holy Week.

One of these private companies is Pacific Grain Terminals, Ltd. (TERPAC, "Terminal de Granos del Pacífico Limitada"), a bulk grain handler that has been at Puerto Quetzal for the past seven years. Private actors (i.e., Guitierrez Group, US Grains Council, and Archer Daniels Midland) are invested in the company, which offloads and transports the majority of bulk grains brought into the port. Market actors reported that the transport group is quite efficient.⁶⁸ The company has six silos (each with 4,000 MT capacity), a 7,500 MT warehouse, weighing and bagging facilities, grain elevators, and trucks (TERPAC, 2006). TERPAC offers eight days' of free storage if importers use TERPAC transportation (Personal communication, 2011).

There is usually no wait time to offload and handle imports at Puerto Quetzal. Most bulk grain shipments take about three days to offload. Traffic is generally steady throughout the year, though October through February are slightly busier due to sugar exports. Port authorities claim there is no prioritization of goods other than medical supplies and perishable goods. Similar to Puerto Santo Tomás, port authorities noted customs clearance as the largest bottleneck in the import process.

Inspection and fumigation. Puerto Quetzal is currently reorganizing its staffing structure; as a result, all containers are currently inspected.⁶⁹ Port authorities estimated that about 90 percent of bulk grains require fumigation, a high rate similar to Santo Tomás. Fumigation takes an average of three days, which is same time reported by fumigation staff at Santo Tomás (assuming no unidentifiable pests are found).

4.3. Storage

4.3.1. Private Storage

Private companies typically have their own private facilities near the port. Most private sector actors claimed they kept about two months' worth of stock at any given time; traders claim that products such as maize begin to lose quality if stored any longer.

4.3.2. Donor Storage

See table below for an overview of donor storage in Guatemala.

Table 25. In-Country Donor Storage- Main Warehouses, as of August 2011

Donor	Locations	Total capacity
WFP	Fraijanes, Tactic, Los Amantes, Chimaltenango, Quetzaltenango, Retalhuleu	47,200 MT
SHARE	Villa Nueva, Huehuetenango, Salama, Jutiapa	5,900 MT
CRS	Villa Nueva	2,000 MT
Save the Children	Villa Nueva, Zacapa	3,200 MT
PCI	Huehuetenango	1,100 MT
Mercy Corps	Coban, Alta Verapaz	3,400 MT

Source: Personal communications, PVOs, July/August 2011

WFP. WFP has a current capacity of 47,200 MT in warehouses across the country. The organization currently rents storage from the National Institute of Agricultural Commercialization

⁶⁸ TERPAC's average offloading rates for grain shipments are as follows: 424 MT/hr (shipments of maize, soy, gluten, and wheat); 350 MT/hr (shipments of maize, soy, and rice); and 699 MT/hr (shipments of wheat) (Puerto Quetzal, 2011).

⁶⁹ Before this increase, about 80 percent of containers were inspected.

(INDECA, "Instituto Nacional de Comercialización Agrícola") as well as from private warehouse owners. INDECA is a government-owned storage company.⁷⁰ Many of the INDECA facilities are unused, and are in need of repair (WFP, 2011). INDECA offers WFP rent-free storage, provided that WFP pays for renovations to the structures as well as provides staff.

WFP currently has a capacity of 8,700 MT in INDECA warehouses, and an additional capacity of 38,500 MT in other privately-owned warehouses (WFP, 2011). WFP's INDECA warehouses are located in Fraijanes (Guatemala department), Tactic (Alta Verapaz), Los Amantes (Izabal), Chimaltenango, Quetzaltenango, and Retalhuleu (WFP, 2011).

SHARE. SHARE has four warehouses, located in Villa Nueva, Huehuetenango, Salama, and Jutiapa. The warehouses have a combined capacity of 5,900 MT (SHARE, 2011).⁷¹ SHARE rents its warehouses from private owners.

The BEST team visited SHARE's Huehuetenango warehouse, which has been used for the organization's MYAP, SYAP, and USDA Food For Education (FFE) activities. The warehouse has a capacity of 20,000 MT. The team found the facility in generally good condition. The warehouse is well-ventilated, clean, and secure. Warehouse managers reported losses of less than one percent, although some bags arrived at the warehouse torn or damaged, and thus had to be re-bagged. Warehouse employees also noted a small amount (estimated 20-30 bags) of bitter-tasting CSB. The CSB has been in the warehouse since May 2011, and will continue to sit at the warehouse until SHARE receives results from toxin tests.

CRS. CRS has one main warehouse in Villa Nueva, Guatemala City, and is currently seeking additional storage for its upcoming SYAP. The organization's current warehouse has a capacity of 2,000 MT and receives about two or three shipments annually. CRS has rented⁷² the facility from a private company since 2008, and has an established relationship with the owners, who control many storage units across the country.

The warehouse is located in a secure industrial park.⁷³ BEST found the warehouse is in good condition, with reported losses less than one percent. Monthly fumigation and pest control measures (such as UV lights and rodent traps) are in place, and the warehouse appears clean, well-ventilated, and orderly.

Though the warehouse is not located ideally in relation to CRS program areas (San Marcos, Baja Verapaz, and Jalapa), CRS confirmed that many factors make the warehouse attractive. For example, Guatemala's south central areas are cooler and less humid than program areas, and thus better for storage.

Warehouse staff reported that CSB and pinto beans are the most problematic commodities to store and transport; particularly bean bags, which occasionally arrive with large amounts of unidentifiable objects unfit for consumption. For example, one shipment of 4,800 pinto bean sacks contained 11 sacks are in this condition.

⁷⁰ The parastatal has provided storage for other food security actors in the past. In 2006, INDECA's humanitarian storage volumes reached 28,500 MT (INDECA, 2009), which included food assistance on behalf of WFP, the GoG, and the Red Cross.

⁷¹ Individual capacities: Villa Nueva: 2,000 MT; Huehuetenango: 20,040 MT; Salama: 780 MT; Jutiapa: 1,100 MT.

⁷² CRS rents the 1,610 square meter space for US\$3,220 per month. This cost includes security.

⁷³ This complex also holds SHARE and Save the Children warehouses.

Every two months⁷⁴, commodities are shipped from the main warehouse to temporary storage facilities provided by Caritas in San Marcos, Rabinal, and Baja Verapaz. Caritas assumes responsibility for storage and transport from the CRS warehouse to distribution sites. Caritas warehouses typically store goods for less than one month.

The BEST team visited a Caritas storage facility in San Marcos, which holds a maximum of 23 MT. The team found the temporary storage unit in poor condition. The space is located in a poorly-lit, damp basement of a church. The basement is poorly-ventilated and dirty, with no visible bookkeeping or commodity management systems in place. Although the space only serves as temporary storage⁷⁵, the BEST team recommends that Caritas take relatively simple hygienic and organizational measures to improve the facility.

Save the Children. Save the Children rents⁷⁶ warehouses in Villa Nueva and Zacapa. The warehouses have a combined capacity of 3,200 MT.⁷⁷ The warehouse in Zacapa is for the SYAP program.

The BEST team visited Save the Children's Zacapa warehouse, which holds about 50 percent capacity as of July 2011. The warehouse is part of a complex of 17 warehouses owned by a private company, Bodega del Atlantico. The warehouse is in good condition, with monthly fumigation and 24-hour security. The space is clean and organized. However, in comparison to other donor warehouses visited, the Save the Children warehouse faces significantly higher temperatures. Staff assured losses less than one percent, with CSB most prone to loss.

Staff at Save the Children's Zacapa warehouse re-bags and rebottles commodities into ration sizes at the warehouse, rather than at the distribution site. The re-bagging and re-bottling procedure appeared efficient and organized, with little if any commodity loss during the process. **PCI.** PCI rents a single warehouse in Huehuetenango. The 730 m² facility has a capacity of 1,100 MT, and stores commodities for the organization's SYAP and USDA/FFE activities. Like other PVOs, PCI is seeking additional storage for upcoming programs.

The BEST team visited the warehouse and found it in good condition. The warehouse is well-ventilated, clean, and secure. PCI fumigates commodities every two months, and reported losses are less than one percent. The facility is part of a large storage facility compound and has 24/7 security.

Mercy Corps. Mercy Corps rents⁷⁸ a recently-built warehouse in Alta Verapaz. The warehouse was constructed specifically for Mercy Corp's PM2A program, and thus benefits from a design customized for food aid storage.⁷⁹ The warehouse has a total capacity of 3,400 MT.⁸⁰

The BEST team visited Mercy Corps' warehouse and found it in very good condition. The warehouse is extremely clean, well-maintained, ventilated, and organized. Warehouse staff

⁷⁴ A usual shipment from the warehouse to San Marcos and Baja Verapaz from the warehouse consists of: 1,200 sacks of rice, 1,700 bags of CSB, 800 bags of beans, 1,100 and tins of vegetable oil.

⁷⁵ Most commodities remain in the basement for about 15 days.

⁷⁶ Save the Children pays US\$2,400 per month to rent the warehouse.

⁷⁷ Villa Nueva capacity: 2,000 MT. Zacapa capacity: 1,200 MT.

⁷⁸ Mercy Corps currently pays US\$9,272 per month for the facility, which was agreed upon based on a rate of roughly US\$2.73/MT.

⁷⁹ For example, the facility includes floors and walls specially lined to deter pests and prevent humidity.

⁸⁰ Under the current program, capacity is reduced to 2,600 MT. Mercy Corps has reserved roughly 800 MT in space dedicated to its re-bagging process.

estimated losses less than one percent.⁸¹ Mercy Corps fumigates their commodities at least once a month.⁸² As of August 2011, the warehouse is nearly at full capacity as the program's first shipment included a year's supply of rice and oil.⁸³

As discussed in Chapter 3, Mercy Corps' program includes a variety of rations destined for specific areas at specific times. Each month, different bags carry different educational messages for the beneficiaries. The organization has hired a private company to handle this complicated process. So far, Mercy Corps has successfully distributed the appropriate ration sizes, with the appropriately-messaged bags, to the appropriate communities.⁸⁴

4.4. Transportation

Roads. Roads from both Santo Tomás and Puerto Quetzal are in generally good condition; they are paved and lined, and well-lit in some areas. Some interviewees noted that the roads are especially windy, only have two lanes, and experience heavy traffic during rush hour, all of which can slow transport time. However, most goods reach main warehouses within one day of leaving the port. Roads within program areas are in poorer condition, but are still navigable. Some Awardees noted slight delays due to heavy rains in the most remote areas.

Transport companies. Awardees select a transport company based on an open-tender, competitive process; however, only a few transporters qualify for consideration (that is, they can handle large shipments on a short notice, as well as assume full responsibility for the cargo while in transit).⁸⁵ Most Awardees currently rely on the Transport and Logistics Company (CLT, "Compañía de Logística y Transporte") to carry their goods.

CLT can usually pick up the goods immediately, and has the capacity to handle large amounts of cargo as well as carry insurance during transit. The company charges roughly US\$89⁸⁶ per container, which also covers the cost of loading and unloading the trucks.⁸⁷ CLT is based in Villa Nueva, and offers transport throughout Central America.

Security. Security is a concern, though most Awardees have had few, if any, losses during transit. Insurance companies require GPS navigation as a standard security measure for most larger trucking companies. Though traveling at night is discouraged, most large carriers do travel overnight, when traffic is low. Furthermore, it is illegal for large trucks to occupy main roads from 6 am-9 am, which encourages truckers to travel in the evenings.

⁸¹ Interestingly, Mercy Corps reported a "gain" of some commodities such as CSB. The shipments received were slightly greater in tonnage than requested; Mercy Corps hypothesizes that the commodities were originally measured in volume, not weight. "Losses" were reported for beans and oil, both of which lose weight over time.

⁸² Mercy Corps practices "preventative fumigation" that is slightly more aggressive than other NGOs' practices; for example, Mercy Corps fumigates the commodity as soon as it arrives at the warehouse, as well as 21 days later. The organization claims that their strategy is safer and more cost-effective in the long run.

⁸³ Note that Mercy Corps changed program design to lower ration sizes of these commodities, and the program's initial shipments were based on the older, larger ration size.

⁸⁴ The costs of such an operation are higher than the usual storage and bagging costs of other food aid programs. Awardees await IFPRI's cost-benefit analysis of the program to see whether the bagging and service costs are a wise investment for future programming. Bagging and packing costs currently average US\$11.11 per year, per participant.

⁸⁵ Awardees claimed that finding a capable trucking company was one of the most difficult parts of the logistics process.

⁸⁶ Converted from 700 Quetzales, using 1 GTQ = 0.127681 USD (www.xe.com, August 24, 2011)

⁸⁷ CLT contracts a separate company to unload the cargo.

The BEST team heard few reports of highjacking. Both WFP and CRS have had trucks overtaken during transit in the past three years.⁸⁸ In these cases, the transport company assumed full responsibility for reimbursement of the goods, as agreed upon in the contract.

4.5. Other Challenges

Although Guatemala meets Bellmon requirements of adequacy of ports, storage, and handling, PVOs noted other, minor, improvements that could be made to improve both resource and logistical efficiency. Lastly, commodity-specific characteristics for storage and handling are provided as information for future programming.

Incineration. USAID/FFP has undergone a shift in the process of unfit commodity disposal. In 2009, FFP/Washington (FFP/W) took more control over the disposal procedures, which was once mostly handled by Guatemala's local FFP officer. Under the new authorization structure, decisions on how to dispose of unfit commodities are handled by FFP/W's Agreement Officer's Technical Representative (AOTR), with input from FFP/W's Environment Officer.

These decisions usually take longer to make (resulting in increased storage/waiting time for PVOs), and are generally stricter than previous disposal methods determined by local FFP staff. Whereas commodities without serious damage (such as high humidity) were once sold to organic fertilizer companies or animal feed companies, the majority of all unfit commodities, regardless of condition, are now ordered to be incinerated. Awardees noted that incineration may not be the most appropriate (or cost-effective⁸⁹) way to discard food aid with minor damages, and would prefer a speedier and less burdensome process.

Shipment size. Awardees noted the logistical difficulties of handling large shipments of food aid. This is especially true for SYAP Awardees, who receive an entire year's worth of commodities in a single shipment. Not only is this a physical burden on transporters and port employees who handle the large shipments, but also a financial and administrative burden on PVOs, who have to find and pay for additional storage facilities. Additionally, some of the SYAP program areas are hot and humid; 12 months of food storage in these locations is challenging and prone to spoilage.

BEST recommends that USAID consider sending smaller shipments of Title II food aid on a more frequent basis. If shipments arrived more frequently and in smaller quantities, Awardees could rent less storage space and thus save precious funds.

Commodity-specific challenges. Future Awardees can note the following about transport and storage of specific commodities:

- **Flour:** Prone to spoil if exposed to rain. Awardees suggest that flour bags include a water-tight lining, similar to CSB bags.

⁸⁸ These cases appear to be random, and Awardees have taken steps to help reduce the likelihood of high jacking. For example, CRS' truck had a GPS system, and was overtaken on a road with heavy traffic, during the early afternoon. PVOs and transporters also strategically distribute higher-value commodities (such as vegetable oil) in smaller quantities among many trucks to reduce risk.

⁸⁹ For example, Mercy Corps continues to pay warehousing fees to store an isolated shipment of infested commodity while they negotiate the incineration process. CRS has also had to incinerate goods, and estimates that it costs roughly US\$30,000 to incinerate 50 MT of CSB.

- **CSB:** Cited as the most difficult commodity to store. CSB is most prone to infestation and spoilage. CSB was cited as inconsistent in terms of texture, appearance, and taste. Interestingly, there is no expiration date listed on CSB bags.
- **Beans:** Some Awardees noted that black beans were more difficult to transport and store than pinto beans, because black beans were more prone to breakage and infestation. However, other Awardees noted that the two types were equal in terms of ease of storage and transport.
- **Oil:** Awardees generally prefer vegetable oil stored in plastic bottles rather than tin cans. Though the tin cans' shape is more conducive to stacking, the tin is more prone to damage during transport, and thus leaks as a result.
- **Rice:** As with CSB, rice bags contain no expiration date.

Chapter 5. Monetized Food Aid

5.1. Introduction

This Chapter is meant to inform USAID in its determination of the appropriateness of monetization in Guatemala during FY12. It covers four critical areas of inquiry:

1. How appropriate is monetization for Guatemala for FY12 under a new Title II development program?
2. If monetization is appropriate during this period, which commodities are the most appropriate to monetize?
3. What is the approximate maximum tonnage feasible for monetization for each commodity?
4. Are there special consideration (e.g. sales platform or timing of sales) that should be taken into account when considering/undertaking monetization in Guatemala?

The content of this analysis is broken into five core sections: a brief overview of historical monetization in-country, a summary of challenges inherent in monetizing food aid in Guatemala, initial commodity selection, individual commodity-specific market analyses and recommendations, and a final recommendation to consider third-country monetization as an optional supplement to in-country monetization. For the complete methodology for determining the potential impact of monetized food aid, please see Annex IV.

5.2. Monetization History

Large-lot Crude Degummed Soybean Oil (CDSO) monetization has been the mainstay of the Title II monetization program in Guatemala for nearly ten years, from 2003 to present. Prior to 2002, Title II Awardees monetized primarily yellow maize and soybean meal, commodities which are commonly used for the manufacture of animal feed in Guatemala. However, FFP/W indicated that monetization of animal feed would no longer be allowed after 2002, which led the Consortium to switch to monetizing solely CDSO from 2003 on (Carlos Chacon, 2007). Title II partners have long discussed the need to diversify the commodities for monetization because of the dependence on a single commodity to support Title II food security programming.

In support of Food for Progress (FFPr) and The McGovern–Dole International Food for Education and Child Nutrition Program programming, USDA Awardees have continued to monetize soybean meal and, to a lesser extent, yellow maize. There was also a USDA monetization of tallow in 2006.

Catholic Relief Services (CRS) has been the lead monetization agent for all implementing PVOs receiving resources from USAID since 1999. CRS has also monetized on behalf of some, but not all, USDA partners. The table below provides an overview of the tonnages monetized by USAID and USDA implementing partners during FY07-FY10, and planned for FY11.

Table 26. USG Monetized Commodities (MT), FY07-FY11

Year	FY07	FY08	FY09	FY10	FY11*	Totals
CDSO (Title II)	10,410	5,420	6,730	13,170	11,010	46,760
Yellow Maize (USDA)	0	0	0	9,750	0	9,750
Soybean Meal (USDA)	12,800	5,340	5,990	8,020	0	32,150
Grand Total	23,210	10,760	12,720	30,940	11,010	88,660

Source: USAID, USDA, Title II MYAP partners, AMEX

Note: *FY11 USAID monetizations are planned totals, and includes 5,410 MT of CDSO that is anticipated to arrive before the end of FY11.

5.3. Initial Commodity Selection

The BEST study team performed a desk review to identify an initial set of commodities for study in this report. The selection is based on available trade statistics, previous Bellmon studies, review of other relevant country reports, and interviews with key informants during a July/August 2011 field visit. For the purpose of this study, in order for a particular commodity to qualify for selection and possible recommendation for monetization, the following six “tests” were applied:

1. Eligibility for export from the US.⁹⁰
2. Eligibility for import to Guatemala.
3. Significance of domestic demand.⁹¹
4. Whether domestic supply shortfalls are filled through commercial imports and food aid.
5. Presence of adequate competition for the commodities.
6. Expectations that fair market prices can be achieved.⁹²

Test 1: Eligibility for export from the US. All of the commodities discussed in this report are eligible for export from the US because they are (a) on the FFP import list and (b) commercially imported into Guatemala. Based on this first test, this Bellmon analysis considers wheat grain, CDSO, yellow maize, soybean meal, rice, and Non-Fat Dry Milk (NFDN) as potential candidates for monetization in FY12.

Test 2: Eligibility for import. None of the commodities discussed in this report are specifically barred from import into Guatemala. At present, the Government of Guatemala (GoG) does not currently have a law regulating GMO products.

Test 3: Significance of domestic demand. To warrant importation and sale of monetized food aid, both local dietary preferences and available market information must strongly suggest that a commodity is consumed in significant amounts (i.e., there is significant demand), and that national production is insufficient to meet the demand (i.e., there is insufficient national supply to meet demand). National demand is estimated based on the latest five-year overall supply trends, equivalent to the sum of (1) domestic production and (2) net trade.

⁹⁰ This “test” implies that it is also on the FFP list of commodities approved for monetization.

⁹¹ A threshold is set to ensure efficiencies in the funding of Awardee programs. In order to promote efficiencies in potential Title II monetizations, BEST studies typically analyze markets where the value of average annual commercial imports are US\$5 million. In recognition of present market constraints for Title II Awardee monetizations, BEST added Non-Fat Dry Milk to the Guatemala market study despite that the average value, at just over US\$4 million, is lower than the standard US\$5 million threshold.

⁹² Implicit in the above six “tests” is that the destination market must be able to absorb the volume of the monetized commodity in question without “substantial” disruption to that market. Recent precedent follows a 10 percent rule—that is, “substantial” disruption is assumed not to occur below a threshold of either 10 percent of commercial imports or 5 percent of the domestic production of any particular commodity if there is substantial domestic production. We will follow this convention throughout this analysis.

Test 4: Commercial import activity. All of the commodities discussed in this report have insufficient national supply to meet demand and therefore depend on commercial imports to fill these supply shortfalls.

Test 5: Presence of adequate competition for the commodities. If there is a single buyer, evidence of a collusive group of buyers, or other indications of a buyer's market that regularly restricts free trade and competition, dominates the market, or exercises anti-competitive practices while purchasing monetized and/or commercial food commodity imports, then it may be expected that a fair market price may not be achieved and monetization may be supporting an uncompetitive industry. If there are many buyers, or there is no substantial evidence to indicate that a single or few buyers are exhibiting this negative behavior, it may be expected that a fair market price may be achieved.

Test 6: Expectation that fair market prices can be achieved. An import parity price (IPP) is the best estimate of a fair market price for commercially imported commodities. An estimated IPP is based on the sum of a simulated commercial entity's cost to import and sell the same (or very similar) food commodity. If IPP has been consistently achieved in the past, and can be expected to be achieved in the near future given current market conditions, a commodity may be recommended for monetization.

One common rule of thumb, which we adapt for the present analysis, is that monetized food aid should not exceed ten percent of average yearly commercial import volumes. Based on the value of the average imports of the last five years, the table below lists the six commodities with five-year average import values of greater than US\$4 million and which also appear on the FFP list of products eligible for monetization during FY12.

Table 27. Average Annual Commercial Import Volume and Value for Select Commodities During Previous 5-year Period, 2006-2010

Commodity	Average Volume of Commercial Imports (MT)	Average Value of Commercial Imports (US\$)
Wheat grain	470,799	\$141,677,147
CDSO	88,943	\$77,837,316
Yellow maize	609,181	\$135,368,737
Soybean meal	253,153	\$93,601,983
Paddy rice (milled equivalent)	73,570	\$29,040,323
Non-Fat Dry Milk	1,691	\$4,059,800

Notes: Paddy rice is milled equivalent. See individual commodity market analysis for sections below for specific sources and other notes.

The table below summarizes each of the first four tests.

Table 28. Initial Selection of Commodities Based on Tests 1–4

Commodity	Eligibility of export from the US	Eligibility for import to Guatemala	Significance of domestic demand	Deficit in Guatemala
Wheat grain	Yes	Yes	Yes	Yes
CDSO	Yes	Yes	Yes	Yes
Yellow Maize	Yes	Yes	Yes	Yes
Soybean Meal	Yes	Yes	Yes	Yes
Rice	Yes	Yes	Yes	Yes
Non-Fat Dry Milk	Yes	Yes	Yes (see fn 87 above)	Yes

The remainder of the analysis will assess the ability of local markets to absorb wheat grain, CDSO, yellow maize, soybean meal, rice, and NFDM, as these are the six commodities that passed the first four tests. The existence of GoG policies, regulations, and practices that may complicate the importation and monetization of commodities also informs further analysis. If it is determined that local markets are able to absorb these commodities and GoG policies are favorable for monetization, the analysis will continue to recommend volumes for monetization. Local markets' absorption abilities, as well as recommended volumes, will stem from critical analysis of market competition (which must be adequate, according to test 5) and prices (which must be fair, according to test 6).

5.4. Overall Challenges to In-Country Monetization

There are two overarching challenges PVOs face in Guatemala when attempting to monetize Title II food aid commodities to support food security programming. Both are related to the nature of the Guatemalan economy. First, commodity markets reflect Guatemala's status as a middle-income country; potential buyers of monetized commodities have well established supply chains, the ability to access credit and, access to high quality US commodities through their normal supply chains and, therefore, the typical advantages of participating in monetization (access to high quality US commodities, payable in local currency), are moot. Second, Guatemalan food imports and processing companies are controlled to a great extent by an oligarchy, which further constrains the ability of PVOs to issue open tenders and receive competitive bids.

Guatemalan commodity markets reflect the country's middle-income status. Discussions with potential buyers during the BEST team field visit revealed that all potential buyers that would be viable bidders on Title II commodities already have established, extremely well organized supply chains for buying locally-produced or imported products. Many firms that import the commodities with the greatest volume of trade (wheat, yellow maize, soybean meal, and CDSO) are fully vertically-integrated companies, with US billions in annual revenues. They have ready access to lines of credit with established suppliers; some have their own vessels to transport commodities from countries of export to their processing plants in Guatemala. This makes Title II monetization commodities uncompetitive.

More than one interviewee expressed that local buyers are less likely to be interested in making an offer for Title II commodities without an incentive, i.e., price advantage over other commercial terms. Their logic is that Title II commodities are either additional to their normal purchases,

depending on availability, but more importantly Title II commodities are sporadic, and not always delivered on commercial terms.⁹³ This tends to disrupt their production schedules.

Letters of credit are standard business practice for medium-scale enterprises, as well as some large-scale enterprises. The largest businesses have established lines of credit with their suppliers and therefore do not typically need to secure a bank letter of credit; for these buyers USAID's Letter of Credit (LOC) requirement should result in a discount in the price to reflect this ad hoc expense associated with participating in Title II monetizations. The smallest businesses may be unable to secure a letter of credit; in which case Title II PVOs may consider working with these potential buyers over time to assist them in securing letters of credit so they might participate in Title II sales and benefit from the availability of quality Title II commodities on favorable payment terms.

Generally speaking, food aid monetizations face two primary disadvantages relative to normal commercial transactions. First, PVOs very rarely have professional staff with experience as commodities traders who can assist with the market analysis, contract design, and price monitoring to ensure a fair market price is achieved. This places Title II PVOs in a weaker bargaining position in any negotiation process. Second, the timing of delivery cannot be fully ensured, which automatically reduces the number of potential buyers for Title II commodities because companies need to plan production processes, including arrival of new inputs, often several months in advance.

While the first disadvantage (inherently weaker bargaining position due to lack of knowledge on the PVO side) can be largely overcome with adequate market analysis, the second disadvantage reasonably warrants a reduction in the purchase price for Title II commodities. PVOs need to understand when and why such reductions would or would not be warranted, and what amount of a discount would be appropriate. This discount should be based on the reference market prices at which the international market is fluctuating to derive a fair market price for the Title II commodity; this should not be confused with a cost recovery rate or a US FOB price. The following are some of the factors that are likely to influence a monetization purchase price in a well-developed market such as Guatemala's because these represent expenses outside the normal process of purchasing international products:

1. The purchase of grains with international suppliers can be as easy as just accepting a quote and signing the contract to wait for the product on time as stipulated. The PVO is not a commercial entity and will require longer follow-up by the buyer from the purchasing process to the delivery date.
2. Grains providers have monthly delivery schedules and possible delays ranging from 5-10 days. Due to the nature of donations, some shipments are delayed for longer than 10 days, which creates uncertainty. Uncertainty in supply chains generates a cost for importers, for which they are reasonably compensated.
3. Some sales processes take place very close to the deadline. Some businesses close shop for periods of three to six months, which involves making additional purchases for these companies, and possibly significant storage costs.

⁹³ As Chacon (2007) noted "quality is another variable that affects price. Title II bulk commodities may not have the identical specifications as those of standard commercial grades. They may allow more damaged and foreign materials, and this, in turn, lowers the commercial value." Furthermore, "the size of the Guatemalan market for commodities available for monetization under the Title II program is limited in its absorptive capacity. This limits the potential amount of sales proceeds that can be derived from any single commodity, and requires adopting a "market basket" that includes more than one commodity to achieve a given level of local currency."

4. Title II monetizations require letters of credit. All large and medium-size companies are fully capable of obtaining and incurring associated fees of 1-2 percent. However, companies with established supply chains have lines of credit with their usual suppliers and, therefore, do not normally incur the cost of opening a letter of credit. Buyers should be compensated for this extra expenditure.

Market power tends to be heavily concentrated. As in many Latin American countries, market power tends to be fairly heavily concentrated within a small number of families. In Guatemala, two families control much of the food imports and processing industries.⁹⁴ Within the commodity markets of interest to current and potential Title II Awardees, the largest group is Multi-Inversiones, owned by the Gutiérrez and Bosch families. Among its six independent operations are: the Pollo Campero fast food empire, which stretches across Central America and the United States, Grupo Avícola (a poultry raising and distribution group comprising 19 companies that control over two-thirds of the Guatemalan chicken market), flour and feed mills (e.g. Molinos Modernos), among others.⁹⁵ A handful of other families control other sectors, including banking, cement, and sugar.⁹⁶ While such market concentration frustrates efforts of smaller market actors to compete, it can also frustrate PVOs efforts to monetize Title II commodities at fair market prices.

5.5. Market Analysis - Wheat Grain

5.5.1. Demand and Supply Overview

Demand. Despite Guatemala's dependence on maize as the primary staple, there has always been some consumption of wheat, even if primarily in urban areas and certain regions where soft wheat has traditionally been grown. That the largest milling company in Latin America was first built in Quetzaltenango more than 70 years ago speaks to the history of wheat consumption and importance of the wheat milling industry in Guatemala. As in many other developing countries, demand for wheat and wheat products has steadily grown in concert with population growth and increasing urbanization. Breads and pastas are widely available in municipal markets, as are cakes and cookies.

Supply overview. Nearly all of Guatemala's wheat supply is imported commercially, and wheat grain is among Guatemala's top commercial imports. While Guatemala has long been a net importer of wheat, domestic production of soft wheat has declined substantially in the last decades. In 1985, national wheat production was estimated at 45,000 MT per year (BANGUAT citation). However, since the 1990s, just prior to trade liberalization and Guatemala joining the WTO, there has been an increasing shift from wheat to vegetables (WFP, 2005). A small amount of soft wheat is still produced domestically, estimated at 1,619 MTs per year for 2009 and 2010.

⁹⁴ Gutiérrez and Bosch

⁹⁵ As the company's website explains: " We are a family held multinational corporation with over twenty eight thousand employees in three continents. We began our operations almost 90 years ago in Guatemala and today we are one of the most prominent corporations in Latin America. Our six independent operations include: milling, fast dining restaurants, livestock operations (poultry and pork), renewable energy, real-estate, and financial services. Corporación Multi Inversiones provides strategic coordination for all 6 entities, however each division operates independently." <http://corporacionmultiinversiones.com/english/quienes-somos.php>

⁹⁶ For example, the Castillo family owns Cervecería Centroamericana, which enjoys about 90% of the beer market; the Novella family owns Cementos Progreso; and the Herrera family dominates sugar and ethanol production with their Pantaleon Sugar Holdings Company Limited.

Table 29. Guatemala Wheat Grain Supply Overview (MT), 2006-2010

Market supply	2006	2007	2008	2009	2010	5 year Average (2006-2010)
1 Imports	450,197	493,627	473,767	444,051	492,354	470,799
2 of which, Food Aid	0	0	0	0	0	0
3 Exports	262	1,771	1,710	109	3	771
4 Net Trade	449,935	491,856	472,057	443,942	492,351	470,028
5 Production	1,588	1,610	1,614	1,619	1,619	1,610
6 Supply	451,523	493,466	473,671	445,561	493,970	471,638

Notes: [1] BANGUAT; does not distinguish between durum and non-durum; [2] WFP; [3] average of BANGUAT, FAOSTAT, ITC; [4] Imports minus exports; [5] BANGUAT; [6] Production plus net trade

Commercial import demand for wheat grain has grown at a steady rate of 2.5 percent per year during the last decade, driven primarily by the growth of the baking and food industries, due to urbanization, population growth and increasing incomes. Guatemala imports three types of wheat: hard red, soft white, and durum (primarily Hard Amber Durum for pasta); details of which appear in the table below.

Table 30. Wheat Imports by Type, Class, Use and Relative Import Volume

Type	Class	Specifications	Use	Share of Imports
Hard Red:	Hard Spring Wheat	No. 2 or better Northern / Dark Northern Spring Wheat - 13.5% minimum protein, minimum weight 60 lbs test, minimum 60% DHV	mostly for baking but also for animal feed.	Approximately 30% of total volume
	Hard Winter Wheat	No. 2 or better Hard Red Winter Wheat 12.0% minimum protein, minimum weight 60 lbs test	mostly for baking but also for animal feed.	35% of total volume
Soft White	Soft Winter White	No. 2 Soft Red Winter Wheat better - minimum 9.5% maximum 10.5% protein, minimum weight 59 lbs test.	cookies and cakes	Approximately 35% of total volume
	Primarily Hard Amber Durum		manufacture of pasta	Less than 5% of total volume; used by Molinos Modernos.

Source: Interviews with commercial wheat importers.

At present, the bulk of commercial imports of hard wheat, soft wheat, and durum are sourced from the US and Canada, with the overwhelming majority from the US. According to the Bank of Guatemala, the US annually exported nearly US\$121 million worth of wheat grain to Guatemala in 2009 and in 2010.

Food aid. There has been no Title II wheat or wheat flour food aid since at least 1993.⁹⁷ The last USDA wheat monetization appears to have been in 2005, when the GoG was awarded 15,000 MT of Hard Red Spring Wheat. In 2000, when wheat was monetized by the National Rural Electric Cooperative Association (NRECA), under PL 480, Section 416(b).

⁹⁷ Wheat flour has reportedly been used in direct distributions by USDA partners and WFP.

USDA/Guatemala reports it is considering monetizing wheat grain for its new FY12 FFPr programs in Guatemala, but has yet to do so. For the FY12 FFPr, USDA intends to raise US\$12 million through monetized wheat.

5.5.2. GoG Policy

There are no GoG policies that would impact the importation of wheat grain. There is a 10 percent tariff on wheat flour imports. During recent years, particularly during the global food price crisis, the GoG opened specific quotas to import volumes of flour with a zero percent tariff in order to offset increases in flour and bread prices. In 2005, this contingent was set at 6,690 MT (equivalent to 49 percent of total imported wheat flour); in 2007, this proportion was 20 percent, and 2008 the proportion rose to 63 percent.

5.5.3. Starch Substitution

Demand for wheat and wheat products has steadily grown, as population has increased and the country has become increasingly urbanized. Among the key staples that would be likeliest substitutes for wheat -- maize and rice, there appears to be continued growth in production and marketing on the whole. To the extent that wheat products, like pastas,⁹⁸ may be displacing another staple carbohydrate source that is domestically produced, the most likely substitute is rice, which has faced flat production but increasing demand overall. There is no reason to believe that monetization of a small volume of current commercial wheat imports would have a negative impact on domestic production of likely substitutes.

5.5.4. Competitive Environment

The Guatemalan wheat market is heavily concentrated. Though there are seven⁹⁹ operational mills, the largest company, Molinos Modernos, owns four of those mills and has an estimated 70 percent market share. Molinos Modernos started operations with a single mill in Quetzaltenango over 70 years ago, from which Multiinversiones Holding SA emerged. Molinos Modernos has acquired some of the 23 mills that existed in 1992 through a series of mergers and acquisitions. A fully vertically-integrated company, Molinos has its own vessels which allow it to procure grains for its own Group's businesses; in addition, Molinos resells to other Guatemalan mills. As with several of the other largest Guatemalan industries reviewed in this study, the Molinos Group is vertically integrated, with its own well-established supply chains to serve the Group's businesses. The Mill is the first actor in the chain producing flour and transferring companies related to flour mill for the baking industry, cookies, and pasta, among other foodstuffs.

The estimated market share for each mill/group is as follows:

1. Molinos Modernos (Molinos Modernos and Molinos Excelsior, INH SA, PASTA INA, with two additional mills in Quetzaltenango), all owned by Multiinversiones Holdings SA), with an estimated market share of 70 percent.
2. Molinos CENTIA (Mill and Mill Central Helvetia), with an estimated market share of 13 percent.

⁹⁸ Pastas are among the more common wheat-based products. Pastas are typically manufactured with durum wheat, which is not a typical Title II monetization commodity such as HRWW, which is commonly used to produce high quality wheat flour for baked goods such as pan breads.

⁹⁹ Officially, there are 11 mills; however, of these only 7 are operational, with the other 4 idle as "a reserve for any growth in the market or to cover any unforeseen or technical failures in one of the major mills in each group" (Personal Communication, August 27, 2011).

3. MOLSA Company, of Salvadoran origin but with a mill in Guatemala, with a market share of approximately 13 percent.
4. Molinos Venecia, purchases wheat grain from Molinos Modernos' imports, with a market share of approximately 4 percent.

Guatemala's wheat mills are organized by the *Gremial de Productores de Harina de Trigo*, or wheat flour millers guild. As previous Bellmon studies indicate, the guild was set up by Molinos Modernos to centralize wheat procurement and standardize certain marketing practices. Market informants suggest that larger mills source via major US brokers (i.e. Archer Daniels Midland, Cargill, and Bunge), with the guild essentially acting as a monopsony within Guatemala on the mills' behalves.

5.5.5. Performance of Past Monetizations

Wheat grain has not been monetized under Title II in about two decades. Previous Bellmon studies have reported that including wheat for monetization under the Title II program has been problematic for a number of reasons, one of which is the fact that there is only one main buyer that has used its position to its advantage in negotiating the price of Title II wheat. It is possible that Title II efforts have been frustrated more by the relative disadvantage in the terms a Title II monetization might offer, relative to USDA monetization. The 2002 Bellmon reported that the USDA Western Hemisphere Program in FY02 essentially competed with USAID monetization of wheat and made it not feasible. Under the agreements, CCC financed the sale of 44,100 MT of US wheat to two major mills, for which payment terms were much less strict than Title II requirements would allow.¹⁰⁰

5.5.6. Recommendations

Given the apparent lack of competition, the nature of the wheat market in Guatemala, the prospect of obtaining a fair market price appears low.¹⁰¹ At this time, the study team does not recommend monetization of wheat grain for FY12. However, should USDA secure a fair market price in upcoming wheat grain monetizations, future Title II Awardees may wish to review USDA experience to assess whether monetization beyond FY12 may prove worth consideration.

5.6. Market Analysis - Crude Degummed Soybean Oil (CDSO)

5.6.1. Demand and Supply Overview

Demand. Total refined edible oil consumption is estimated at 80,500 MT per year.¹⁰² Edible oil consumption in Guatemala is low relative to the world average, and well below the World Health Organization (WHO)-recommended consumption levels. Annual per capita consumption of edible oil is estimated at 1/2 gallon to 1 gallon (4.17-35 kg). Per an industry source, the annual average for urbanites is 12 gallons (1 gallon per month, or 100.14 kg per year) (Masek), 2011). These averages compare with the WHO recommendation of 19-22 kg per capita per year consumption of oil and fat to maintain human nutritional requirements.

¹⁰⁰ Payment was reportedly made through a Standby Letter of Credit to be paid in four equal installments at a one percent interest; with the first installment not due until three years after the last delivery of the commodity in each calendar year.

¹⁰¹ As a reference, August 26, 2011 prices can be estimated on a base of 36/MT, freight of \$26 to \$30 per MT and insurance of US\$1.5 per MT. Current futures prices are: (1) HRS 404 for a CIF Puerto Quetzal price of US\$468 per MT, (2) HRW 354 for a CIF Puerto Quetzal price of US\$418 per MT, and (3) SRW 285 for a CIF Puerto Quetzal price of US\$349 per MT.

¹⁰² An estimated 15 percent of total refined edible oil is from non-palm sources (i.e., soybean oil and sunflower). With a population of 13.8 million, and total refined consumption of 80,500 MT per year, annual per capita consumption is 5.83 kg, within the range quoted by industry insiders.

Per capita consumption in Guatemala is very low, particularly in rural areas, because of the nation's large indigenous population, which relies heavily on manteca (pig lard, shortening) for cooking. The most common use of edible oil in homes is to make beans ("frijoles volteados"), and fried chicken particularly in urban areas.

Edible oil consumed in Guatemala is primarily a mix of domestic palm oil, and imported soybean and/or sunflower. The market for edible oils appears segmented between higher-end and lower-end markets, which each rely on a separate blend of oils. The higher end market appears to rely on non-palm blends, while the lower-end relies heavily on blending palm with soybean. The segmentation in the market among the two largest companies, who market their products to different wealth groups, illustrates these somewhat parallel markets. For example, "Olmeca Light" targets wealth groups A and B with a blend of soybean and sunflower oil, while "Molino" (Olmeca) targets wealthy groups C and D with a blend of palm and soybean oil. The Grasas y Aceites brand "Capullo" also targets the palm oil market. Within each of these markets, particularly the lower-end market, however, edible oils appear to be near-perfect substitutes from the majority of Guatemalan consumers' perspectives. With some exceptions, price and packaging are the primary factors consumers consider when choosing among oils, rather than the particular oil blend. As a result, processors frequently vary the ratios of blended oils depending on relative input prices and refining requirements.

Supply. Edible oil is generally a blend of imported soya, domestic palm, imported sunflower, and imported canola.

There is substantial domestic production of crude palm oil. Roughly 10,000 ha of palm are planted currently, yielding an average annual production of 250,000 MT crude palm in 2010. Guatemala exports the bulk of domestically-produced crude palm oil (an average of 180,000 MT¹⁰³ annually), primarily to Mexico and El Salvador. Domestic palm oil is harvested year-round, however, production is greatest in June, July, and August. The remaining 70,000 MT of crude palm oil is consumed domestically on an annual basis.¹⁰⁴ Please see the text box on the following page for more details about palm oil production and processing in Guatemala.

Guatemala does not produce oil seeds due to climatic limitations, and therefore all sunflower is imported. There is very minimal domestic soybean production, and it is used exclusively for animal feed, especially for aquaculture.¹⁰⁵

Guatemala is a net importer of CDSO, with annual imports averaging 101,151 MT from 2006-2010. CDSO is sourced primarily from the US, Argentina, and Brazil. While CDSO from Argentina is slightly less expensive on average than from the US, supply is not as reliable from Argentina.¹⁰⁶ Between 2006 and 2010, CDSO food aid imports averaged 12,173 MT per year, which represents approximately 12 percent of average yearly imports, as shown in the table below.

¹⁰³ Crude palm production figures should be viewed with caution. Grepalma, the guild of palm growers and processors, is still in the process of collecting production information from its members. The figure of 250,000 MT for 2010 is the best available estimate at this time.

¹⁰⁴ Guatemala has a strong comparative advantage in palm oil production due to its climate and soil typology. In addition, whereas 100,000 hectares of soybeans would yield 33,000 MT of (crude) soybean oil, 100,000 hectares of palm yields 600,000 MT of (crude) palm oil. The extraction rate for crude palm to refined palm oil is approximately 23 percent.

¹⁰⁵ Grupo PAF combines Hard Red Winter Wheat and soy grain to pelletize shrimp feed, for example.

¹⁰⁶ Comtrade

Table 31. Guatemalan CDSO Supply Overview (MT), 2006-2010

	Market supply	2006	2007	2008	2009	2010	5-year Average
1	Imports	84,620	121,535	109,662	83,188	106,751	101,151
2	<i>of which, Food Aid</i>	14,103	12,515	13,726	7,353	13,170	12,173
3	Exports	2,068	4,339	5,396	4,346	3,659	3,962
4	Net Trade	82,552	117,196	104,266	78,842	103,092	97,190
5	Production	0	0	0	0	0	0
6	Supply	82,552	117,196	104,266	78,842	103,092	97,190

Notes: [1] Average of Comtrade, ITC, FAOSTAT; [2] USAID Title II Awardees for monetized CDSO totals; development and emergency distributed food aid oil converted to approximate crude soybean oil equivalent tonnages; [3] Average of Comtrade, ITC; [4] Imports minus exports; [5] Guatemala does not produce crude soy bean oil; [6] Production plus net trade

As noted in previous Bellmons, palm oil is CDSO's main competitor and has steadily increased its share of the edible oil market (BEST/Fintrac, 2009). As the 2009 BEST report noted, while some major food manufacturers such as Frito Lay and Bimbo have shifted from soybean oil to palm oil, consumer markets are still targeted with a mix of soybean, sunflower, and palm oils. Yet, the separate market niches enjoyed by CDSO and sunflower, versus palm oil are evidenced by the simultaneous growth in imports of CDSO and the production of palm oil in the past five years.

