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# **USAID OFFICE OF FOOD FOR PEACE BURKINA FASO BELLMON ESTIMATION**

August 2009

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The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.



# PREFACE

In June and July 2009, the Bellmon Estimation Studies for Title II (BEST) team undertook an analysis aimed at generating recommendations for a Bellmon Determination to be made by USAID. The purpose of the analysis was to determine that the direct distribution and monetization of U.S. agricultural commodities provided for use in Burkina Faso during FY2010 through Title II meet the criteria set forth in the Bellmon Amendment.

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## ACRONYMS & NOTES

CET	Common External Tariff
CFA	West African CFA franc (Communauté financière africaine)
CIF	Cost, Insurance and Freight
	Comité Permanent Inter-Etats de la Lutte contre la Sécheresse dans le Sahel (Permanent Inter-State)
CILSS	Committee for Drought Control in the Sahel)
CRF	Christian Relief Fund
CRS	Catholic Relief Services
CSB	Corn Soya Blend
CT-CNSA	Technical Committee of National Food Security
DAP	Development Assistance Program
DGPER	Direction Générale de la Promotion de l'Economie Rurale
DGPSA	Direction Générale des Prévisions et des Statistiques Agricoles
DHS	Demographic and Health Survey
DSM	Dried Skimmed Milk
	Enquête Burkinabée sur les conditions de vie des ménages (Burkina Household Living Conditions Survey)
EBCVM	
ECHO	European Commission Humanitarian Aid Office
ECOWAS	Economic Community of West African States
EMOP	Emergency Operation
ENIAM	Enquête Nationale de l'Insécurité Alimentaire et de la Malnutrition
EP	Enquête prioritaire (Priority Survey)
EU	European Union
FANTA	Food and Nutrition Technical Assistance Project
FAO	Food and Agriculture Organization of the United Nations
FAS	Free Along Side
FBF	Fortified Blended Foods
FCS	Food Consumption Score
FEWS NET	Famine Early Warning Systems Network
FFP	Food For Peace
FFW	Food For Work
FOB	Free on Board
FSCF	Food Security Country Framework
FY	Fiscal Year
GDP	Gross Domestic Product
GMO	Genetically Modified Organism
GOBF	Government of Burkina Faso
HDI	Human Development Index
HH	Household
HKI	Helen Keller Institute
IMF	International Monetary Fund

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INERA	L'Institut de l'Environnement et des Recherches Agricoles (Institute of Environment and Agricultural Research)
INSD	L'Institut National de la Statistique et de la Démographie (National Institute of Statistics and Demography)
IPC	Integrated Phase Classification
IPP	Import Parity Price
ITSH	Internal Transport Shipping & Handling
Kg	Kilograms
MAHRH	Ministère de l'Agriculture de l'Hydrolique et des Ressources Halieutiques
MoA	Ministry of Agriculture
MoH	Ministry of Health
MT	MT
MYAP	Multi-Year Assistance Program
NFDM	Nonfat Dried Milk
NGO	Non-Governmental Organizations
PRFTTAAO	World Bank's Regional Project of Transport and Transit Facilitation in West Africa
PRRO	Protracted Relief and Recovery Operation
QUIBB	Questionnaire des Indicateurs de Base du Bien-être (Questionnaire on Primary Well-Being Indicators)
RGPH	Recensement Général de la Population et de l'Habitation (General Population and Housing Census)
SMP	Skimmed Milk Powder
SONAGESS	Société Nationale de la Gestion du Stock de la Sécurité Alimentaire
UEMOA	l'Union Economique et Monétaire Ouest Africaine
USAID	United States Agency for International Development
WB	World Bank
WFP	World Food Programme

Exchange Rate: 460 CFAs = \$1 (July 1, 2009)



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# 1. EXECUTIVE SUMMARY

This report presents findings for monetization and distribution of food aid commodities for making Bellmon determinations in advance of a FY2010 USAID Title II funded Multi-Year Assistance Program (MYAP) in Burkina Faso. This study is based on a desk study and field work conducted in June and July 2009. 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. Current food aid programs and proxy indicators of additionality were investigated to estimate the potential effect of a Title II-funded program on local production and markets.

## 1.1 MONETIZATION ANALYSIS – FINDINGS/RECOMMENDATIONS

Overall food aid commodities were considered for monetization based on:

- Eligibility for export from the U.S.;
- Eligibility for import to Burkina Faso;
- Domestic demand;
- Domestic supply shortfalls are filled through commercial imports and food aid;
- Presence of adequate competition for the food aid commodities; and
- Expectations that fair market prices can be obtained.

This Bellmon analysis evaluates the effect monetizing **vegetable oil**, **wheat/wheat flour**, **nonfat dried milk** and **parboiled rice** would have on Burkina Faso's local production and marketing.

### Findings

This Bellmon **recommends** monetizing up to 22,094 MT of parboiled rice through small lot sales for FY2010. It is recommended for monetization because: (i) domestic production is not enough to meet domestic demand for rice; (ii) it has previously been monetized; (iii) monetization sales occur via small lot sales, and in a competitive sales environment; and (iv) a sales volume less than 10 percent of estimated import volumes would generate substantial proceeds to fund program needs estimated at \$18,404,184.