The company that targets the lower end of the consumer market, Olmecca, prefers 50 palm/50 soy blend, but adjusts the ratio to a 60/40 blend when the price of CDSO rises. The highest ratio of palm to soy Olmecca can use, which depends on altitude and temperature, is 86/14.

Soy and palm prices track one another closely. Soy is generally US\$150 more per MT than palm oil. The price of CDSO is not dependent on just the soybean harvest but also on biofuels.

Food aid. CDSO is used only in monetization. Between 2006 and 2010, CDSO food aid imports ranged from 7,353-14,103 MT per year, with an overall average of 12,173 MT per year, which represents approximately 12 percent of average yearly imports.

Monetized CDSO is currently purchased by only one buyer, Olmecca. For this company,

Palm Oil in Guatemala

Although 90 percent of the world's palm oil is produced in Indonesia, Malaysia, Thailand (in that order), other developing countries play an increasing important role in palm production. In the Americas, the largest producers are Columbia, Ecuador, Honduras, Guatemala, Costa Rica, and Brazil (in that order).

Production and processing of palm oil are well-established and important industries in Guatemala, and for good reason. Global average yields are 14 MT per hectare.

Best areas for production are on Pacific side, which has more rainfall and ideal soils. Here, palm industry insiders estimate production can be 30 MT per ha; in the north, yields are 18 MT per ha, which brings the current average to 7 MT per ha.

Successful palm production demands vertical integration; palm oil has to be processed within 72 hours of harvesting the fruit or it will go bad. The palm kernel oil is used for ice cream and soap and, in Guatemala, is typically exported to Mexico for use in Colgate and Palmolive products. The palm meal, high in protein, is sold to cattle breeders.

There are 23 companies that own palm oil plantations in Guatemala. The three largest plantation owners are: (1) IdealSA (Köng family, originally German) owns plantations along the Pacific coast, (2) Molina family owns Unipalm plantation along the Pacific coast and in Alta Verapaz, and (3) the Maegli family-owned Tecun company owns the El Pataxte plantation.

There are 10 extraction plants, five on the Pacific coast and five on Atlantic, and four more under construction in Alta Verapaz and Izabal. There are four refineries: Ideal SA and Olmecca, which are the largest, and Grasas y Aceite and Suprema, which are both smaller.

Title II monetized CDSO represents 50-70 percent of the company's CDSO imports.

Refined vegetable oil is widely used in distributed food aid programs, including current Title II MYAPs and SYAPs, USDA-funded McGovern-Dole Food for Education, and GoG Bolsa Solidaria programs.

According to industry leaders, food aid vegetable oil does not negatively impact oil processors' markets because the food aid oil is reaching populations who would not normally purchase vegetable oil. Instead, the greatest competition is contraband edible oil from Mexico, according to a spokesman for the company which concentrates its marketing on the lower end of the market.

5.6.2. GoG Policy

To protect domestic palm oil production, the DR-CAFTA imposes a tariff of five percent on crude palm (imported from Malaysia, for example). DR-CAFTA allows free trade of Guatemala's domestic palm oil between Guatemala and Central American countries, and a separate agreement between Guatemala and Mexico.

There is no tariff or quota on CDSO, which enables Title II partners to be competitive in the market.¹⁰⁷

5.6.3. Competitive Environment

The edible oil market comprises four companies, the first two of which enjoy a dominant market share: IdealSA, Olmeca (Molina-Bostrán family), Aceites y Grasas (Maegli family), and Suprema (also apparently the Molina-Bostrán family).¹⁰⁸ According to key informants, contraband from Mexico plays an important role in the Guatemalan market.

Both Ideal and Olmeca are involved in the fabrication of cooking oil, margarine, shortening, and soaps. Market share within specific markets is difficult to ascertain. Overall market share appears to be: IdealSA (50 percent), Olmeca (30 percent), Aceites y Grasas (2.5 percent), and Suprema (2.5 percent). Contraband from Mexico makes up the remaining 15 percent.

IdealSA self-reports a 75 percent market share (Roberto Herrarte, 2011), but was not sufficiently forthcoming regarding its business norms and practices to ascertain better estimates.

Olmeca self-reports the following market shares: cooking oil (30 percent market share), margarine (40 percent market share), and shortening (45 percent market share). Olmeca reports IdealSA has a 25 percent market share in the cooking oil market. Olmeca sells 20-30 percent of his refined oil to supermarkets, and the remainder to wholesale markets.

Olmeca reports refining 500 MT per day of shortening, margarine, and cooking oil. The company has storage capacity of 12,000 MT, most of which is at Puerto Santo Tomas, where it is able to receive monetized CDSO on a C&F basis directly into its facilities. To meet this

¹⁰⁷ See p. 19, [http://www.seic.gov.do/baseConocimiento/TLCEEUU%20DRCAFTA/Texto%20del%20Tratado%20en%20Inglés/Annex%20III%20\(Financial%20Services%20Non-Conforming%20Measures\)/Tariff%20Schedules/Schedule%20of%20Guatemala%20to%20Annex%203.3.pdf](http://www.seic.gov.do/baseConocimiento/TLCEEUU%20DRCAFTA/Texto%20del%20Tratado%20en%20Inglés/Annex%20III%20(Financial%20Services%20Non-Conforming%20Measures)/Tariff%20Schedules/Schedule%20of%20Guatemala%20to%20Annex%203.3.pdf)

¹⁰⁸ Noted family connections are based on interviews during field visit, and <http://www.albedrio.org/htm/articulos//ls-020.htm>.

demand, Olmeca imports 2,500-3,500 MT of CDSO every 2 months (i.e., 15,000-21,000 MT per year), which is an estimated 20-25 percent of total CDSO imports.

5.6.4. Monetization Process

When CRS originally shifted from monetizing soybean meal and yellow maize to CDSO, they attempted to offer the CDSO through open tenders to the four potential local buyers: Ideal, S.A., Olmeca, Grasas y Aceites, S.A., and Suprema, S.A. IdealSA expressed no interest, which is to be expected given that IdealSA is a large, well-established, and fully vertically-integrated company with their own vessels and a secure supply chain. Title II CDSO simply could not compete. Larger buyers such as IdealSA are also more likely to complain about delivery delays and lack of product quality assurances. The two smaller buyers apparently have lower capacity and may only be interested in smaller lot sales. As with all Title II monetizations, while commercial buyers (even medium-scale buyers like Grasas y Aceite) are able to secure letters of credit, they would expect a discount equal to the cost of securing it.¹⁰⁹

Based on limited interest from the largest importer/refiner, and a belief that two smaller importer/refiners had limited capacity, the lead monetization agent developed a practice of direct negotiation with the single buyer, Olmeca.

Despite the lack of competition, CRS has been able to employ a commercial-style "price-to-be-determined" contract to arrive at a final sales price, which are set on a C&F Puerto Santo Tomas basis. The contract mechanism sets a reference price based on CBOT FOB Gulf prices for future delivery the month the vessel is anticipated. To that reference price, the contract adds a fixed premium intended to cover freight. That premium has been fixed at US\$19 per MT since early 2010.¹¹⁰ The final sales price is set by taking the fixed premium and adding to it the following: an average of four prices, which are fixed by the buyer based on high/low prices published by the CBOT, on a maximum of four different dates within the period from the date of contract signature until two weeks prior to vessel arrival. This allows the buyer to take advantage of fluctuating commodity prices, but only in a prospective manner; the buyer cannot retroactively choose the days on which prices *were* lowest, he can only predict whether a price on a present day or on a future date will be among the lowest within any given time period. The elapsed time between contract signing and the date on which sales prices are set ranges from one week to two months, with the average approximately seven weeks.

5.6.5. Performance of Past Monetizations

CDSO was monetized sixteen times between May 2007 and August 2011. The team compared sales prices achieved against a benchmark price to assess performance. The appropriate benchmark is the commodity that would normally be procured through commercial channels. In the case of CDSO, both the US and Argentina are common sources. FOB prices for both the US and Argentine CDSO are nearly equivalent in most years, with Argentine prices an average of 97 percent of US prices for about the last 2 1/2 years. Therefore, it is reasonable to use FOB prices for Argentine CDSO. To the FOB price, both insurance and freight must be added to arrive at the sales price a commercial importer would normally face. Unlike commodity prices, which are publically-available via large exchanges, freight rates are negotiated with

¹⁰⁹ IdealSA buys from big commercial vendors, like Cargill, who offer them lines of credit, so they do not need a Letter of Credit. When Olmeca buys via commercial sources, the company often purchases through Cargill and Pasternak.

¹¹⁰ The freight rates for CDSO monetizations to Olmeca have varied over the years and are written into the sales agreements. Since July 2009, the freight rates have maintained at US\$18/19 per MT. However, in prior years the negotiated freight rate went as low as US\$10 per MT in August 2007, to as high as US\$25 per MT in May 2008.

suppliers/freight forwarders and based on multiple factors. For purposes of this analysis, the team had to use rates available from IGC for bulk grains, which are likely to be lower than rates for bulk oil since specialized vessels are required for oil.

Overall, sales prices reached an average of 100 percent of estimated import parity price (IPP) using a C&F Puerto Santo Tomas price for Argentine CDSO. Performance has been consistent throughout the nearly five-year period analyzed.

Figure 3. Past Monetization Sales of Soybean Oil vs. IPP for Argentine CDSO, C&F Santo Tomas



Source: Argentine Secretaría de Agricultura, Ganadería, Pesca y Alimentos, Awardees, AMEX Int'l

Please see Annex III for a detailed breakdown of IPP calculations, and the comparison to monetization sales prices.

5.6.6. Recommendations

As noted above, with one exception, the Title II monetization lead has effectively developed a contract instrument which successfully mimics a commercial transaction. The Title II Awardees are unable to negotiate a fair freight rate (having already accepted C&F rates despite that the buyer enjoys assurance that he will pay only for the tonnage actually delivered¹¹¹), because the Awardees have a weak bargaining position when negotiating with what is in effect a single buyer with monopsony power. According to Olmeca, freight from the US is in the range of US\$15-35 per MT, whereas freight from Argentina is a flat US\$30 per MT. The study team does not believe these quoted freight rates accurately reflect current market conditions. Using rates from the IGC for bulk dry grain, our team finds the rates have averaged US\$38 at a minimum. Bulk liquid rates are likely to be higher since they require special vessels for transport. A CRS

¹¹¹ Prices are set on a C&F Puerto Santo Tomas basis. This results in the USG effectively subsidizing the insurance coverage the buyer enjoys. This is reasonably offset by a price discount to the buyer for the uncertainty related to precise timing of food aid deliveries.

commodities expert believes bulk oil shipments from Argentina to Guatemala are currently no less than US\$70 per MT.

The team recommends a renegotiation of freight rates based on actual freights rates for similar tonnages of CDSO from Argentina. USDA may be able to assist in securing this information from industry informants. Barring the availability of more informed freight rates, the team suggests opening the sales via placement of detailed tenders in the leading daily newspapers to increase awareness among both Ideal SA and Grasas y Aceite.

To ensure Title II Awardees do not risk their, at present, only source of funding, the team recommends this shift in conjunction with an expansion of the commodities available for monetization to include soybean meal and yellow maize, at a minimum.

The team finds that monetization of up to 10,115 MT of CDSO would have no discernible negative impact on the Guatemalan edible oil market, and could generate funds of just under US\$12.9 million annually, assuming a C&F Puerto Santo Tomas of approximately US\$1,275 per MT. The recommended sales platform is tender/bids to negotiated or multiple buyers, with special care paid to any negotiated premium for freight. This will enable the smaller, medium-scale buyers (Grasas y Aceite, for example) to participate and may help increase competition.

5.7. Market Analysis - Rice

5.7.1. Demand and Supply Overview

Demand. Rice is considered one of the three basic staples in the Guatemalan diet, although it trails well behind maize and beans in the diets of the majority of Guatemala's poor. Until recently, rice was consumed primarily on special occasions. As in many countries, rice consumption in Guatemala has been steadily increasing in step with increases in population and urbanization. Nowadays, rice is commonly consumed as a cooked grain with black beans, in soups, or in an atol like arroz con leche. Rice is regularly available in municipal markets throughout the country, including in the more remote western highlands.

Rice consumption appears to also be positively correlated with wealth, with both rice and wheat apparently replacing the consumption of maize as income increases. Rice industry experts estimate that 80 percent of consumption is in urban areas, with only 20 percent in rural areas. Estimates of annual per capita rice consumption vary from 5-7 kg (FAO/WFP, 2010) (Delta Farm Press, 2009).

While there had been a consumer preference for local rice, during the last decade, domestic producers have switched to higher-yielding imported varieties; thus, there is no longer much distinction between "local rice" and imported rice.

Supply. Guatemala's rice production meets only one-fifth to one-third of its rice supply, with commercial imports comprising the bulk of supply, and food aid imports accounting for the small remainder (approximately five percent of the total supply).

Table 32. Rice Supply Overview (milled equivalent) (MT), 2006-2010

	2006	2007	2008	2009	2010	5-year Average
1 Imports	80,786	80,040	79,605	75,766	76,750	78,589
2 of which, Food Aid	5,886	4,440	6,105	3,666	5000	5,019

	2006	2007	2008	2009	2010	5-year Average
3 Exports	910	910	490	560	700	714
4 Net Trade	79,876	79,130	79,115	75,206	76,050	77,875
5 Production	19,600	17,500	19,950	21,700	22,400	20,230
6 Supply	93,590	92,190	92,960	93,240	93,450	93,086

Sources: (1) ARROZGUA, milled equivalent, (2) WFP Interfaís (2006 - 2009), (3) ARROZGUA, milled equivalent (4) Imports minus exports, (5) ARROZGUA, milled equivalent OR USDA-FAS – production data available shows milled rice, (6) Net trade plus production, minus food aid

According to the Fourth National Agricultural Census, the national harvest is concentrated in seven departments: Jutiapa, Izabal, San Marcos, Alta Verapaz, Petén, Chiquimula and Quetzaltenango. Milling facilities are concentrated in the industrial surroundings of Guatemala City, and in Jutiapa around the town of El Progreso. The Census reported approximately 7,516 hectares are planted to rice, which represents 0.3 percent of total arable land, with a yield of approximately 20,00 MT (milled equivalent) (Carlos Chacon, 2007) (Asociacion Guatemalteca del Arroz (ARROZGUA), 2011).

Currently, 33 millers buy and process the entirety of domestic rice production. Millers' purchases of paddy rice (aka "rough rice") generally take place directly from farmers, through farmers associations that work as assemblers in rural areas, or via intermediaries and transporters. There is an growing trend of contract farming.

Domestic paddy production only meets an average of 19-23 percent of national demand, and therefore millers import 76,000-80,000 MT of rice (milled equivalent) per year to meet national consumption. For the period 2004-2008, average yearly commercial imports of paddy rice were 84,054 MT. Market informants note that informal cross-border trade contributes substantially to overall supply; ARROZGUA estimates that this factor accounts for about 40 percent of the supply in areas near the border with Mexico.

Rice exports are not seen as significant, although the quality of milled rice is generally quite high.¹¹² Puerto Quetzal authorities report 33,749.74 MT of paddy rice were imported in the period January-June 2011 which, at approximately 67,500 MT on an annualized basis, is under ARROZGUA figures (Organismo Internacional Regional de Sanidad Agropecuaria, 2011).

The overwhelming majority of imported rice originates in the US, and almost all is paddy rice, with smaller amounts from Mexico and El Salvador. The USA Rice Federation reports US rice exports to Guatemala for 2010 stood at 66,992 MT at a value of US\$23,749,358 (USA Rice Federation).

Guatemala's rice milling industry is well-established, and well-organized. Rice processing plants have drying, milling, and packaging facilities as well as laboratories to analyze paddy characteristics (humidity, purity, percentage of broken kernels, whiteness of polish, milling yields, and presence of contaminants (Carlos Chacon, 2007). Milled rice is then sold directly by millers to wholesalers, supermarkets, and retailers in urban areas, or to regional and national intermediaries that supply deficit and remote areas. A negligible amount of processed rice is exported to neighboring countries.

¹¹² WFP Market Analysis for Emergence Food Security Assessment December 2005

Despite the dominance of imported rice, there is a seasonal trend in rice prices due to the seasonal calendar for primarily rain-fed domestic rice. Prices are lowest during September through January when the harvest comes in, and relatively higher during February to August, when trading in these months is mainly on stored product.

In general, the national rice production has remained stable during this decade because of the incentives made for producers and because the allocation of quotas within the quota is tied to the purchase of domestic rice by rice millers.

Food aid. In rural areas, food aid rice has a relatively long history in rural areas, particularly in the maize-consuming Western Highlands. All current Title II partners incorporate rice into food aid rations for both Maternal Child Health and Nutrition (MCHN) and Food for Work (FFW) programming. In addition, the GoG includes rice in its Bolsa Solidaria food aid transfer programs. In FY10, 4100 MT of milled rice were distributed by Title II partners within their MYAPs, while 2,690 MT of milled rice were distributed by Title II partners within their SYAPs. See Chapter 3 for more details about distributed food aid tonnages.

5.7.2. GoG Policy

In order to support local rice production and discourage speculation in the rice market, current GoG policy requires Guatemalan rice millers to first purchase all of the local rice crop,¹¹³ and then restricts the volumes each mill/importer can import to the quantity each imported the previous year (with a 2.5 percent annual growth factor). The domestic and imported paddy rice is then comingled and milled.

Government and industry work together through an Ad-hoc Committee to develop the regulations which govern the rice market to protect domestic rice production and processing industries. The Committee comprises representatives of Ministry of Economy (MoE), Ministry of Agriculture and Livestock (MAGA), Ministry of Finance, Superintendent of Tax Administration (“Superintendencia de Administración Tributaria”, SAT), and ARROZGUA. This system has supported the stability of the domestic rice market during the past decade precisely because of the incentives afforded producers, and because the allocation of quotas within the quota is tied to the purchase of domestic rice by Guatemalan rice millers.

Based on analysis of estimates of market demand and supply, the Committee sets annual quotas that will have preferential import duties during the following calendar year. For 2011, the MoE set the Tariff Free Quota (TRQ) for paddy rice at 75,000 MT; for 2012, the TRQ will be 77,500. The in-quota import tariff for paddy rice is zero rated, but out-of-quota imports are subject to 23.7 percent import tariffs (ARROZGUA 2011)

To support the domestic milling industry, milled rice faces a much lower 10,000 MT TRQ. All milled rice imported under the TRQ of 10,000 MT faces a 0 percent tariff, but any volume imported outside the quota (i.e., over 10,000 MT) faces a 23.7 percent import tariff.

5.7.3. Starch Substitution

According to rice market stakeholders, rice competes primarily with wheat products (nearly all of which are based on imported grain). According to a report made for the Guatemalan food producers in 2011, as a result of the wheat flour price increases, rice consumption is up by 10

¹¹³ This is accomplished via a "Certificado de Compra de Cosecha".

percent this year (Central America Trade Office, Taiwan, Republic of China, 2011), a phenomenon that appears to corroborate this claim.

Rice may also substitute for maize to some extent; however, in rural areas, it is unlikely that targeted direct distribution of rice in the Title II programs will be a disincentive to the local production of rice because of the unique procurement and pricing mechanism for the domestic rice industry. ARROZGUA reports that rice producers do not complain about distributed food aid rice because, even if it dampened market prices, it does not affect the price they receive from millers. On the other hand, millers may be impacted by rice distributions because they sell into the wholesale market yet face a set producer price. ARROZGUA reports that in 2010 there was a negative impact on prices in urban areas due to the distribution of rice under the GoG Bolsa Solidaria program. There is only anecdotal information to support this claim, and it appears to be an issue primarily in urban or peri-urban areas. Nonetheless, potential Awardees should be aware of and sensitive to this possibility.

Provided Title II programs are well-targeted (and evidence suggest they generally are), this is not a great concern for Title II programs. ARROZGUA did complain that food aid rice was displacing some market purchases. Field interviews with beneficiaries widely confirmed that distributed food aid rice displaced normal market purchases of rice. ARROZGUA claimed the problem in rural areas is that people are not accustomed to eating rice and so they feed it to livestock or self-monetize to buy maize. Plus, since national average is only 11-16 lb (5-7 kg) and thus rural average is much lower, the amount in ration is too high. During the July/August 2011 field visit, there was no evidence of self-monetization of rice by beneficiaries, which may be explained by the doubling of the price of maize in the previous year which pushed prices out of reach of rural indigenous households. This would NOT be the case for monetized food aid rice, however, which would enter the market through regular marketing channels just as though it were a regular commercial sale.

5.7.4. Competitive Environment

The Guatemalan Rice Association (ARROZGUA - Asociacion Guatemalteca del Arroz), established in 1997, brings together rice producers and all of Guatemala's rice millers for the purpose of centralizing rice market information, supporting technology training and advances, and lobbying on behalf of both rice producers and rice millers on issues of trade and industry marketing standards.

There are approximately 8,000 rice producers and 33 rice mills throughout the country. The number of mills is slightly misleading however, because some mills are owned by the same company. The import quota varies for new rice mills and existing rice mills under the free trade agreements. The intention was to establish new rice mills, however, many existing mills created small new companies to take advantage of those import quotas designated for the new mills and import even larger volumes. Only seven mills are actually new and are not a part of a larger existing company.

The three largest mills combined command about 72 percent market share:

1. Arrocera Los Corrales, SA (ALCSA), a 40+ year old company, imports, mills and packages U.S. rice under its two premium brands, Gallo Dorado and El Molinero, and enjoys approximately 48 percent of the market.
2. Albay Agro (Albay, Dawn and Pralsa), with a market share of 18 percent
3. Beneficio Tempisque, with a market share of 6 percent

Other millers represent 28 percent of the market.

ARROZGUA producers and millers face a unique price stability mechanism: each year a floor price for domestic rice is set based on the cost of production (fertilizer, fuel, labor, etc), while market prices faced by rice millers are based on FOB Gulf prices for US #2 paddy rice 55/70. Millers are thus indifferent between domestic and imported rice because they face the same price either way; only if international prices (FOB Gulf) drop below the cost of domestic production do millers subsidize domestic rice producers. ARROZGUA reports this has yet to occur.

5.7.5. Performance of Past Monetizations

To the best of the study team's knowledge, neither paddy nor milled rice have been previously monetized in Guatemala. Therefore, there are no past sales to inform an assessment of past performance in achieving a fair market price.

5.7.6. Recommendations

The study team recommends US #2 long grain paddy rice¹ for monetization for FY12 for the following reasons:

- There is a substantial commercial market for US long grain paddy rice, with growing commercial imports already sourced almost exclusively from the US.
- Trade policies favor the import of paddy rice from the US without bumping up against a quota or tariff. Specifically, the TRQ for paddy rice is 75,000 MT for 2011, and should rise to 77,500 MT for 2012, and an additional 2,500 MT each year thereafter.
- The professional association which represents both producers and millers, ARROZGUA, is willing and appears able to assist with a monetization sale in such a way as to encourage/ensure competitive process, which is key to ensure a fair market price is achieved from the sale and that local market actors are not disrupted.
- Monetization of a small volume of paddy rice would have no discernible impact on normal trade relations between the Guatemala and its usual trading partner in the rice market (the US), but would simply substitute for a very small volume of normal US commercial sales in support of food security activities in Guatemala.

The team recommends PVOs issue open tender through ARROZGUA. While the most promising potential buyers may be the three largest millers, because it represents both producers and millers, ARROZGUA has an incentive to ensure an open and competitive tender process.

Provided the monetization is conducted through an open and competitive process, the team finds that monetization of up to 8,000 MT of rice per year would have no discernible negative impact on the Guatemalan rice market, and could generate approximately US\$2.8 million in funds for food security activities in Guatemala assuming a CIF Puerto Quetzal of US\$350 per MT.

At the time of this writing, paddy rice ("rough rice") is not a commodity available for use under U.S. Government food assistance programs.

¹ Paddy rice, also known as "rough rice" especially in the US, refers to rice as it comes from the field after harvest, still in the husk.

5.8. Market Analysis - Yellow Maize

5.8.1. Demand and Supply Overview

Demand. Demand for yellow maize is driven by derived demand for the commodity as an input into animal feed (poultry, cattle, and pig feed) and, to a lesser extent, as an input into processed snack foods and cereals. Out of total supply of yellow maize, the feed industry¹¹⁵ consumes approximately 95 percent of the total supply of yellow maize; the remaining 5 percent is consumed by the industry dedicated to the transformation of corn products for human consumption (cereals and snacks). A small percentage of yellow maize is for direct human consumption primarily among indigenous populations in the western highlands, where yellow maize is considered superior to white maize because it can be used to make tamales. The relative price of domestic yellow and white maize reflects both this preference, and the limited availability of yellow maize in the country.

Supply. Yellow maize makes up about 20 percent of total Guatemalan maize production; the remainder of maize is white and for direct human consumption. Domestic production of yellow maize meets only 20 percent of national demand. As the table below shows, for the period 2006-2010, the five-year average of commercial imports of maize was 624,550 MT. Annual imports for 2011 are estimated at just over 656,000 MT, for a total supply of 795,000 MT.

Table 33. Guatemalan Yellow Maize Supply Overview (MT), 2006-2010

	Market supply	2006	2007	2008	2009	2010	5-yr Average
1	Imports	686,019	641,781	574,104	618,841	602,003	624,550
2	of which, Food Aid	18,000	0	0	0	9,750	5,550
3	Exports	33	2,123	6,061	3,577	1,919	2,743
4	Net Trade	685,986	639,658	568,043	615,264	600,084	621,807
5	Production	124,117	142,766	150,427	135,055	141,256	138,724
6	Supply	810,103	782,425	718,470	750,319	741,340	760,531

Notes: [1] BANGUAT; [2] USDA Awardees, all monetized food aid; [3] BANGUAT; [4] Imports minus exports; [5] Average of FAOSTAT, USDA-FAS; [6] Production plus net trade

The US is the largest exporter of yellow maize to Guatemala, supplying nearly 100 percent of the country's yellow maize import needs, with over 85 percent being US No 2 yellow maize.¹¹⁶ Argentina also supplies grain, but typically higher maritime freight costs make Argentina less competitive in the Guatemalan maize market.

Food aid. USAID has not monetized yellow maize since 2002. The GoG received a FFPr award to monetize 18,000 MT of yellow maize in 2006. USDA Awardee Universidad del Valle de Guatemala monetized 9,750 MT of yellow maize only one time during the last five years, in FY10. Neither USAID nor USDA distribute yellow maize in any food aid programs. The study team is unaware of any other donors or NGOs distributing or monetizing yellow maize.

¹¹⁵ The poultry industry prefers yellow maize because the carotenoides turn the yolk a yellow color, which consumers in the region prefer.

¹¹⁶ Comtrade

5.8.2. GoG Policy

To protect domestic production, the importation of yellow maize in Guatemala is governed by both DR-CAFTA and WTO tariff quotas. Guatemala's WTO Schedule of Commitments includes tariff quotas for 22 agricultural products, but tariff quotas are applied only to imports of rice, wheat flour, yellow maize and apples. Quotas are activated only in the event of a domestic market shortfall, although Guatemala normally imports volumes greater than those bounds. Maize imports are subject to an out-of-quota import tariff of 15 percent.

The CAFTA-DR TRQ for yellow maize was set at 525,000 MT in 2005, with a 25,000 MT annual increase. A total of 633,000 MT tariff-free has been allocated for 2011 to date (based on annual totals for 2011 of 200,000 MT from WTO quota and 650,000 MT from CAFTA-DR).¹¹⁷ All maize that enters under the TRQ pays zero tariff; outside the quota, a 15 percent tariff is imposed.

5.8.3. Starch Substitution

Although maize is a staple across Guatemala, yellow maize is a staple (and a preferred staple) for only a small region in the Western Highlands. The sale of yellow maize for use in animal feed and processed snack foods would not act as an disincentive to local production of white maize since the two products are not viewed as substitutes. Nor would the sale of monetized yellow maize act as a disincentive to local production since domestic production only meets about 20 percent of domestic demand. The only risk is undercutting the market price among animal feed manufacturers, which could support uncompetitive behavior among those market actors who benefit from an abnormally low sales price.

5.8.4. Competitive Environment

The animal feed industry is composed of a variety of companies of all sizes, from vertically-integrated poultry producers who manufacture feed for their own animals, to companies that focus on both livestock rearing and marketing as well as animal feed manufacturing, to businesses engaged exclusively in the manufacture and marketing of feed. The figure below illustrates the number of companies involved in the importation of maize in different forms:

¹¹⁷ According to records of the Department of Foreign Trade Administration of the Ministry of Economy accessed August 25, 2011.

Figure 4. Number of Businesses Registered in Importation of Maize Products, by Product Type



Source: MAGA

There are five companies that import the bulk of yellow maize. These same companies also import soybean meal, which they combine with the yellow maize to manufacture animal feed. A number of snack food manufacturers also import yellow maize, but their presence in the yellow maize import market is minimal compared to the feed industry.¹¹⁸

The most important companies in terms of demand for yellow maize imports, and their respective market share, are:

1. Aliansa (part of Grupo Gutiérrez – Muti-Inversiones Holdings), with approximately 35 percent of the market
2. Frisa (Grupo PAF) , with approximately 30 percent of the market
3. Avisá (Avícola Rosanda) , with approximately 10 percent of the market
4. COMAYMA (Cooperativa Integral de Producción Madre y Maestra), with approximately 8 percent of the market
5. Agribbrands Purina, with approximately 5 percent of the market
6. Molino Santa Ana, with approximately 3 percent of the market
7. CIXSA, Concentrados de Guatemala, Alimentos del Prado y Agroimportaciones, with approximately 1 percent market share each.

The remaining small companies together consume the remaining 6 percent of yellow maize market.

Companies that focus on snack foods and cereals include:

1. Frito Lay (owned by PepsiCo), dedicated principally to snack production, holds about 60 percent of the market share.

¹¹⁸ For this reasons, the study team concentrated on assessing the nature of the animal feed market, including the commercial market demand for yellow maize and promise of competition for potential Title II monetizations.

2. Alimentos SA, dedicated to both snack and cereals production, holds about 35 percent of the market share.

Other companies make up the remaining 5 percent.

5.8.5. Performance of Past Monetizations

There have been no USAID Title II monetizations of yellow maize since 2002. USDA programs have occasionally been supported through monetization of yellow maize. The last monetization occurred in FY10; prior to that sale, there had not been a sale since 2006. The GoG received a Food for Progress award to monetize 18,000 MT of yellow maize in 2006.

While this study does not intend to fully analyze the USDA sales against IPP, the relative success of USDA sales may be instructive for USAID Awardees considering monetization of yellow maize. SHARE monetized the FY10 yellow maize on behalf of UVG. SHARE reports that Frisa of Grupo PAF bid at a “low price” (actual sales price not provided). A team interview with Comayma revealed that, Comayma, which often bids on monetized animal feed commodities, did not bid because there was insufficient lead time to adjust its production plans. This left Frisa the sole bidder, and left SHARE in a weakened position to reject the low bid. If future USAID awardees consider yellow maize monetization, they should encourage more bidders than in past sales.

Currently, CRS leads the USAID Title II monetization consortium; at USDA Awardees' request, CRS has also monetized soybean meal, another animal feed commodity, on behalf of USDA.¹¹⁹ CRS notes that the timeline for proposal, award, and call forward for USDA provides less time than USAID's process, which reduces the time available to reject a low bid or negotiate with a bidder to get a higher price. This suggests that sufficient lead time to negotiate higher prices following the receipt of any low bids is very important to improve the likelihood of a fair market price.

5.8.6. Recommendations

The study team recommends US No. 2 yellow corn for monetization for FY12 for the following reasons:

- There is a substantial commercial market for US #2 yellow corn, with growing commercial imports already sourced almost exclusively from the US.
- Trade policies favor the import of US yellow corn from the US without bumping up against a quota or tariff. Specifically, the TRQ for yellow maize is 650,000 MT for 2011, and should rise to 675,000 MT for 2012, and an additional 25,000 MT each year thereafter.
- Monetization of a small volume of yellow maize would have no discernible impact on normal trade relations between Guatemala and its usual trading partner in the yellow maize market (the US), but would simply substitute for a very small volume of normal US commercial sales in support of food security activities in Guatemala.

¹¹⁹ When CRS monetizes for in-consortium members, CRS charges the same 1% fee to cover administrative costs whether the funding is from USAID or USDA. CRS currently charges a non-consortium organization 3% due to the additional work and responsibility entailed outside its normal programming for monetization on behalf of a non-consortium member.

PVOs interested in monetizing yellow maize should note that potential buyers are generally interested in US No. 2 yellow corn with the following specifications: No. 2 Yellow Corn or better - 54 lbs / bu or better; max. 14.5 percent moisture, max. Heat damaged kernels 0.1 percent, max. Total damaged kernels 5.0 percent, max. BCFM 3.0 percent, max. 20PPB aflatoxin, max. Ochratoxin 5ppb, max. DON 2 ppm, max. 2 ppm fumonisin, max. 50 ppb T-2, max. 125PPB zearalenone, max. 90F temperature.

The study team recommends the following process for monetization of Title II yellow maize:

1. Discover prevailing market prices for US yellow corn #2 on the CBOT. Note that commercial importers face a CIF Puerto Quetzal price, which is composed of two items: Future + Base = CIF Puerto Quetzal. The value of the "future" can be checked online via CBOT.¹²⁰ It is important to define which month they would be delivering the product in stock prices would have to define the futures price in the period. The "Base" consists of a reward-punishment on the future value, the cost of freight and insurance. This value, which includes freight and insurance, is not found on the Internet; instead, each supplier manages their rates with the insurers and freight carriers the supplier hires.
2. Once a fixed minimum selling price based on a CIF price is obtained, determine whether any potential buyers would require a discount for opening a letter of credit. If so, this discount would be in the range of 1-2 percent of the contract.
3. These processes should be carried out at least three or four months before the date of delivery as the large and medium companies that normally would be involved in their inventory monetization typically cover three months in advance. For the potential buyer to purchase a large amount of monetized goods, the buyer has to have sufficient lead time in order to plan their inventory and storage.
4. Issue a tender through the newspapers with at least seven to ten days to respond, followed by direct communication with the companies invited to participate. Given the infrequent nature of Title II monetizations, a phone call advising all potential buyers of the announcement will ensure the widest range of potential buyers. While the most promising potential buyers may be two or three of the larger animal feed manufacturers (Frisa of Grupo PAF and Comayma, and Rosanda), there are other medium- and smaller-sized businesses which are very likely to compete if they are aware of the tenders. An open and competitive tender process will enable smaller firms to participate as well.
5. Once bids are received, the first award should go to those bidders that have offered a better price, with successive quantities offered to those bidders offering relatively lower prices.

Provided the monetization is conducted through an open and competitive process, the team finds that monetization of up to 62,450 MT per year would have no discernible negative impact on the Guatemalan yellow maize market, and could generate approximately US\$22.5 million¹²¹ in funds for food security activities in Guatemala assuming a CIF Puerto Quetzal of US\$360 per MT.

¹²⁰ Quotes are available via <http://www.cmegroup.com/trading/agricultural/grain-and-oilseed/corn.html>

¹²¹ As of this writing, CIF Puerto Quetzal reference price for delivery in October 2011 is between US\$360 to US\$365 per MT.

5.9. Market Analysis - Soybean Meal

5.9.1. Demand and Supply Overview

Demand. Soybean products are used for two primary purposes in Guatemala: soybean meal for the manufacture of animal feed¹²² and, to a much lesser extent, as a source of vegetable protein in the production of nutritional supplements for human consumption.

For the manufacture of animal feed in Guatemala, yellow maize is used as the main source of carbohydrates and soybean meal as the main source of vegetable protein. Within the feed industry, as a general rule, yellow maize and soybean meal are consumed in a 2:1 ratio (two units of yellow maize to every one unit of soybean meal). This ratio is useful for estimating consumption of both products and for the consideration of soybean meal and yellow maize monetizations.

Supply. There is no domestic production of soybean meal. In earlier years, Guatemala had soybean production with the intention of making the extrusion process and obtaining all the sub-grain products, but due to some problems in some aspects of quality of the grain produced in Guatemala, industrial processes are not economically sustainable, and therefore this production was reduced.

The entire supply of soybean meal is met through commercial imports and monetized food aid.

Table 34. Guatemalan Soybean Meal Supply Overview (MT), 2006-2010

Market supply	2006	2007	2008	2009	2010	Five-year Average
1 Imports	229,081	256,144	253,332	239,513	287,696	253,153
2 of which, Food Aid	10,550	20,800	20,340	5,990	7,020	12,940
3 Exports	0	0	0	0	0	0
4 Net Trade	229,081	256,144	253,332	239,513	287,696	253,153
5 Production	0	0	0	0	0	0
6 Supply	229,081	256,144	253,332	239,513	287,696	253,153

Notes: [1] BANGUAT; [2] USDA Awardees, all monetized food aid; [3] BANGUAT; [4] Imports minus exports; [5] FAOSTAT, USDA-FAS, no data available; [6] Production plus net trade

Food aid. USAID has not monetized soybean meal since 2002. USDA monetized 32,150 MT of soybean meal in the four-year period FY07-FY10,¹²³ an annual average of just under 8,038 MT.

5.9.2. GoG Policy

Soybean meal is free of any import tariff under the free trade agreement with the United States, which is the main supplier of this product to Guatemala.

¹²² Soybean meal is a derivative of the extrusion process of soybean, in which the soybean is subjected to pressure and heat to extract oil from the grain, making the heating process the nutrients are more available and digest and eliminate toxins that have the grain eaten raw by some animal species.

¹²³ BEST has not yet been able to confirm FY06 monetization tonnages, and therefore reports FY07-FY10 tonnages.

5.9.3. Competitive Environment

The same companies that import yellow maize also import soybean meal, which they combine with the yellow maize to manufacture animal feed. Just as with yellow maize, the most important companies in terms of demand for soybean meal imports, and their respective market share, are:

1. Aliansa (part of Grupo Gutiérrez – Muti-Inversiones Holdings), with approximately 35 percent of the market
2. Frisa (Grupo PAF) , with approximately 30 percent of the market
3. Avisá (Avícola Rosanda) , with approximately 10 percent of the market
4. COMAYMA (Cooperativa Integral de Producción Madre y Maestra), with approximately 8 percent of the market
5. Agribands Purina, with approximately 5 percent of the market
6. Molino Santa Ana, with approximately 3 percent of the market
7. CIXSA, Concentrados de Guatemala, Alimentos del Prado y Agroimportaciones, with approximately 1 percent market share each.

The remaining small companies together consume the remaining 6 percent of yellow maize market.

5.9.4. Performance of Past Monetizations

There have been no USAID Title II monetizations of soybean meal since 2002. USDA programs have been regularly supported through monetization of soybean meal. There were nine monetizations of soybean meal for USDA programs between 2006-present.¹²⁴ As noted in regards to yellow maize, while this study does not intend to fully analyze the USDA sales against IPP, the relative success of USDA sales may be instructive for USAID Awardees considering monetization of soybean meal.

Current Title II Awardee CRS leads the Title II monetization consortium; at USDA awardees' request, CRS has also monetized soybean meal seven times on behalf of USDA. CRS notes that the timeline for proposal, award, and call forward for USDA provides less time than USAID's process, which reduces the time available to reject a low bid or negotiate with a bidder to get a higher price.

Other USDA awardees have also monetized, including PCI in 2011. PCI utilized the services of a private grain broker in Guatemala City, who was able to suggest an appropriate sales platform (open tender announced in daily newspapers) and research current CBOT market prices to inform PCI's decision. The winning bidder was Grupo Rosanda, a company that has not typically participated in monetizations but was pleased with the experience including the quality of the commodity received. The letter of credit requirement was not viewed as an undue burden, nor an unusual requirement, despite that the company enjoys a line of credit with large suppliers like Bunge and Archer Daniels Midland. Based on a limited review of the sales price, and method of sales price determination, the team believes PCI was able to obtain a fair market price; at the same time, Rosanda was able to gain from the sale because the company was able to lock in a sales price at a time of increasing commodity prices.

¹²⁴ CRS has monetized soybean meal seven times on behalf of USDA Awardees SHARE and Finca. PCI monetized soybean meal in 2011 in support of its McGovern-Dole programming. Texas A&M monetized soybean meal in 2008 for its FFPr programming.

5.9.5. Recommendations

The study team recommends bulk US soybean meal, with specifications as outlined below, for monetization for FY12 for the following reasons:

- There is a substantial commercial market for US soybean meal, with growing commercial imports already sourced almost exclusively from the US.
- Trade policies favor the import of US soybean meal, as there are no quotas or tariffs for soybean meal from the US.
- Monetization of a small volume of soybean meal would have no discernible impact on normal trade relations between Guatemala and its usual trading partner in the soybean meal market (the US), but would simply substitute for a very small volume of normal US commercial sales in support of food security activities in Guatemala.

PVOs interested in monetizing soybean meal should pay special attention to the specifications required by animal feed industry. Basic quality conditions include the percent protein, moisture, fiber, and that the meal is free of toxins. Potential buyers are generally interested in the following specifications: Soybean Meal 48 percent Protein or better (SBM) – minimum 48.0 percent protein, 1:1 discount from 48.0 percent to 47.50 percent; max. 12.5 percent moisture; max. 3.5 percent fiber; 0.05-0.20pH urease activity; 75.0 percent-85.0 percent protein solubility; minimum 0.5 percent fat; max. 6.0 percent ash; minimum 2.90 percent lysine (as is); max. 20PPB aflatoxin; max. 5PPB ochratoxin; max. 2PPM DON; max. 2PPM fumonisin; max. 50PPB T-2; max. 125PPB zearalenone; max. 90F temperature.

Similar to the team's recommendations for yellow maize, the study team recommends the following process for monetization of Title II soybean meal:

1. Discover prevailing market prices for US soybean meal on the CBOT. Note that commercial importers face a CIF Puerto Quetzal price, which is composed of two items: Future + Base = CIF Puerto Quetzal. The value of the "future" can be checked online via CBOT.¹²⁵ It is important to define which month they would be delivering the product in stock prices would have to define the futures price in the period. The "Base" consists of a reward-punishment on the future value, the cost of freight and insurance. This value, which includes freight and insurance, is not found on the Internet; instead, each supplier manages their rates with the insurers and freight carriers the supplier hires.

A current reference price CIF Puerto Quetzal US soybean meal (48 percent protein) for delivery in September 2011 is US\$447 per MT.¹²⁶

2. Once a fixed minimum selling price based on a CIF price is obtained, determine whether any potential buyers would require a discount for opening a letter of credit. If so, this discount would be in the range of 1-2 percent of the contract.
3. These processes should be carried out at least three or four months before the date of delivery as the large and medium companies that normally would be involved in their inventory monetization typically cover three months in advance with their normal supply chains. For the potential buyer to purchase a large amount of monetized goods, the buyer has to have sufficient lead time in order to plan their inventory and storage.

¹²⁵ Quotes are available via <http://www.cmegroup.com/trading/agricultural/grain-and-oilseed/corn.html>

¹²⁶ This is based on Future 364 / Short Ton Base 41.5 + / S = 405.50 Ton / Short Ton CIF Puerto Quetzal = 447 USD / MT.

4. Issue a tender through the newspapers with at least seven to ten days to respond, followed by direct communication with the companies invited to participate. Given the infrequent nature of Title II monetizations, a phone call advising all potential buyers of the announcement will ensure the widest range of potential buyers. While the most promising potential buyers may be three of the larger animal feed manufacturers (Frisa of Grupo PAF, Comayma, and Rosanda), there are other medium- and smaller-sized businesses which are very likely to compete if they are aware of the tenders. An open and competitive tender process will enable smaller firms to participate as well.
5. Once bids are received, the first award should be to those bidders that have offered a better price, with successive quantities offered to those bidders offering relatively lower prices.

Provided the monetization is conducted through an open and competitive process, the team finds that monetization of up to 25,315 MT per year would have no discernible negative impact on the Guatemalan soybean meal market, and could generate approximately US\$11.3 million annually¹²⁷ in funds for food security activities in Guatemala assuming a CIF Puerto Quetzal of US\$447 per MT.

Of course, any proposed USAID or USDA monetization should account for any monetization tonnages planned under the other agency's programming. At present, SHARE reports that it plans to monetize soybean meal at the end of 2011 in support of its FY11 McGovern–Dole International Food for Education and Child Nutrition Program.

5.10. Market Analysis - Non-Fat Dry Milk (NFDM)

5.10.1. Demand and Supply Overview

Demand. Consumption of milk and milk products is low in Guatemala relative to many of its Central American neighbors. Powdered milk is the main form of milk consumed in the country, but they compete with maize-based, or maize/soy-based powdered products for making atols (e.g., Incaparina). Powdered milk, including full fat, low fat and non-fat dry milk (NFDM, powdered milk with less than 1.5 percent fat) are used in several foodstuffs commonly consumed by Guatemalans, including ice cream and yogurts. The primary consumers of powdered milk include: hotels, ice cream manufacturers, restaurants, schools (particularly through the GoG programs).

Supply. Domestic milk production is the lowest in Central America and, although both consumption and domestic milk production have grown in recent years, Guatemala's production and consumption are among the lowest in the region (Oficina Comercial de ProChile en Guatemala, 2011). The country has a small dairy industry which is able to meet a small portion of national demand. The majority of demand for milk is met through commercial imports.

There is no domestic production of powdered milk (fat, non-fat, or skim milk powder). There is domestic production of reconstituted milk, and processing of milk-based products using imported powdered milk. Guatemala imports an average of approximately 17,500 MT of milk powder per year. Of this, the percentage of that constitutes NFDM has fluctuated from 4 percent

¹²⁷ As of this writing, CIF Puerto Quetzal reference price for delivery in September 2011 is US\$447per MT.

to nearly 17 percent in the last five years. In 2009 and 2010, NFDM imports as a percentage of total powdered milk imports have been 15-17 percent.

5.10.2. Supply Summary

Table 35. Non-Fat Milk Powder Supply (MT)

Market supply	2006	2007	2008	2009	2010	5 year Average
1 Imports	730	848	1,032	2,029	3,021	1,532
2 of which, Food Aid	0	0	0	0	0	0
3 Exports	1	0	4	28	14	9
4 Net Trade	729	848	1,028	2,001	3,007	1,523
5 Production	0	0	0	0	0	0
6 Supply	729	848	1,028	2,001	3,007	1,523

Notes: [1] Average of Comtrade, FAOSTAT, ITC, BANGUAT; [2] WFP Interfais, 2006-2009; [3] Average of Comtrade, FAOSTAT, ITC, BANGUAT; [4] imports minus exports; [5] USDA-FAS, FAOSTAT; [6] Production plus net trade

While the five-year average is relatively low, growth in the industries using NFDM for ice cream and other processed foods is reflected in the three-year average, which is 2,292 MT.

As reported in the 2009 BEST report, the top five suppliers of NFDM to Guatemala were the US, Australia, Costa Rica, New Zealand, and El Salvador for the period 2004-2008, with the US supplying 84 percent of Guatemala's NFDM imports over the period. With the implementation of DR-CAFTA, there was a sharp decline in US milk powder exports, and sharp increase in exports from Nicaragua¹²⁸

While price is an important factor in selecting a country of origin for inputs, according to a June 2011 study of the powdered milk market, ice cream manufacturers are most concerned about quality and food safety. Manufacturers cite the most trust in powdered milk from the US, followed by Australia and New Zealand.

Milk powder has been imported as food aid, but has not been monetized. According to USAID Food Assistance Reports, SHARE and Food for the Poor (FFTP) are among those who distributed NFDM under the McGovern-Dole International Food for Education and Child Nutrition Program.

5.10.3. GoG Policy

There are several regulatory and import constraints that would impact monetization of NFDM. Constraints include FFP guidance on the use of milk powder for monetization (see Annex IV) and the application of import tariff and quotas by the GoG, under the Central American-Dominican Republic (DR-CAFTA) agreement with the United States.¹²⁹

¹²⁸ The study team was unable to meet with major actors in the ice cream industry who might use NFDM. We will continue to research information on the country of origins for all powdered milk vs NFDM, but suspect the NFDM market is not a viable option for near future Title II monetizations.

¹²⁹ World Trade Organization, Guatemala Trade Policy Review 2009, p. 76. The quotas are distributed through import certificates, on a first come first served basis. Import requests above the quota limit are distributed in proportion to the total volumes requested. The GOG imposes quantitative ceilings per application, and only firms legally established in Guatemala and registered with the Ministry of the Economy (MOE) are eligible for the certificates.

Once the US became a signatory participant to the CAFTA (Central American Free Trade Agreement) Treaty in 2005, which includes Guatemala and Nicaragua, it was able to gain greater market access for exports, including milk powder (allowed to export up to 1,800 MT), and will benefit from tariff-free exports in 20 years' time, with current tariff rates in place until 2016.¹³⁰ Due to these trade policy agreements, it is now possible for the US to slightly increase milk powder exports to Guatemala, making milk powder a candidate for monetization.

The 2011 TRQ under DR-CAFTA for NFDM is 318.52 MT per year. Imports from within DR-CAFTA signatory countries, there is no tariff imposed. Above this quota, there is a 15 percent tariff imposed. This TRQ restricts the viability of NFDM monetization because tariffs increase the prices of imported goods, which effectively limit the size of the market.

5.10.4. Competitive Environment

There are numerous brands of milk products in Guatemala, including Anchor, Nido, Klim, Svelty (all Nestle), Borden (owned by Malher), Pinito (owned by Dos Pinos", a Costa Rican company), Gold Star (New Zealand), Kamoja (Australian), among others.

It is unclear how many individual potential buyers there are. The team estimates there are two to three potential buyers, including Sarita, Inlacs, and Nestlé, for milk powder. The team was unsuccessful in obtaining interviews with any potential buyers or market informants. This may reflect the lack of interest in participating in sales of Title II NFDM monetizations.

5.10.5. Performance of Past Monetizations

To the best of the study team's knowledge, NFDM has not been previously monetized in Guatemala. Therefore, there are no past sales to inform an assessment of past performance in achieving a fair market price.

5.10.6. Recommendations

The market for NFDM is limited, and monetization of a reasonably small volume would generate just under US\$563,000, assuming monetization of ten percent of average annual commercial volumes (i.e., 169 MT at US\$3329 per MT).¹³¹ Given the lack of experience in the NFDM market, and the apparent disinterest of potential buyers, the study team recommends against considering monetization of NFDM in FY12, or for the foreseeable future.

Should PVOs seek to diversify the commodities by including NFDM, the following should be noted. First, demand for powdered milk products, including NFDM, is constant throughout the year; therefore, there are no timing considerations for a call forward or sale. Second, sales should be through an open tender process, with announcements placed in the largest daily newspapers. Phone calls to potential buyers could alert them to the existence of the announcement.

¹³⁰ US Dairy Export Council Backgrounder, Dairy Fact Sheet on U.S. – Central America FTA, <http://usdec.files.cms-plus.com/PDFs/TradePolicy/Central%20America%20TPA%20Fact%20Sheet.pdf>

¹³¹ As of September 1, 2011, the current price for US NFDM Grade A is US\$3,328.98 per MT (per <http://marketnews.usda.gov/portal/da/>). Price from Chicago CME time series data available here: http://future.aae.wisc.edu/data/monthly_values/by_area/21.csv?area=Central%2CEast

5.11. Overarching Recommendations for All Proposed Monetization Sales In Guatemala

Potential Title II awardees should recognize the Guatemalan market's strengths and weaknesses, and work to support the market via the monetization process in addition to supporting vulnerable communities via the monetization proceeds.

Options for sales methodologies may be limited depending on the commodity and funding requirements. As previous Bellmon analyses have clearly noted, market realities do not leave much of an alternative to negotiated sales with a single buyer for CDSO. The lead agent should continue to monetize CDSO under contract with the current buyer (Olmecca), but future Title II Awardees need to take a market basket approach if only to increase their bargaining power, and ensure sufficient funds are available for food security programming.

Though USAID has monetized only CDSO, Title II partners do have experience monetizing other commodities (soybean meal and yellow maize, in particular). Future Title II Awardees should draw upon lessons learned from that experience.

Diversification of the commodity basket for monetization will complicate life for Title II partners, and will add to the administrative and logistical burden associated with raising funds through food aid monetization.

As noted at the beginning of this Chapter, food aid monetizations face two primary disadvantages relative to normal commercial transactions: First, PVOs almost never have professional staff with experience as commodities traders who can assist with the market analysis, contract design, and price monitoring to ensure a fair market price is achieved. This places Title II PVOs in a weaker bargaining position in any negotiation process. Second, the timing of delivery cannot be fully ensured, which typically automatically reduces the number of potential buyers for Title II commodities because companies need to plan production processes, including arrival of new inputs, often many months in advance. This reasonably warrants a reduction in the price potential buyers will be willing to pay for Title II commodities.

As previous Bellmons have also suggested, one solution is to work through professional traders to manage the monetization process. As Chacon argued clearly:

This would allow the PVOs to focus their attention on their primary interests, i.e., humanitarian assistance and economic development; and, would convert monetization transactions into regular commercial transactions, avoiding negative perceptions associated with donated food commodities. Large commercial trading companies can offer a number of advantages, including tools to manage price and currency risk, ability to provide credit terms, an established logistical, marketing and transportation network, and commercial interest in back hauling products from the recipient country for export elsewhere on the international market without disturbance to local markets.

One logical option available to Title II PVOs is to outsource the monetization of one or more additional commodities (soybean meal, yellow maize, and/or rice) to a knowledgeable broker. A broker would very likely charge the same or only slightly more than the consortium fee (1 percent or 1.5 percent). Sales should be made CIF, with the buyer taking possession at Puerto Quetzal. Sales prices through a broker could be determined according to the same (or nearly the same) practice as current Title II CDSO sales (e.g., developing a reference price based on CBOT future prices for US commodities, with freight charges determined by the broker's investigation of current freight rates for similar commodities/tonnages at the time of the sales.

Should PVOs consider soybean meal and/or yellow maize, whether or not sales are made through a broker, PVOs should ensure offerings are published as widely as possible to attract the maximum number of bidders, and to continually assess the viability of monetizing using competitive bids.

Finally, PVOs should note that 1) yellow maize is used in higher proportions than soybean meal in the manufacture of animal feed, generally in a ratio of 2 to 1, and 2) the price of yellow maize is about 80 percent the price of soybeans. Therefore, to raise the same amount of proceeds from the sale of yellow maize and the sale of soybean meal sale, 15 percent more maize (in volume terms) would be required. There may be an advantage in monetizing a combination of yellow maize (65 percent) and soybean meal (35 percent) in a single sale shipment. With this noted, there is clearly a larger market in Guatemala for yellow maize and, in fact, the potential bidders on an open tender of yellow maize and soybean meal are very likely to be the same companies regardless of which commodity is offered for sale.

5.12. Third-Country Monetization

When competition in a commodity market is severely limited, monetization activities in that market run the risk of introducing or intensifying market distortions. These effects frustrate the development of an open and fully competitive market, by contributing to either excessive profits or barriers to entry. By denying producers and consumers the opportunity to operate within a competitive market, over time, the monetization activity could lead to reduced national economic efficiency and assign indeterminate costs to producers and consumers. Monetization in such a market would be contrary to the legal requirements of the U.S. agricultural legislation (e.g. Farm Bill), which requires that monetization does not introduce local market or production disincentives.

Third-country monetization (sometimes referred to as "regional monetization") can offer a legally-compliant alternative for Awardees operating in a country where 1) there exist less than fully competitive domestic commodity markets; 2) commercial markets are relatively limited in size, therefore limiting scope for monetization; and/or 3) host government policies constrain the ability of USAID implementing partners from meeting sufficient funding needs through in-country monetization.

Third-country monetization provides Awardees with the option of selling into a market where there is sufficient competition among buyers in order to increase the likelihood that bids will be at or near IPP, which is the best measure of a fair market price. With competition, there is increased assurance that the monetization will not distort the market and will generate higher revenues than if the monetization is conducted in a domestic market with limited or no competition. Third-country monetization can generate greater revenue for food security activities and thereby increase the efficiencies of the FFP program. It also provides the Awardees with a fallback position if a commodity that was initially recommended for monetization becomes unviable at a later date due to changing market or policy conditions.

However, it is important to note that third-country monetization may face challenges, such as:

- The appropriate third country or regional market for third-country monetization is that market in which one may expect to receive a commodity price commensurate with the international price. A market analysis to inform a Bellmon Determination would need to be conducted in both Guatemala and the regional market in which the monetization is to

- take place. According to FFP Guidelines, the country must be either a LIFDC or a LDC on the OECD-DAC list.
- Within the region, only Haiti, Nicaragua, and Honduras are LIFDCs. As the final destination of the commodities sold is indeterminate, the relevant reference to ensure that the Bellmon market conditions are satisfied is to ensure that the final negotiated price is comparable to the import price for that market. In addition, the port facilities of the selected market platform need to be sufficient to physically accommodate the commodities. This requires that a Bellmon analysis be conducted in both the recipient country and the country in which third-country monetization takes place.
- USDA Food for Progress has already approved large-scale monetization activities for both Honduras and Nicaragua. USDA Food for Progress has on-going programming and monetizations in Honduras and Nicaragua. In Honduras, FINCA monetized 20,000 MT of wheat in February 2011 and the Government of Honduras is scheduled to monetize 22,336 MT of wheat in December 2011, but the agreement has not been finalized. In recent years, soybean meal and yellow maize have been monetized in Honduras. In Nicaragua, the Government of Nicaragua monetized in early 2011, 24,000 MT of yellow maize and 9,000 MT of soybean meal. In previous years, wheat and CDSO were monetized in Nicaragua. Additional research will need to be conducted to determine if these countries are economically suitable for additional monetization activities. Thus, these countries may be economically unsuitable for additional monetization activities.

Monetization in a relatively large port city is preferred because inland freight and other costs will be assumed by the buyer. The preferred currency in which the transactions would be conducted would be specified in the offer. Based on the above criteria, the table below provides an overview of the products and markets that may be considered for third-country monetization.

Table 36. Quantities of Select Commodities Imported into Nicaragua, Honduras,¹³² Dominican Republic, and Peru

Commodity	Honduras (MT)	Nicaragua (MT)	DR ¹³³ (MT)	Peru (MT)
Maize	373,998	136,043	1,042,083	1,904,298
Rice *	155,270	124,754	**	**
Wheat grain	189,813	113,684	525,817	1,687,195
Soya-bean oil crude	**	40,932	150,889	343,140
LIFDC	Yes	Yes	No	No

Sources: FAOSTAT, ITC, USDA-FAS, Comtrade, individual national government central statistics and/or ministries of agriculture.

Notes: Figures based on desk study only and reflect reported volumes for 2010 in Peru and the DR, and reported volumes for 2009 for Honduras and Nicaragua; all figures to be refined and updated in forthcoming Third Country Monetization feasibility study

* Rice may include paddy, broken, husked, semi milled and milled

** Imports negligible, or negligible relative to domestic production

If third-country monetization is selected as an option, a widely advertised competitive procurement using newspapers, internet, and radio is recommended. Advertisement should be

¹³² Per USAID policy, only countries that are classified as LIFDC or Least Developed countries are eligible for third-country monetization. Haiti, Honduras, and Nicaragua are the only countries in Central America and the Caribbean fitting this criteria.

¹³³ The Dominican Republic is not in the DAC list but its proximity to Guatemala makes the DR a viable candidate for third-country monetization. As mentioned above, there was a successful third-country monetization of CDSO through CARE in Peru for Haiti programming.

explicit regarding commodity specifications, delivery time range, transaction locations, payment terms, and required currency. An auction process using a commodity exchange should be considered. Finally, both the Mission Director of the third-country monetization country and the Title II development programs country must endorse the monetization.

Chapter 6. Distributed Food Aid

This Chapter provides general guidelines to help ensure that future distributed food aid programs in Guatemala will not result in substantial production disincentive or disruption of local markets. The study provides guidelines within a specific framework for analyzing the potential market and production impact of distributed food aid. The recommendations are broad, and importantly, future Awardees are expected to conduct their own independent needs assessments, market analysis, and formative research to fully understand local conditions, needs, and the range of appropriate responses.

6.1. Objectives of Distribution Analysis

The Bellmon Amendment requires assurances that a proposed food aid distribution program would not result in substantial disincentive to or interference with domestic production or marketing in that country. The extent to which distributed food aid has the potential to result in disincentive to local production or disruption of markets rests fundamentally on whether proposed food aid represents “additional consumption” for beneficiary households (i.e., food consumption that would not have occurred in the absence of the food aid distribution program). If food aid transfers exceed households’ perceived needs, the beneficiary is more likely to sell the food aid, reduce market purchases of food, and/or increase household farm sales. Such a response could lower market prices and/or reduce local incentives for production.

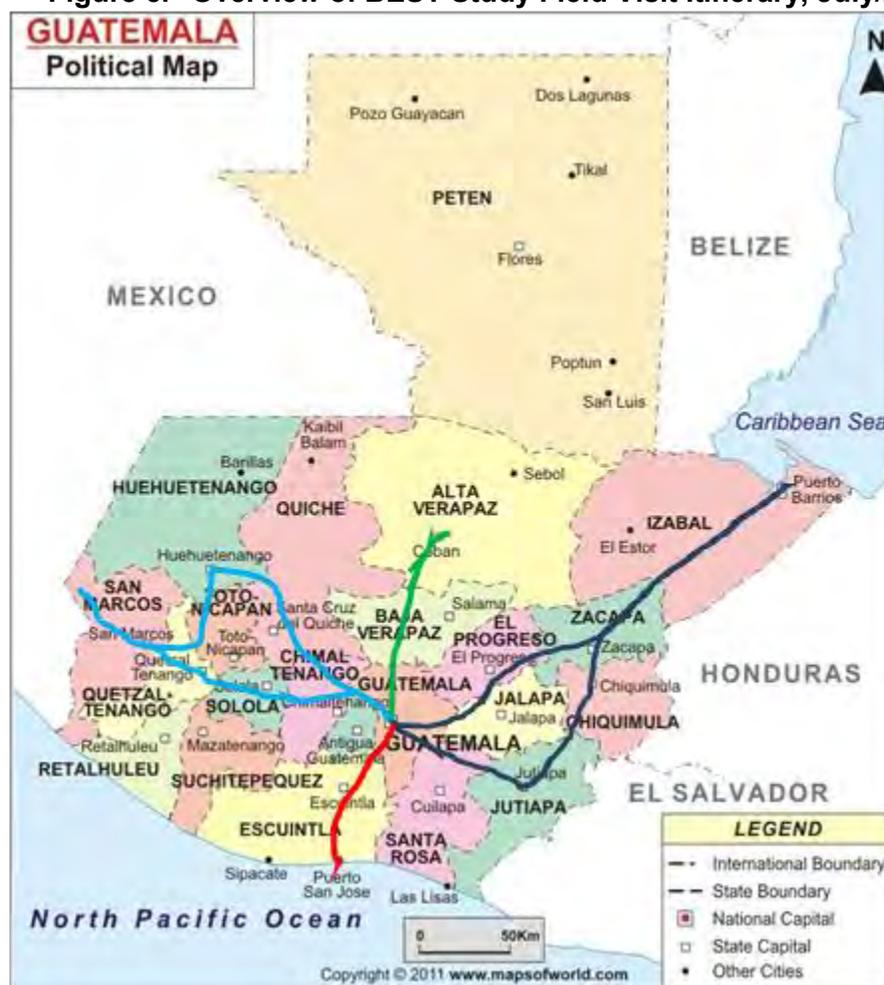
To help ensure proposed programs will not result in substantial disincentive or market disruption, this Chapter presents:

1. An overview of available evidence of national and localized food deficits in Guatemala -- particularly western highlands where distributed food aid has taken place, or is expected to take place in the next programming cycle, and an overview of the private market's capacity to meet localized food deficits, based on a Structure-Conduct-Performance framework.
2. An assessment of market integration across Guatemala.
3. Key considerations for all distributed food aid interventions in Guatemala, and guidelines for each of the most likely modalities for distributed food aid.

6.2. Private Market Capacity to Meet National and Localized Food Deficits

To inform the present study, the team conducted desk research prior to field visit, and then conducted extensive field research over the course of one month, followed by additional follow-up research during the drafting of the report findings. During the period July/August 2011, the team visited with beneficiaries and market actors across 15 departments, with some concentration on the western highlands. An overview of the field visit itinerary is illustrated in the figure below.

Figure 5. Overview of BEST Study Field Visit Itinerary, July/August 2011



Source: Team itinerary drawn over map from www.mapsoftheworld.com

Guatemala is a domestic food consumption deficit country and is a net importer of beans, rice, yellow maize, beef, eggs, and milk. The Guatemalan diet is very heavily focused on maize, as maize tortillas are generally consumed at all three meals. Because maize is so frequently consumed, producers limit diversification of production to other crops. Similarly, consumers have a very strong preference for maize over other commodities, despite the fact that maize prices are currently high. Families across Guatemala are currently struggling with high maize prices, and decreasing consumption of other goods, like proteins and vegetables, in order to purchase maize and maize based products.

The western highlands have structural bean and maize production deficits (FAO/WFP 2010). Small-scale farmers in the western highlands dedicate a large majority of their land to maize production, and dedicate smaller amounts of land to beans, wheat, and potato production. This production is rain fed and therefore vulnerable to varying climatic conditions. Furthermore, production plots are small, and often unable to produce sufficient for the large size of many households. Local markets function well in terms of availability of food, but low purchasing power undermines access.

Western highland markets are well-integrated among departments as well as with the markets in Guatemala City and, to their advantage, with the markets in Mexico.¹³⁴ Because of this area's proximity to Mexico, both legal and illegal goods flow across the border. The ability of Mexico to supply the western highlands with food increases food availability on the market, improves access by increasing supply and lowering market prices, and smoothes gaps in local production.

The following sections provide an overview of commodity markets critical for food security in Guatemala, including maize, beans, rice, and oil, according to a Structure, Conduct, Performance (S-C-P) framework,¹³⁵ and summarizes current market conditions.

6.2.1. Maize (White and Yellow)

Maize is vital to the country's economy and culture; the country largely depends on self-production of white maize for human consumption, and depends largely on imports of yellow maize for animal feed and some snack foods. White and yellow maize apparent consumption is 224.4 lbs per person per year (FAO/WFP 2010), and there are no obvious gaps of availability in the white and yellow maize markets. Legal and illegal white maize crosses the border from Mexico, increasing competition and efficiency. Yellow maize produced locally is for select consumers, primarily in the western highlands, who have a strong preference.

The maize grain trade is very competitive in Guatemala. Producers of all levels (sub-subsistence, subsistence, and surplus) are active players in the white maize market. As stated earlier, small (sub-subsistence and subsistence) farmers produce maize on small plots of land, with little to no diversification of other crops. There does not appear to be barriers to entry or price gauging in the white maize market. Price information is exchanged and spread very effectively through informal channels and trading networks. As discussed in the market integration section below, maize prices in local markets track one another closely.

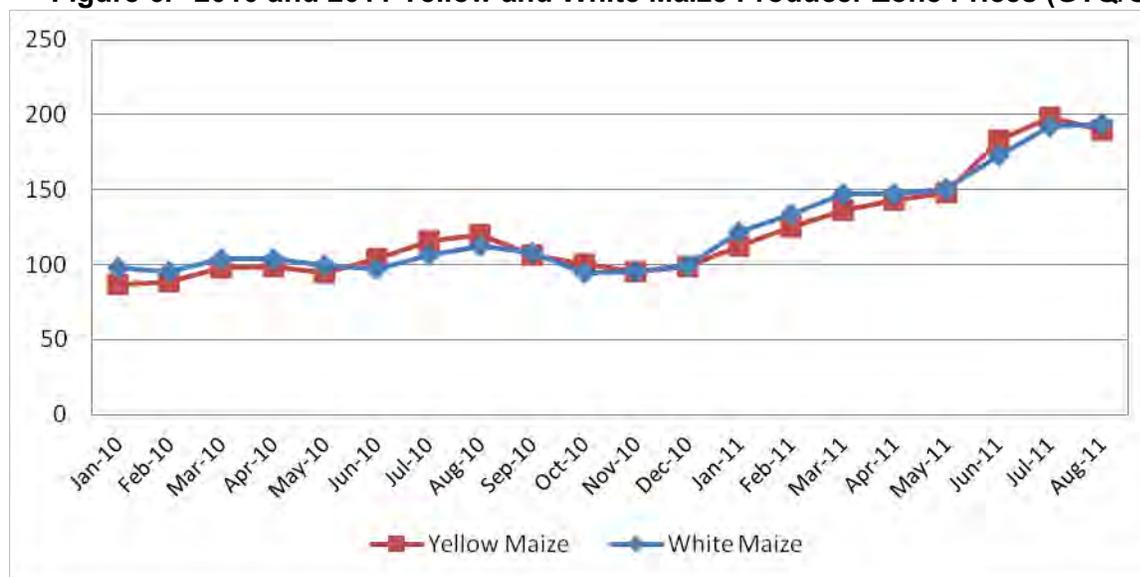
The main constraint to food security is due to poor access arising from weak household purchasing power; poor choices¹³⁶ about market purchases also constrain food security.

Current conditions. In 2010, white maize retail prices were relatively stable across markets, with the exception of prices in the central region, which increased from April to June, and after that decreased and remained similar to prices in other regions. In 2011, all markets show steady price increases.

¹³⁴ BEST team visited markets in Guatemala City, Alta Verapaz, Totonicapán, San Marcos and Quetzaltenango and interviews with market actors and beneficiaries revealed strong integration of markets for key staples.

¹³⁵ For more information about SCP frameworks in food security analysis, please see: http://www.fews.net/docs/Publications/MT%20Guidance_S%20C%20P_No%202_En.pdf

¹³⁶ Households report buying non-nutritious foods and carbohydrate heavy foods like sodas, chips, cookies and pastas.

Figure 6. 2010 and 2011 Yellow and White Maize Producer Zone Prices (GTQ/Quintal)

Source: BEST calculation based on MAGA prices

Production zone prices for yellow and white maize¹³⁷ (north and east for white maize, north for yellow maize) showed slightly more variation than retail prices from June to August 2010. Since December 2010, white and yellow maize prices in production areas steadily increased until August 2011 (Figure 6).

6.2.2. Beans (Black)

Consumers have a very strong preference for black beans. Apparent consumption of black beans is 22 pounds per person per year. (FAO/WFP 2010). The majority of domestic production is black beans. Domestic production meets 50 percent of demand.¹³⁸ There are two harvests for beans: May and August.

An average of 50 percent of bean demand is met through imports. Black beans are imported from Nicaragua, Argentina, and China and then repackaged in Guatemala. Generally, beans are repackaged without country of origin labels. Poor households are necessarily price-sensitive, and express a preference for cheaper beans over quality beans. Illegal beans from Mexico appear to have minimal impact on market. Prices are exchanged and spread through informal channels and trading networks. However, as discussed below under market integration, bean prices are less well integrated than other staples. The red bean market is well integrated with markets in El Salvador.

The beans market appears competitive. The main constraints to market performance are weak household purchasing power, which limits access, and poor choices.

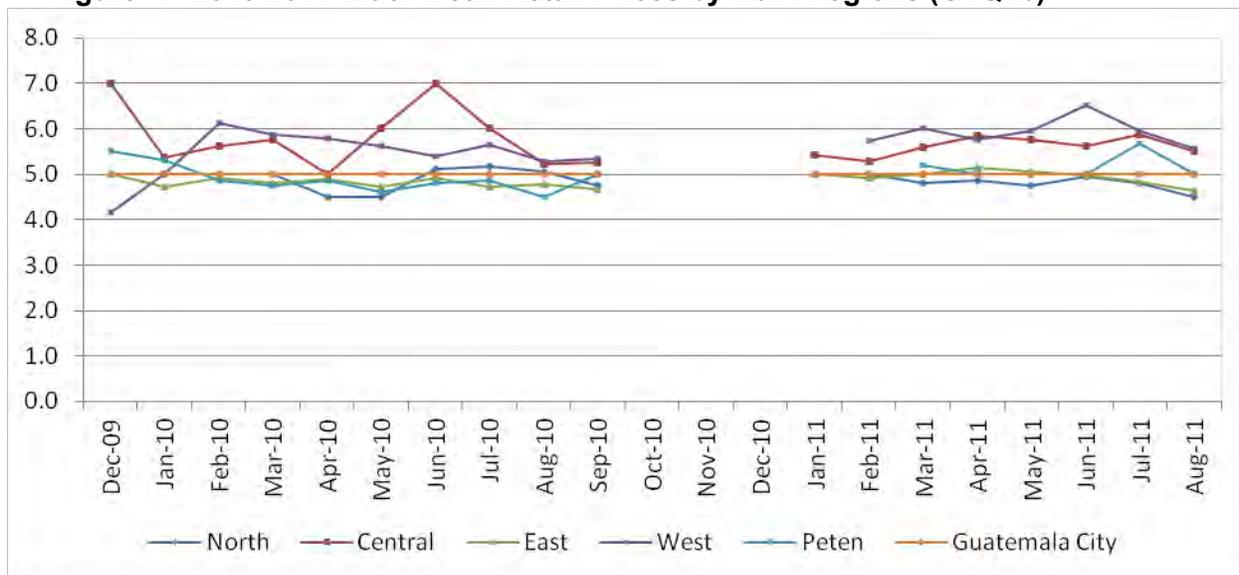
Current conditions. In 2010, black bean retail prices showed some month-to-month variation. In the north, prices were relatively low and slightly changed from March until the end of the year. Prices in the central region showed the most variability in 2010, with prices changing rapidly particularly from April to August. Prices in the east remained relatively unchanged. In the west

¹³⁷ MAGA reports local "acopiador" prices as prices from production zone.

¹³⁸ Information is from bean producer association, exact statistics are unavailable.

region, prices increased rapidly until February 2010 to slowly decrease until the end of the year. Petén region also showed very small variation in 2010. Finally, prices in Guatemala City were unchanged from 2010 to August 2011. In Figure 7, see that in 2011, prices slightly changed reflecting production seasonality.

Figure 7. 2010-2011 Black Bean Retail Prices by Main Regions (GTQ/lb)



Source: BEST calculation based on MAGA prices

Consistent with dry bean price seasonality, average price from production zones in the north and east decreased from January 2010 to August 2010. From September 2010 until January 2011, prices remained relatively high corresponding to limited supply period. After January prices again decreased until April and later slightly increased again until July 2011 (see Figure 8).

Figure 8. Average Black Beans Producer Zone Prices (GTQ/Quintal)



Source: BEST calculation based on MAGA prices

6.2.3. Rice

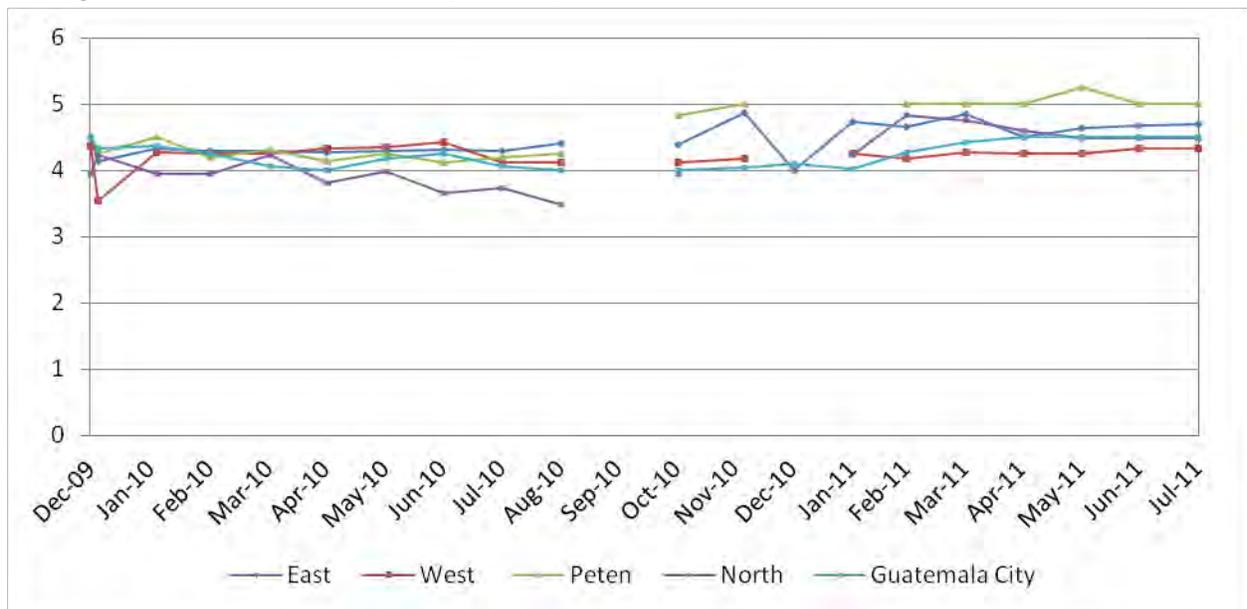
National per capita rice consumption is 11-16 pounds per year (ARROZGUA, 2011) (FAO/WFP 2010). The majority of rice consumption is by urban consumers; although growing, rice consumption by rural indigenous consumers is less common. Despite relatively low consumption outside of major urban areas, rice is widely available in local markets, indicating that the private sector has adequate capacity to meet localized demand. According to a report made for the Guatemalan food producers in 2011, as a result of the wheat flour price increases, rice consumption is up by 10 percent this year (Central America Trade Office, Taiwan, Republic of China, 2011).

Domestic production meets approximately one-fifth to one-third of annual demand, with the remainder met through commercial imports of paddy (rough) rice from the US, as well as substantial illegally imported rice from Mexico. Rice is produced in the Departments of Jutiapa, Izabal, San Marcos, Alta Verapaz, Petén, Chiquimula and Quetzaltenango. There are 33 rice mills, the three largest of which enjoy approximately 72 percent market share.

Rice millers are required to buy national rice before they can import international rice. ARROZGUA sets a "Producers Guaranteed Price" at the beginning of each year in agreement with different rice millers in the country, based on the previous year's costs of production. This agreement assures producers who are part of the association to have all their harvest bought by millers participants at an guaranteed floor price (ARROZGUA, 2011). This helps to stabilize prices throughout the marketing chain, and support domestic rice producers. This unique procurement and pricing mechanism for domestic rice ensures that targeted direct distribution in the Title II program will NOT be a disincentive to local production. Millers may be impacted by rice distributions because they sell into the wholesale market yet face a set producer price. ARROZGUA reports that in 2010 there was a negative impact on prices in urban areas due to the distribution of rice under the GoG Bolsa Solidaria program. There is only anecdotal information to support this claim, and it appears to be an issue primarily in urban or peri-urban areas. Nonetheless, potential Awardees should be aware of and sensitive to this possibility.

Current conditions. Retail prices for rice in the east, west, Petén and Guatemala City were stable until August 2010. During the last part of 2010, prices in different regions showed slightly more variation with an upward tendency. The north region was the only showing some decreasing trend during 2010. In 2011, while most regions showed very small changes, for the most part prices were slightly higher than 2010 (Figure 9).

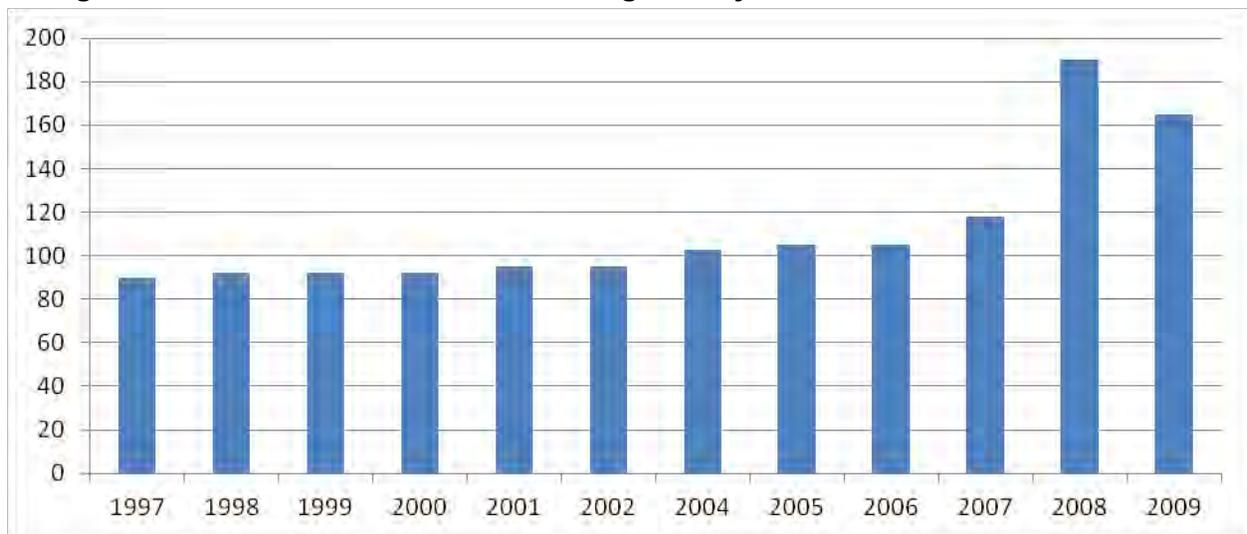
Figure 9. Rice Retail Prices (GTQ/lb)



Source: BEST calculation based on MAGA prices

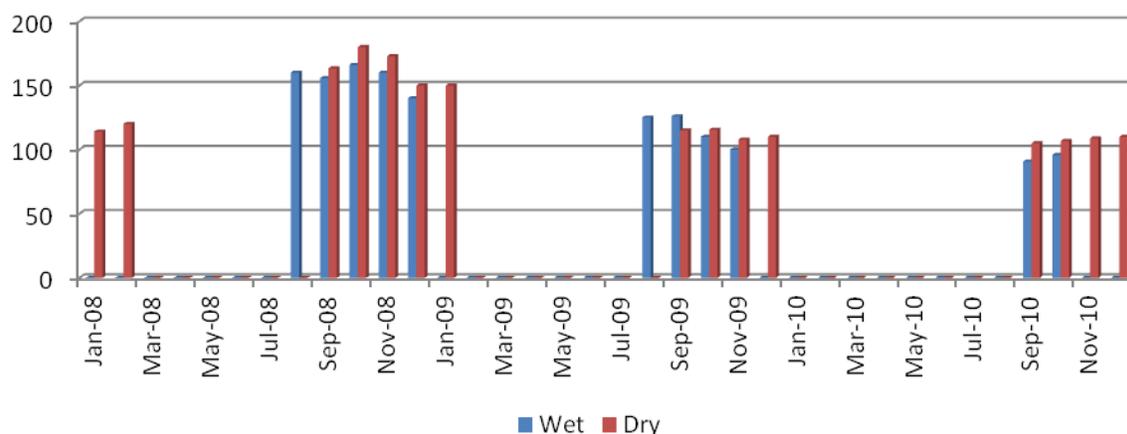
According to ARROZGUA price data, production zone prices for rice paddy delivered wet or dry and sorted increased significantly during harvest time in 2008 (see figure below).

Figure 10. 1997 – 2009 ARROZGUA Average Yearly Producers Price



Source: (ARROZGUA, 2011)

Price information from MAGA, while limited, supports this price trend. By 2009, prices decreased, and in 2010, they returned to lower levels similar to those observed before 2008 (see figure below).

Figure 11. 2008 – 2010 Rice Paddy Production Zone Prices (GTQ/Quintal)

Source: BEST calculation based on MAGA prices

6.2.4. Edible Oils

The market for edible oils for home consumption is fairly concentrated, but market segmentation among palm/soy blends and soy/sunflower blends, and consumer price sensitivity appear to support competitive pricing at the retail level. The higher quality blends are mainly consumed in urban markets, whereas poor rural households and especially households in the western highlands rely primarily on lard, with refined vegetable oil a secondary luxury item. Although per capita consumption in Guatemala is very low, particularly in rural areas, edible oils are widely available in local markets. Private market actors have well-established distribution channels and are able to move goods. There is also significant vegetable oil that arrives on the market illegally from Mexico. Prices are well integrated in markets across the country. Any market impact of distributed refined vegetable oil would be significantly dampened across many markets.

6.3. Market Integration

Introduction. This section focuses on integration of local markets within Guatemala. The analysis reveals that retail prices for rice and maize show significant correlation across local markets. On the other hand, black bean prices are not generally correlated.¹³⁹ Although this study does not include price data from other countries, other studies and field work interviews suggest that cross-border markets are also well-integrated, particularly those with Mexico. Food aid stakeholders should note that Guatemalan markets are generally integrated, and that food aid programs are less likely to have a pronounced effect on any one local market, but will affect a wider swath of local markets through price transmission.

¹³⁹ Currently in Guatemala, there is limited and sporadic price information collection in different markets. The Ministry of Agriculture (MAGA) started collecting price information in different markets in 2008. However, the collection has not been systematic over the years. In addition, there is no data (that the researchers in this project know of) on cross-border trade, particularly information on basic grains movements along the borders. Thus, the results of this market integration correlation analysis should be considered with care when assessing future implications.

Market Integration for Food Security

How Is Market Integration Measured? Markets are said to be integrated when the price in one market affects prices in others through trade flow adjustments. A simple, but imperfect method to measure spatial market integration is the bivariate correlation coefficient (Barrett, 1996). This method uses the Pearson correlation coefficient, a scale-free measure of the covariance between two price series, giving values between -1.00 and 1.00 . Statistically significant and positive correlation coefficients indicate a spatial integration between the respective pair of markets through trade; and the higher the correlation coefficient (the closer to 1), the greater the degree of market integration. Absence of statistically significant price correlations suggests that markets are not linked, and prices are determined independently from one market to another.

Why Is Market Integration Important? Market analysis is important to food security assessments because; a) understanding how markets operate provides important insights into the impact and value of various responses in times of crisis (e.g., food aid versus cash transfers), b) the systematic collection of price data from various markets provides a baseline for comparison, early warning, and analysis, and c) when markets are well-integrated, cash transfers are appropriate because suppliers and traders will respond favorably to increases in household demand (Beekhuis & Laouali, 2007).

International market integration. For most staples, local production and trade are more likely to influence greater price variations in Guatemala than international market prices. While Guatemala is import dependent on rice and wheat, it is not in maize and beans (De Janvry & Sadoulet, 2009). In the case of rice, the import dependency is quite high (68 percent) and there is a quasi monopoly in imports by a few mills. However, very low consumption (5 percent), a high import out-of-quota tariff, and competition with contraband rice coming from the United States through Mexico contribute to decrease the effect of price variations on local markets due to international price shocks (e.g., 2008 food crisis). On the other hand, maize is widely consumed in the country, but import dependency is very low (35 percent for yellow maize for human consumption, and nearly zero percent for white maize) which contributes to a low price variation in the country due to external shocks (De Janvry & Sadoulet, 2009).

Cross-border market integration. Cross-border trade takes place with all neighboring countries; however, trade is generally un-registered. Usually, cross-border trade depends on season and local food availability. Basic grains are informally traded with Mexico, El Salvador, Honduras and Costa Rica. Commonly, transporters or intermediaries buy agricultural products from Guatemala and take them to different markets, where they cross “blind spots”- areas where no formal custom control exists. While there is no official record of the exact amount that is traded in these areas, it is believed that the volume and value is quite substantial (Zappacosta, 2005). According to some estimations based on available data, among Central American countries intraregional exports increased from US\$671 million in 1990 to US\$3,912 million in 2005, out of which 32 percent were agricultural products (RUTA, 2008).

Market integration with Mexico is particularly important for food security. Guatemala has approximately 963 km of border with Mexico. Four departments (Petén, Quiché, San Marcos y Huehuetenango) border with the Mexican states of Campeche, Quintana Roo, Tabasco y Chiapas. On the Guatemalan side, Huehuetenango is one of the largest and most populated departments bordering Mexico. Despite the poverty observed in this area, coffee production and trade is major as well as trade of natural resources and other mostly illegal products (Carrillo, Mas alla de la invisibilidad: trabajo femenino en la frontera Mexico-Guatemala 2001). People from Huehuetenango frequently migrate to seasonal jobs in coffee plantations in Mexico or within Guatemala. Thus, border crossing is very common and it is also a survival resource for many people. Generally, people trade basic consumption products on a small-scale, with most products coming from Mexico and entering Guatemala without being recorded. While cross-

border trade is common, Guatemalan people complain that border crossing is not easy because of natural difficulties and because they often have to pay bribes to enter Mexico (Carrillo, Mas alla de la invisibilidad: trabajo femenino en la frontera Mexico-Guatemala 2001).

Local market integration. In Guatemala, all departments have food markets; local population and road access determines the importance of these markets. Main food markets are along the Inter American Highway. This highway spans from Jutiapa in the East, passing through Guatemala City and Chimaltenango in the centre to Quetzaltenango, Totonicapán and Huehuetenango in the west. Esquintla and Retalhuleu in the southern region are also important markets. Other important markets are Flores and Cobán in the north, and San Marcos in the western highlands. Petén and Alta Verapaz in the north, Jalapa in the east and Jutiapa and all Pacific coastal departments usually produce basic grains with a surplus sold in deficit areas such as the capital city and the departments of San Marcos, Totonicapán, Huehuetenango, Quetzaltenango and Sololá in the western highlands and the south (Zappacosta, 2005).

The marketing channels for basic grains from producers to consumers involve several intermediaries which include, and are not limited to, assemblers, transporters, traders, wholesalers, retailers and the food processing industry, in some cases also supermarkets (Zappacosta, 2005). While there may be multiple intermediaries along the supply chain, evidence suggests market information flows very smoothly among participants. Traders and transporters are important to transmit price information to farmers in food production areas and to wholesalers and retailers in the urban areas (Zappacosta, 2005). However, farmers in areas with limited access to roads or important markets have a harder time accessing important market information (Zappacosta, 2005).

Market integration by commodity. To analyze market integration, the study team used price data from two different sources: MAGA and FAO. Both sources have limitations worth mentioning. MAGA started collecting price information from different markets in 2008. However, the data collection has not been systematic and the time series contain numerous missing values. Price data have been more consistently collected since 2010. Thus, the analysis with MAGA prices contains 18 months of average retail prices. FAO collects price information from its beneficiaries using a randomized household survey. Participants are asked to provide the price they pay for maize and beans in their communities, which FAO calls a “community price”. This price can be the price participants paid to farmers in their communities, or the price they received when selling to intermediaries (Garcia, Ficha Tecnica del Monitoreo Mensual de Maiz y Frijol 2011). FAO prices are available from January 2007.

In addition, MAGA collects prices from all main markets in each department. For the analysis, different regions were constructed based on the Guatemalan National Household Survey (ENCOVI, Encuesta Nacional de Condiciones de Vida, 2006) poverty map, and field work information. The regions included are i) Central: Chimaltenango, Escuintla, Sacatepéquez; ii) Guatemala City: La Terminal market; iii) North: Alta Verapaz, Baja Verapaz; iv) Petén; v) East: Jalapa, Jutiapa, Santa Rosa, Chiquimula, El Progreso, Izabal, and Zacapa; and vi) West: Quetzaltenango, Retalhuleu, San Marcos, Sololá, Suchitepéquez, Totonicapán, El Quiché and Huehuetenango. FAO collects data from the following regions: i) North: Petén, Izabal, Alta Verapaz, El Quiché; ii) East: Baja Verapaz, El Progreso, Zacapa, Chiquimula, Jalapa, and Jutiapa; iii) South: Santa Rosa, Escuintla, Retalhuleu, and Suchitepequez, and iv) West: San Marcos, Solola, Quetzaltenango, and Totonicapán (Garcia, Ficha Tecnica del Monitoreo Mensual de Maiz y Frijol 2011). While both sources show limitations, they were the only available data to conduct this analysis.

Maize. Markets for maize¹⁴⁰ appear to be highly integrated. Using MAGA price data from January 2010 to August 2011, prices from all regions with the exception of the west are positively correlated. The highest correlation coefficients are between the north and east regions (96.2 percent), the north and Guatemala City (96.6 percent), the east and Petén (91.5 percent), the east and Guatemala City (96.8 percent) and Petén and Guatemala City (91.6 percent).

Table 37. White Maize Price Correlation Coefficients – MAGA price data

	North	Central	East	West	Petén	Guatemala City
North	1					
Central	.645**	1				
East	.962**	.734**	1			
West	.418	.283	.393	1		
Peten	.898**	.743**	.915**	.499*	1	
Guatemala City	.966**	.770**	.968**	.424	.916**	1

** Correlation is significant at the 0.01 level. * Correlation is significant at the 0.05 level (2-tailed).

Considering FAO price data from January 2007 to June 2010, prices from all regions also appeared highly correlated. The highest coefficients were between the south and west regions (91.6 percent), and the south and Guatemala City (90.5 percent).

Figure 12. White Maize Price Correlation Coefficients – FAO price data

	East	North	South	West	Guatemala City
East	1				
North	.715**	1			
South	.870**	.832**	1		
West	.811**	.771**	.916**	1	
Guatemala City	.840**	.705**	.905**	.888**	1

** Correlation is significant at the 0.01 level. * Correlation is significant at the 0.05 level (2-tailed).

Black beans. Markets for black beans in Guatemala do not appear to be as well integrated across the country however this may reflect data limitations. While using MAGA prices there seem to be no price correlation among different regions in the country, FAO price data suggest that prices from three markets appeared to be correlated. The regions with significant correlation coefficients were east and west (67.4 percent), east and Guatemala City (88.3 percent), and west and Guatemala City (70.1 percent). Based on interviews during field visit, the market for black beans appear to be just as well integrated as for maize.

Table 38. Black Bean Price Correlation Coefficients – MAGA price data

	North	Central	East	West	Peten
North	1				
Central	.285	1			
East	.132	.176	1		
West	-.155	-.423	.211	1	
Peten	-.086	.227	.162	-.192	1

¹⁴⁰ The price data are for white maize.

	North	Central	East	West	Peten
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** Correlation is significant at the 0.01 level . * Correlation is significant at the 0.05 level (2-tailed). Correlations with Guatemala city cannot be computed because MAGA reported constant prices for the time period studied.

Table 39. Black Bean Price Correlation Coefficients – FAO price data

	East	North	South	West	Guatemala City
East	1				
North	.322	1			
South	.323	.150	1		
West	.674**	.250	.155	1	
Guatemala City	.883**	.032	-.282	.701**	1

** Correlation is significant at the 0.01 level . * Correlation is significant at the 0.05 level (2-tailed).

Rice. Rice prices appeared to be integrated across several regions. Using MAGA data for rice with 10 percent broken grains (90-10 rice), the regions that show positive and significant correlations coefficients are north and east (69.9 percent), north and Petén (81.6 percent), north and Guatemala City (60.7 percent), and east and Petén (82.9 percent) In addition, Petén and Guatemala City showed a significant but low correlation (51.1 percent)

Table 40. Rice Price Correlation Coefficients – MAGA price data

	North	Central	East	West	Peten	Guatemala City
North	1					
Central	-.071	1				
East	.699**	-.063	1			
West	.061	.222	.313	1		
Peten	.816**	-.039	.829**	.080	1	
Guatemala City	.607**	-.027	.223	.193	.511*	1

** Correlation is significant at the 0.01 level . * Correlation is significant at the 0.05 level (2-tailed).

Recommendations. The more integrated markets are, the less of an impact any change in local food supply will have on a single target market. When markets are well-integrated, price changes are transmitted across geographic space, and thus dilute the impact on the target market. In Guatemala, markets for basic grains such as maize and rice appeared to be highly integrated while black bean markets do not appear to be as well integrated. However, it is important to consider data limitations for this analysis. Donors and implementing partners should incorporate more market monitoring outside of their immediate local market catchment area to appropriately measure the impact of their programs

6.4. Considerations for Distributed Food Aid

This section covers key considerations for all interventions which involve distributed food aid in the western highlands of Guatemala, including geographic targeting, seasonal targeting, household targeting, activity type, and commodity selection. The section concludes with a brief mention of other considerations for food aid programming, and a brief mention of considerations for mitigating any negative impact on local markets from distributed food aid.

6.3.1. General Guidelines

Food security has four main components: food access, food availability, food utilization, and stability. In different regions in Guatemala, certain components are more challenging than others and require different responses. The USAID/Guatemala Food Security Framework Analysis reported that food availability is the least problematic of these components in Guatemala (USAID, 2010), and the BEST team confirmed this during field visits in July/August 2011.

Access to nutritiously-adequate foods and the ability to withstand lean seasons are more concerning; food security in Guatemala is not an issue of food production or market functionality, but rather an issue of both poverty and nutrition. Although increasing household income will contribute toward fighting chronic malnutrition, health and nutrition interventions are imperative to inform vulnerable households how to make better use of food they can access.

6.3.2. Geographic Targeting

USAID/Guatemala has deemed the western highlands as a priority due to the area's chronic malnutrition, poverty levels, and social and economic growth indicators. Chronic malnutrition affects 43.4 percent of the Guatemalan population, with the highest in the country's northwest area at 64.8 percent (FAO/WFP 2010). All upcoming Title II development programs are expected to be located in the western highlands, in the departments of: San Marcos, Huehuetenango, Quiché, Totonicapán, and Quetzaltenango. Target municipalities and communities in those departments have yet to be determined.

MFEWS' Livelihoods Zone Profiles outlines the country's 20 livelihood zones, and their climatic conditions, livelihoods, and agricultural production.¹⁴¹ The western highlands region holds nine livelihood zones, described below.¹⁴²

- Northern Transversal Strip (#1) - This livelihood zone includes the northern sections of Huehuetenango and Quiché. This area is dedicated to basic grain production, selling of cattle, and daily labor. There is significant labor migration to Mexico.
- Subsistence Agriculture (#5) - This livelihood zone includes sections of Quiché, Huehuetenango, San Marcos, Totonicapán, and Quetzaltenango. There are significant micro-climates in this area. This area has the highest concentration of the indigenous population. Livelihoods are based on basic grain production and selling of daily labor. Women are dedicated to smallstock, vegetable production, and textiles. Seventy to eighty percent of grains consumed in the region are produced in the region. Some of the population migrates to Guatemalan sugarcane and coffee farms, as well as to Mexico. This area struggles with frosts and droughts, high food prices, poor animal health, plant pests, and high unemployment.
- Agriculture and Remittances (#6) - This is a small livelihood zone in Huehuetenango. The population works primarily in construction (as an outcome of remittances), basic grain production, and hibiscus, tomato, and peanut commercial production. Markets are integrated with Mexico and significant contraband trade flows through this area.
- Basic Grains and Wage Labor (#9) - This livelihood zone covers the eastern part of Quiché. The population produces basic grains, vegetables, and cattle. Most income is

¹⁴¹ For a complete list of the livelihood zones, see the Food Security Annex.

¹⁴² For the purpose of Title II programming, this section only addresses livelihood zones in San Marcos, Huehuetenango, Quiché, Totonicapán and Quetzaltenango.

generated through daily labor in agriculture. There is migration for work in sugarcane, coffee, melons, and watermelon harvests.

- Coffee Production (#11) - This livelihood zone covers parts of Huehuetenango, San Marcos, and Quetzaltenango. The population is dedicated to coffee production, some basic grain production, and primarily, daily labor. The poorest households have to buy 100 percent of their basic grains.
- Agro-Industry for Export and Basic Grains (#12) - This livelihood zone covers the southern tips of San Marcos and Quetzaltenango. Production is focused on sugarcane, palm, banana, and maize. The poorest households have to buy 100 percent of their basic grains.
- Cardamom and Coffee (#14) - The eastern part of Quiché and Alta Verapaz are in this livelihood zone. The population is dedicated to the production of basic grains, cattle, coffee, and cardamom. Livelihoods are based on daily labor. This area is vulnerable to changing international prices for coffee and cardamom.
- Los Cuchumatanes Mountain Range (#18) - This livelihood zone includes varying topography in Huehuetenango and the western corner of Quiché. Almost all (99 percent) of the population is indigenous. Livelihoods are based in basic grain and vegetable production for consumption, and manual labor for the area as well as for Mexico. Mexican maize supports unmet demand.
- Agriculture, Wage Labor and Trade (#20) - This livelihood zone is in San Marcos, and is known for agriculture and commerce, with little migration. Cattle farming is important, as well as commerce with Mexico, and livelihood zones 11 and 12.

As shown above, the nine livelihood zones which are expected to be covered by upcoming Title II have varying topography, cultures and languages, agricultural production, market access, and labor market trends. Program design will require adaptation and flexibility to best suit and compliment this diversity. Household and community targeting within the selected departments should be based on areas with inconsistent financial and geographic market access. Other important targeting criteria include malnutrition and health/diet indicators; as noted above, nutrition and food utilization challenges food security in the country. Geographically, PVOs will have to coordinate with GoG food aid programs (Bolsa Solidaria) to avoid overlap and potential self-monetization.

6.4.3. Seasonal Targeting

Seasonality of production. Guatemala has two main agricultural production cycles: The *de primera* season which begins in April/May and is harvested in August/September, and the *de postrera* season which begins in August/September and is harvested from November onwards (FAO/WFP 2010).

However, the western highlands only have 180 days of production with one harvest per year, making this area more vulnerable as compared to other parts of the country which have two, or even three, annual harvests (Personal correspondence with MFEWS, August 2011). Furthermore, most production in the western highlands is on small plots of land, and/or steep hillsides, resulting in low yields.

Seasonality of marketing. Low production levels force families to rely on market purchase and inter-household trade, in addition to own-production (Personal correspondence with MFEWS, August 2011). Food and non-food items are widely available, and commerce thrives year-round in markets across the western highlands. People buy and sell grains, fruits and vegetables, clothing and shoes, household supplies, fertilizers and seeds, and non-essential items (snack

foods, toys, etc). Thus, seasonality of absolute food availability in the markets is not a food security concern. Market fluctuations refer to changing prices because of harvest and non-harvest seasons and household purchasing power, which also fluctuates based on participation in the labor market.

Seasonality of labor. Consistent employment opportunities in the western highlands are limited. Most income is generated through agricultural production, remittances, and temporary labor.

As reported in the Livelihoods Profile, migration to other zones and to Mexico for temporary work is common in the western highlands. The western highlands' proximity to Mexico is an advantage and disadvantage for this population. On one hand, temporary labor opportunities on coffee plantations in Chiapas are available as a source of income; on the other, violence, trafficking, and contraband trade also flows across the border, threatening the population's personal and economic security. Seasonal migration of families during the school year limits school attendance; though some households from municipal capitals limit migration of students to school vacation periods.

Seasonal migration flows coordinate more closely according to demand for manual labor elsewhere, rather than according to the area's lean season. Demand for migration labor is highest during sugar and coffee harvests (October to March), and lowest from April to August. Plantation owners have significant control over demand for unskilled labor. These owners even offer free transport for laborers by sending buses to the highlands; in combination with an offer of guaranteed (although temporary) labor, this additional incentive is attractive to many households.

When families experience seasonal migration of one or more members, household food allocation is affected. Some households have increased purchasing power and consumption, as migrant members send additional funds to a temporarily smaller household. Other households, however, experience decreased purchasing power and consumption because the migrant member is no longer contributing traditional sources of income, and/or is not able or willing to send his/her temporary labor earnings to the household.

PVOs should take seasonality of migrant labor into consideration during program design and implementation. Food aid transfers can play a critical role in smoothing consumption, especially of children, during times of shortage. FFW/FFA activities are short-term and mobile, so PVOs have the benefit of flexibility in programming and could be put to best use during these times of shortage.

6.4.4. Household/Individual Targeting

As noted in Annex II, income distribution in Guatemala is highly skewed; naturally, it makes sense to target households with the fewest resources. However, also noted in Annex II is the country's extremely high rate of malnutrition, which should also be taken into consideration when targeting. PVOs should aim to select households with infants and young children at risk of or suffering from malnutrition.

Every beneficiary visited during the BEST study requested that food aid rations be given to families with children under five years of age. Current MYAP MCHN programs target all households in a community that have children under three years of age and pregnant or lactating women (PLWs). All households that fit this criteria receive a blanket distribution of a

predetermined ration. Slightly different than these MCHN programs are the Preventing Malnutrition In Children Under 2 Approach (PM2A) program, and other programs with a "first 1,000 day" approach, which provide rations to households with children under two, not three, years of age and PLWs.

Growth monitoring is important because it provides families with critical information on their children's health and nutritional status. Although growth monitoring services are available to all members of the community (regardless of whether they participate in a MCHN program), Awardees and MCHN beneficiaries noted that growth monitoring stops when children exit the program at three years of age. PVOs implementing MCHN programs would be able to further encourage growth monitoring by allowing children to remain in the program until they are older. However, with that said, PVOs should consider the high costs of allowing children to stay in the program longer, and note that proper food utilization and program implementation should not be sacrificed in order to extend beneficiaries' time in the program.

In addition to resource levels, malnutrition rates, and growth monitoring, PVOs should consider household nutrition education as a program component. The country's diet and nutrition levels are in transition, and many households (even poor households) struggle with a double burden of undernutrition and overnutrition. The country's health system is unable to support the resulting future chronic health concerns (Groeneveld, 2007), which include chronic malnutrition as well as obesity. Education on the proper utilization of Title II commodities that are not normally consumed in the household (such as CSB, pinto beans, vegetable oil, and to some extent, rice) as well as balanced family nutrition is imperative to assure households consume Title II commodities and other foods in the most appropriate and healthy, manner. Importantly, educational trainings must explicitly cater to local languages and literacy rates if they are to be effective.

6.4.5. Type of Activity

FFW/FFA. FFW/FFA intends to create food-wage employment during periods when rural unemployment increases. FFW/FFA activities are an effective way to transfer food to households during temporary shortages. FFW/FFA projects should be relevant and useful for specific livelihoods and communities. Needs assessments should be carried out on a continuous basis to ensure that FFW/FFA activities remain appropriate for the community. Suggested FFW/FFA activities include construction/improvement of water and sanitation systems, road maintenance, and agricultural and environmental development projects. Emphasis on hygiene, water, and sanitation projects are a critical component of improved health and nutrition assistance and education.

MCHN. As noted above, MCHN activities are particularly relevant for countries with high malnutrition rates, such as Guatemala. MCHN activities that require regular growth monitoring and health-related trainings are useful for transmitting Behavior Change Communication (BCC) to help ensure families properly utilize food. Interventions under MCHN programming to reduce chronic malnutrition may include: 1) improving infant and young child feeding practices; 2) preventing and treating childhood illnesses; 3) promoting growth monitoring by local health authorities and PVOs, and screening and referral for children under five at-risk of or suffering from chronic malnutrition; 4) improving health and nutrition for PLWs; 5) enhancing access to clean water/sanitation, and improving hygiene practices; and 6) adopting appropriate health practices through effective BCC interventions.

Growth monitoring is essential for families who wish to monitor their children's health. Weight-for-age and height-for-age indicators are standard measurements of malnutrition. Time spent

distributing monthly rations is also time to encourage monthly growth monitoring and to educate mothers. PVOs currently implementing MCHN programs in Guatemala have varying standards of weight and height monitoring. Neither measurement appears to be prioritized in current programming. A standard growth monitoring methodology would maintain consistency across programs and, most importantly, adequately encourage and monitor growth.

PVOs should consider health and nutrition trainings for the entire household, rather than for just the mother. Other family members are often present at distribution sites, and thus have this time available to participate in trainings. These family members actually play a role in household nutrition; the BEST field staff, PVOs, and beneficiaries all noted that older children and/or other family members often feed and care for infants and young children, particularly in household with many young children. Thus, BCC messages should target *all* household caregivers to most effectively combat poor feeding practices.

MCHN programs should include a home visit component, to help ensure that recommendations are household-specific. Most MCHN programs currently include home visits, which are undertaken by mother leaders. In this model, select mothers carry out home visits and share best practices with beneficiaries. In theory, this system works well as mothers feel more comfortable sharing with peers than they would with a stranger or official. However, in current MCHN programs, mother leaders have been reportedly ill-informed. To better ensure that mother leaders transmit the most appropriate nutrition and health messages, PVOs must work diligently with these leaders to adequately educate them for home visits.

Women report very strong preferences for receiving in-kind food aid over cash. According to PVOs and beneficiaries, husbands or other household members generally have the most control over cash; during the BEST field visit, many female beneficiaries noted that these members would not spend additional cash wisely. This preference suggests that appropriate programming could include in-kind food aid (balancing a negative market impact with a positive market impact on overall health and human capital) or vouchers redeemable for specific staples. BEST suggests that USAID consider vouchers redeemable for specific, appropriate goods. For example, Incaparina vouchers would increase consumption of a nutritious food and support the domestic processing industry. Furthermore, vouchers for Incaparina or other locally-available and accepted foods would require less program resources for logistical handling of food aid commodities as well as fewer resources dedicated to trainings on food preparation.

6.4.6. Commodity Selection

Commodity selection should be based on nutritional requirements, household preferences, and local market conditions. Accurate selection of commodities and ration size will affect both a program's impact on food security as well as on any impact on local markets.

Food preferences and family diets in Guatemala have been changing with the influence of remittances, urbanization, and increased investment in the services sector. Guatemalans currently consume less maize, black beans, dairy, eggs, and sorghum, and consume more rice, oil and fats, sugar, meats, and some fruits than they did in the 1990s (Chacon, 2007). All types of meat are consumed, though demand for is the poultry highest (Chacon, 2007).

However, in rural areas, dietary diversity is still lacking. Diets are high in carbohydrates (maize, rice, pasta, atols¹⁴³, and potatoes). Diets have minimal amounts of protein (mostly beans), fruits, and leafy greens and vegetables. Cereals make up 60 percent of basic caloric needs, of which

¹⁴³ Atols are porridge-like meals, generally served hot.

maize (in the form of tortillas, atols, tamales, tacos, etc.) accounts for the majority. The remaining 40 percent of caloric intake comes from sugar, vegetable oil, and, in smaller quantities, eggs, meat, fruits, and vegetables (FAO/WFP 2010).

Current Title II commodities¹⁴⁴ (rice, beans, vegetable oil, and CSB) are well-received by beneficiaries and make up a significant amount of household calorie consumption each month. These commodities do not have a production disincentive but the food aid commodities do have a market impact for traders, as beneficiaries are adjusting their market purchase in response to receiving a basket of staples. Beneficiaries reported that they are now able to purchase pasta, sugar, eggs, some meat, and milk. Beneficiaries reported that they no longer purchase rice (as they now receive, rice), oil/lard (as they now receive vegetable oil), oatmeal (as they now receive CSB), or Incaparina (as they now receive CSB). Markets for Incaparina, rice, and lard/oil appear to be the most affected. According to field study report in 2008 by Rowe et al., monthly rations generally last 2-3 weeks, depending on family size. Regarding market leakage and trade, the Rowe study states that MCHN beneficiaries are unlikely to sell, with FFW beneficiaries most likely to be involved in trading (Rowe, 2008).

Another consideration for commodity selection is household ability to store food. Poor households have limited medium-to-long term dry food storage capacity, and cold storage is not an option. In tropical areas, humidity further challenges food storage.

In the section below, commodity-specific guidelines are provided based on in-country market visits, interviews, and observations. PVOs should further evaluate livelihoods, markets, and family food choices in order to design the most appropriate rations given food security programming objectives.

Rice. National per capita rice consumption is 11-16 lbs per year (ARROZGUA, July 2011) (FAO/WFP 2010) Urban populations account for the majority of consumption, and indigenous populations consume smaller amounts. According to ARROZGUA, indigenous populations' lack of familiarity with rice makes them prone to sell or trade the commodity if possible (Personal correspondence with ARROZGUA, July 2011). The current rice ration per family varies across PVOs, as shown in the following table.

Table 41. Rice Rations, Lbs

PVO	MCHN/Monthly	FFW/days worked ¹⁴⁵
Save the Children	10	14.5
(CRS) Caritas San Marcos	8	25
SHARE	6	30

Source: Personal correspondence with PVOs

Current monthly MCHN and FFW rations are not always in accordance with average per capita rice consumption (11-16 lbs per year). Save the Children, for example, distributes 120 lbs per year per beneficiary through its MCHN program. If this was for a family of five, the average household size, than the ration would be about eight pounds over typical per capita consumption. However, many rural households have family sizes more than five, in which case the ration would be insufficient. Ration appropriateness depends on household size and it is

¹⁴⁴ The current Title II food aid commodity basket is being used by all Awardees.

¹⁴⁵ Each Awardee has different criteria for FFW rations. The rations are distributed depending on number of days worked and that ranges from 6 - 20 days, with each Awardee having varying approaches.

challenging to tailor programming to each household. Additionally, it is not always clear if the ration is for the entire household or just the target population (PLW and infants under three).

There was no visible self-monetization of rice in the markets during the BEST July/August 2011 field visit.¹⁴⁶ This may be explained by the doubling of the price of maize in the previous year which pushed prices out of reach of rural indigenous households therefore, increasing rice consumption. Beneficiaries were pleased with rice as part of the ration, and pleased with the quantity of rice in the ration; however, according to per capita consumption, beneficiaries are likely changing their diets to increase rice consumption beyond normal levels.

Rice donations are definitely impacting markets and decreasing local purchase. Field interviews with beneficiaries widely confirmed that distributed food aid rice displaced normal market purchases of rice. Rice is widely available in markets across the country and traders have appeared to have adjusted commodities over the years in response to the presence of food aid. As noted above, beneficiaries have decreased (or completely halted) rice purchase, and now buy a variety of foods instead, including pasta. As described earlier in this Chapter, PVOs should encourage additional consumption of fruits, vegetables, meat, and dairy products, rather than solely additional consumption of carbohydrates. Overnutrition among mothers in particular is one sign of the pressing need for dietary diversity.

Beans. Annual per capita consumption of beans is 15 - 22 lbs¹⁴⁷ which provides an important source of protein. Though the population has a strong preference for black beans (Personal correspondence with Bean Producers Association, July 2011), some food aid programs distribute kidney or pinto beans. Despite the fact that beneficiaries receive this less-preferred bean variety, significant leakage of food aid beans has not been reported, and the commodity is generally well-received by beneficiaries. Furthermore, since black bean market prices are significantly higher than those for pinto beans, self-monetization of pinto beans is less likely than self-monetization of black beans. Beyond a preference for black beans, there is no preference for Guatemalan-produced beans. To minimize market impact in MCHN programming and encourage self-targeting in FFW activities, pinto beans are appropriate.

Consumers consider price (not quality or source) most heavily when purchasing beans. Bean prices are reportedly affected by contraband bean trade from Mexico (Personal correspondence with Bean Producers Association and Rice Association, July 2011). In addition to locally-produced beans, processors buy Chinese and Nicaraguan black beans and repackage them with local branding without indication of country of origin. All black beans, whether Chinese, Nicaraguan, or local, continue to sell at high rates.

Quantities of beans in current rations varies, as shown in the table below.

Table 42. Bean Rations, Lbs

PVO	MCHN/Monthly	FFW/days worked
Save the Children	10	45
(CRS) Caritas San Marcos	7	12.5
SHARE	6	35

Source: Personal correspondence with PVOs

¹⁴⁶ The rice that arrives for food aid distribution does not have an expiration date. It is suggested that the packagers in the US include an expiration date so that it is consumed before potential spoilage.

¹⁴⁷ FAO/WFP CFSAM reported 22 pounds annual per capita consumption.

CSB. CSB is a nutritiously appropriate commodity for Title II programs. CSB is reportedly replacing market purchases of locally-produced fortified cereals, like Incaparina. The products are similar and both are nutritiously appropriate for infants. Incaparina is well known across Guatemala and does not require cooking demonstrations or recipe instruction as the CSB does. PVOs have undertaken many activities to promote and educate beneficiaries on CSB consumption and preparation. According to a field study report on fortified food aid, 98 percent of Guatemalan beneficiaries follow recipes learned from the PVOs, and the remaining 2 percent used traditional recipes (Rowe, 2008). The same report and the BEST team found that the dish most commonly prepared from CSB is a drinkable porridge (atol) of thin consistency. Recipes often include cinnamon, herbs, or bananas. The second most common use of CSB is as a dough ("masa") for tortillas.

The retail-level market for CSB is basically non-existent. The BEST team did not see any market leakage. The Rowe study hypothesizes that MCHN beneficiaries do not trade CSB with other households because the majority of households in the community participate in the MCHN program (and thus have their own stock of CSB) (Rowe, 2008).

According to the BEST team interviews, the appropriateness of the CSB ration size varies immensely. Larger households tend to finish the ration much more quickly than smaller households. PVOs have been distributing various CSB ration sizes, as shown in the table below.

Table 43. CSB Rations, Lbs

CSB	MCHN/Monthly	FFW/days worked
Save the Children	15	0
(CRS) Caritas San Marcos	10	0
SHARE	14	15

Source: Personal correspondence with PVOs

PVOs should design ration size considering that household storage is limited, and that CSB is prone to spoilage.¹⁴⁸ CSB should be promoted as a product for consumption by infants and PLWs, and not for consumption by other household members.¹⁴⁹ CSB provides essential micronutrients that high-risk, vulnerable young infants and PLWs may not have access to.

USAID could also consider supporting local industry by purchasing and distributing Incaparina. Since Incaparina is highly nutritious and well-regarded among rural households the distribution would leave more program time available for non-CSB related trainings, which would be more sustainable in the long-term. CSB will not be a part of the family diet post-Title II programming. On a larger scale, and as an alternative, USAID could consider supporting local industry by purchasing CSB in-country. CSB is processed by three Guatemalan companies who supply WFP.

Edible oil. Vegetable oil is not traditionally consumed in rural areas. According to Olmeca, a large oil processor, total annual per capita consumption of vegetable oil for all of Guatemala is 1/2-1 gallon, while the total urban per capita consumption per month is 1 gallon. Populations that receive food aid rations are not populations that would normally purchase vegetable oil;

¹⁴⁸ Although CSB comes packaged in paper with plastic lining which reported to be good for storage purposes, the bag does not have any expiration date to inform PVOs or beneficiaries of proper storage time.

¹⁴⁹ BEST field interviews revealed that CSB is sometimes consumed as a family meal among the entire household.

instead, these families traditionally rely on lard, mostly in small amounts, to prepare beans. Deep-frying with lard is not a common practice; however, the practice of deep-frying foods with Title II vegetable oil is increasing, and a nutrition concern. According to one study, 54.3 percent of beneficiary households reporting frying as the sole use of oil (Rowe, 2008).

Vegetable oil is a high-value commodity; thus, provision of vegetable oil in rations could lead to market leakage, in theory. If beneficiaries have high cash needs, vegetable oil would likely be the first ration commodity they would self-monetize. However, self-monetization was not reported by private market actors as a challenge to their business (Personal correspondence with OLMECA, July 2011), especially in comparison to the market damage brought by contraband trade from Mexico. The BEST field team did not see any Title II vegetable oil in local markets.

MCHN programs have similar monthly rations of vegetable oil. Regarding storage, PVOs and warehouse managers noted that vegetable oil in plastic bottles is more durable than vegetable oil in tin cans.

Table 44. Vegetable Oil Rations, Liters

	MCHN/Monthly	FFW/days worked
Save the Children	2.5	10
(CRS) Caritas San Marcos	2	5
SHARE	2	2

Source: Personal correspondence with PVOs

Wheat. Wheat is not widely consumed across Guatemala. In urban areas, bread is available and increasing in popularity; however, rural areas maintain a strong preference for maize which outweighs preference for wheat. Some markets sell soft wheat grain, which people buy for tamales and baking. Food aid rations that include wheat flour would likely lead to self-monetization, since households have a strong preference for other substitutable grains (such as maize) and would likely use the wheat to meet cash needs. Additionally, it is challenging to store wheat grain or wheat flour in tropical climates.¹⁵⁰

Maize. Maize is the most important food in the Guatemalan diet. White maize tortillas are an integral part of daily meals in both urban and rural settings. During lean seasons, families will restrict protein consumption through sale of chickens or bean reserves, while retaining all maize production as a continual basis for calorie consumption.

During the BEST July/August 2011 field visit, interviewees noted that white maize would be an ideal commodity for food aid rations because families will always consume it, and prices are currently high. The price of maize is extremely important to markets and households across Guatemala, who continue to purchase the commodity regardless of price. Families will decrease purchase of proteins and nonfood items, like clothes and housing goods, in order to purchase maize. However, white maize is not largely produced in the US and therefore not available as a Title II commodity.

Yellow maize is a preferred staple in some areas, especially among indigenous populations in the western highlands. Much yellow maize that is produced and imported goes to the animal

¹⁵⁰ Wheat flour for food aid distribution is arriving in single layer, mesh-type bags. It is highly suggested for any food aid programs that wheat flour comes in bags with plastic liners.

feed industry, with some to the snack food industry. There is not enough diet preference for yellow maize and it would lead to market leakage if given as food aid.

Lentils are not culturally or traditionally part of the Guatemalan diet and would not be appropriate for food aid rations.

Sorghum is not common in the Guatemalan diet and would not be appropriate for food aid rations. It is consumed in small amounts by families in extreme poverty, sub-subsistence farmers when they exhaust maize reserves, and families that are in migration for work with extremely limited means. They prepare a sorghum atol with unrefined sugar cane. However, sorghum production is primarily directed towards animal feed (MFEWS, 2008).

Soy-fortified bulgur could be considered as part of the food aid ration but requires further research. Soy-fortified bulgur would avoid competition with the local maize market. It has been distributed in the past¹⁵¹ and it was reported to be used as fillings for tortillas and empanadas. The remaining water, from soaking the bulgur can be made into a beverage. (Rowe, 2008). Additionally, they can toast the bulgur and make it into a hot porridge (Rowe, 2008).

6.4.7. General Guidelines for Decreasing Market Impact and Improving Program Design

- Under current programming, beneficiaries are reducing their market purchases of rice, beans, lard, and Incaparina in particular. To mitigate this market impact, the BEST team proposes a renewed focus on family nutrition and diet in food security programming to ensure that overall food security is improved in order for the ultimate impact on the market will be a positive one, through improvements in human capital. It is apparent that households are making poor choices in food purchases that fail to enhance dietary diversity, and in choices to improve utilization within the household. The potential long-term effects of poor nutrition and obesity could lead to chronic health problems (cardiovascular disease, diabetes, etc.) that the country's health system would not be able to support.
- Standardization of MCHN growth-monitoring methodologies and practices across Awardees is critical. PVOs have varying program design, from monthly to trimester weight monitoring, and frequency of height monitoring is low and irregular. PVOs should use monthly ration distributions as a mechanism to encourage monthly growth monitoring. Height/weight monitoring should be encouraged as frequently as possible, preferably in collaboration with the local health centers.
- Family planning and sexual reproductive health are a critical, and currently missing, program component. Current MYAP holders do not address the lack of family planning that exists in many program areas. Given Guatemala's poor land tenure system, large household size is a critical threat to families with little land to produce their own food. Thus, household size directly and indirectly impacts food security, and should be addressed in holistic food security programming.
- Greater program and resource emphasis on hygiene, water, and sanitation infrastructure projects will support food security objectives, and enhance the utilization of food aid. The provision of food without the availability of potable water will never reap intended benefits. Poor hygiene and sanitation practices around food preparation and child feeding are ongoing challenges to infant health.

¹⁵¹The 2003 Bellmon reported that CARE distributed soy-fortified bulgur wheat for its Maternal-Child feeding programs.

- PVOs must seek ample staff, and hire skilled, experienced employees. PVOs must require that field staff speak local languages, in order to thoroughly communicate with beneficiaries. Furthermore, field staff should receive consistent and professional trainings in health, nutrition, agriculture, and environmental conservation.
- To enhance programming effectiveness, and minimize inefficiencies, Awardees should consider the use of external, independent midterm evaluations. External teams can review program design, monitor implementation, and evaluate impact from an impartial viewpoint. Midterm evaluations should be a vehicle for Awardees to reflect on programming and make any necessary adjustments to continuously adapt and improve.
- Title II Awardees should make a greater effort to share lessons and best practices. Routine meetings among all Awardees are encouraged, and a regular meeting schedule should be established. USDA Awardees, with experience and knowledge of their own to share, should be encouraged to share lessons and best practices as well.

**USAID OFFICE OF FOOD FOR PEACE
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BELLMON ESTIMATION**

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Annex I. Household Consumption and Expenditure

I.i. Sources of Food

In rural areas, Guatemalans produce some portion of their own food, especially maize. Maize is the most commonly-grown crop for own consumption. About 36 percent of households reserve all production of crops for consumption (and do not market any surplus for sale) (FAO, 2009). Main production areas of basic grains include Petén, Alta Verapaz, Jutiapa and Quiché (MAGA, 2011). (WFP, 2005)

Table 1. Main Basic Grains Production Areas (% of total production)

Department	Maize	Beans	Rice
Petén	18.4	17.0	10.4
Alta Verapaz	13.1		13.2
Jutiapa	6.6	13.5	18.5
Quiche	8.1	9.9	
Huehuetenango	7.5	8.1	
Chiquimula		8.4	9.6
San Marcos	4.7		13.3
Izabal	4		
Jalapa		6.4	
Santa Rosa		6.0	
Quetzaltenango			5.1

Source: (MAGA, 2011)

Households also depend, to varying degrees, on market purchases to meet household food needs. As shown in Table 2, the extremely poor rely more on market purchases for maize and beans than the poor; this could be due in large part to the fact that poor households have more access to land than extremely poor households. Food aid beneficiaries interviewed by the BEST team¹ in July-August 2011 noted they go to the market as frequently as once a week, or as infrequently as once a month. Main markets are located along the Inter-American highway, including large markets in Jutiapa, Guatemala City, Chimaltenango, Quetzaltenango, Totonicapán, and Huehuetenango. Most departmental capitals have larger markets, including Escuintla, Retalhuleu, Flores, Cobán, and San Marcos (WFP, 2005).

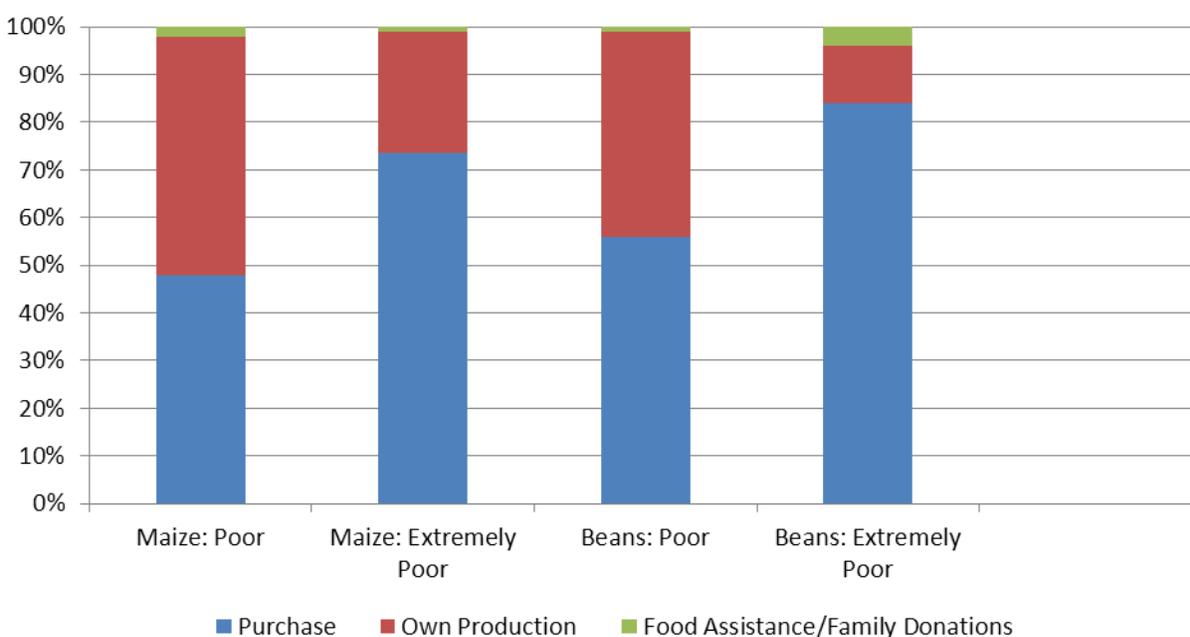
As previous studies have reported, Guatemalan households' food supply is not solely a result of availability of domestically-produced foods, but rather of the household's financial access to markets (Ziegler, 2006); BEST fieldwork in July-August 2011 suggests the same conclusion. Poor families do not source enough income to depend solely on market purchases; a 2006 report noted that the minimum wage in Guatemala could only purchase 56 percent of the food basket (Ziegler, 2006). In addition, other studies report that in 2009, the legal minimum wage (Q1,560 per month) could not afford all the household living expenses, even if both parents in a standard five-person family worked full time (APRODEV, 2010). Currently, in rural areas, WFP estimates that minimum wage covers around 75 percent of the basic food basket; while 70 percent of all the population is below the poverty line (WFP). When households have money to

¹ The BEST team interviewed beneficiaries in Alta Verapaz, Huehuetenango, and San Marcos.

access markets, they have the option of purchasing a variety of goods. All staple foods are generally available in the local market, including beans, rice, maize, pasta, and vegetable oil. Fruits, vegetables, and spices are available. A large array of imported staples and processed foods are widely available at municipal markets, which primarily originate from Mexico but also from other Central American countries.

Supermarkets are also expanding in Guatemala; the number of supermarkets in the country has doubled since 1990 (IFPRI, 2007). Households who shop at supermarkets consume a higher amount of processed foods, and households who do not shop at the supermarkets have higher consumption levels of maize, maize products, and beans (IFPRI, 2007).

Table 2. Sources of Maize and Beans, Poor and Extremely Poor



Source: FEWS NET, 2007 Livelihood Zone Report

I.ii. Local Diets

Average per capita, per day, caloric intake in Guatemala is 2,171 (FAO, 2011); however, averages speak little for a country with the 11th highest Gini coefficient in the world (CIA, 2007).

Cereals account for about 60 percent of Guatemalans' caloric intake, with sugar, oil, eggs, meat, fruit, and vegetables accounting for the remainder (WFP and FAO, 2010). Maize is the most-consumed cereal (an average consumption (mostly white, yellow to a lesser extent) of 102 kg per capita, per year), followed by beans (10 kg per capita, per year), and rice (5-7 kg per capita, per year) (WFP and FAO, 2010) (Delta Farm Press, 2009).

Maize forms the base of popular foods such as tortillas, tamales, enchiladas, tacos, and atols (hot drinks). A large number of maize varieties are grown in Guatemala; reasons for doing so include: 1) different varieties are better suited to different soils; 2) a way to manage risk; and 3)

culture and tradition (Isakson, 2010). Furthermore, the varieties of maize add diversity to a somewhat monotonous diet. As one interviewee of a recent study noted:

"We grow many classes of maize because we like colors...Nobody wants to eat black maize every day. Guatemalans are people of maize. We eat tortillas all day long, tortillas with chilies." (Isakson, 2010)

Atol is a hot, porridge-like drink usually made of maize flour (masa). Masa is usually heated on a griddle, and then combined with water and cinnamon and/or sugar. Atol can also be made salty, using black or yellow maize. Other atol varieties are based on rice flour or oatmeal, and some atols include chocolate or fruit. Atol made with red maize is recommended for medicinal purposes (Isakson, 2010).

Tortillas are served at almost every meal, and are made at the household level as well as at the market. White maize, and sometimes yellow or black maize, usually forms the base of tortillas (Isakson, 2010). During the BEST field visit, some food aid beneficiaries reported also making tortillas out of CSB.

Beans, especially black beans, are also common in the Guatemalan diet. Beans can be consumed with breakfast, lunch, and/or dinner, and provide the primary source of protein for households with limited access to meat (FEWS NET, 2011). They are served whole, refried, or mashed.

Dietary diversity differs among socio-economic classes. Very small-scale farmers of basic grains in Guatemala's dry corridor have the least diverse diet, and consume mostly maize, beans, and sugar. Subsistence farmers outside of the dry corridor consume a similar but slightly more diverse diet, and consume meat an average of once a month. Surplus and commercial farmers have a varied diet including all the food groups; however, they seem to still have a low consumption of milk (WFP and FAO, 2010). During the field visit, many interviewees stated that lactose intolerance is common in Guatemala because traditionally, dairy products have not been common in their diet.

I.iii. Household Economy

I.iii.i. Income Sources

Opportunities for income generation are limited among the poor and extremely poor, who cannot easily find paid labor positions (WFP and FAO, 2010). According to a 2007/08 study, among different socio-economic groups, women face the highest rate of unemployment and underemployment, followed by the indigenous population and the rural population, respectively (UNDP, 2007/2008).

Small and medium-scale producers source the majority of their income and staple foods from agricultural labor, and some work on commercial sugar, coffee, melon, or tobacco farms. Temporary migration to other parts of the country (or to neighboring countries) to work on coffee, banana, or sugar farms, is common, especially for family members of subsistence households (WFP and FAO, 2010). In 2010, the estimated Guatemalan population residing outside of the country was 1,637,119 people (Unicef/IOM, 2011), and the annual number of

people who journeyed outside of the country in search of better opportunities averaged 44,440 (from 2002-2010). The rate of emigration has been gradually increasing, from 10.5 percent in 2002, to 11.4 percent in 2010 (Unicef/IOM, 2011).

Poorer households have fewer livestock to serve as additional income; whereas surplus producer households have cattle herds as large as 35 heads (in addition to 30 to 50 small stock animals), poorer households usually have one or two hogs, and 12 to 20 chickens. Households in the "Dry Corridor" hold even less livestock, with an average of four to 14 chickens per household (WFP and FAO, 2010). Fractured and very small landholdings, especially those on mountainous terrain, are not conducive to rearing livestock.

Guatemala is the 10th-top country receiving remittances, worldwide (World Bank, 2011). Remittances for 2010 totaled US\$4.3 billion, the third-largest volume of remittances received worldwide (World Bank, 2011). Internal and international remittances represent a portion of income for 4,510,290 Guatemalans (Unicef/IOM, 2011). Remittances grew an average of six percent annually, from 2001 to 2010, with a slight decrease in 2009 due to the global financial crisis. Remittances rose again in 2010, but appear to have decreased for 2011; in July 2011, US\$349.83 million in remittances came into Guatemala, which is about US\$35 million less than in July 2010 (Publinews, 2011). Almost all (97 percent) of remittances to Guatemala come from the US; the most common US source states are California, New York, Florida, and Texas (Unicef/IOM, 2011). The population of people receiving remittances is most highly concentrated in the department of Guatemala, followed by San Marcos, Huehuetenango, and Quetzaltenango. More women than men receive remittances, and the indigenous population only accounts for 14 percent of those receiving remittances (Unicef/IOM, 2011). Slightly more than half (60 percent) of remittance recipients are categorized as "not economically active," and 40 percent are "economically active" (Unicef/IOM, 2011). Of those who receive remittances and have an occupation, the most common fields of work are: commercial, hotel, and restaurant (26.7 percent), agriculture, forestry, and fishing (18.5 percent), and industry (14.1 percent) (Unicef/IOM, 2011).

I.iii.ii. Expenditure Patterns

Food expenditure accounts for the highest percentage of the household budget (USDA and CBS, 2004). According to a USDA study, this percentage differs among urban populations (who spend 32 percent of their income on food) and rural populations (who spend 47 percent of their income on food) (USDA and CBS, 2004). The study reports the average percent of household income (urban and rural) spent on rent, water, and electricity at 22 percent, followed by transportation/communication (8 percent), health (7 percent), shoes/clothing (7 percent), and, lastly, education (3 percent). Regarding household budgets, the BEST team heard multiple reports of beneficiaries who prioritized cell phones and cell phone minutes over purchasing nutritious food and/or health services.

Basic Food Basket

The "basic food basket" is a measurement based on a group of foods, in sufficient quantities to satisfy the caloric needs of an average household. According to the National Institute of Statistics for the Government of Guatemala (GoG), this measurement represents a minimal daily need based on reference households, but it is by no means a totally sufficient diet with all the nutritional needs². From fall 2010 into 2011, the basic food basket has been increasing. In general, price increases negatively affect households who need to purchase food, which in Guatemala affect both urban and farm households because they are net food buyers. From 2010, the basic food basket cost have increased by more than 10 percent inter-annually which likely results in more household poverty due to limited purchasing power.³

Table 3. Basic Food Basket

Year	Month	Daily Cost	Monthly Cost	Monthly Variation	Inter-annual Variation
2008	January	56.17	1,684.97	1.35	10.96
2008	February	55.91	1,677.24	-0.46	10.92
2008	March	58.18	1,745.25	4.06	13.87
2008	April	59.20	1,776.01	1.76	16.25
2008	May	60.57	1,817.03	2.31	20.08
2008	June	62.43	1,872.84	3.07	22.77
2008	July	64.64	1,939.05	3.54	23.35
2008	August	65.24	1,954.66	0.80	21.16
2008	September	64.73	1,939.21	-0.79	17.94
2008	October	65.27	1,958.08	0.97	20.01
2008	November	65.82	1,974.71	0.85	17.46
2008	December	65.87	1,976.05	0.07	18.85
2009	January	66.30	1,989.11	0.66	18.05
2009	February	65.94	1,978.10	-0.55	17.94
2009	March	65.89	1,976.78	-0.07	13.27
2009	April	65.60	1,968.06	-0.44	10.81

² The basic food basket is not an ideal diet and should not be used as an instrument for nutrition education, nor for establishing food necessities.

³ According to Robles and Keefe (2011) the 2007–08 food-price crisis negatively affected 96.4 percent of households and resulted in a 1.1 percent increase in the national poverty rate. Households lose approximately 2.3 percent of their purchasing power. The total welfare loss for all households in Guatemala was nearly 2 percent of national aggregate expenditure (Robles & Keefe, 2011).

Year	Month	Daily Cost	Monthly Cost	Monthly Variation	Inter-annual Variation
2009	May	65.08	1,952.53	-0.79	7.46
2009	June	65.17	1,955.24	0.14	4.40
2009	July	65.27	1,958.04	0.14	0.98
2009	August	64.68	1,940.27	-0.91	-0.74
2009	September	65.08	1,952.26	0.62	0.67
2009	October	65.06	1,951.81	-0.02	-0.32
2009	November	63.91	1,917.34	-1.77	-2.91
2009	December	63.24	1,897.32	-1.04	-3.98
2010	January	64.61	1,938.27	2.16	-2.56
2010	February	65.17	1,955.05	0.87	-1.17
2010	March	66.80	2,003.89	2.50	1.37
2010	April	66.54	1,996.13	-0.39	1.43
2010	May	66.42	1,992.63	-0.18	2.05
2010	June	67.49	2,024.70	1.61	3.55
2010	July	67.82	2,034.60	0.49	3.91
2010	August	67.24	2,017.20	-0.86	3.96
2010	September	67.67	2,030.10	0.64	3.99
2010	October	69.64	2,089.20	2.91	7.04
2010	November	71.28	2,138.40	2.35	11.53
2010	December	71.64	2,149.20	0.51	13.28
2011	January	72.42	2,172.60	1.09	12.09
2011	February	72.91	2,187.30	0.68	11.88
2011	March	74.16	2,224.80	1.71	11.02

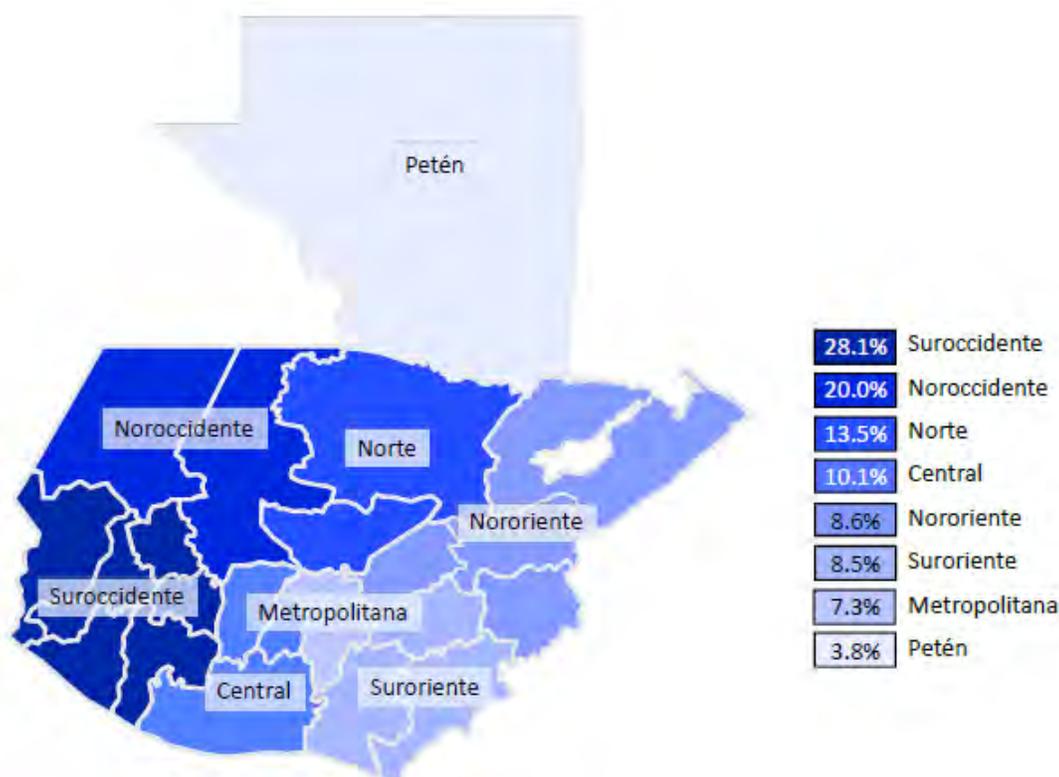
Source: National Statistics Institute, (INE, Instituto Nacional de Estadística), <http://www.ine.gob.gt/np/CBA/index.htm>

I.iv. Poverty

Slightly over half of Guatemala's population is classified as poor, and 15 percent is classified as extremely poor (WFP and FAO, 2010) (INE, 2006). Whereas total poverty decreased by five percent from 2000 to 2006, extreme poverty decreased by less than one percent during the

same period (INE, 2006). The average monthly value of extremely poor households amounts to about US\$20.25, and the average monthly value of poor households amounts to US\$45.95 (INE, 2006).⁴ Figure 1 shows the geographic distribution of poverty in Guatemala.

Figure 1. Regional Distribution of General Poverty



Source: INE, 2006. ENCOVI Livelihoods Survey.

When comparing the three main sectors of agriculture, industry, and commercial/services, agriculture shows the highest percentage of workers who are poor (75 percent). The industry sector has a 43 percent poverty rate and the commercial/services sector has a 25 percent rate. Not surprisingly, when comparing the formal and informal sector, the informal sector shows a much higher (55 percent) rate of poverty than the formal (23 percent) (INE, 2006).

Rural households account for 52 percent of Guatemala's population (World Bank, 2008), a decrease from 56 percent in 2000. Seventy-one percent of the country's rural population is in poverty, as opposed to 31 percent of the urban population (World Bank, 2008). Of the country's total poor population, 56 percent of households are engaged in farming; of the country's total rural poor population, 72 percent of households are engaged in farming.

Poverty is also correlated with gender, and strongly correlated with ethnicity. Women accounted for 52 percent of the poor population in 2006 (INE, 2006); however, of women-headed households, only 31 percent were classified as poor. Of male-headed households, 43 percent

⁴ Conversion of GTQ 264 and GTQ 540, based on 1 GTQ = 0.127657 USD (www.xe.com, August 24, 2011).

were classified as poor (INE, 2006). Indigenous people account for 56 percent of the total poor population, and only account for 19 percent of the non-poor population (INE, 2006).

Annex II. Food Security

Data. This Annex is largely based on the FAO/WFP 2010 Crop and Food Security Assessment Mission (CFSAM), the most recent, available, and thorough food security assessment in Guatemala. The Annex is also informed by the Government of Guatemala (GoG) 2006 National Survey of Livelihoods, FEWS NET's 2007 Livelihood Profiles Report, FEWS NET food security updates and outlooks, as well as other sources which are either not comprehensive in regard to country-wide food security, or dated to the extent that much of their information is likely no longer accurate. In the absence of very recent, very thorough sources, this Annex proceeds to present the most accurate, current, overview of food security as possible given limited resources.

II.i. Livelihood Zones

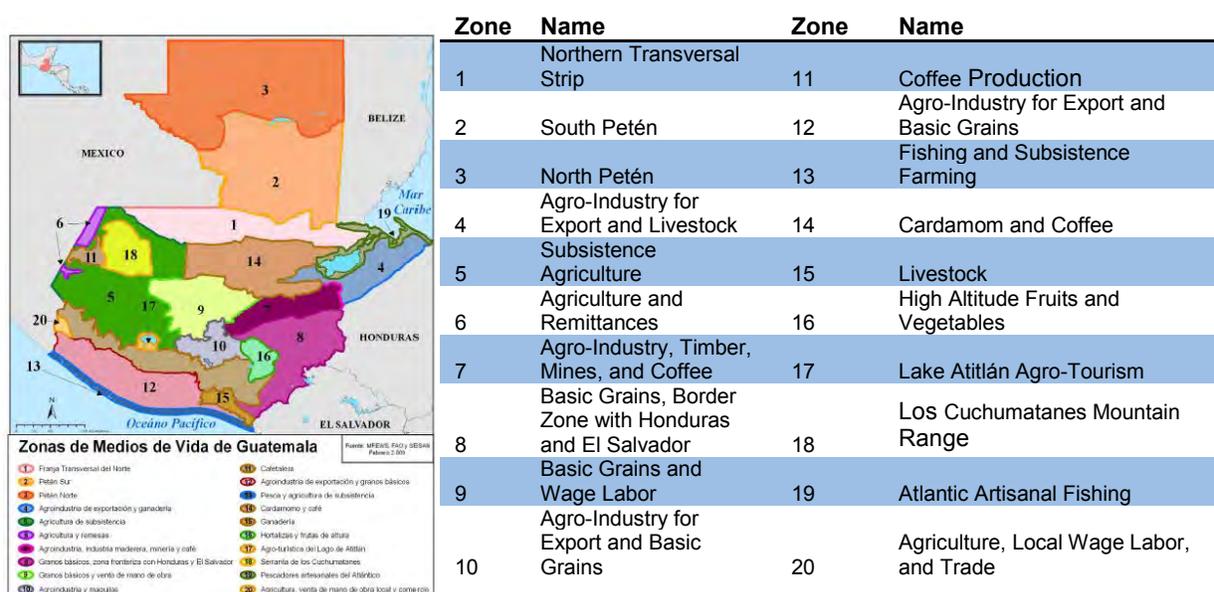
II.i.i. Introduction

Guatemala has 20 livelihood zones, listed in Figure 2.⁵

In 2007, over half (55 percent) of the population lived in rural areas, which are more prone to infant mortality, chronic malnutrition, and have access to limited basic goods and services (FEWS NET, 2007). The most food insecure areas of the country are the northwest and the dry corridor (according to the CFSAM (FAO/WFP, 2010) the dry corridor consists of Jutiapa, Jalapa, Zacapa, Chiquimula, El Progreso, Quiché and Baja Verapaz departments) (USAID, 2010). The highest percentage of subsistence and semi-subsistence farmers lives near the western highland mountainsides, the semiarid region, and some northern areas (WFP and FAO, 2010). Guatemala is culturally and geographically diverse. The population includes three main indigenous groups (Maya, Xinka, and Garífuna) and over 20 different languages.

⁵ The livelihood zones were designed by FEWS NET; unfortunately, the 2007 is reported to be slightly outdated as of August 2011.

Figure 2. Livelihood Zones



Source: FEWS NET, 2007

Table 4. Livelihood Overview

Zone	Climate	Main sources of labor/food for the poorest households
1	Warm/mild, variable, dry and rainy season, annual precipitation 2,000 mm	Agricultural labor 50% purchase
2	Warm, dry/hot in August, annual precipitation 3,000 mm	Agricultural labor Maize production, bean purchase
3	Warm, dry/hot in August, annual precipitation 3,000 mm	Agricultural labor (no data on food supply)
4	Warm/mild, humid, annual precipitation 1,800-2,500 mm	Agricultural labor 60% purchase
5	Highly variable, annual precipitation 1,000 mm-2,000 mm	Agricultural labor 90% purchase Unskilled, non-agricultural labor 100% purchase
6	Warm, annual precipitation 750-1,224 mm	Agricultural labor
7	Variable, irregular rainfall	65% purchase
8	Mild, some drought, annual rainfall 2,200 mm	72% purchase
9	Warm, variable, with lower precipitation (600-700 mm) in central/southern areas, and higher (1,500-1,999 mm) in the north	Agricultural labor 79% purchase
10	Warm, variable, with rainy and dry season, annual rainfall 800-1,500 mm	Unskilled labor (no data on food supply)
11	Warm, with rainy and dry season, annual rainfall in southern area: 2,500-4,000 mm; northern area: 1,000-1,500 mm	Agricultural labor 100% purchase
12	Warm, dry/hot July and August	Agricultural labor 100% purchase
13	Warm, humid, annual precipitation 1,000-1,500 mm	Agricultural labor 80% purchase
14	Cool, annual precipitation 2,000 mm	Agricultural labor

Zone	Climate	Main sources of labor/food for the poorest households
		Maize: 20% purchase Beans: 65% purchase Agricultural labor and livestock
15	Warm, annual precipitation 500-1,000 mm	Agricultural labor 90% purchase
16	Cool, mild	95% purchase
17	Mild, variable, annual precipitation 1,000-1,100 mm	Agricultural labor 73% purchase
18	Mild, cool, annual precipitation 1,000-2,000 mm, with higher precipitation in high-altitude areas	Fishing 50% purchase
19	Mild, humid, annual precipitation 1,800-2,500 mm	Agricultural labor 95% purchase
20	Warm, dry and rainy season	

Source: FEWS NET Livelihoods Report, 2007

The country's dry corridor departments fall in Livelihood Zones 8 (staple food border with Honduras and El Salvador), Zone 11 (coffee), Zone 16 (high altitude vegetables and fruits), Zone 7 (agro-industry, mining and coffee zone), and Zone 9 (staple food and sale of manual labor). The area is characterized by periods of drought and erratic rains during the winter (May through October) and animal/plant disease. Much of the soil in the area has been degraded, and households cultivate low yields in the western area's hillside terrain (WFP and FAO, 2010) and southern area's coastal sections.

In the northwest region, departments with the highest rate of poverty and malnutrition include San Marcos, Huehuetenango, Quiché, and Alta Verapaz (USAID, 2010). These regions fall largely under Livelihood Zone 5 (highland and vegetables), Zone 6 (commercial border with Mexico), and Zone 1 (northern transversal strip).

II.ii. Latest Food Security Assessments

This section covers the findings and study details of the Red Cross Rapid Food Security Assessment (published in March 2010) and the WFP/FAO CFSAM (published in February 2010). The section is also informed by latest FEWS NET publications, and the BEST July-August 2011 field visit.

II.ii.i. Food Security Overview

In 2009-2010, low rains affected the Guatemala's southwestern departments, as well as Alta Verapaz (WFP and FAO, 2010). Still, country-wide harvests for the 2009/2010 season were higher than the previous year's, due to well-distributed rains elsewhere in the country. FAO/WFP estimated that 145,400 households whose crops had suffered due to low rainfall would need food assistance in 2010 (WFP and FAO, 2010). In September of 2009, the Guatemalan President declared a state of emergency due to drought and high food and fuel prices.

Guatemala's food security outlook has improved since 2010, but some areas are still recovering from the previous year's reduced stock, as well as increasing prices for maize. The poor harvest

of 2010 sparked an early onset of the 2011 lean season by two months.⁶ However, the late-August harvest for 2011 has not been affected by weather hazards, and good yields of maize and beans are expected (FEWS NET, 2011). In response to high maize prices (which are detailed in sections I.ii.i and I.ii), farmers have increased the amount of land dedicated to maize. With expected good yields for this first 2011 harvest, most households will be able to maximize self-consumption and reduce market purchase (FEWS NET, 2011). However, high maize prices will significantly impact households in the highlands, as this area does not experience an August/September harvest.

Other factors impacting food security this year include increased prices for fuel (which in turn impact prices for both local and imported foods), and decreased informal trade from Mexico (which reduces market supply) (FEWS NET, 2011).⁷ Government provision of inputs and fertilizer is expected to fall according to a reduced budget for the Ministry of Agriculture (MAGA, –Ministerio de Agricultura, Ganadería y Alimentación”) (FEWS NET, 2011).

As of August 2011, the following areas are classified as –stressed” regarding food security: central and eastern Huehuetenango, eastern parts of San Marcos and Quetzaltenango, the southern coastal areas, and some parts of Zacapa and El Progreso. Areas categorized as –crisis” include: parts of El Progreso and Zacapa, southern and northeastern Huehuetenango, and northeastern San Marcos. No areas are categorized as –emergency” or –catastrophe/famine (FEWS NET, 2011).” FEWS NET food security forecasts for the rest of 2011 are generally in accordance with this current snapshot, though decreased improved levels of food security in Zacapa and El Progreso are expected for October through December.

II.ii.ii. Study Details

Red Cross' Rapid Food Security Assessment, March 2010. The International Federation of the Red Cross' Disaster Relief Emergency Fund sponsored the Guatemalan Red Cross to conduct food security assessments in Jalapa, Chiquimula, and Izabal, in late 2009 and early 2010. The study covered 2,053 families in 21 communities. The aim of the study is to assess the food security situation at the current time, after a series of droughts and floods rendered 2008/2009 harvests poor. The study team examined nutrition patterns, food intake, sources of food, and income-generating activities of the communities.

WFP/FAO CFSAM, February 2010. In November 2009, WFP and FAO, with assistance from the GoG, undertook a study to assess production of basic grains (maize, beans, rice) in Guatemala's dry corridor and eastern region. The study included interviews and focus groups with community leaders, government officials, and other key informants. Topics discussed included climatic events, prices, livestock health, crop/animal disease, household food security, household resources, income-generating services, input availability, and basic services availability.

⁶ FEWS rain July 2011

⁷ Decreases in informal imports from Mexico is expected because of increased border control and poor weather in Mexico.

II.ii.iii. Findings

Food security overview. The following factors challenge the establishment of livelihoods in Guatemala: 1) high food costs; 2) inadequate access to assets (land, credit, education, housing, goods, basic services); 3) limited incomes (due to a history of poor health and nutrition, and limited labor opportunities,); and 4) inadequate dietary and child care practices (due to low calorie consumption and a limited variety of foods). Food insecurity in most regions is critical from April to August (between the March and September harvests) (WFP and FAO, 2010).

Table 5. Food Insecure Households by Livelihood Zone, 2009

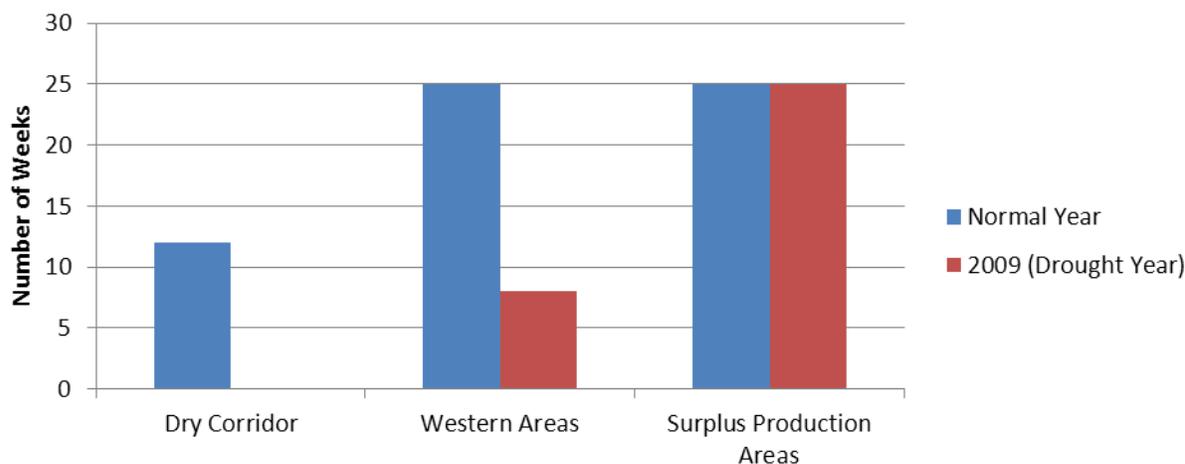
Department	# of HH affected by DT 16 ⁸	# of HH affected by irregular rains	# HH severely food insecure	# of HH moderately food insecure	Total # HH food insecure
Alta Verapaz	7,635	---	840	2,886	3,726
Baja Verapaz	---	45,104	5,413	9,021	14,433
Chiquimula	---	37,972	6,076	15,189	21,264
El Progreso	---	23,346	2,568	3,502	6,070
Izabal	8,806	66,634	4,465	16,975	21,440
Jalapa	---	60,351	12,070	12,674	24,744
Jutiapa	---	44,965	10,792	13,040	23,831
Petén	7,186	---	417	1,516	1,933
Quiché	2,440	33,489	1,479	5,428	6,906
Santa Rosa	---	52,360	3,142	7,330	10,472
Zacapa	---	36,338	3,634	6,904	10,538
Total	26,067	400,559	50,893	94,465	145,358

Source: FEWS NET, as cited in FAO/WFP CFSAM

Food supply and access. Supply of and access to food is impacted by factors such as ability to store food, access to transport, access to markets, and access to finance. The July-August 2011 BEST field visit revealed that physical market access is not a major constraint to food security; limited purchasing power and ability to store food are far more common limitations. Extremely poor and poor households depend on market purchase (in addition to own production) for food supply to varying degrees; as noted in Annex I, the minimum wage barely covers half of the price of the basic food basket in Guatemala. The WFP/FAO CFSAM of 2010 noted vulnerable households' lack of food reserves as one of its most important findings. In the dry corridor, for example, poor 2009 harvests left most producer households without any reserved stocks for 2010 (WFP and FAO, 2010). Coping mechanisms listed include the limitation of meal size/quantity, limitation of food variety, migration to other cities for work, sale of smallstock, limitation of input use, and seeking help from organizations. Poor households have limited space to store food and only eight percent of poor households have refrigerators.⁹

⁸ Tropical Depression 16 that turned into Tropical Storm Nicole, October 2008.

⁹ ENCOVI 2006

Figure 3. Household Food Reserves Among Production Areas

Source: WFP/FAO, 2010 CFSAM

In some areas of the dry corridor, physical market access is relatively more limited; a household may have to walk up to one hour to the market (WFP and FAO, 2010), and heavy rains sometimes cause delays on secondary roads. However, as noted throughout this report, access to finance, not geographic access to market, appears to be the main threat to food security in most areas.

Weather and hazards. According to the GoG, an estimated 54,000 families live in areas prone to extreme weather conditions (Red Cross, 2010). In 2010, producers stated that the main cause of reduced yields and low herd counts were climatic effects (such as irregular rains and tropical storms) (WFP and FAO, 2010). Potential climatic shocks for Guatemala include: 1) earthquakes, such as the one in 1976, which resulted in over 23,000 deaths; 2) tropical storms such as the hurricanes in 2005 and 1998, and the recent tropical depression in 2008; 3) landslides; 4) drought, such as the ones in 2001 and 2009; and 4) volcanic eruptions (Afifi, 2010). Drought is the largest problem in the country's dry corridor, which has suffered from sporadic droughts over the past 30 years (WFP and FAO, 2010).

This year, rains fell slightly short from March to June, but returned to normal levels in July (FEWS NET, 2011).

Income and prices. Increasing prices reduces purchasing power, which in turn impacts food security. The price of the basic food basket and the price of the basic vital basket in Guatemala both rose about 30 percent from 2006 to 2009, whereas average farm wages only rose 21 percent (WFP and FAO, 2010). Note that maize accounts for six percent of the total food basket. Farmers struggled to purchase inputs and improved seeds in 2010, as the price of these goods rose to a greater extent than the price of maize (WFP and FAO, 2010).¹⁰

¹⁰ Note that the share of basic grain consumption is 71 percent for maize (Janvry, 2009), this is different from the share of the total food basket cost. According to the Guatemalan Ministry of Economy, just tortilla purchases are around 2 percent of total expenditure on food by an average urban household (Ministerio de Economía de Guatemala, 2011)

The prices of locally-produced maize and beans rise and fall according to seasonality, as detailed below. Prices are lowest right after harvest (August-September, for northern and eastern areas first harvest; November and December, for eastern area second harvest; March for northern area second harvest). Prices for beans are more stable than prices for maize, due to imports (including informal imports from Mexico).

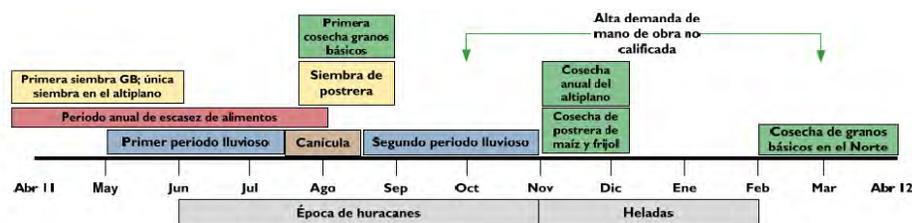
Maize prices in 2011 are about 30 percent higher than the past five-year average, with the sharpest increases in the highland area (FEWS NET, 2011). Beans prices have risen by about 10 percent. The causes behind the increase in price for white maize can be attributed to a number of factors noted by interviewees in the 2011 BEST field visit, such as: 1) high international staple food prices; 2) increasing fuel prices; 3) increased costs of security; 4) increased costs of inputs; 5) shortage of stock after low 2009 harvests; 6) high internal transport costs; 7) decrease in contraband maize from Mexico; 8) animal feed industry using white maize for feed; 9) traders speculation; and 10) prices never recovered from 2008 global financial crisis. For a thorough price analysis, including seasonality, see section II.iii.

Recommendations. The WFP/FAO CFSAM made the following recommendations to improve food security in 2010: 1) improve and expand availability of malnutrition treatment and prevention programs, especially in the dry corridor; 2) improve and expand programs increasing health and food security of pregnant and lactating women; 3) implement community crisis-response, prevention, and alert programs; 4) improve targeting of food security programs, especially FFW, and emphasize the role of both (not just one) parent in the household; 5) promote and educate communities on general nutrition and food security, as well as promote and educate livelihood improvement and re-establishment after crises.

II.iii. Seasonality and Prices

In general, Guatemala has two production seasons. The first planting begins in April and May, and is harvested in August and September. The second planting begins in September, and is harvested in November and December. The dry season occurs from November to April, and the rainy season occurs from May to October. An exception to this seasonal timeline is the country's western highlands region, which only experiences a single annual harvest in November and December. See the following figure for Guatemala's seasonal timeline.

Figure 4. Guatemala Seasonal Timeline



Source: FEWS NET

In the case of maize, in warm zones there are two periods; the first period start with planting in May and June, followed by harvesting in August and September. The second period starts with

planting from August to September and harvesting from November to December. In the highland region, planting is from March to April and harvesting happens in November and December.

In the Northern and Southern regions, the first planting occurs in May and harvest in October. The second planting is in November with harvest in February and March. Usually, the price of yellow maize is slightly higher than white maize, and the two rise and fall together. In general, for both types of maize, prices are lowest in December, and highest in September (WFP and FAO, 2010).

Rice prices tend to be lower in times of excess supply from September to January, if normal conditions allow for a good harvest. From February to August, prices tend to slightly increase once imported and stored rice volumes tend to be lower (ARROZGUA, 2011)

Dry beans also have two seasons; the first starts mid-February until May and the second from mid-August to December (Salazar, 2011). Prices also tend to follow this seasonal variation, with highest prices observed in June, July and August and also December and January (Salazar, 2011).

Besides production seasonality, local markets play an important role for food security in Guatemala. Large and small scale farm households rely heavily on the market, and are mostly vulnerable to local price shocks. De Janvry and Sadoulet (2009) found that while during the global food crisis (i.e., 2005-2008 food price increase), there was no transmission of international into domestic prices in Guatemala, given farm household's high food dependency (even large scale farms) most farmers lost when prices rose, particularly marginal, small, and medium farmers. Furthermore, farmers represented two-thirds of all houses that lost during the food price crisis (Janvry, 2009).

Seasonality of labor is another factor which impacts food security in Guatemala. To increase income, many household members migrate to coffee, tobacco, cantaloupe, and sugar plantations for some part of the year (generally October through December) (WFP and FAO, 2010).

II.iv. Price Analysis

This section includes an analysis of nominal monthly consumer prices for five main regions in Guatemala¹¹ (Figure 5):

- Guatemala city "La Terminal" wholesale market is the most important market in the country. Prices for basic grains (e.g., rice, black beans and maize), milk, and oil are reported in this market
- East region comprises the departments of Jalapa, Jutiapa, Santa Rosa, Chiquimula, El Progreso, Izabal, and Zacapa
- North region includes Alta Verapaz, and Baja Verapaz departments

¹¹ This regional division was based on field visits and the Ministry of Agriculture (MAGA) available price information

- Central region includes Chimaltenango, Escuintla, and Sacatepéquez departments
- Petén department
- West includes the departments of Quetzaltenango, Retalhuleu, San Marcos, Sololá, Suchitepéquez, Totonicapán, Quiché and Huehuetenango

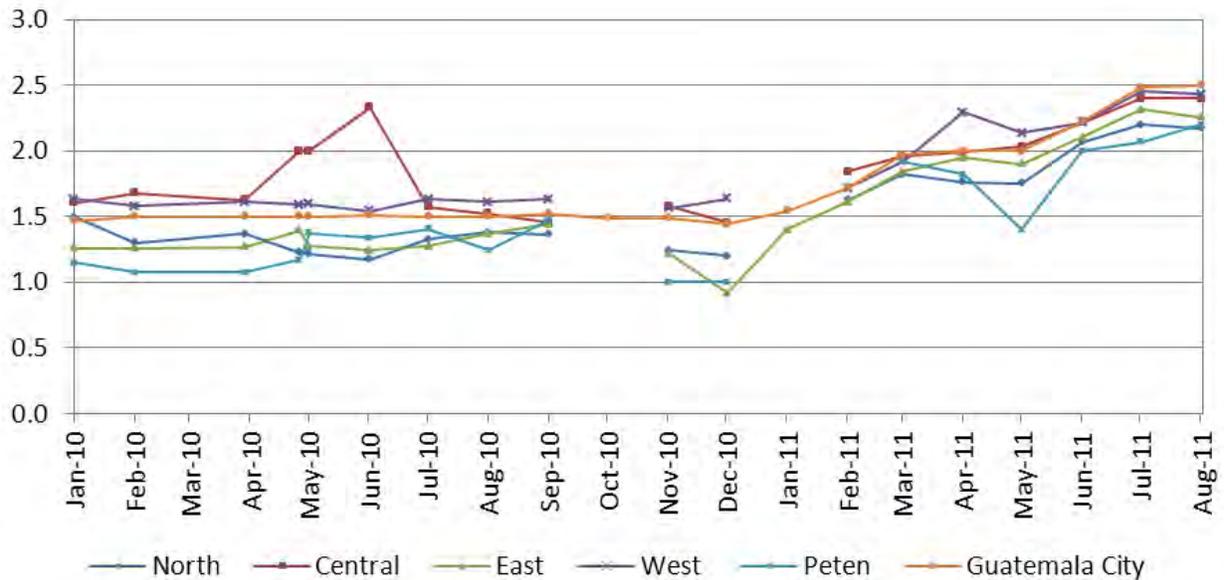
Figure 5. Guatemala Main Regions for Price Analysis



II.iv.i. Basic Grains Price Seasonality

This section includes an overview of price seasonality for basic grains at main regional markets. Basic grains include maize (white and yellow maize), black dry beans and rice with 10% broken grain (rice 90-10). Prices are from the Ministry of Agriculture (MAGA, –Ministerio de Agricultura, Ganadería y Alimentación”).

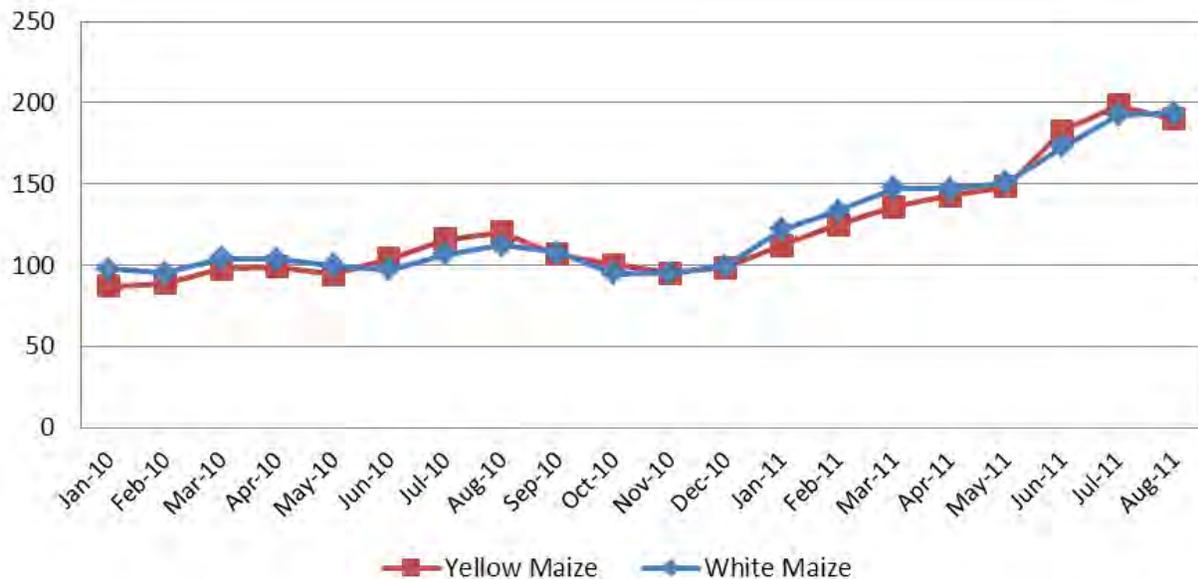
Figure 6. 2010-2011 White Maize Retail Prices by Main Regions (GTQ/lb)



Source: BEST calculation based on MAGA prices

In 2010, white maize retail prices were relatively stable across markets, with the exception of prices in central region, which increased from April to June, and later decreased and remained similar to prices in other regions. In 2011, all markets show steadily increasing prices (Figure 6).

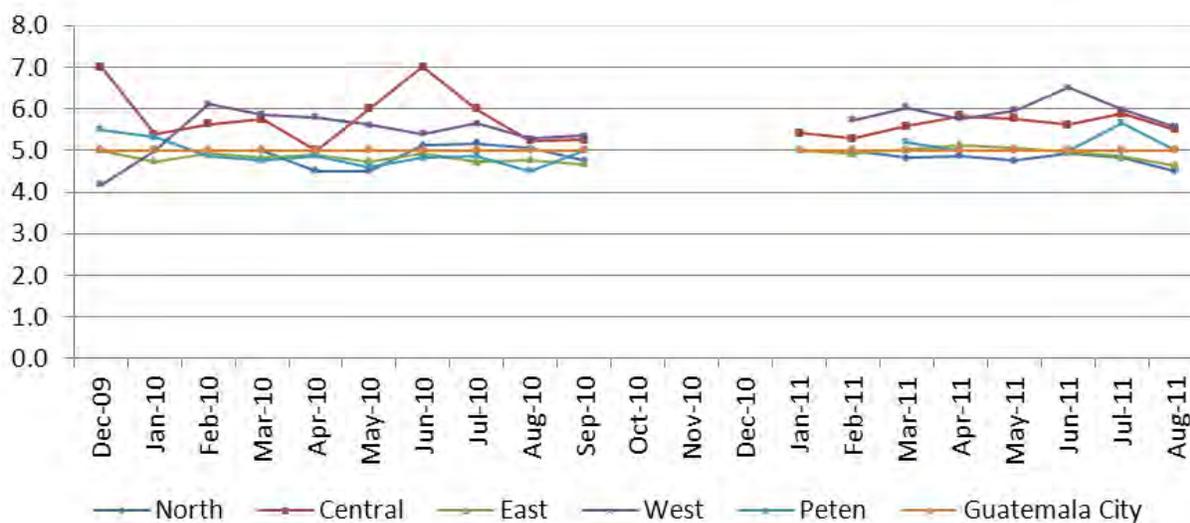
Figure 7. 2010 and 2011 Yellow and White Maize Producer Zone Prices (GTQ/Quintal)



Source: BEST calculation based on MAGA prices

Production zone prices¹² for yellow and white maize¹³ showed slightly more variation than retail prices from June to August 2010, which is consistent with production seasonality variations. However, since December 2010, white and yellow maize prices in production areas progressively increased until August 2011 (Figure 7).

Figure 8. 2010-2011 Black Bean Retail Prices by Main Regions (GTQ/lb)

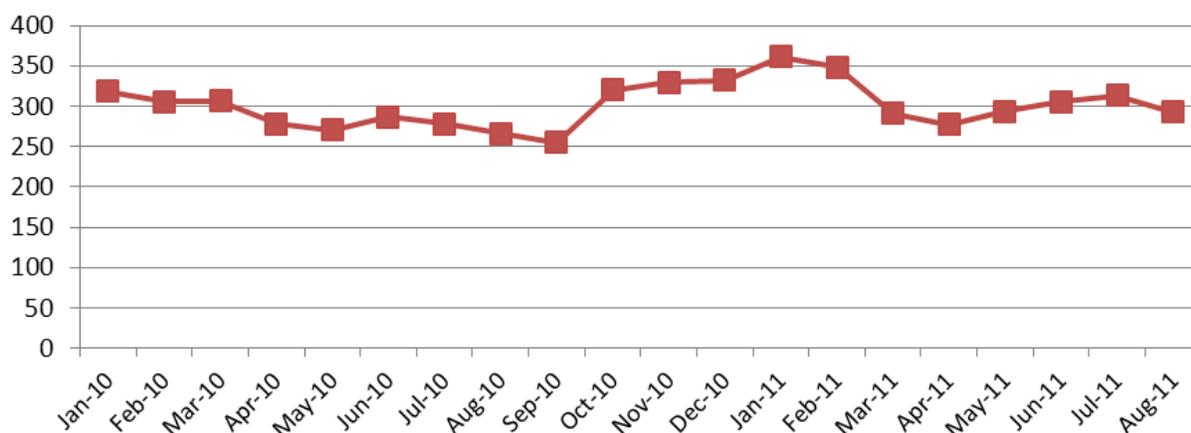


Source: BEST calculation based on MAGA prices

In 2010, black bean retail prices showed some month-to-month variation in certain regions. In the north, prices were relatively stable at the beginning of the year and later slightly varied from March until the end of the year. In the central region, prices showed the most variability in 2010, with prices changing rapidly particularly from April to August. Prices in the east remained relatively unchanged. In the west region, prices increased rapidly until February 2010 then slowly decreased until the end of the year. Petén region also showed very small variation in 2010. Finally, prices in Guatemala City were unchanged from 2010 to August 2011. In 2011, prices in all regions slightly changed reflecting mostly production seasonality (Figure 8).

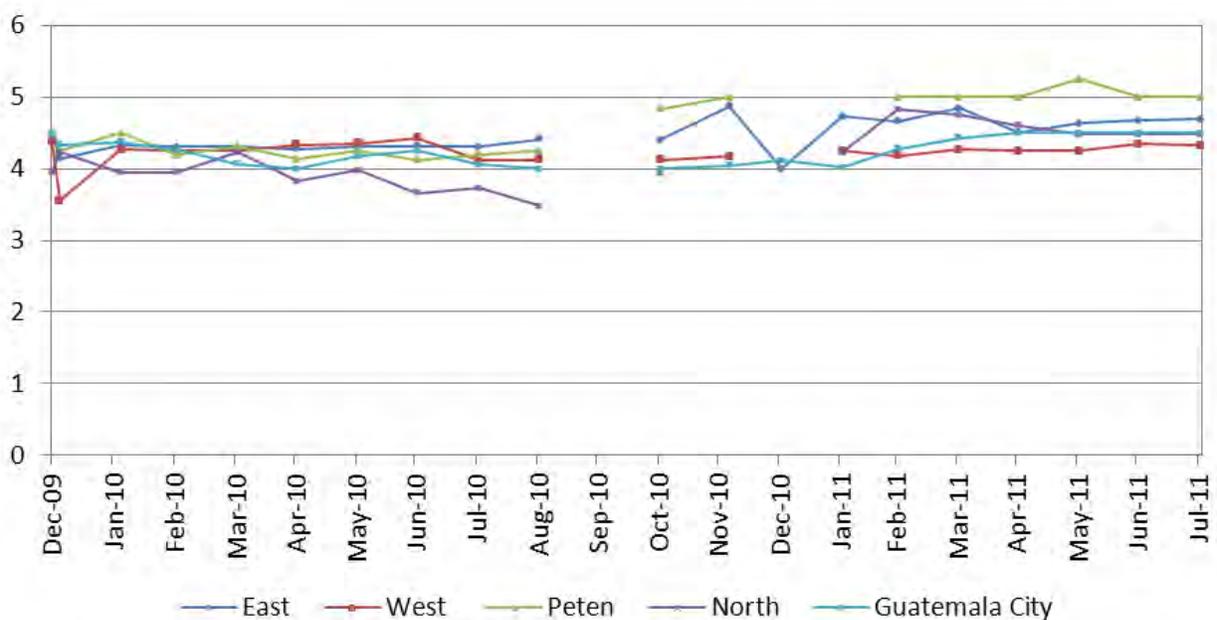
¹² MAGA reports local “acopiador” prices as prices from production zone.

¹³ Production zone for white maize are the north and east, and for yellow maize is the north region.

Figure 9. Average Black Beans Producer Zone Prices (GTQ/Quintal)

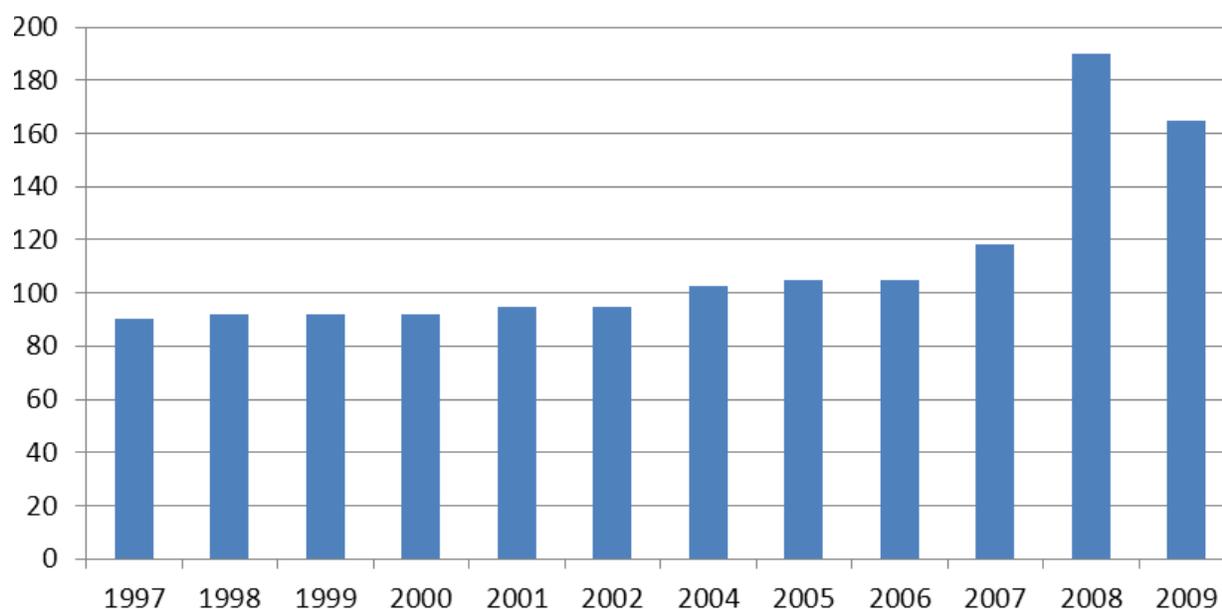
Source: BEST calculation based on MAGA prices

Consistent with dry bean price seasonality, average prices from production zones in the north and east decreased from January 2010 to August 2010. From September 2010 until January 2011, prices remained relatively high corresponding to limited supply period. After January, prices again decreased until April and later slightly increased again until July 2011 (Figure 9)

Figure 10. Rice Retail Prices (GTQ/lb)

Source: BEST calculation based on MAGA prices

Retail prices for rice in the east, west, Petén and Guatemala City were stable until August 2010. During the last part of 2010, prices in different regions showed slightly more variation with an upward tendency. The north region was the only region showing some decreasing trend during 2010. In 2011, while most regions showed very small price changes, for the most part prices were slightly higher than 2010 (Figure 10).

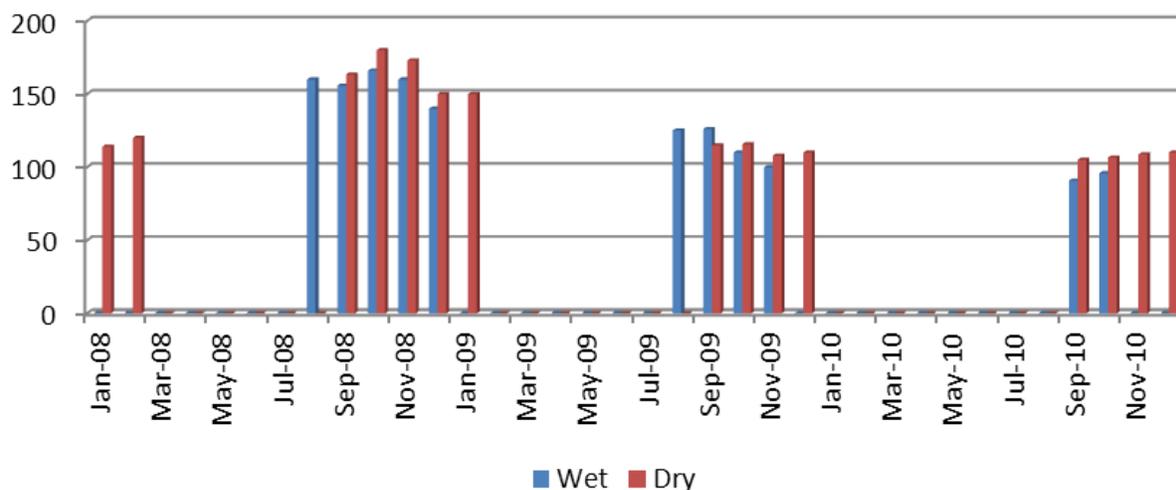
Figure 11. 1997 – 2009 ARROZGUA Average Yearly Producer's Price

Source: (ARROZGUA, 2011)

According to the Guatemalan Rice Association (ARROZGUA), producer prices¹⁴ from 1997 to 2006 remained relatively stable. Since 2007, prices increased rapidly, particularly in 2008 (ARROZGUA, 2011) (Figure 11). During 2007 and 2008, increasing ethanol production displaced rice production in Guatemala, causing a fall in area planted of approximately 50% from the previous year as farmers planted more sugar cane instead of rice to take advantage of more competitive prices (GAIN).

Price information from MAGA, while limited, supports production price trends. Production zone prices for rice paddy delivered wet or dry and sorted increased significantly during harvest time in 2008. By 2009, prices decreased, and in 2010, they returned to lower levels similar to those observed before 2008.

¹⁴ ARROZGUA sets a "Producers Guaranteed Price" at the beginning of each year in agreement with different rice millers in the country. This agreement assures producers who are part of the association to have all their harvest bought by millers participants at an guaranteed floor price (ARROZGUA, 2011).

Figure 12. 2008 – 2010 Rice Paddy Production Zone Prices (GTQ/Quintal)

Source: BEST calculation based on MAGA prices

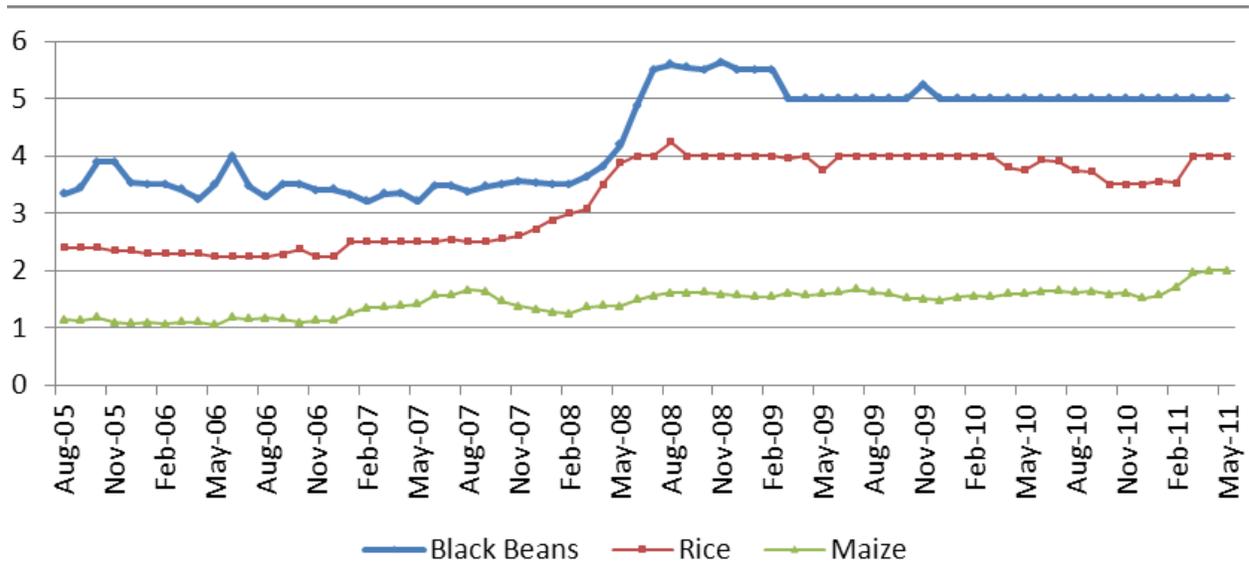
II.iv.ii. Price Changes in Guatemala City – La Terminal Market

As noted above, La Terminal market is the most important distribution center in Guatemala City.¹⁵ MAGA maintains price records for basic grains, milk, and vegetable oil for this market, which are analyzed and presented in this section.

Overall retail price for basic grains in La Terminal have remained relatively stable from August 2005 until August 2007. Black beans showed the most variation from 2005 to 2006. The greatest price increase happened in 2008, when black bean prices jumped from approximately 3.5 GQT/lb to more than 5.5 GQT/lb (a 57% increase) in less than one year's time. Rice prices increased from approximately 2.5 GQT/lb to around 4 GQT/lb (a 60% increase). After 2008, black bean prices decreased again to 5 GQT/lb and rice prices remained at 4 GQT/lb. Maize prices did not show much variation from 2005 to 2010. However, starting 2011, prices have increased considerably in this market (Figure 13).

¹⁵ Calle 21 market is another important wholesale and distribution center in Guatemala City. However, there is no significant price difference between these two markets. Thus, this section only includes prices from La Terminal market.

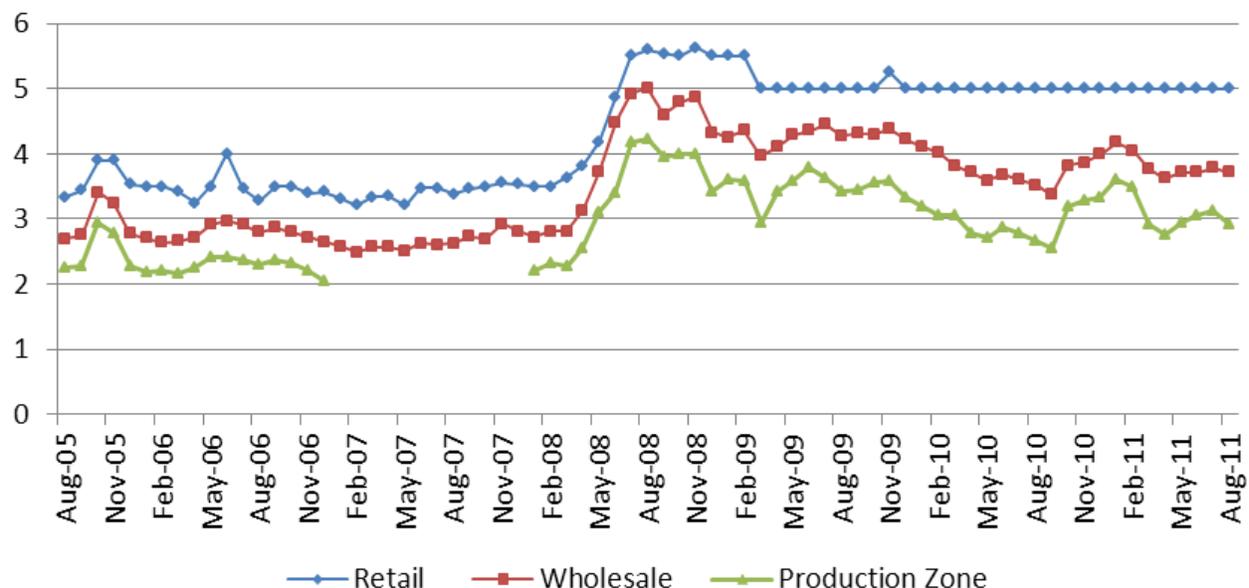
Figure 13. 2005 - 2011 Basic Grains Retail Price Changes – La Terminal Market Guatemala City (GTQ/lb)



Source: BEST calculation based on MAGA prices

Black bean production zone, wholesale and retail prices showed a similar trend from August 2005 until February 2009. In 2008, all three prices increased rapidly and remained relatively high during the year. In 2009, while wholesale and production zone prices showed a markedly downward trend, retail prices remained relatively high and continued unchanged but high until August 2011. Wholesale and production zone prices continued decreasing until August 2010. Both prices varied during the last part of 2010, but remained relatively stable during 2011 (Figure 14).

Figure 14. 2005 - 2011 Black Bean Production Zone, Wholesale and Retail Prices – La Terminal Market Guatemala City (GTQ/lb)



Source: BEST calculation based on MAGA prices

Marketing margins¹⁶ for black beans at La Terminal market have changed over the period 2008 to 2011. Figure 14 shows that while retail prices continuously increased to later remain unchanged, the share of production price changed from about 50 to 60% to more than 70% during the same period.

Price data from 2008 to 2011 suggests that the black bean production zone price share decreased from around 70% of retail prices to around 55% percent in 2008. During the same period, retail prices started an upward trend and reached their highest point in mid-2008. While shares of retail prices continued to be mostly variable in 2009 (from approximately 50% in March to more than 70% in June), retail prices were constant, with a small change in November, but returned to their original levels in December. In 2010, the share of production zone price decreased constantly up until September 2010 and later increased again. In 2011, the percentage share of production price continued to be variable but was generally lower until August 2011 (Figure 15).

¹⁶ The percentage difference between retail prices and production zone prices is considered marketing margins. This share was calculated as the percentage of production zone over retail prices. In general, retail prices include payments for both the raw farm product and activities that occur once the product has moved past the farm gate, such as processing, transportation, wholesaling, and retailing. Thus, this percentage difference can be considered part of marketing margins for retailers. In the case of unprocessed products such as basic grains, it is expected that the retail margin remains relatively unchanged and high.

Figure 15. Black Beans Production Zone Share of Retail Prices – La Terminal Market Guatemala City (GTQ/lb)

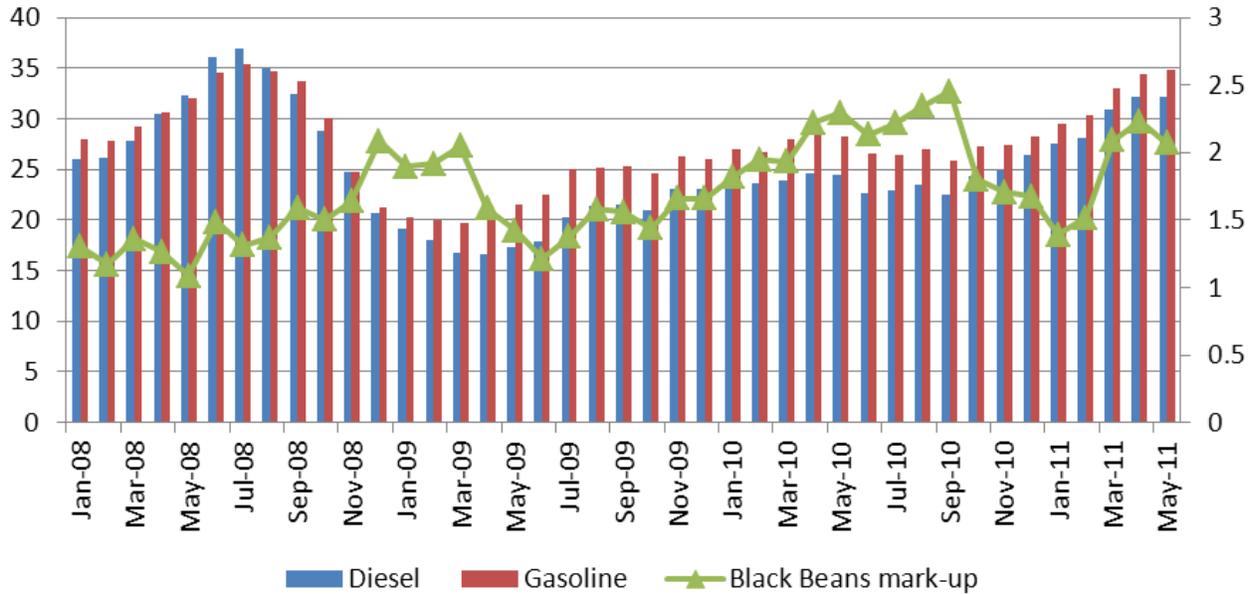


Source: BEST calculation based on MAGA prices

Since marketing margins usually contain transportation costs, in this case, it is assumed that fuel costs represent the bulk of transportation costs. Thus, any change in fuel cost is expected to affect prices. Figure 16 shows that from 2008 and 2011, the difference between production zone prices and retail prices¹⁷ increased relatively similarly to increases in prices of diesel and gasoline, which suggest that retail prices adjusted relatively quickly to changes in fuel prices.

¹⁷ Another way to calculate marketing margins is by taking the difference between retail price and production zone prices.

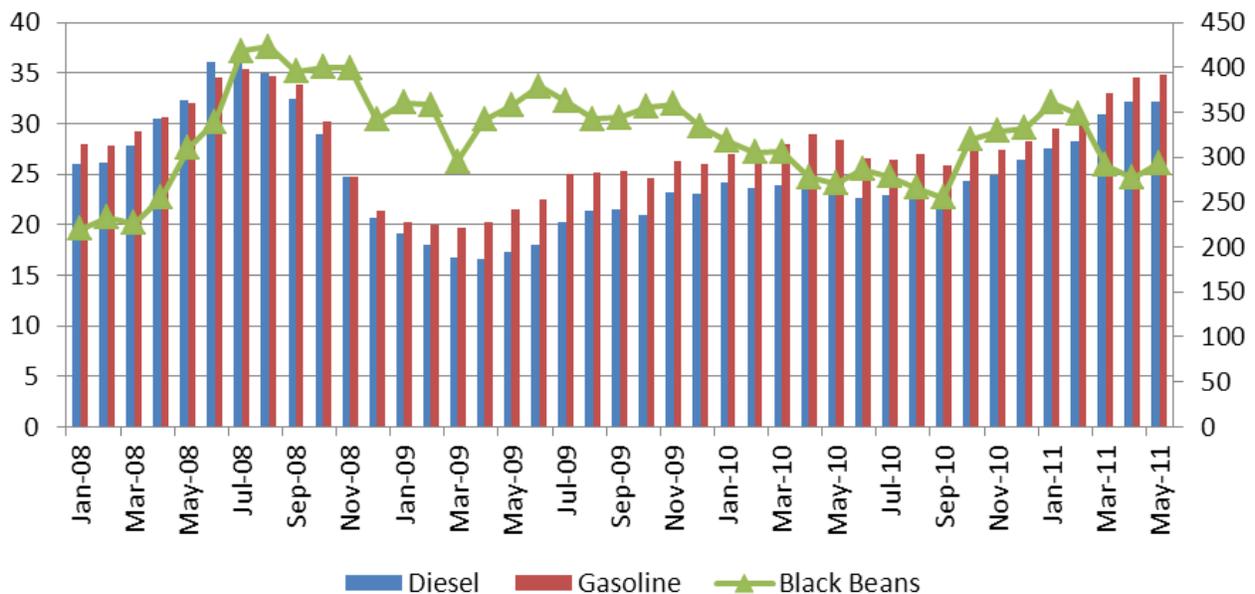
Figure 16. Diesel and Gasoline Prices (GTQ/Gallon) compared to Black Bean Retail and Production Zone Price Difference (GTQ/lb)- La Terminal Market



Source: BEST calculation based on MAGA prices

On the other hand, production zone prices before 2011 adjusted more quickly to changes in fuel prices. However, in 2011, data suggest that production zone prices are reacting slowly to fuel price variations, and this could negatively affect farm prices (Figure 17).

Figure 17. Diesel and Gasoline Prices (GTQ/Gallon) compared to Black Beans Production Zone Prices (GTQ/lb)



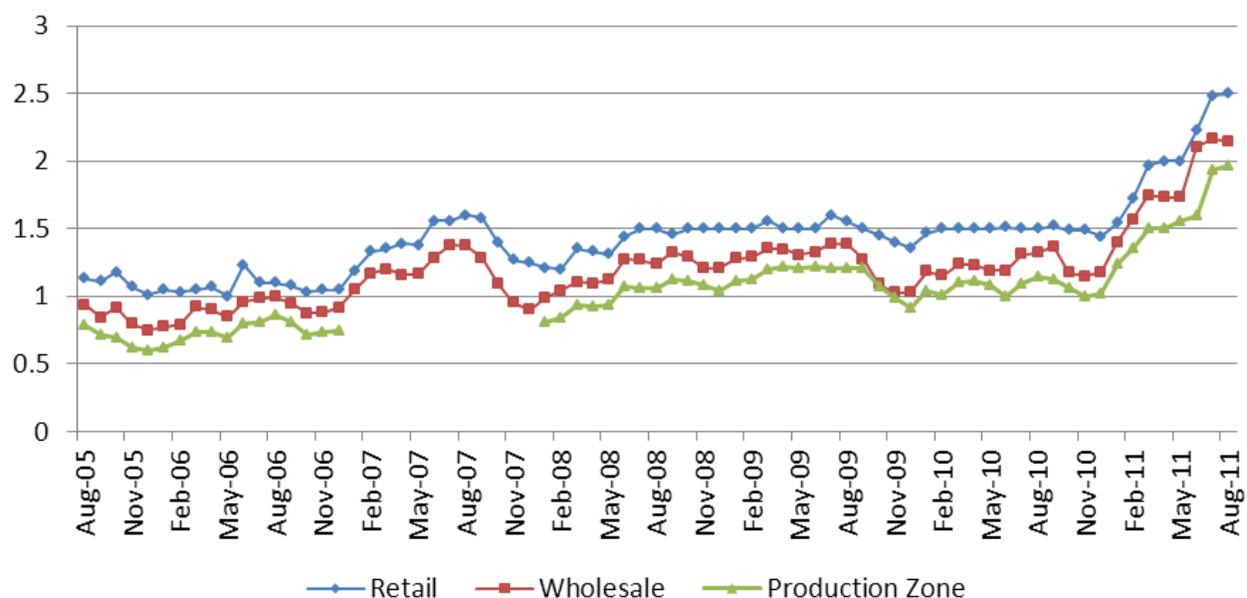
Source: BEST calculation based on MAGA prices

Figure 18 presents a comparison between fuel prices and production zone prices. In 2008, increasing fuel costs were accompanied by increasing production zone prices. By 2009, while

fuel costs went down, production prices were also down, but relatively higher compared to the previous year. In 2010, fuel prices increased again, while production prices continued its downward trend. After a jump in the last part of 2010 and beginning of 2011, producer prices decreased again, while fuel costs continued to increase.

In the case of white maize, production zone, wholesale and retail prices showed a similar trend from 2005 to 2011 at La Terminal market. All prices were relatively higher from November 2006 and by mid-2007 they started a downward trend.¹⁸ From 2008 to 2010, prices changed minimally. In 2011, all prices started to show rapid increases (Figure 18).

Figure 18. 2005 - 2011 White Maize Producer Zone, Wholesale and Retail Prices – La Terminal Market Guatemala City (GTQ/lb)

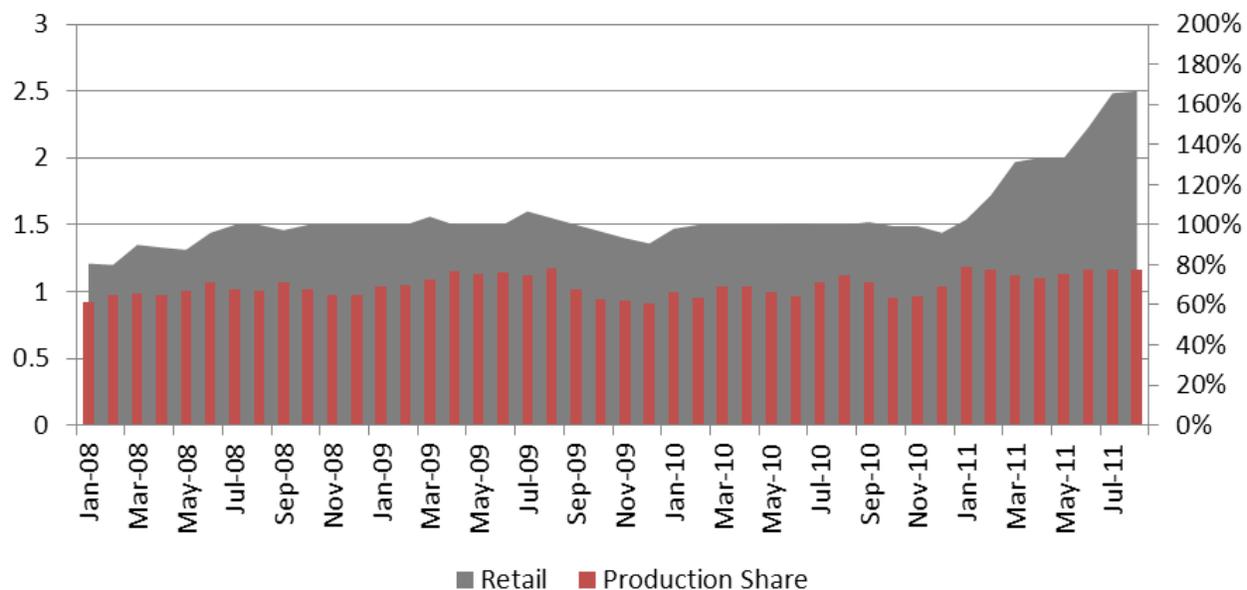


Source: BEST calculation based on MAGA prices

In general, white maize production zone prices as a percentage share of retail prices have maintained a relatively constant trend over the years. In 2011, while retail prices continued to increase, shares of production zone prices remained constant at 80% of retail prices. This situation implies that variations in retail prices are quickly passed on to production zones contributing to maintaining a relatively constant marketing spread (Figure 19).

¹⁸ MAGA does not report production zone prices for 2007.

Figure 19. White Maize Retail Prices and Share of Production Area Prices – La Terminal Market Guatemala City (GTQ/lb)

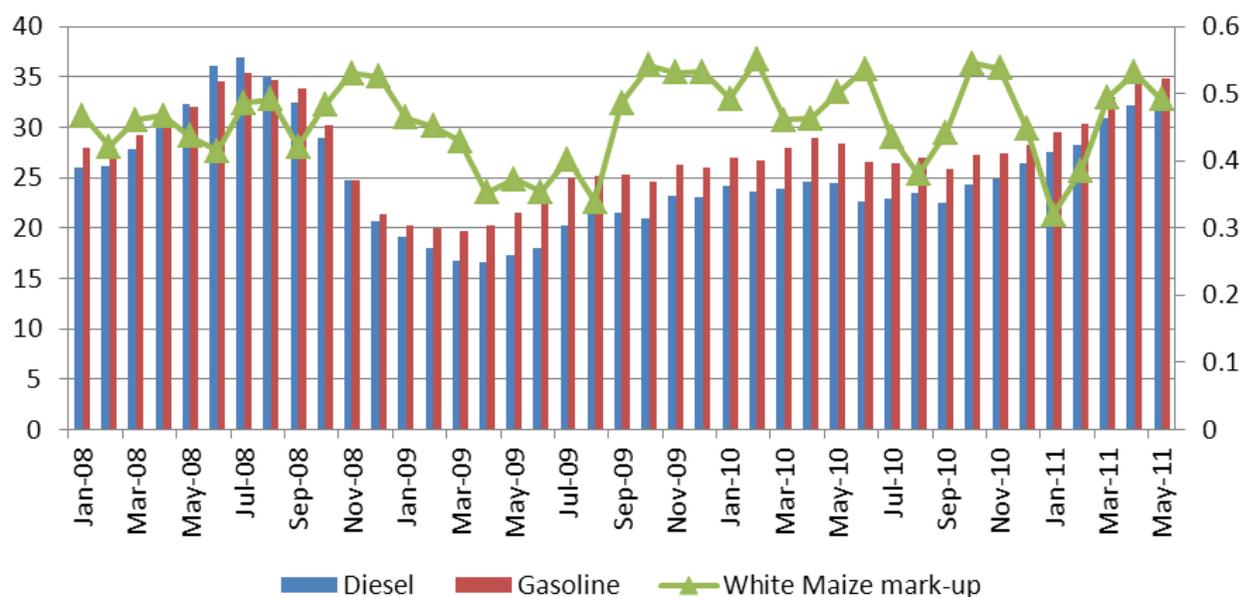


Source: BEST calculation based on MAGA prices

From 2008 to 2011, retail and production zone price differences¹⁹ showed a variable trend, but overall changing with the changing cost of fuel. This situation suggests that retail prices generally adjusted to changes in fuel prices (Figure 19).

¹⁹ The difference between retail price and production zone prices is considered the marketing margin. Marketing margins usually contain transportation costs. In this case, it is assumed that fuel costs represent the bulk of transportation costs. Thus, any change in fuel cost is expected to affect prices.

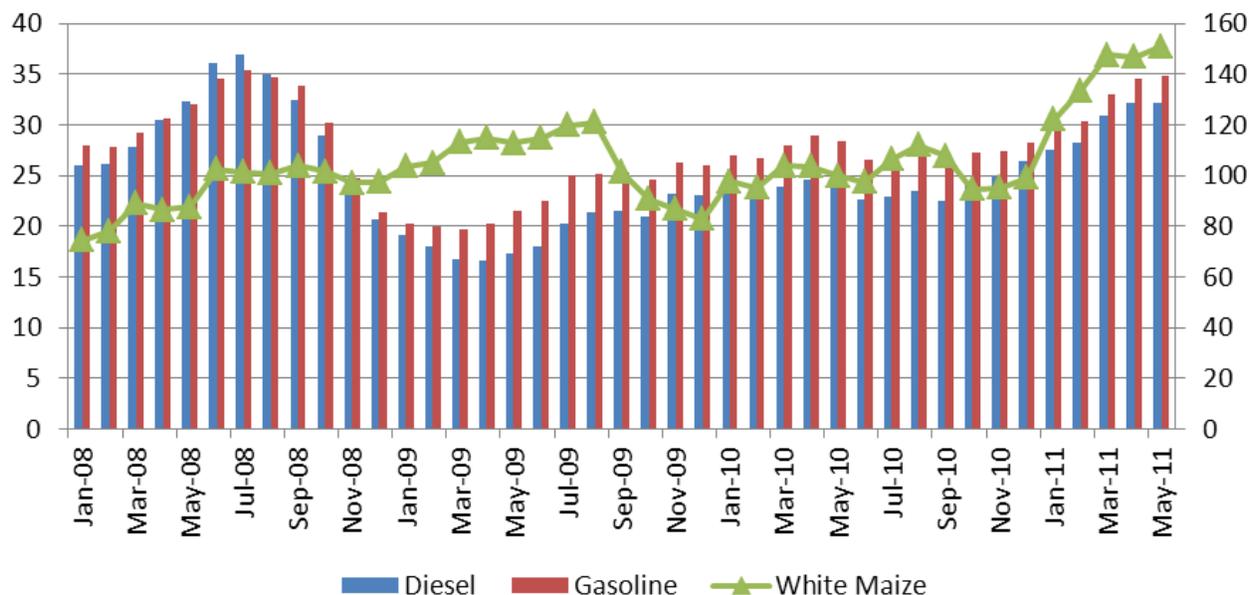
Figure 20. Diesel and Gasoline Prices (GTQ/Gallon) and White Maize Retail and Production Zone Price Difference (GTQ/lb) - La Terminal Market



Source: BEST calculation based on MAGA prices

Comparing production zone prices and fuel costs, it is possible to suggest that production zone prices and fuel costs have had similar price variation trends, suggesting that production price also adjust relatively fast to fuel cost changes (Figure 21). In 2008, increasing fuel costs were accompanied by increasing production zone prices. By 2009, while fuel costs went down, production zone prices remained relatively unchanged, but higher than the previous year. In 2010 and 2011, both fuel and production zone prices increased again (Figure 21).

Figure 21. Diesel and Gasoline Prices (GTQ/Gallon) compared to White Maize Production Zone Prices (GTQ/lb)



Source: BEST calculation based on MAGA prices

Yellow maize production zone, wholesale and retail prices presented similar trends from 2008 to 2011.²⁰ Prices were relatively stable until the end of 2010. However, by 2011, all prices started to show rapid increases (Figure 22).

Figure 22. 2005 - 2011 Yellow Maize Producer Zone, Wholesale and Retail Prices – La Terminal Market Guatemala City (GTQ/lb)

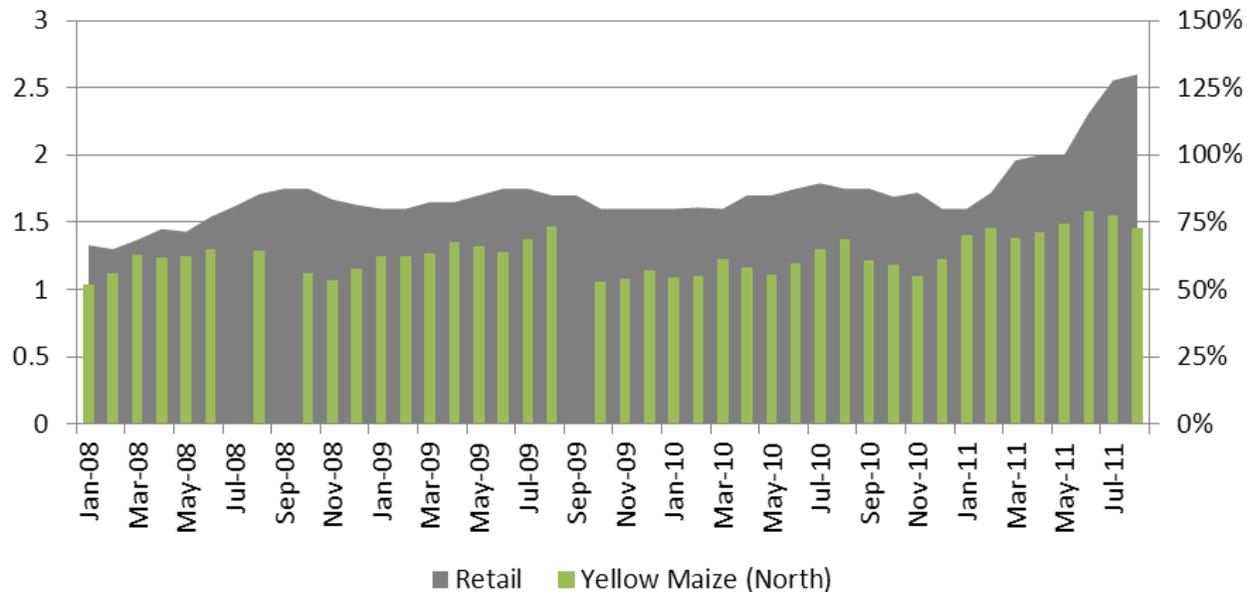


Source: BEST calculation based on MAGA prices

²⁰ MAGA reports production zone prices from 2008

In general, yellow maize production zone prices' share of retail prices have maintained a relatively constant trend over the years. In 2011, while retail prices continue its upward trend, the share of production zone price has remained constant at around 75 percent. This situation implies that price variation from retail to production zone prices is transmitted relatively fast which contributes to maintaining a relatively constant marketing spread (Figure 23).

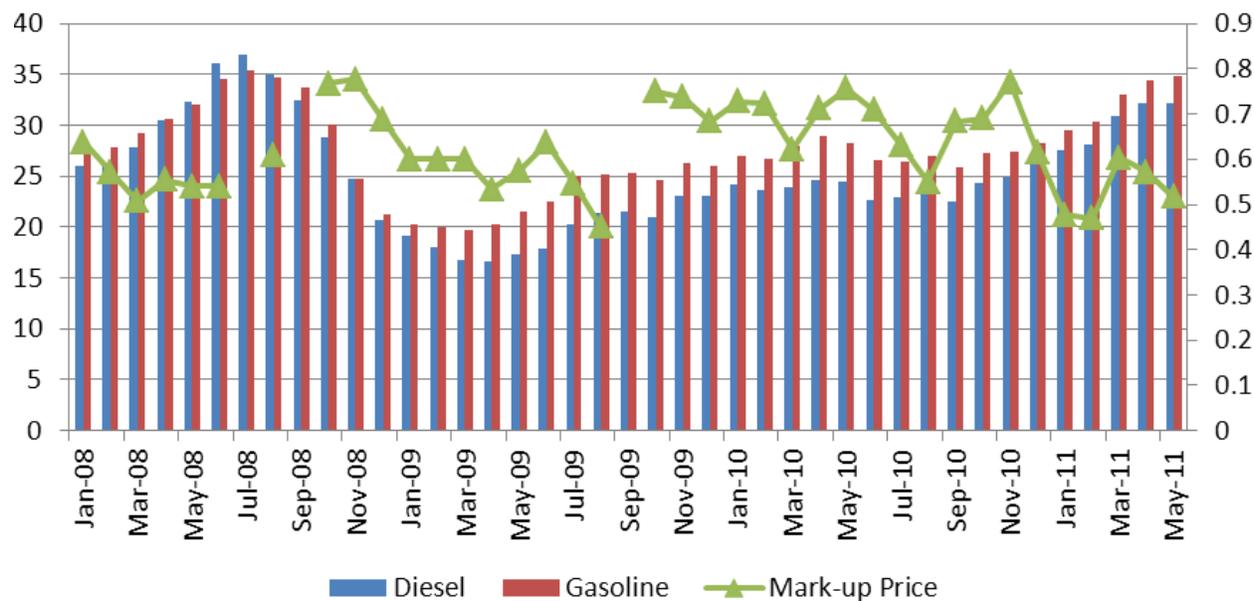
Figure 23. Yellow Maize Retail Prices and Share of Production Area Prices – La Terminal Market Guatemala City (GTQ/lb)



Source: BEST calculation based on MAGA prices

From 2008 to 2011, retail and production zone price difference showed overall variable trends. However, price differences tended to follow variations in fuel costs. This situation suggests that yellow maize retail prices generally adjusted rapidly to changes in fuel prices.

Figure 24. Diesel and Gasoline Prices (GTQ/Gallon) and Yellow Maize Retail and Production Zone Price Difference (GTQ/lb) - La Terminal Market

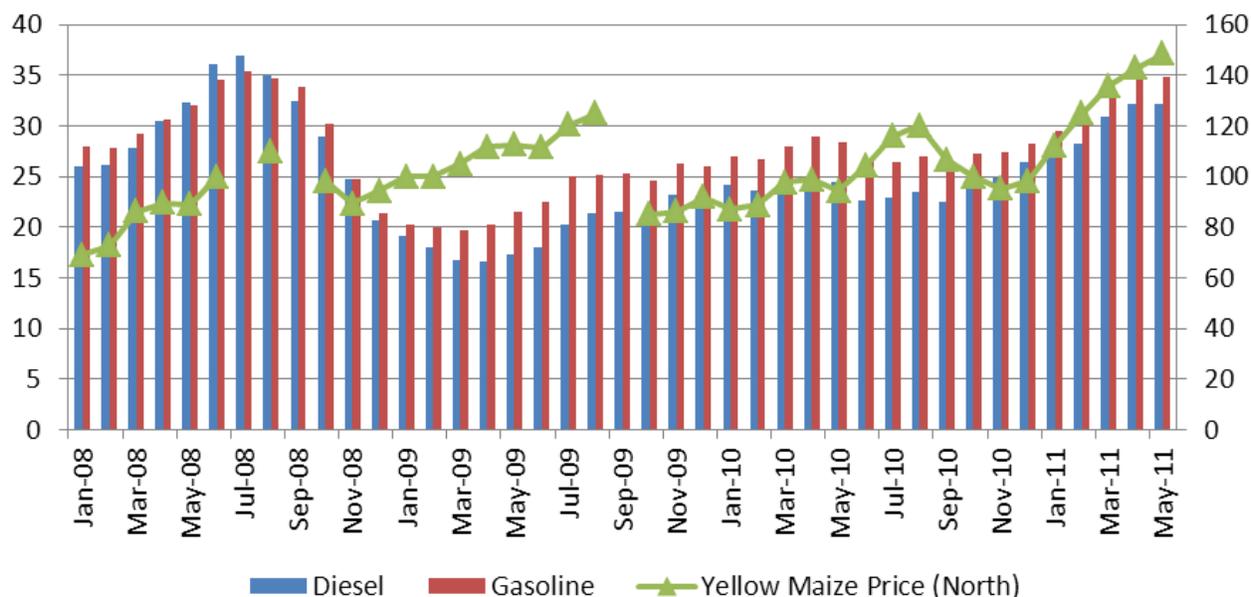


Source: BEST calculation based on MAGA prices

When comparing production zone prices and fuel costs, it is possible to suggest that prices have a similar variable trend which could also suggest that production price adjust relatively quickly to fuel cost changes (Figure 24).

Figure 24 presents a comparison of fuel prices with production zone prices. In 2008, increasing fuel costs were accompanied by increasing production zone price. By 2009, while fuel costs went down, production zone prices continued a trend upwards. In 2010 and 2011, both fuel and production zone prices increased rapidly.

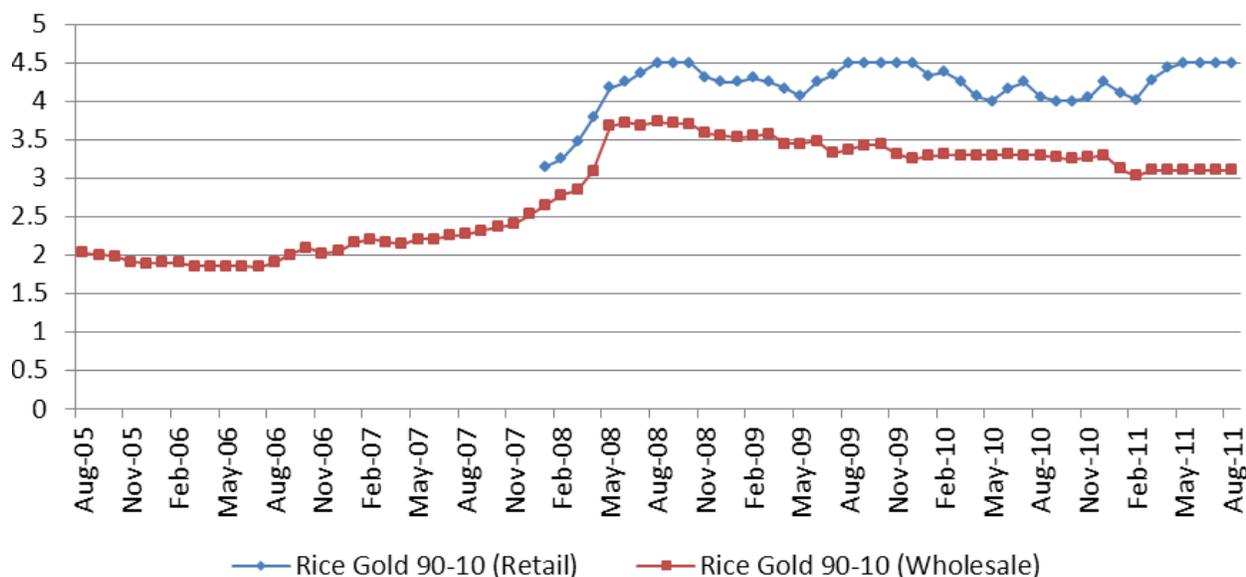
Figure 25. Diesel and Gasoline Prices (GTQ/Gallon) compared to Yellow Maize Production Zone Prices from the North (GTQ/lb)



Source: BEST calculation based on MAGA prices

Available data for rice at wholesale show that prices remained relatively stable from 2005 until approximately August 2007 in La Terminal market. After 2007, prices started to steadily increase up until May 2008 and remained relatively unchanged until August 2011. On the other hand, retail prices²¹ showed more variation from November 2007 until 2011 (Figure 26).

Figure 26. 2005 – 2011 Rice Retail and Wholesale Prices – La Terminal market (GTQ/lb)

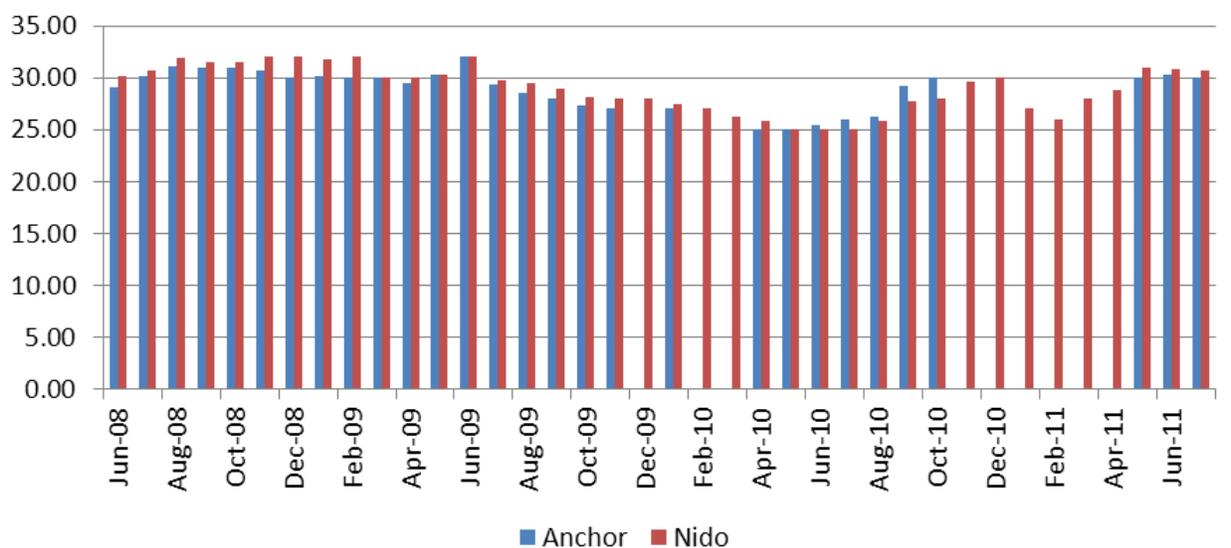


Source: BEST calculation based on MAGA prices

²¹ MAGA reports retail prices from November 2007

MAGA reports prices for two main brands of dry milk at La Terminal market: Anchor and Nido. In general, dry milk –Anchor” 360-gram pack prices are lower than the brand –Nido”. However, over the years retail prices for both brands have shown similar trends from 2008 to 2011. While prices remained relatively stable from June 2008 until 2009, prices started to steadily decrease in 2009. From 2010 until 2011, prices increasingly showed more variation (Figure 27)

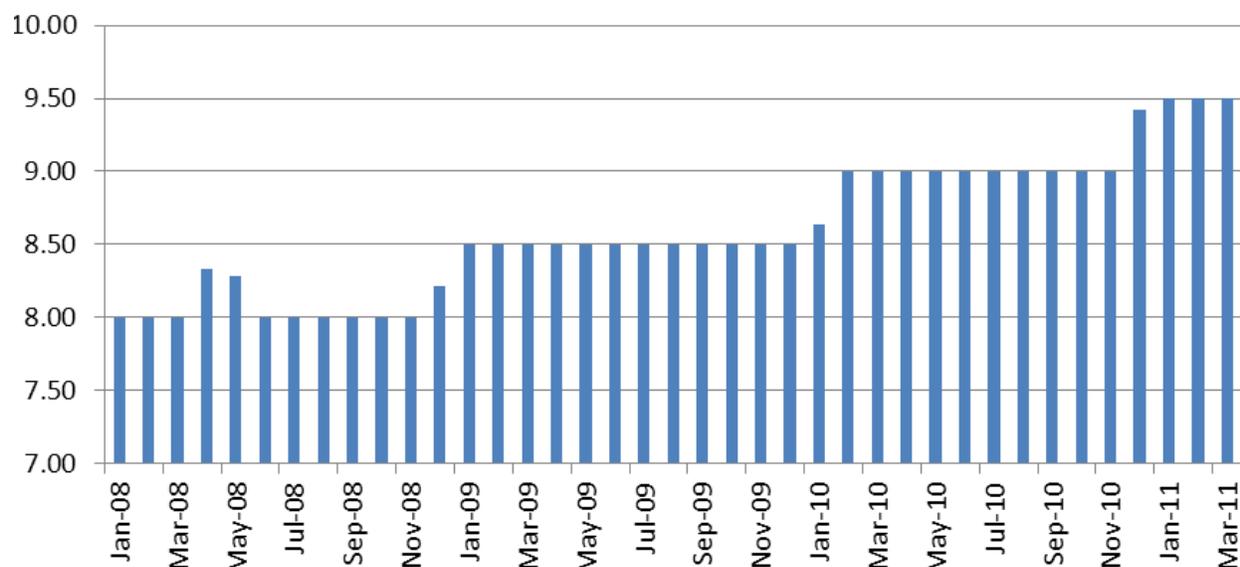
Figure 27. 2008-2011 Average Retail Price Dry Milk – La Terminal (GTQ/360g pack)



Source: BEST calculation based on MAGA prices

Pasteurized milk prices followed a more fixed trend over the years. In general, each year retail prices increased by around 4 to 6 percent (Figure 28)

Figure 28. 2008 – 2011 Pasteurized Milk Retail Prices – La Terminal (GTQ/liter)

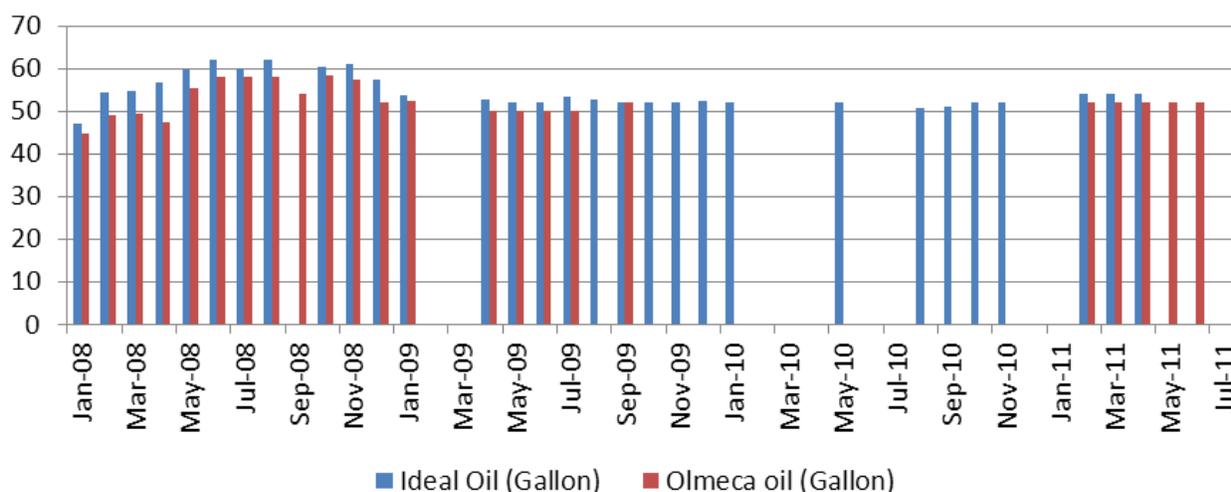


Source: BEST calculation based on MAGA prices

IdealSA and Olmeca are the two largest edible oil companies in Guatemala. Ideal sells a slightly higher-end blend of imported soy and sunflower oils, while Olmeca blends domestic palm and imported soy. Retail prices for Olmeca and Ideal oil at La Terminal market reflect this slight difference in each company's target markets.

From 2008 to 2011, MAGA irregularly reported retail prices for Ideal and Olmeca oil sold by the gallon. Based on these data, prices showed more variation (upward and downward trends) during 2008. Since May 2009 until June 2011 retail prices of both oil sold by the gallon remained relatively unchanged (Figure 29)

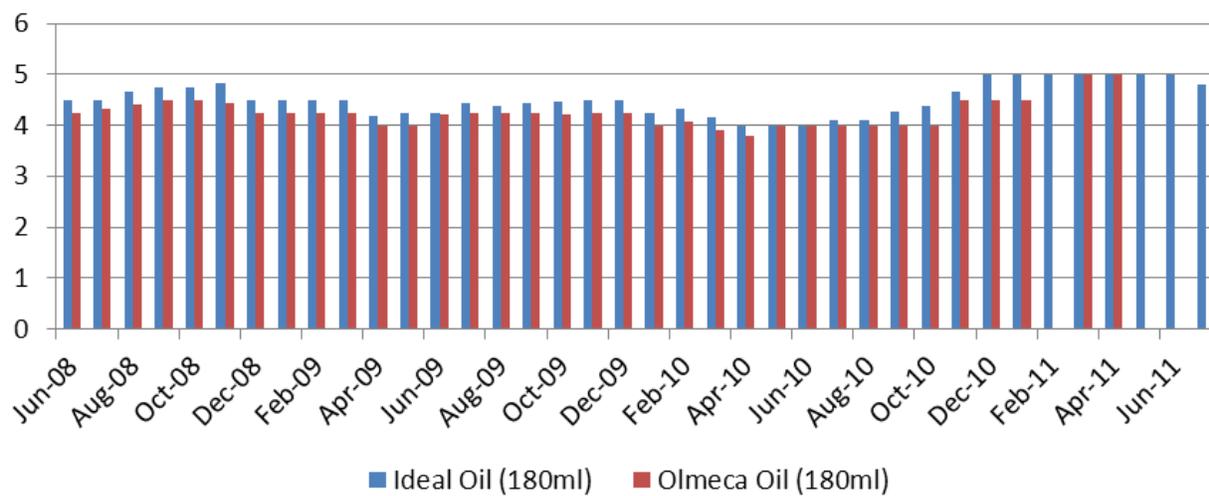
Figure 29. 2008 – 2011 Vegetable Oil Retail Price – La Terminal Market (GTQ/Gallon)



Source: BEST calculation based on MAGA prices

In the case of oil sold in 180 ml bottles, both IdealSA and Olmeca brands showed similar trends from June 2008 until 2011. While for the most part, prices were slightly above 4 GTQ per bottle from 2008 to 2009, prices remained relatively constant at around 4 GTQ per bottle during 2010. By the end of 2010 and in 2011, prices increased steadily to reach 5 GTQ (Figure 30).

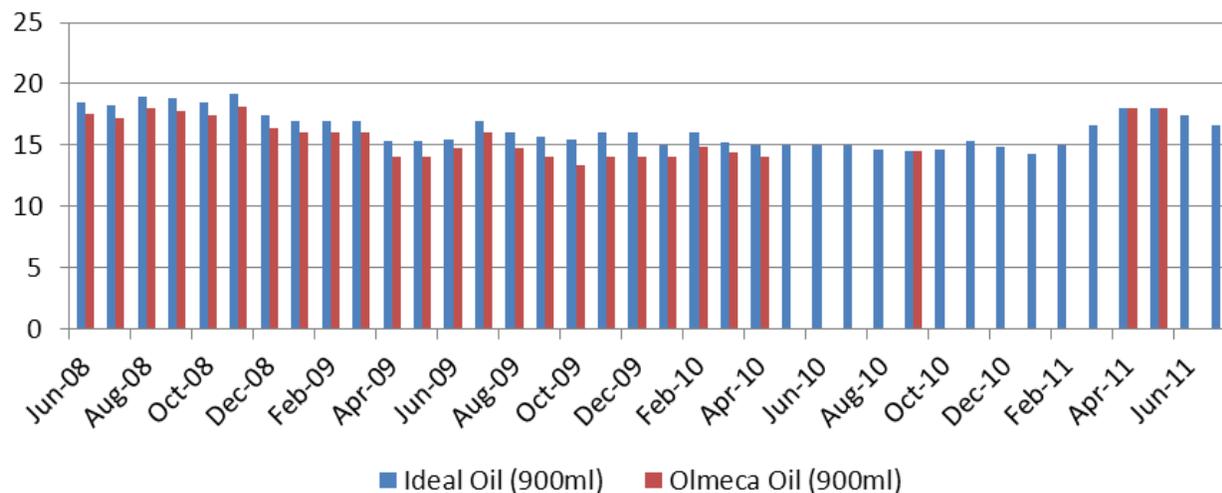
Figure 30. 2008 – 2011 Vegetable Oil Retail Price – La Terminal Market (GTQ/180ml bottle)



Source: BEST calculation based on MAGA prices

Oil sold in 900 ml bottles for both brands (IdealSA and Olmeca) showed very small price differences from 2008 to 2011. While prices in 2008 were relatively high (above 17 GTQ per bottle), in 2009 prices started a downward trend until February 2011 when it reached just below 15 GTQ per bottle. After February 2011, prices again increased to around 17 GTQ per bottle (Figure 31).

Figure 31. 2008 – 2011 Vegetable Oil Retail Price – La Terminal Market (GTQ/900ml bottle)



Source: BEST calculation based on MAGA prices

II.v. Malnutrition

Guatemala has the highest malnutrition rates in Latin America, and one of the highest in the world; the latest survey reveals that 43 percent of the population is chronically malnourished (WFP and FAO, 2010) (INE, 2009). The eastern and northeastern areas - especially the dry

corridor - have the highest prevalence of acute malnutrition; the west accounts for the highest prevalence of chronic malnutrition (WFP and FAO, 2010). From 2004 to 2008, Guatemala accounted for almost half of all underweight-related deaths of children under five in Costa Rica, El Salvador, Honduras, Nicaragua, Panama, and the DR (WFP, 2008).

The WFP/FAO CFSAM cites increased child malnutrition as one result of the 2009 tropical depression (DT 16) and the 2009 drought. The study gives no clear cause of Guatemala's high malnutrition rates, but points to lack of medical care, mothers' poor health statuses, households' inability to maintain a healthy diet, poor hygiene, and poverty as underlying factors.

II.vi. Water, Sanitation, and Hygiene

The WFP/FAO CFSAM found that most households had access to piped water sources, though some depended on natural sources, which may be contaminated. According to the 2002 census, water coverage is 75 percent, and sanitation access is 47 percent. About 45 percent of households have drainage (INE, 2006). In 2006, 62 percent of households had piped water sources inside their houses. Access to sanitation is much lower in rural areas (about 17 percent coverage) than in urban areas (about 77 percent coverage).

Annex III. Detailed CDSO IPP Calculations

Date Sales Price Determined	FOB Argentina	Freight	Estimated IPP (C&F)	IPP Moving Avg (MA)	IPP MA + 10%	IPP MA - 10%	Sales Price	Sales price as % of C&F
May-07	692	56.00	748.00	750.99	826.09	675.89	760.8	102%
Jun-07	748	59.00	807.00	795.44	874.98	715.90		
Jul-07	787	60.20	847.20	835.94	919.53	752.35		
Aug-07	809	63.50	872.50	876.58	964.24	788.92		
Sep-07	841	64.00	905.00	929.83	1022.81	836.85	876.4	97%
Oct-07	885	66.20	951.20	982.39	1080.63	884.15	875.5	92%
Nov-07	1,004.00	69.25	1,073.25	1055.53	1161.08	949.98		
Dec-07	1,030.00	80.00	1,110.00	1153.83	1269.21	1038.45		
Jan-08	1,162.00	76.20	1,238.20	1248.99	1373.89	1124.09		
Feb-08	1,326.00	70.50	1,396.50	1311.10	1442.21	1179.99	1,384.1	99%
Mar-08	1,358.00	69.00	1,427.00	1366.40	1503.04	1229.76		
Apr-08	1,315.00	68.80	1,383.80	1407.86	1548.65	1267.07		
May-08	1,310.00	76.50	1,386.50	1407.08	1547.79	1266.37		
Jun-08	1,369.00	76.50	1,445.50	1356.13	1491.74	1220.52	1,475.7	102%
Jul-08	1,320.00	72.60	1,392.60	1288.62	1417.48	1159.76		
Aug-08	1,100.00	72.25	1,172.25	1174.84	1292.32	1057.36		
Sep-08	981	65.25	1,046.25	1030.34	1133.37	927.31		
Oct-08	775	42.60	817.60	879.74	967.71	791.77		
Nov-08	695	28.00	723.00	786.19	864.81	707.57		
Dec-08	617	22.60	639.60	713.74	785.11	642.37		
Jan-09	682	22.50	704.50	686.47	755.12	617.82	777.8	110%
Feb-09	657	27.00	684.00	700.59	770.65	630.53		
Mar-09	649	32.25	681.25	746.97	821.67	672.27		
Apr-09	761	32.60	793.60	778.17	855.99	700.35	800.2	101%
May-09	837	34.50	871.50	798.73	878.60	718.86		
Jun-09	826	34.50	860.50	831.93	915.12	748.74		
Jul-09	751	35.80	786.80	833.54	916.90	750.19		
Aug-09	810	37.25	847.25	827.89	910.68	745.10		
Sep-09	767	34.67	801.67	833.69	917.06	750.32	770.5	96%
Oct-09	810	33.25	843.25	856.77	942.45	771.10		
Nov-09	856	33.50	889.50	864.02	950.43	777.62		
Dec-09	865	37.20	902.20	878.89	966.78	791.00		
Jan-10	844	39.50	883.50	883.68	972.048	795.312		
Feb-10	836	40.00	876.00	878.13	965.943	790.317		
Mar-10	824	43.20	867.20	866.64	953.304	779.976	888.5	102%
Apr-10	816	45.75	861.75	854.46	939.906	769.014	898.1	104%
May-10	796	48.75	844.75	852.06	937.266	766.854	841.3	100%
Jun-10	776	46.60	822.60	866.92	953.612	780.228		
Jul-10	825	39.00	864.00	891.53	980.683	802.377		
Aug-10	901	40.50	941.50	939.08	1032.988	845.172	921.7	98%
Sep-10	945	39.80	984.80	1008.76	1109.636	907.884		
Oct-10	1046	36.50	1,082.50	1087.41	1196.151	978.669	1,060.2	98%
Nov-10	1138	33.00	1,171.00	1161.96	1278.156	1045.764		

Date Sales Price Determined	FOB Argentina	Freight	Estimated IPP (C&F)	IPP Moving Avg (MA)	IPP MA + 10%	IPP MA - 10%	Sales Price	Sales price as % of C&F
Dec-10	1224	33.25	1,257.25	1227.25	1349.975	1104.525		
Jan-11	1277	37.25	1,314.25	1262.35	1388.585	1136.115	1,246.1	95%
Feb-11	1275	36.25	1,311.25	1279.24	1407.159	1151.312	1,232.7	94%
Mar-11	1221	37.00	1,258.00	1277.44	1405.179	1149.692		
Apr-11	1216	39.43	1,255.43	1269.83	1396.808	1142.843		
May-11	1209	39.25	1,248.25	1265.18	1391.693	1138.658		
Jun-11	1238	38.20	1,276.20	1269.28	1396.203	1142.348		
Jul-11	1250	38.00	1,288.00	1272.74	1400.011	1145.464		
Aug-11	1240	38.50	1,278.50	1280.90	1408.99	1152.81	1223.17	96%

Notes:

[1] FOB Price: 15071000 Bulk Soybean Oil - Secretaría de Agricultura, Ganadería, Pesca y Alimentos

[2] Freight Rate: IGC Ocean Freight Rates for bulk dry grain rates, not bulk liquid rates as these were unavailable. Note that the freight rate used for this IPP calculation is the Argentina – Mexico route as published by IGC as proxy.

[3] Sales Prices: Title II Awardees (via CRS) and AMEX International

Annex IV. Methodology for Determining Impact of Monetized Food Aid²²

IV.i. Introduction

The Bellmon Amendment requires assurance that a proposed food aid program would not result in a substantial disincentive to or interference with domestic production or marketing. The extent to which monetized food aid has the potential to introduce a production disincentive or market disruption rests primarily on whether the monetized commodity is sold at a fair market price, and in a volume that would not be expected to cause disruption of normal trade patterns.

The objective of the BEST pre-MYAP report is to provide sufficient information to relevant USAID policy decision makers and program managers to allow them to make a determination of whether a proposed food aid program would have a substantial impact on local market and production incentives. If it is determined in the negative, then the proposed Title II food aid program would be compliant with the Bellmon Amendment. The BEST report accomplishes this objective by providing specific guidance as to:

- The appropriateness of monetization in a Title II recipient country.
- If appropriate, which commodities might be appropriate to monetize.
- The approximate maximum tonnage feasible for monetization.
- Any special considerations (such as sales platform) that should be taken into account when undertaking monetization in the study country.

IV.ii. Analytical Process

IV.ii.i. Step 1: Initial Commodity Selection

A desk review will identify an initial set of commodities for study. This review will be based on the best available trade statistics and any previous Bellmon studies, and informed by country situational reports and policy reviews. Ideally, each commodity will be selected based on a complete set of objective criteria involving eligibility, freedom from trade and policy restrictions, and, most importantly, the market's ability to absorb a volume of monetized commodity without substantial disruption. In practice, this ideal is constrained by information gaps and varying standards of what may be considered "substantial" in different country and regional contexts. Official trade data is often incomplete, out-of-date, or contradictory.

²² This methodology was developed to provide guidance prior to the initiation of a new MYAP/SYAP cycle; however, in the case of monetization, the methodology for the market analysis is exactly the same whether the analysis is conducted mid-MYAP or prior to the beginning of a new MYAP/SYAP cycle.

The field visit will involve triangulating trade figures, filling in data gaps, and discussing with traders and potential buyers to assess 1) interest and ability to purchase commodities in various quantities; and 2) factors affecting demand and supply of commodities with which a monetized commodity would likely compete.

The following set of “tests” is used, in whole or in part, to make an initial assessment of the feasibility of monetization without introducing Bellmon concerns:

Test 1: Purchase and export restrictions. There are various layers of US government policies, regulations, and practices that may restrict the purchase of commodities intended for monetization. In consideration of these restrictions, Food For Peace (FFP) maintains a list of approved Title II commodities that can be used for emergency or development programs (see Annex VI.I). There may also be special policies, such as the FFP Policy on Use of Milk Powder for Monetization (see Annex VI.II), which must also be reflected in sales transactions.

Test: If a commodity is on the FFP list, it is eligible for consideration as a monetization candidate. If it is not on the list, it is ineligible.

Upon special request by FFP, commodities not currently on the FFP list may be selected for review.

Test 2: Recipient country policy, regulation, and practice. Recipient country policies, regulations, and practices may restrict importation of commodities intended for monetization. These may include, but not be limited to, one or more of the following:

- Restrictions on genetically modified foods
- Political sensitivities to staple crop industries
- National industry promotion or protection favoring local purchase of certain commodities
- Food aid-specific regulation of monetization sales volumes and prices

Test: If potential monetization of a commodity is affected by such barriers, analysis and recommendations will consider each barrier in light of its restrictiveness in practical terms. Extreme barriers to monetization (such as a complete restriction on GMOs, for example) will render a commodity ineligible for monetization. However, government institutions that regulate monetization may set guidelines that have little to no effect on an overall recommendation, but may impact a detail such as minimum sales prices. In this case, a commodity would still be considered eligible for monetization.

Test 3: Significant demand and commercial import activity. To warrant importation and sale of monetized food aid, both local dietary preferences and available market information must strongly suggest that a proposed commodity is consumed in significant amounts (i.e., there is significant demand), and that national production is insufficient to meet demand (i.e., there is insufficient national supply to meet demand). National demand is estimated based on the latest

5-year overall supply trend, equivalent to the sum of domestic production, net trade, and food aid.²³

Assessment of the 5-year supply trend considers products of the same specification, or those that are the most likely substitutes. Commodity specifications (class and grading) are particularly important for some of the most frequently monetized commodities, such as wheat, rice, and vegetable oil. In order to compare commodities accurately, the analyst must take into account the exact specifications of normal commercial imports. Processors' requirements and consumer preferences will determine the required and/or desirable specifications. Field visits must include meetings with commercial importers, processors, millers, and large traders because these are the market players who can provide the most accurate information in regards to specific commodities' commercial demand.

Annex VI.III is a survey questionnaire tailored to potential buyers of Title II monetized commodities. This set of questions should form the basic foundation for meetings with millers, traders, and other potential buyers of monetized commodities.

Annex VI.IV is a survey questionnaire form tailored to current NGO Monetization Units, for those countries where these units are operational. This set of questions should form the basic foundation for meetings with Monetization Units to assess their experience monetizing commodities in-country.

In countries with substantial informal trade, the analyst will gather all available market intelligence on the volume and pattern of informal trade where available. This will involve reliance on FEWS NET cross-border trade estimates and discussions with key stakeholders (such as Ministries) in the field. Informal trade may be substantial, because informal trade is generally between two low-income food-deficit countries; disruption of such trade would be considered particularly undesirable. The volume of commodity recommended for monetization will exclude informal trade volumes and rely instead on commercial import and food aid import volumes as a basis for estimating unmet demand.

Test: Generally, the value of the commercial import market must be large enough so that monetization sales would generate at least US\$1 million. This amount is a guideline based on analysis of perceived Awardee funding need, but which is subject to review, especially as funds become available from other sources (e.g., 202(e) funding). Commodities that would generate less than US\$1 million in funds will be considered, particularly where there are only one or two commodities eligible/feasible for monetization and a diversified basket of commodities would be preferable. If sales are expected to displace normal commercial imports, the displaced volume should not exceed 10 percent of commercial import volumes (averaged over 5 years) per BEST's current guideline. If sales are expected to compete with domestic production, the

²³ Where supply in the previous years is especially stable, a single-year projected increase in supply is possible using annual population growth figures. In the most recent round of BEST studies, many Title II countries had experienced substantial inter-annual fluctuations in supply during the five-year period under review (on the order of 100 percent change year-on-year), partially due to the food price crisis of 2007. This made projections much more difficult and unreliable. However, as prices and therefore supply stabilize, such projections would be a reasonable basis on which to estimate a recommended volume for monetization.

displaced volume should not exceed 5 percent of domestic production (averaged over 5 years) per BEST's current guideline.

IV.ii.ii. Step 2: Market Analysis

Additional market research and analysis are conducted to assess the likelihood of achieving a fair and competitive market price. The analyst will review all available evidence of market structure, level of competition, and available sales platforms, including findings from interviews with traders, producers, potential buyers, and any current monetizing agents. To support a recommendation of commodity monetization, the analyst must conclude that there is a high likelihood of achieving a fair market price in the near-term. Achievement of a fair market price may be expected in the near-term based on the following criteria.

Criterion 1: Structure and composition of the buyer market supports competition. There must be enough potential buyers with sufficient purchasing power and market positioning to absorb the likely volumes of monetized commodities without exerting a negative influence on fair and efficient market function. In some cases, monetizing agents may have long-term relationships with a single buyer. This may or may not indicate a problem. As discussed in the following section, whether Awardees are able to monetize commodities at or near IPP provides strong suggestive evidence of the level of competition.

Test: If there is a single buyer, evidence of a collusive group of buyers, or other indications of a buyer's market that regularly restricts free trade and competition, dominates the market, or exercises anti-competitive practices while purchasing monetized and/or commercial food commodity imports, then it may be expected that a fair market price may not be achieved and monetization may be supporting an uncompetitive industry. If there are many buyers, or there is no substantial evidence to indicate that a single or few buyers are exhibiting this negative behavior, a fair market price may be achieved.

Criterion 2: Likelihood of achieving a fair market price is high. An IPP is the best estimate of a fair market price for commercially imported commodities. An estimated IPP is based on the sum of a simulated commercial entity's cost to import and sell the same (or very similar) food commodity. If import parity price has been consistently achieved in the past, and can be expected to be achieved in the near future given current market conditions, a commodity may be recommended for monetization.

The estimated import parity price is calculated by adding the following costs:

- Freight On Board (FOB) from exporting location/market (for the same or similar commodity)
- Insurance
- Ocean freight to point of import²⁴

²⁴ BEST will use CIF at port prices whenever they are available.

- Port charges at port of entry (taxes, handling, packaging, storage, agents' fees, etc.)
- Import duties and subsidies
- Taxes (including VAT if applicable)
- Inland transportation
- Any other costs that bring the per unit cost into a parity estimate with the reference price, such as a price adjustment for a difference in commodity quality

Given that each of these components of IPP is estimated, and that certain components, such as freight charges, are likely estimated with some error, BEST analysis allows for a margin of error of +/- 10 percent. Monetized sales transacted at prices above or below the margin of error can be reasonably attributed to profit or loss, respectively.

Test: If IPP analysis reveals a consistent pattern of pricing below IPP, and there are no substantial prospects for improvements in the negotiating capacity of the Awardee(s) (e.g., no significant increase in the number of potential buyers), future monetizations of that commodity would not be recommended since such sales would be unlikely to obtain a fair market price.

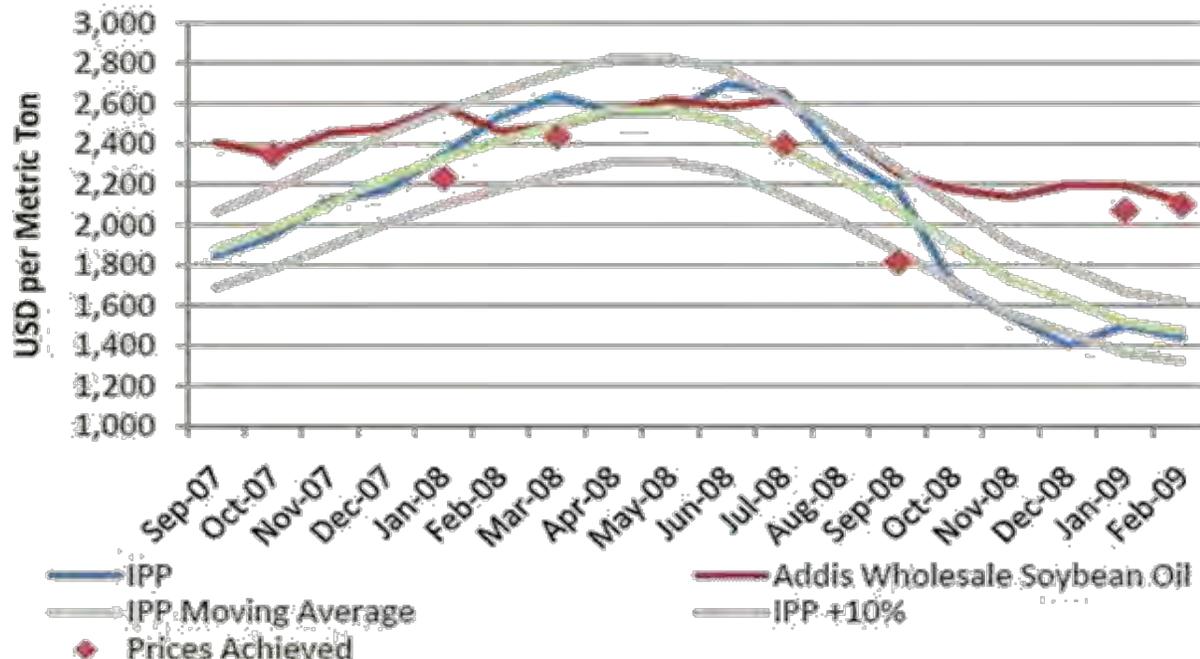
If there is little or no history of monetization sales transactions to compare with IPP, then market structure and conduct must be assessed as indicators of the potential for achieving a fair market price.

Example of IPP calculation and use in monetization analysis: The following is an example of an IPP calculation and a comparison of achieved sales prices relative to IPP. The table below shows an individual import parity price calculation for soybean oil for possible sale in Addis Ababa. The figure below shows historical IPP charted against actual monetization sales price achievements for soybean oil monetized in Addis Ababa.

Table 6. Soybean Oil Import Parity Price Calculation Template

No.	Item	Source	US\$/MT
1	Refined Soybean Oil Ex Rotterdam	USDA FAS Data	748
2	Ocean Freight	Marill Freight	50
3	Insurance	1% of #1	7.5
4	CIF Djibouti	#1+#2+#3	805.5
5	Customs Duty	30% of #4	241.6
6	VAT	15% of (#4+#5)	157.1
7	Withholding Tax	3% of #4	24.2
8	Port Charges, handling etc.	Axis Transit Services	39.5
9	Inland Freight	Axis Transit Services	41.1
10	Storage	ECEX	7.5
11	Packaging	Whey Consulting Ltd.	119.5
12	Administration	World Bank Salary Data	4.0
13	Total Import Parity Price	Sum(#4:#12)	1440.1

Figure 32. Comparison of Addis Wholesale Soybean Oil Prices and Calculated IPP



Criterion 3: Other Key Considerations for Monetization Transactions

There are a number of other important factors that should be considered when assessing the feasibility of monetizing commodities. These factors include, but are not limited to:

Price responsiveness of local production. General characteristics of the agricultural sector, such as average farm size, access to agricultural inputs (labor, seeds, fertilizer, etc), and average crop yields, provide an indication of how responsive local producers may be to changes in output prices (i.e., how elastic supply is). For example, if farm sizes are relatively small and farmers lack access to inputs, domestic production is likely to be relatively less responsive to changes in output prices (i.e., relatively inelastic) simply because producers lack the capacity to make large changes in their production plans in response to price incentives. If production is inelastic, the disincentive effects from additional Title II food aid will therefore be minimized. Domestic supply is often price inelastic in developing countries.

Conversely, if local production is extremely price responsive (or elastic), a small price change on the local market will result in a large percentage change in local production. While a drop in output prices may benefit consumers, such a drop could create disincentives to produce as well as cause a drop in traders' incomes.

Monetization may affect the marketing or production of substitute commodities. If commodities considered for monetization are highly substitutable with other commodities in the local diet, the analyst must assess market conditions to reveal the likely cross-price effects on those substitute commodities. As an example, suppose consumers typically consume black beans, but view pinto beans as a very close substitute. If pinto beans are monetized, resulting in an increase in the supply of pinto beans and therefore a drop in the price of pinto beans relative

to black beans, consumers may substitute away from black beans and increase pinto beans in their diets. Depending on how easily consumers substitute the two goods (as reflected in the cross-price elasticity between black beans and pinto beans), monetization of pinto beans could result in a decrease in demand for black beans, which could affect production incentives and markets for black beans.

Estimates of elasticities are generally not available. Qualitative assessments of factors which determine demand and supply, however, are fairly easy to undertake during field visits, particularly with the insights of local agricultural marketing specialists.

The willingness to substitute commodities in the local diet often follows a socioeconomic gradient and differs in urban versus rural areas. Understanding these dynamics is important to strengthening market intelligence and providing appropriate guidance regarding the likely effects of food aid (both monetized and distributed) on local markets. As an example, there may be very strong preferences for rice in an urban area which makes consumers relatively nonresponsive to price changes (i.e., the own price elasticity of demand for rice is inelastic), whereas rural consumers may have a preference for sorghum but are willing to substitute sorghum with millet as the price of sorghum increases relative to millet.

Monetization sales platform may support competition. The monetization sales platform may provide insight into the level of competitiveness and the monetization agents' ability to achieve a fair price. In most cases, the most common platforms available are direct negotiation and auction. Though it is entirely possible to realize a competitive or non-competitive process under each sales platform, some platforms are more likely to result in a competitive bid. For example, while it is possible to obtain a fair market price through large lot sales, small lot sales will promote greater competition (which increases the probability of achieving IPP) and may help promote the trading sector. Details to consider regarding sales platforms are discussed in Annex VI.V.

Timing of sales is critical. When supplies are relatively low (e.g., during lean season), prices are relatively higher. A monetization sale timed to coincide with normal seasonal supply shortfalls has the potential to yield a higher price for the monetized commodity. Although it is not the intent of the monetization program, well-timed sales can help also help stabilize market supply and dampen seasonal price spikes, which harm consumers in recipient countries.

Tests: A monetization program would generally be considered positively if a sale takes place:

- During the lean or hunger season(s), and up to the seasonal or annual harvest(s).
- In avoidance of another substantial monetization sale.
- In avoidance of a major food aid distribution.²⁵

²⁵ Depending on demand and supply dynamics for the specific commodity recommended for monetization, it may be more important that the monetized commodity is sold in an urban area while the distributed commodity is targeted in rural areas.

Awardees should demonstrate awareness of any other monetizations planned (e.g., through USDA) during the same season as their proposed monetization, and should seek to avoid overlap of transactions. Likewise, Awardees should seek to avoid major monetizations during large food aid distributions.

However, as emphasized in the 1998 Food For Peace Monetization Field Manual, timing sales during lean seasons can, over the longer-term, create a disincentive for traders to engage in normal intra-annual price arbitrage. Based on discussions with traders in-country, the analyst will only recommend a practice of timing monetizations during in the lean season if the analyst can demonstrate that such timing will have little impact on incentives for traders to engage in intra-annual storage.

Monetization should avoid disrupting trade between two Low-Income Food-Deficit Countries (LIFDCs). Typically, commercial import markets in LIFDCs are dominated by large non-food deficit exporting countries. Occasionally, however, LIFDCs may dominate a particular commodity markets (e.g., the maize market in Zambia may be dominated by Malawi, though this market dominance will vary from year to year since South Africa is a strong regional supplier). Monetization of a commodity typically imported from another LIFDC would be considered highly undesirable.

Regional monetization can offer a legally compliant alternative for Awardees operating in a country with less than fully competitive domestic commodity markets or insufficient commercial demand to meet Awardee funding requirements. Regional monetization provides Awardees with the option of selling into a market where there is sufficient competition among buyers in order to increase the likelihood that bids will be at or near import parity. Competition increases assurance that monetization will not distort the market and will generate higher revenues than if the monetization is conducted in a domestic market with limited or no competition. Regional monetization can generate greater revenue for food security activities and thereby increase the efficiencies of the FFP program. It also provides the Awardees with a fallback position if a commodity that was initially recommended for monetization becomes unviable at a later date due to changing market or policy conditions. In countries with highly limited competition and/or limited import volumes of available Title II commodities, the BEST team will analyze the feasibility of regional monetization of specific Title II commodities.

IV.ii.iii. Step 3: Conclusions and Recommendations

The BEST team does or does not recommend a commodity for monetization. If recommended, a maximum volume is recommended based on either a threshold of 10 percent of the commercial import market, or 5 percent of domestic production, averaged over 5 years, per BEST's current guideline.²⁶ Anticipated proceeds from such a sale are presented.

²⁶ A threshold of 10 percent of commercial imports (5 percent of domestic production) has been used, but is subject to review on a case-by-case basis, and may be adjusted downwards or upwards based on the findings of the market analysis.

Hypothetical Example. The figure below summarizes the basic steps in a decision tree for a hypothetical monetization analysis in Country X in which 5 initial commodities are reviewed for potential monetization: CDSO, HRWW, NFDM, rice, and pinto beans.

Figure 33. Decision Tree

5 initial commodities considered for Monetization in Country X:

- CDSO
- HRWW
- NFDM
- Rice
- Pinto Beans

No policy restrictions prevent the importation of HRWW, NFDM, Rice, or Pinto Beans, but there are restrictions for CDSO.

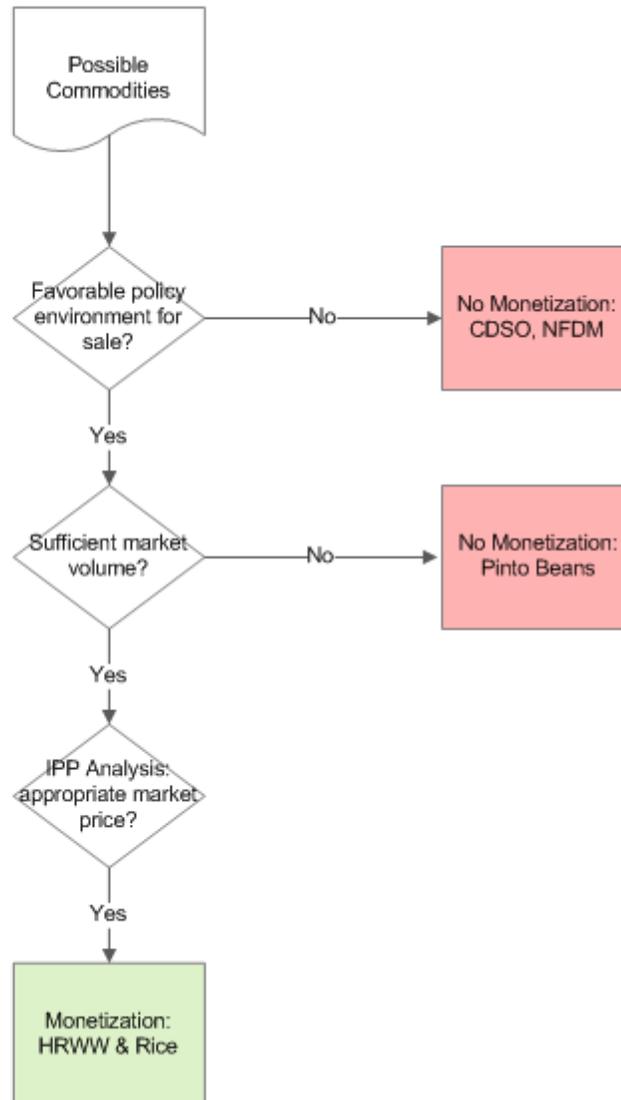
BEST research also indicates that the buyer for NFDM would probably use it to manufacture breast milk substitute, which preclude its monetization.

Based on trade data, HRWW, Rice and NFDM have an import market value of approximately \$60 million each.

The market for Pinto Beans is estimated to be only \$2 million however – this market is thus too small to be cost effective to generate monetization proceeds.

Import Parity Price calculations estimate that HRWW and Rice would be sold at appropriate local market prices.

Based upon market volume trade data, BEST analysis would recommend selling HRWW and Rice at 10% of their respective market volumes in Country X. This would generate an expected \$6 million in proceeds for each commodity.



Annex IV.I FFP FY12 Commodity List

Packaged

A-20 Paste
A-28 Rice Bar
A-29 Wheat Bar
Aseptic Sweet Potato Puree
Beans, Black
Beans, Great Northern
Beans, Kidney (dark & light)
Beans, Navy
Beans, Pink
Beans, Pinto
Beans, Small Red
Buckwheat Farinetta
Buckwheat Grits
Buckwheat Groats
Buckwheat Supreme Flour
Bulgur
Bulgur - SF
Chickpeas/Garbanzo Beans - Desi (small, dark)
Chickpeas/Garbanzo Beans - Kabulis (large, white)
Corn Soy Blend
Corn Soy Blend +
Corn Soy Masa Flour
Corn Soy Milk
Corn Soy Milk (Instant)
Corn, bagged
Cornmeal
Cornmeal - SF
Instant Corn Soy Blend
Lentils
Mainstay 3600
Mainstay Complete
Non-fat dry milk
Nutrition Bars
Nutritional Supplementary Paste
Peanut Butter Paste
Peas, Green
Peas, Split Green
Peas, Split Yellow
Peas, Yellow
Potato, Dehydrated Flakes
Potato, Dehydrated Granuals

Raisins (California)
Ready to Use Therapeutic Food (spread)
Rice X
Rice, bagged
Rice, bagged (par-boiled)
Salmon (canned)
Sorghum Grits - soy fortified (SF)
Sorghum, bagged
Soy Flour, Defatted
Soy Protein, Concentrate
Soy Protein, Isolate
Soy Protein, Textured
Soybeans, bagged
Sunflower Seed oil, refined, 4 Ltr
Sweet Potatoes, #10 cans
Sweet Potatoes, 29 oz cans
Sweet Potatoes, 40 oz cans
Vegetable oil, 20 Ltr
Vegetable oil, 208 Ltr
Vegetable oil, 4 Ltr
Vitameal
Wheat Flour, AP
Wheat Flour, bread
Wheat Soy Blend
Wheat Soy Milk
Wheat, Hard, Red, Spring, bagged
Wheat, Hard, Red, Winter, bagged
Wheat, Hard, White, bagged
Wheat, Northern, Spring, bagged
Wheat, Northern, Spring, Dark, bagged
Wheat, Soft, Red, Winter, bagged
Wheat, Soft, White, Winter, bagged
Whey Protein Concentrate #34
Whey Protein Concentrate #80
Whole Milk Replacer

Bulk

Corn, bulk
Corn, bulk, w/bags
Rice, bulk, w/bags
Sorghum, bulk
Sorghum, bulk, w/bags
Soybean meal, bulk
Soybean, bulk

Sunflower Seed oil, (crude), bulk
Vegetable oil, (CDSO) bulk
Vegetable oil, refined bulk
Wheat, Hard, Red, Spring, bulk
Wheat, Hard, Red, Spring, bulk, w/bags
Wheat, Hard, Red, Winter, bulk
Wheat, Hard, Red, Winter, bulk, w/bags*
Wheat, Hard, White, bulk, w/bags
Wheat, Northern, Spring, bulk
Wheat, Northern, Spring, bulk, w/bags
Wheat, Northern, Spring, Dark, bulk
Wheat, Northern, Spring, Dark, bulk, w/bags*
Wheat, Soft, Red, Winter, bulk
Wheat, Soft, Red, Winter, bulk, w/bags
Wheat, Soft, White, Winter bulk
Wheat, Soft, White, Winter, bulk, w/bags

** Value-added food aid commodities processed, fortified, or bagged in the United States*

Annex IV.II FFP Policy on Use of Milk Powder for Monetization

USAID's Office of Food for Peace (FFP) will consider proposals for monetization of Non-Fat Dry Milk (NFDM) under the following conditions:

The Awardee will provide FFP a written policy for the monetization of NFDM. This policy must comply with the International Code of Marketing of Breast-Milk Substitutes and all subsequent relevant World Health Assembly (WHA) resolutions pertinent to the sale or distribution of breast milk substitutes. Awardee will include a statement under "special provisions" which states, "It is the intention of the US Government that the NFDM commodities provided herein are not to be used as breast milk substitutes, nor in their production or manufacture."

Preference will be given to countries that have current laws or policies implementing the International Code of Marketing Breast-Milk Substitutes.

NFDM may be sold for industrial use as an ingredient in processed foods, baked goods, yogurt, etc. NFDM must not substitute for breast milk or be used for products represented or locally perceived as breast milk substitutes. It must not be sold for direct market distribution, for example in small tender sales, and should not be sold directly to the consumer.

Awardee will not sell NFDM to known manufacturers or marketers of breast milk substitutes or replacement foods with breast milk substitute production facilities in the program country. The sales contract will have a written commitment from the buyer that the product will not be sold or freely distributed as a breast milk substitute, nor used to manufacture breast milk substitutes and that the sellers name or the name or logo of USAID will not be used in marketing, advertising, product promotion, or any implied relationship to any of the manufacture's products. Furthermore, the Awardee shall make it clear to the buyer that failure to comply with this clause will constitute a material breach of the contract.

The Awardee will submit to FFP, as part of the proposal, a plan to monitor the end-use of the product for a reasonable period of time. The plan should include sensitivity to problems in countries with high lactose intolerance, proper storage and handling information, and information on possible leakage from the buyer to the general market. This monitoring plan must be in place prior to the arrival of the commodity in the country.

The buyer agrees in writing that the uses of NFDM will be accessible for monitoring by USAID personnel to ensure that the use of NFDM adheres to the above policy and does not violate the International Code of Marketing of Breast-Milk Substitutes.

NFDM commodities for monetization must be labeled, "Not for feeding children under one year of age." If repackaged for any reason, any such package should also be so labeled.

To ensure market parity, all Title II and FFP policies and regulations, including cost-recovery, Bellman and Usual Marketing Requirement (UMR) considerations, shall apply.

The Director of the Office of Food for Peace must approve in writing any exceptions to the above policy.

Annex IV.III Survey Questionnaire for Potential Buyers of Title II Monetized Commodities

The purpose of this questionnaire is to provide BEST team members with a practical approach to assessing the market's prospects for monetization of Food for Peace commodities. These questions are designed to act as an informal but standardized survey questionnaire, as most traders are unlikely to provide a detailed and structured dataset to suit our analysis.

Potential buyers are typically private industry representatives, many of whom may hold the public interest and food security in high esteem, but by nature of their business should be expected to be motivated by profit. Levels of interest, honesty, and forthrightness will vary from person to person. On the one hand, a potential buyer may be motivated, honest, and open, expecting that monetization will facilitate a transaction favorable to his or her business. On the other hand, potential buyers may attempt to manipulate or misguide the analyst in an unfair or dishonest fashion.

Key questions that should be addressed to potential buyers include:

1. What commodities do you typically trade in? In what volumes?
2. What is the current fair market price for these commodities?
3. Do you prefer local or imported product? What drives these preferences: Milling or processing requirements? Consumer preferences? In general, is local or imported product cheaper?
4. If offered on or around <date 1>, would you buy X, Y, and/or Z volumes/values of Food for Peace commodities A, B, and C?
5. What is the fair market price for the volumes suggested?
6. If no to question #4, is there a variation of, or substitute for, one or more of these FFP commodities that you would buy?
7. If yes to #6, what degree of substitution might be normal?
8. Would you participate in a direct negotiation, auction, or—if one were available—purchase through a commodity exchange?
9. Are you aware of any policy and/or trade barriers that might impact importation of FFP commodities?

Annex IV.IV Survey Questionnaire for Current NGO(s) Monetization Unit

1. How many years have you been monetizing in-country?
2. Do you monetize for a single NGO or as a consortium?
3. What is the professional background of the negotiators? (i.e., do they have prior commodities trading experience?)
4. Who calculates IPP? What is their source of data? How often is IPP updated (e.g., monthly, only immediately prior to a call-forward or anticipated monetization transaction)?
5. Has the unit changed its approach (e.g., choice of commodity or preferred sales platform) as a result of past experience?
6. What are the greatest constraints to successful monetization in this country? Put another way, if you could change one just thing about the way monetization occurs in country, what would that one change be?
7. We understand rice, wheat, wheat flour, and vegetable oil (or commodity X) have been monetized in the last X years. Can you confirm?
8. Could you provide the following data for each transaction?
 - Date of transaction
 - Commodity (and specs if available)
 - Buyer
 - Price paid per MT or for whole lot (in local currency and US\$)
 - Volume
 - Sales platform (auction, direct negotiation, exchange)
 - Which companies import the largest volumes of [cereals], [oil], [commodities on top ten list of commercial imports for country under study]?
9. Which imported and local commodities do FFP commodities compete against?
10. Could you describe the effect in terms of consumer preferences?
11. Are there any policy constraints or political sensitivities?

Annex VI.V Monetization Sales Platforms

Careful selection of a monetization sales platform may enhance the monetization agents' ability to achieve a fair price. In most cases, the most common platforms available are direct negotiation and auction, although commodity exchanges, while generally limited in overall availability to monetization agents, are also an option and have particular advantages.

Direct negotiation is the only option if auction or commodity exchange is not available or otherwise feasible. It is most appropriate when there are few buyers (less than 10) and/or where there is high likelihood of collusion. Direct negotiators must have a deep knowledge and understanding of international costs, current and historical volumes and prices—domestic and import—and have a keen sense of what the market will bear in terms of supply, demand, and price. Historical local price and volume information may indicate what the market will bear, and international costs will show the price traders and other buyers may have to pay if they were to purchase/import from another source. The advantages generally present themselves in smaller markets and where monetization agents are highly skilled, experienced, and plugged into local and international information sources over a long period of time. Options include:

- Monetization at the border, or in the main urban centers (or wherever the mills are located)
- Small lots/many sales, or large lots/fewer sales
- Monetizing as single agents or within a consortium

Auctions are an option if there are many buyers present and have the advantage of playing the market against bidders who will compete with open knowledge of what their rivals will pay. Monetization agents who manage sales through auctions need not necessarily have the same set of skills direct negotiators need, but they must identify and manage the auction process. In general, it is advantageous to maximize the number of participants at each auction to stimulate competition and increase price pressure. To ensure maximization of participants, monetization agents should identify the lot size that will attract the largest number of buyers, and therefore agents must have a knowledge of the potential buyers' capacities and financial capabilities (i.e., access to credit). A disadvantage is that collusion and speculation are still possible, as in direct negotiation, although the more buyers are involved, the less likely this is to occur. Another disadvantage may be that if small lots and traders are chosen, then many buyers may not have credit, transport, or VAT registration. Large and/or monopolistic corporations or parastatals may be challenging to work with as they may wield unfavorable influence on the terms. Options include:

- Monetization at the border or in main urban centers
- Smaller lots will involve more auctions and higher administrative costs; larger lots suggest less on both accounts

Sale on a commodity exchange is an option where available, and brings the advantage of eliminating risks of collusion, involves very low costs (brokers fees only), and reduces risk of failing to achieve a market price (assuming the exchange represents the market). If trading is done on the basis of warehouse receipts, then the exchange should absorb storage costs, perhaps for as long as six months. Furthermore, futures may also be an option. A disadvantage is that lot sizes and conditions may be pre-determined and fixed.

Recommended Reading

USAID Monetization Field Manual (1998).

FEWS NET Markets Guidance No 1 May 2008). *Import/Export Parity Price Analysis*.

Barrett, Christopher and Erin Lentz (Dec 2009). *U.S. Monetization Policy: Recommendations for Improvement*.

Tschirley, David and Julie Howard (2003). *Title II Food Aid and Agricultural Development in Sub-Saharan Africa: Towards a Principled Argument for When, and When Not, to Monetize*.

Simmons, Emmy (June 2009). *Monetization of Food Aid: Reconsidering U.S. Policy and Practice*.

Oxfam (2005). *Food aid or hidden dumping?*

Staatz, John, Pat Diskin, and Nancy Estes (Dec 1999). *Food Aid Monetization in West Africa: How to Make it More Effective*.

Annex V. Methodology for Determining Impact of Distributed Food Aid²⁷

V.i. Introduction

The Bellmon Amendment requires assurance that a proposed food aid distribution program would not result in a substantial disincentive to or interference with domestic production or marketing. The extent to which distributed²⁸ food aid has the potential to introduce a disincentive to production or disruption of markets rests fundamentally on whether proposed food aid will represent "additional consumption" for beneficiary households, i.e., food consumption which would not have occurred in the absence of the food aid distribution program.

The objective of a BEST report is to provide sufficient information to relevant USAID policy decision makers and program managers to allow a determination of whether a proposed distributed food aid program would have a substantial impact on local market and production incentives. If it is determined in the negative, then the proposed Title II food aid program would be compliant with the Bellmon Amendment.

Why might distributed food aid introduce a substantial disincentive to local production and markets?

Beneficiaries of food aid receive an exogenous positive income shock: they are given free food (a good with non-negative monetary value).²⁹ The provision of in-kind food aid effectively increases the beneficiary's purchasing power. The changes in demand for food and non-food goods resulting from that increase in purchasing power will determine the ultimate impact of the food aid on prices and therefore supply.

Although food aid beneficiaries are expected to consume the food provided, households may respond to the receipt of food aid in a number of ways depending on prices, local diet preferences, perceived needs for non-food goods, and access to local markets. A beneficiary household may:

- Consume the food aid without reducing its regular market purchases or small-scale production to compensate for a food deficit in the normal diet caused by insufficient purchasing power, in which case the food aid represents additional consumption;

²⁷ This methodology was developed to provide guidance prior to the initiation of a new MYAP cycle; however, the methodology is essentially the same where the BEST team undertakes special studies mid-MYAP, for example, to inform future programming.

²⁸ Please note that this methodology covers only the potential impact of distributed food aid. While some of the data and analysis of market dynamics, such as substitutability of staples and level of market integration, is relevant for both analyses, a separate methodology has been developed to assess the potential impact of monetized food aid. The monetization analysis focuses primarily on commercial markets rather than the behavior of beneficiary households.

²⁹ Occasionally, food aid rations are provided to beneficiaries in exchange for their labor or time, in which case the ration is not provided entirely free. For example, some Maternal Child Health/Nutrition interventions require attendance at a clinic; Food for Work beneficiaries are provided food in exchange for work, in which case the food acts as an in-kind wage.

- Use a portion or all of the food aid to displace market purchases that otherwise would have been made;
- Use a portion or all of the food aid to substitute for the home consumption of a household's own production and sell the released production in the market; or
- Consume some portion (or none of) the food aid and sell the other portion (or all) on the market, and use the income generated from that sale to purchase other food and/or non-food goods.

Distributed food aid also has the potential to change household labor supply decisions, particularly when food is distributed under a Food for Work program.

If enough beneficiaries (intended and/or unintended beneficiaries) within a given geographic area react to food aid by altering their decisions about market purchases, small-scale production, or own labor supply, distributed food aid has the potential to cause a number of negative impacts. The most frequently alleged problems include:

- Depressed producer prices (production disincentive).
- Dependency.
- Labor supply disincentives.
- Disruption of markets (especially traders).

Targeting. The BEST methodology begins with the assumption that a well-designed and executed food aid program, whose transfers correspond to the needs of the household, will have minimal to no impact on the market or local production incentives.³⁰ Effective application of criteria which accurately identifies those households in need of food assistance is the first, and arguably the most important, condition to ensure Title II resources are used effectively and efficiently and yield the maximum food security impact. Once households are well-identified, maximum food security impact and minimum leakages are ensured when the size, frequency, and commodity composition of rations correspond most closely to household food needs. Similarly, distribution modalities and any associated conditionality of participation (such as Food for Education, Food for Work/Assets, or Maternal Child Health activities), play an important role in maximizing food security impact through effective targeting.

Two concepts are fundamental to targeting. Exclusion errors occur when food aid fails to reach the needy. Errors of exclusion are a humanitarian concern. Inclusion errors occur when food aid is provided to the non-needy. Errors of inclusion ("leakage") are a Bellmon concern. Errors of inclusion are also a humanitarian concern because, by definition, leakage involves the inefficient use of scarce resources. Improvements in targeting (reductions in inclusion errors) achieves three simultaneous objectives: 1) increases efficiency of food of food aid in accomplishing

³⁰ For a review of the economic rationale, see Christopher Barrett, 2002, "Food Aid Effectiveness: It's the Targeting, Stupid!"

humanitarian and development goals; 2) maximizes efficiency of Title II resources; 3) ensures compliance with the Bellmon Amendment.

While the BEST approach to assessing the potential impact of food aid starts with this assumption, it also recognizes that effective targeting is both expensive in terms of human and financial capital and extremely difficult to implement and sustain. Even the most effectively targeted programs can never prevent all leakage.³¹ Even where targeting reaches the most food insecure households, precisely because poor people are both food-poor and cash-poor, beneficiary households will always face an incentive to sell some of the food aid to meet cash needs. In the absence of food aid, many food insecure households may suffer by not getting enough food (quantity and quality) or may use coping strategies that adversely affect their health, productive capacities, etc. Therefore, decision makers inevitably have to strike a balance between exclusion and inclusion errors. Inclusion errors are particularly important for Bellmon considerations because they impact markets.

How can we determine whether a specific proposed food aid distribution program would introduce a substantial disincentive?

The goal of the BEST study is to present USAID decision makers with sufficient information to allow determination of whether or not inclusion errors will substantially impact markets.³² As noted above, the extent to which distributed food aid has the potential to disrupt private markets or introduce production disincentives rests fundamentally on whether food aid will represent "additional consumption" for beneficiary households, i.e., food consumption which would not have occurred in the absence of the food aid distribution program. Unfortunately, the only certain method to determine whether food aid represents (or would represent) additional consumption is to conduct household surveys to determine whether a household would consume the food aid rations without changing its household production and market purchasing behavior. However, because household surveys are expensive and time-consuming, proxy indicators of "additionality" must be used to assess the potential for leakage. Further details about each of these possible proxy indicators are discussed in Annex VII.II.³³ This makes assessing the impact of food aid on markets and producer incentives an inherently problematic undertaking, even in relatively stable economies.

With that caveat in mind, combined with basic information about the current state of a country's agricultural markets—how strong consumer preferences are for various foodstuffs, how responsive producers are to price changes, how well-integrated local markets are with one another, and how sensitive traders are to changes in market conditions, among other indicators—well-selected indicators of additionality typically provide sufficient information to

³¹ For more background on targeting, see Hoddinott (1999), Barrett (2002), and EU/FAO (2008).

³² Importantly, whether the effect is substantial is quite subjective and will likely vary quite widely across contexts. While the BEST study will strive to provide adequate information about the type and proportion of market players that may be affected by distributed food aid, ultimately the determination of whether the impact might be "substantial" will rest with the informed judgment of the relevant USG decision-maker (typically the USAID Mission Director).

³³ Additional qualitative indicators provide critical context to a discussion of potential household responses to the receipt of food aid. These include descriptive analyses of the ways in which households secure their livelihoods (main sources of food and income), particularly among the most food insecure households, and varying degrees of vulnerability to external shocks.

allow some generalizations to be made about the type, form, timing, and geographic targeting of food assistance that would unlikely harm markets and production incentives.

The BEST analysis will, therefore, combine the highest quality of quantitative and qualitative information available about demand and supply characteristics that are likely to influence the production and market responses to food aid. The analysis focuses on three inter-related subject matters: needs assessments, effectiveness of targeting, and analysis of markets that are critical for food security. An overview of a standard analytical process follows.

V.ii. Analytical Process

The sub-national distribution analysis will be based primarily on secondary data from all available food security and vulnerability assessments, livelihoods baselines or profiles, relevant country situation reports, and any direct FFP guidance regarding geographic or beneficiary-characteristic targeting (including FANTA's Food Security Programming Framework). The amount of reliable, available data will vary somewhat from country to country; under these conditions, BEST will analyze the highest quality and most relevant data available. BEST field visits and discussions with stakeholders will provide key information as well as validate findings from secondary data analysis.

An initial desktop study will focus on review and analysis of secondary data and reports, and discussions with Food for Peace and FANTA in Washington, DC. This portion of the study will involve the following steps.

Step 1: Review Relevant Background Materials

Research and review all background materials relevant for a potential distributed food aid program including food security assessments (e.g., CFSAM, CSFVA, VAC reports, and FANTA's Food Security Country Framework, if available), previous Bellmon Analyses or Updates, reports of Awardees' previous and ongoing food aid programs, livelihoods reports, and reports of production, trade, and food aid flow.

Step 2: Determine Most Likely Modalities for Distributed Food Aid for Upcoming MYAP Cycle

Review the country Food Security Country Framework along with any other official USAID/FFP guidance relevant for future Title II programming. Based on this review, as well as discussions with stakeholders in Washington and the field, determine most likely distribution modalities (Food for Work/Assets, Food for Education, Maternal Child Health Nutrition, etc).

Step 3: For Each Modality, Provide Bellmon-Relevant Guidance

For each of the most likely distribution modalities, provide Bellmon-relevant guidance and scenarios of possible coverage, where appropriate, that will help ensure potential impact on production and markets of such food aid distributions are minimized, and therefore Bellmon-compliant. Given that potential Awardees' MYAP proposals will not yet be final (and are

therefore unavailable to inform the analysis), this Bellmon-relevant guidance will be necessarily general but should discuss each of the following:

- Ration size
- Ration composition
- Timing of delivery with an emphasis on the months of lowest food availability (lean season)
- Any special targeting considerations
- Balance between cash and food resources to ensure effective program implementation and thereby avoid potential leakages

Regarding ration composition, BEST will provide general guidance as to which Food for Peace commodities might be appropriate for distribution to potentially targeted beneficiary groups. This requires both secondary and primary research of local diets, including preferences and substitutes, among different socioeconomic groups and in rural versus urban areas.³⁴ The main staples consumed by poorest households in each potential target area will be outlined, with any seasonal differences noted.

Where current Awardee Mid-term or Final Evaluations are available, BEST will review evaluations to summarize any “lessons learned” for each modality.

Step 4: Review All Food Security Assessments to Identify an Appropriate Proxy Indicator of Additionality

USAID/Food for Peace development programs focus on chronically food insecure regions within Title II recipient countries. By definition (or default), program activities will be geographically targeted within a subset of sub-national units (e.g., districts/countries/provinces). Because of the localized nature of the impact of distributed food aid, the vulnerability of small markets to disruptions, and the sensitivity of small farmers to production disincentives, quantities that may appear insignificant compared to a country’s total food staple consumption can nonetheless have a major impact on markets and production at the local level. Therefore, while previous Bellmon analysis has often used an estimated national food deficit to determine the appropriate

³⁴ If commodities considered for distribution are highly substitutable for other commodities in the local diet, the analyst must assess market conditions to reveal the distributed commodity’s likely cross-price effects on those substitute commodities. As an example, suppose consumers typically consume black beans, but view pinto beans as a very close substitute. If pinto beans are monetized, resulting in an increase in the supply of pinto beans and therefore a drop in the price of pinto beans relative to black beans, consumers may substitute pinto beans for black beans. Depending on how easily consumers substitute the two goods (as reflected in the cross-price elasticity between black beans and pinto beans), monetization of pinto beans could result in a decrease in demand for black beans, which could affect production incentives and markets for black beans. The willingness to substitute commodities in the local diet often follows a socioeconomic gradient and differs in urban versus rural areas. Understanding these dynamics is important to strengthen the market intelligence, and provide appropriate guidance regarding the likely effects of food aid (both monetized and distributed) on local markets. As an example, there may be very strong preferences for rice in an urban area which makes consumers relatively nonresponsive to price changes (i.e., the own price elasticity of demand for rice is inelastic), whereas rural consumers may have a preference for sorghum but remain willing to substitute sorghum with millet as the price of sorghum increases relative to millet.

level of distributed commodities, the BEST analysis explicitly recognizes that distributed food aid will be concentrated in only select areas within a country, and therefore must assess the volume of commodities suitable for distribution at a more localized level in order to provide Bellmon guidance.

Through review and application of appropriate indicators of additionality, an assessment of the relatively absorptive capacity of sub-national administrative units (typically at the first administrative unit such as province or district), based on proxy indicators of additionality, can further refine geographic targeting guidance and provide estimates of the populations that may be targeted for future food aid programs. While geographic targeting may not always be the most preferred or appropriate targeting criteria, in most cases it will be the easiest and least costly to administer and, of course, can be followed by application of other administrative or self-targeting criteria.³⁵

In the case of a distribution modality such as PM2A, which targets households with pregnant and lactating women and children under two years old for preventive nutritional supplementation, regardless of household wealth or food deficit, initial geographic targeting is critical as it represents the key program parameter to avoid potential Bellmon concerns. Effective targeting of a PM2A program, from a Bellmon perspective, therefore involves further refinement of initial geographic targeting based on estimated household food deficits on a relative basis, followed by targeting households based on PM2A program eligibility (i.e. all children 6-23 months and all pregnant/lactating women).

See Annex VII.II for a description of possible proxy indicators of additionality.

Step 5: If Possible, Assess Potential Beneficiary Coverage Using Country Budgetary Guidance

If applicable, when likely program dimensions are available (such as program budget and proposed ration), the analysis will assess the absorptive capacity of potential target districts. This assessment will be based on comparing the number of potentially eligible food insecure households with the estimated number of rations available for distribution under the given program.

For modalities with fairly standard rations in terms of both size and composition (e.g., Food for Work/Assets or Food for Education), BEST will provide basic cost comparisons of ration by modality, which will provide some guidance as to total beneficiary coverage possible, and therefore total volume of distributed commodities possible given budget constraints.

For modalities with (at present) less-standard rations in terms of both size and composition (e.g., PM2A), BEST will base ration scenarios on guidance from FFP/FANTA and review of current Awardee MCHN experience, if applicable. Likely parameters of a PM2A program

³⁵ Hoddinott, John. 1999. "Targeting: Principles and Practice," IFPRI Technical Guidance No 9, Washington, DC: International Food Policy Research Institute, accessible via <http://www.ifpri.org/sites/default/files/publications/tg09.pdf>.

(including ration size and composition) will be used to estimate the number of household rations available under various levels of funding.

For PM2A, BEST will use the most current and reliable demographic data to estimate the number of households with either a pregnant or lactating mother or a child under two. Based on these figures, BEST will estimate the number of households who are both PM2A-eligible and for whom PM2A rations would most represent additional consumption (using the proxy indicator(s) of additionality), to estimate the number of households that could be targeted for year-round individual and household rations within each district without introducing Bellmon concerns.

BEST will then rank sub-national administrative units according to those in which PM2A rations would:

1. Most likely represent additional consumption, and therefore be unlikely to pose any negative Bellmon impact;
2. Address the highest rates of malnutrition at the district level; and
3. Target the largest total number of PM2A-eligible households, an important efficiency consideration when implementing an integrated development program.

Step 6: Review Food Security Assessments and Livelihoods Reports to Inform Sub-National Analysis

Descriptive analyses of the ways in which households secure their livelihoods, and their varying degrees of vulnerability to external shocks, provide critical context to a discussion of potential household responses to the receipt of food aid.

Assessed food insecurity. Whenever possible, BEST will list the relative ranking of administrative units' levels of food insecurity (e.g., high, medium, low) for each target area. The ranking may be based on measures of poverty (for example, from available Demographic Health Survey (DHS), poverty mapping, and/or census data) and the prevalence of stunting in children under five. Such a ranking would provide a measure of both food access and utilization. This assessment will be derived from the Food Security Country Framework whenever available.

The data available to assess food insecurity levels will vary from country to country, depending on the types of surveys and assessments conducted within a relevant time period. The BEST team, including all consultants, will undertake careful review of all alternative sources of food security assessments to determine the best available data for the distribution analysis.

Livelihoods. Based on a review of all available livelihood assessments and consultation with relevant experts in the field, BEST will provide an overview of livelihoods including key characteristics of food insecure households within each target area such as sources of food, sources of income, and possible impediments to utilization (for example, a high prevalence of diarrheal disease within the district which prevents proper absorption of nutrients).

Key vulnerable populations. Whenever possible, key vulnerable populations will be identified and latest available population figures will be provided.

Step 7: Report On-Going Food Aid and Cash Transfer Programs

To properly assess the expected level of “additionality” with the introduction of a new food aid program, BEST must first account for all pre-existing programs that affect households’ cash and food receipts including in-kind and/or cash transfers households receive through a variety of government and non-governmental sources, which contribute to households’ current level of food insecurity. Both the amount of in-kind aid and the timing of distribution must be considered to properly account for the volume of food deficits throughout the year. Whenever possible, BEST will report:

- NGO or government agency
- Location
- Modality
- Expected duration of activity
- Ration (size, composition, kcals)
- Planned and actual beneficiary coverage

Combined with food insecurity measures and estimated district-specific nutrition gap (or other proxy indicators of additionality), this overview of existing food aid and cash transfer programs will provide relevant USAID decision makers a more accurate measure of the “food gap” a proposed food aid distribution program should fill. This overview will allow both a spatial and temporal assessment of a potential food aid disincentive effect.

Step 8: Review All Available Baseline Market Analyses

Whether a donor provides food aid rations to food insecure households across the breadth of a country or only in a localized area, the donor must have an understanding of the current functioning of agricultural markets critical for food security, as those are the markets most likely to be impacted by the introduction of food aid.

When attempting to assess the potential impact of food aid in a localized area (whether distributed in kind, in cash, or through subsidized food sales), it is especially important to understand 1) the functioning of local markets and 2) how well-integrated local markets are with markets outside of the food aid intervention area, and therefore how any changes in food prices might be transmitted to other markets.

A unique challenge in attempting to assess the impact of food aid on markets and incentives in many LIFDC countries arises due to the lack of available high-quality and disaggregated baseline market information. Markets and market players have often been impacted by a series of complex changes; these changes reduce the utility of any but the most recent thorough

market assessments. Production and market data is often scarce and of very poor quality, and/or is tainted by concerns about politicization of the data. That said, while market analysis is often thought of as a highly quantitative exercise, much can be gained from a descriptive analysis of the structure, conduct, and performance of markets. Analysis using a SCP framework can be well-suited to low-cost rapid appraisal techniques, such as those used in BEST market analyses.

Step 9: Determine Key Commodities Markets and Set of Physical Markets for Field Visit

Without an understanding of how markets are currently functioning, it is not possible to provide guidance on the type, form, timing, or geographic targeting of food aid that is not likely to negatively impact markets or producer incentives. To address this initial gap in knowledge, the study team may be required to undertake a baseline Market Analysis, using a Rapid Assessment Tool (see Annex VII.I), to assess the current state of agricultural markets as of the study date. The baseline will be accomplished through a combination of desk study, key informant interviews, and intensive field work.

The choice of commodity markets for assessment will be determined by the food aid commodities typically distributed in-country, commodity markets likely impacted by such distribution, and any commodities critical for food security whose prices may be impacted by a sudden increase in the supply of food in food insecure areas. These commodity markets will generally involve the major cereal markets (e.g., wheat, maize, small grains), major pulses, edible oils, and livestock markets.

The choice of physical markets to include in the field visit will likely include those major markets currently monitored by, for example, FEWS NET, WFP, and/or recipient country Ministries or Central Statistics Office, along with a host of other markets throughout the country that are critical for food security. The BEST team will consult with the USAID and FFP missions to develop the field visit itinerary, and incorporate any specific Mission objectives. For example, the Mission and/or the BEST team may deem local markets in remote food insecure areas not covered by regular monitoring appropriate to cover during the field visit.

To maximize coverage of the broadest cross-section of markets possible, the study team will typically split into separate teams. Teams will employ a Rapid Assessment Tool (see Annex VII.I) and use a Structure-Conduct-Performance (S-C-P) Framework as a lens through which to investigate the state of markets across the country. Team members will conduct interviews with subsistence farmers, small-scale and large-scale producers, traders, small and large processors and millers, wholesalers, and retailers. In geographic areas where food aid interventions are currently taking place, team members will also interview a sample of beneficiaries and non-beneficiaries of food aid.

Commodity markets and physical markets will be assessed using Structure-Conduct-Performance (S-C-P) model, as adapted by FEWS NET from Industrial Organization Theory³⁶ to the realities of markets in developing countries.³⁷

³⁶ See Bain (1959).

According to traditional neo-classical economic theory, a market is “performing” if an increase in demand or a decrease in supply results in a new equilibrium characterized by a higher price, which clears the market by equating quantity supplied and quantity demanded. This definition of market performance is insufficient from a food security perspective because a price increase that substantially diminishes the purchasing power of households, though an equilibrium, has undesirable social outcomes that threaten food security. For this reason, we turn to the S-C-P concept of market performance.

Within the S-C-P framework, markets are said to perform well if they achieve socially desirable goals such as availability of a sufficient quantity, diversity, and quality of goods to satisfy demand at prices that are “fair” to traders, producers, and consumers. Fair prices ensure reasonable margins to traders, enabling them to continue engagement in that market. Fair prices to consumers assure that a cross-section of the population is able to access goods via the market. Short and long-term price stability, as well as market efficiency, are indicators of market performance. **Market performance is derived from basic conditions, market structure, and market conduct.**

Basic conditions broadly describe basic traits of the country and economy, including seasons and seasonality, infrastructure, consumption characteristics such as elasticities³⁸ and income distribution, stability, government policies, and incentives for producers and traders.

Basic conditions set the parameters for **market structure**, which is composed of the relatively stable features that influence the behavior of market participants. Features of market structure include the number and concentration of buyers and sellers, barriers to entry and exit, vertical and horizontal coordination, and licensing requirements.

In conjunction, basic conditions and market structure influence **market conduct**, or the behavior of market actors. Price setting behavior, buying and selling practices, informal norms of trade, and information use are all aspects of market conduct.

As part of the market analysis, BEST will perform an assessment of the level of market integration. Where markets are well-integrated, price changes due to supply and demand shocks in one market are more easily transmitted to other markets. By dissipating the price effects, such shocks will have less of an impact on any one local market. Any effect of temporarily increasing the local food supply through localized food aid distribution will therefore be dampened wherever markets are well-integrated. Conversely, where markets are poorly integrated, prices are likely to decrease more significantly when food supply is increased with

³⁷ Readers interested in more details about a Structure-Conduct-Performance framework for analysis in the context of food security in developing countries, please see FEWS NET (2008b).

³⁸ Elasticities are a common way to describe the responsiveness of demand or supply to changes in prices or income. For example, the price elasticity of demand describes the percentage change in quantity demanded resulting from a percentage change in the price of a good, while the price elasticity of supply describes the percentage change in quantity supplied resulting from a percentage change in the price of a good. The income elasticity of demand describes the percentage change in quantity demanded in response to a percentage change in income. Importantly, price and income elasticities are very rarely available, and extremely difficult to collect. Elasticities are mentioned here solely for the purpose of tying these important concepts of supply and demand price responsiveness from economic theory to the qualitative indicators often relied upon in practice. For more details, please see Annex I and FEWS NET (2008b).

the addition of distributed food aid. Where time-series of market prices for key commodities relevant for food security are available or obtainable, BEST will assess the level of market integration through analysis of covariance of prices over time and across markets. These data are generally, though not always, available by request to WFP and/or FEWS NET within the study country.

Step 10: Field Visit

The BEST field visit will involve filling in data gaps, triangulation of secondary data, and discussions with all key stakeholders to ensure an accurate and thorough analysis. Upon arrival, the BEST team shall first meet with USAID/FFP Mission personnel to come to a common understanding of the purpose of the assignment and outline the activity timetable.

Following the meeting with the mission, the BEST team will seek insights, data, studies, and reports through meetings with key government ministries, aid and development project offices, assessment committees and networks such as FEWS NET, United Nations offices (WFP/VAM and FAO), universities, and others. Insights into future initiatives that may impact food security in potential Title II intervention areas (e.g., a World Bank, Millennium Challenge Corporation, or other donor's planned program affecting agriculture) are more likely to be gained through these meetings than through desk review prior to the field visit.

In-depth meetings with the private sector—producer/farmer groups and associations, traders and other middlemen, processors, importers and exporters, and shippers—will be critical. Formal and informal intelligence gathered through these meetings will be key to understanding the latest market dynamics and future trends. Discussion with producers, processors, and traders³⁹ will provide an understanding of the factors affecting demand and supply of commodities with which a distributed commodity would likely compete. The overarching goal of such meetings in regards to the BEST analysis is to gain an understanding of the price responsiveness of supply and demand of select commodities, constraints to expansion, and inter-temporal arbitrage practices of traders that may be impacted by a supply increase via distributed food aid.

Travel to current and/or potential sites for Title II program implementation is an integral part of assessing potential impact of distributed food aid. Assessing conditions “on the ground” allows a detailed contextual knowledge of demand and supply dynamics affecting local markets. It is generally not possible to gain such knowledge through desk review and, therefore, travel to the specific sites in the study country will be an essential component of every BEST study. In addition to meeting with current and potential Title II Awardees, informal discussions with current or potential beneficiaries can offer insights into the appropriateness of specific Title II commodities for distribution, including palatability, ease of preparation, and price and quality factors relevant to demand responsiveness.

The BEST study is not intended to evaluate current food aid programming, but may nonetheless make observations during field visits which can be instructive for future food aid programming.

³⁹ When combined with a monetization analysis, discussions with traders and potential buyers will also involve assessing their interest and ability to purchase commodities in various quantities.

BEST will report general observations about current food aid distributions and any challenges to improving targeting effectiveness reported by current Awardees.

Inspection of a sample of storage facilities in current use is required to assess the adequacy and cleanliness of storage facilities for distributed food aid. During inspections, the average storage time and frequency of fumigation will be noted.

In all cases, the visit should be completed with a private and candid briefing to relevant Mission personnel.

Step 11: Report Production

BEST will report results according to the agreed-upon report outline as detailed in the country study SOW. BEST team members should anticipate submission of an initial draft within approximately four to six weeks after conclusion of the field visit. FFP/W and the Mission will generally reply with comments, questions, and requests for clarification within two to three weeks of receipt of the initial draft. A final 508-compliant report must be submitted to FFP/W generally within two to three weeks of receipt of all FFP/W and Mission comments.

Annex V.I BEST Rapid Assessment Tool

Producers

(If possible, speak with both small-scale and larger-scale producers.)

Agricultural

When did you settle?

How many acres (ha) do you have access to?

How many acres (ha) do you cultivate?

How many acres of maize? Wheat? Other grains (if appropriate)?

What other crops do you grow?

Which crops are you increasing? Which are you decreasing? Why?

How do you decide how many acres (ha) to devote to maize/wheat/small grains?

Are seeds and fertilizers available? Are they accessible? How much did you use/plan to use this year and how much did/will it cost?

What does your household need cash for?

How do you raise this cash?

How much maize/wheat/other grains did you produce for selling from the last harvest? How this did compare to other years?

How many months of household stocks do you currently have?

Who do you sell your maize/wheat/other grains/other crops to? Where do you go to sell? How do you get there, and how much does it cost?

What price do you receive when a trader comes to your farm to buy? When you travel to the market?

Are prices based on grades and standards? What are the prices for different grades?

Do you contract with any companies? If YES:

What company and for what commodity?

What do you receive and what do you give?

Are there problems with contract enforcement?

Are you a member of a farmer's cooperative? If so, what are the terms of membership and benefits?

Do you ever sell on credit? If yes, to whom do you provide credit and on what terms?

Do you ever buy inputs on credit? If yes, where do you receive this credit from?

Livestock

What is the size of your herd?

Have you utilized dipping services this year?

What are the current range conditions? Water conditions?

How many heads (large/small) did you sell last year? This year?

Food Aid

Do you receive food aid? If so, how much? Do you know why you were chosen?

What is your household eating? How many meals a day are you taking?

If you don't have maize/wheat/other grains, what do you eat? How do you obtain this substitute food?

Does the community believe that the distribution reaches the people who need it most? Do you?

Do you ever sell/exchange food aid on the market for something you need more than food aid?

If there was no food aid, how would your farm change? More land cultivated? More staple crops?

Traders

(If possible, speak with small, medium, and large-scale traders.)

Background

What are the main agricultural commodities traded on this market?

What are the main cereals traded in this market?

When are grains/pulses plenty? What are the [standard unit, e.g., 1kg or 20kg] prices after harvest?

When are grains/pulses in short supply? What are the [standard unit] prices in the lean season?

What commodity do you trade, and how long have you been trading?

Structure

How many other traders are selling similar goods in this location?

Who are the big traders in grains/pulses/oils/livestock, and how what volumes do they transact?

Who are the market authorities, and what role do they play in the market?

Where do you get your grains/pulses/oils/livestock from? How far away is the source?

How many bags/liters/heads do you buy at a time? How often do you buy? Who do you buy from? How much does it cost to transport?

What is the condition of the roads between your source and destination markets? What are your transportation options?

Where do you store your goods? Where do big traders store their goods? What are the costs of storage?

Conduct

How do you know where to go to get low cost stock?

If the cost in your source market increases, what do you do?

What prevents more traders from entering into this market?

Does anything prevent traders from dropping out of this market?

How do you determine the price?

Do you ever buy on credit? If yes, from whom and on what terms?

Do you ever extend credit to buyers? If yes, to whom and on what terms?

Do your buyers want high quality or low prices? Why?

Performance

Costs: transport, loading/offloading, market fees, license fees, taxes, electricity, rent,...

How much profit can you find in [standard unit]?

What risks do traders have in grain/pulse/oil/livestock trade?

What prevents you from doubling the volume of your business?

Food Aid

If households had more purchasing power, could you increase your stocks? How long would it take to organize?

Do households ever sell or trade food aid? If so, which commodities do they sell/trade and for how much?

How does food aid affect your business?

Wholesalers/Retailers

If possible, speak with several wholesalers and retailers in each urban area.

What percentage of this market (local or regional) does your company supply?

How many other wholesalers/retailers are there in this market? (if known, name them)

Where is the major source of commodity X (local, regional, import)?

Do you prefer to stock local or imported product? Why? Higher marketing margins? Less competition? Niche market?

What are current barriers to expansion of business? Access to credit? Lack of effective demand? Transportation costs that restrict possible geographic coverage?

In your opinion, has your business been affected by the food aid distribution program conducted in this area? If so, has it increased or decreased?

Local Market Spot Checks

Observe whether there are any food aid commodities for sale. Title II? WFP?

If you suspect the food aid is Title II, copy down lot number from the back of can, or bottom of milled bag between the bottom seam and USAID label.⁴⁰

Ask for basic information from traders and wholesales in the local markets, including:

Normal prices

Consumers' preferences for different commodities, and grades of commodities

Do they notice any impact on their business from food aid distributions?

NGOs distributing food aid

What is targeting criteria (geographic targeting, household targeting, food delivery mechanisms)?

Do you have the capacity to implement and enforce the selection criteria?

Do you think households understand the targeting criteria?

⁴⁰ The lot number will tell you (1) something about market integration because you can trace back to origin and; (2) something about modality (if came from a MCJH, VGF, FFW etc) beneficiary, which can signal that you should investigate possible causes of inclusion errors associated with that specific intervention to see if it sheds light on necessary adjustments in targeting.

Do you have any “lessons learned” from your own past programs or other NGOs’ programs?

What are the greatest constraints to improving targeting?

If there is one thing you could change about the targeting process, what would it be?

How appropriate is the food aid program in terms of commodity type, ration size, delivery schedule, and venue?

Is the distributed food likely to be an “inferior good,” one consumed in disproportionately greater quantities by the poor?

Annex V.II Description of Proxy Indicators of Additionality

Among the possible proxy indicators of additionality are food consumption scores (or some other measure of actual consumption), a composite indicator of food security (such as through food security and vulnerability assessments), sources and levels of income (particularly extreme poverty), malnutrition rates, an estimated nutrition gap, or some combination of these indicators. Proxy indicators are typically available at the first administrative unit (e.g., province or district) and provide a gross measure of the relative additionality across sub-national administrative units. Thus, the proxy indicators can provide guidance on initial geographic targeting and volume of commodities that might be appropriate for distribution.

Nutrition or food gap

A nutrition or food gap estimate provides a measure of the difference between available food (proxied by domestic food production) and the amount of food needed to support a specific per capita daily nutritional standard (generally 2100 kcal per person per day, although FAO estimates have been revised and are now country-specific). If estimated on a more localized level (i.e., at the level closer to the communities in which a cooperating sponsor would implement a distributed food aid program), a nutrition or food gap can provide a very useful measure of that volume of food which is not currently supplied by local production and/or markets, and which would represent an appropriate volume under a proposed Title II non-emergency food aid distribution program to assure minimal to no disincentive effect. In order to estimate a sub-national food or nutrition gap, it is necessary to collect data on population, production and trade flows within relevant catchment areas. Collection of trade flow data at a sub-national level is an extremely time-consuming and expensive undertaking and outside the present BEST scope of work. For the purposes of the distribution analysis, one or more proxy indicators of “additionality” are used to characterize the relative food or nutrition gap at the sub-national level.

One source of estimated food deficits is FAO’s new “depth of hunger” estimates, which provide national averages for the estimated food deficit of undernourished populations in countries across the globe. These figures provide a useful national benchmark which can be used prior to conducting formative research in proposed target communities to determine in more precise detail the average household deficits of beneficiary households. While the BEST report may make use of these figures to develop an illustrative household ration under PM2A, for example, the analysis will nevertheless maintain the use of proxy indicators of “additionality” to characterize the relative food or nutrition gap at the sub-national level in order to provide initial geographic targeting guidance.

Food Consumption Scores / Composite indicators of food security

A Food Consumption Score⁴¹ (FCS) is collected via household surveys, and is generally based on a 7-day recall of food consumption. The weighted score reflects both dietary diversity and

⁴¹ For details on the calculation, use and validity of food consumption scores and other measures of dietary diversity in food security analysis, please see (1) WFP’s “Technical Guidance Sheet - Food Consumption Analysis: Calculation and Use of the Food

frequency of consumption of food items. Depending on whether the survey is implemented during a typical harvest or typical lean season will affect the validity of the FCS as a measure of average household food consumption. If, for example, the survey that derives the FCS is conducted during a favorable harvest period, households identified as food insecure using “poor FCS” as an indicator may reasonably be considered as chronically food insecure, since these households consumed very poor diets in favorable harvest periods.

FCS is not a quantitative measure of a “nutrition gap,” and cannot be compared with the ration under the proposed food aid program to determine the extent to which the program fills (or potentially overfills) the nutrition gap. However, a FCS does provide a snapshot of both the frequency and diversity of household staple consumption and is therefore a reasonable proxy indicator of the availability and access dimensions of food security and, to a lesser extent, the utilization dimension.⁴²

Composite indicators of food security, which encompass measures of both food consumption and food access, may be available instead of or in addition to a food consumption score. The food access measure provides an indicator of a household’s ability to produce or purchase food.⁴³

Extreme poverty

Poverty is the best indicator of access-driven food insecurity. Extreme poverty is an indicator that a household is unable to meet its basic nutritional requirements. This is because households living under conditions of extreme poverty simply do not have enough money to purchase sufficient foods for meeting the energy and nutrient needs of all of their members. Such households can be described as “food poor.” Depending on intra-household distribution of food, it is typically assumed that at least one member of a “food-poor” household is always hungry, and potentially all members are hungry.⁴⁴ However, extreme poverty is not a quantitative measure of a nutrition gap that can be used to determine the extent to which a proposed food aid ration might fill (or potentially overfill) that gap. Nevertheless, households living in extreme poverty can reasonably be considered households for whom food aid would likely represent additional consumption.

Consumption Score in Food Security Analysis”, accessible via http://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp197216.pdf; (2) Wiesmann, Doris (June 2009), *Validation of the World Food Programme’s Food Consumption Score and Alternative Indicators of Household Food Security*, IFPRI Discussion Paper 870, Washington DC; and (3) Hoddinott, John and Yisehac Yohannes (2002), *Dietary Diversity as a Food Security Indicator*, IFPRI Discussion Paper 136, Washington DC: IFPRI.

⁴² The recent BEST analysis for Burundi’s FY2009-2014 PM2A initiative relied on Food Consumption scores as reported in the 2008 CFSVA. As reported in Wiesmann (2009) (see footnote 2 above), the FCS in Burundi was found to be well correlated with food security status.

⁴³ The recent BEST analysis for Liberia relied upon the “food insecure” and “highly vulnerable” categories of food insecurity as defined in Liberia’s 2006 Comprehensive Food Security and Nutrition Survey. This composite indicator of food consumption and food access was the best available indicator of the relative absorptive capacity of food aid on a county-level basis for Liberia.

⁴⁴ DeRose, Laurie, Ellen Messer and Sara Millman (1998). *Who’s hungry? And how do we know?* Food Shortage, Poverty, and Deprivation. United Nations University Press.

Prevalence of malnutrition in children

Chronic malnutrition (stunting, or low height-for-age) in children under five is an additional potential indicator of chronic food deficits. Malnutrition rates may reflect either inadequate intake, malabsorption due to infectious disease, or some combination of both. To the extent malnutrition rates reflect disease prevalence more than inadequate intake, any conclusions about food deficits drawn from malnutrition rates will be an inaccurate reflection of household food deficits. To the extent the prevalence of stunting reflects poor availability and/or poor access, such prevalence rates can appropriately inform geographic targeting from a Bellmon perspective.

Where a high percentage of households report both poor food consumption and poor food access, and surveys show high rates of chronic malnutrition in children under five, poor nutritional outcomes will likely be more responsive to food aid intended as supplemental nutrition. By geographically targeting areas where these indicators coincide, a PM2A program will help ensure that any given PM2A beneficiary household will more than likely increase overall household food consumption, and therefore represent additional consumption, relative to households in other geographic areas with lower rates of poverty and chronic malnutrition.

The most recent and reliable source of reliable district-level malnutrition rates is often available from Demographic and Health Surveys.

Recommended Reading

Barrett, Christopher (2002). *Food Aid Effectiveness: It's the Targeting, Stupid!* Cornell University Working Paper No. 2002-43.

FEWS NET (May 2008). *Structure-Conduct-Performance and Food Security*. FEWS NET Market Guidance No. 2.

Hoddinott, John (1999). *Targeting: Principles and Practice*. IFPRI Technical Guidance No. 9.

Annex VI. Contacts

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