This Bellmon **does not recommend** monetizing wheat or wheat flour because the lack of in-country bulk buyers/millers would not allow a competitive sales environment. Although there is a trace amount of local production, and therefore wheat must be imported, there are not enough bulk buyers to create a competitive environment. There are only three flour mills in Burkina Faso and two of the mills purchase less than 1,000 MT per month. The third mill can reportedly purchase larger quantities with credit terms provided by the supplier.

This Bellmon **does not recommend** monetizing nonfat dried milk (NFDM) because of a lack of bulk buyers and processing capacity for commercial food production, additional storage costs, and potential that this product may leak into the marketplace and be sold or used as an infant formula substitute.

This Bellmon **does not recommend** monetizing vegetable oil. Burkina Faso derives an estimated 98 percent of its edible oil supply from domestic production (primarily from cottonseed) and there is limited interest in refined soya oil, which is a higher-value product in a price sensitive cooking oil market.

## 1.2 DISTRIBUTION ANALYSIS – FINDINGS/RECOMMENDATIONS

The BEST distribution analysis is based on the assumption that a well-designed and executed food aid program that targets the needs of beneficiaries will have little to no impact on the market or local production incentives. Once effective application of beneficiary criteria has accurately identified households in need of food assistance, maximum food security impact and minimum leakages are ensured when the ration size and composition, as well as the timing and frequency of ration delivery, correspond most closely to a household's perceived food needs.

The 2008 United Nations (UN) Human Development Index (HDI) reports that more than 70 percent of Burkina Faso's population lives on less than \$2 a day. This high percentage, coupled with poor outcomes related to life expectancy, adult literacy rates and school enrollment rates, renders Burkina Faso 173<sup>rd</sup> out of the 179 countries listed in the HDI. Not surprisingly, there is broad scope and range for a wide array of Title II-funded development interventions in Burkina Faso. For the upcoming MYAP cycle, however, several modalities appear most likely: Food For Work (FFW), Food For Education (FFE) and Maternal Child Health Nutrition (MCHN) interventions, likely in the form of a Prevention of Malnutrition in Children Under Two Approach (PM2A). To help ensure proposed Title II programs will not result in substantial disincentive or disruption of markets, the BEST distribution analysis outlines key considerations for FFW, FFE and PM2A interventions.

There are no current Title II awardees implementing MCHN programs. Therefore, it is difficult at this stage to anticipate what geographic coverage or ration might be proposed for distribution, should a MYAP propose a PM2A as one part of, or an entire MCHN program. Beneficiary targeting will likely focus on regions identified as chronically food insecure in the USAID Food Security Programming Strategy (FSPS) for Burkina Faso for FY2010-2014.

### **PM2A Geographic Targeting and Program Coverage**

PM2A presents both an opportunity for long-term human capital investment and a unique challenge to avoid disincentives in the short-to-medium term. While the traditional recuperative approach targets children who are already malnourished and may have severe, irreversible physical and cognitive damage, the PM2A provides food aid to all pregnant and lactating mothers, and all children between the ages of 6 to 24 months within a target geographic area regardless of wealth status or household food needs. Because the key PM2A targeting criteria are based on a child's age and a women's physiological status, rather than on an estimated

household food deficit, the program has greater potential to provide food aid to households for whom the food aid would not represent additional consumption. Initial geographic targeting of areas with a greater proportion of food-deficit households will help avoid disruption of local production and markets.

To provide additional geographic targeting guidance, this analysis uses two proxy indicators of additionality, cereal poverty and chronic malnutrition of children under five years of age, because these are the best available indicators of the relative absorptive capacity of food aid on a sub-national basis in Burkina Faso. Relative to other regions, targeting the poorest communities in the Center North, East, North, Central Plateau and Sahel regions for PM2A rations would be most likely to represent additional consumption for PM2A-eligible households and therefore least likely to pose any Bellmon concerns.

### **Strategic Use of Food Rations to Achieve Maximum Impact on Nutritional Outcomes**

Individual PM2A rations must cover all pregnant or lactating mothers and children under two years of age within a catchment area on a year-round basis, with the size and composition of the individual ration designed to meet their special nutritional needs. Household rations, however, should be designed with the objective of protecting the individual rations from diversion or dilution and inducing program participation.

Potential awardees will need to conduct formative research to understand key health and nutrition behaviors and current barriers to change in order to determine the appropriate size, composition, beneficiary coverage and frequency of delivery of household rations. The preventive approach that was successfully piloted in Haiti provided a household ration composed of blended foods, pulses and oil to all households within the catchment area on a year-round basis, regardless of household wealth status or food deficit. Future awardees may consider different household ration designs depending on a variety of factors (e.g., community needs, food preferences and logistics, etc.), which may lead to a more strategic use of household rations, both in terms of household ration composition, size, and frequency and timing of delivery. Two additional possible options for the provision of household rations are explored in this report:

1. Target household rations to *all* PM2A-eligible households, regardless of household food insecurity or wealth status, but limit distribution of household rations to the lean season months
2. Target household rations year-round but only to the most food insecure households

Based on formative research, future awardees may consider these and other household ration designs, any one of which will require ongoing monitoring and evaluation to ensure the household ration is sufficient to ensure protection of individual rations while maintaining acceptable levels of program participation.

The total magnitude of coverage is important from a Bellmon perspective because not only does it translate into a volume of food aid commodities being introduced into a local area (and therefore potentially affecting markets and incentives to produce), it hints at the non-food ration

costs that must be available to effectively support all of the other program activities. Behavior Change and Communication, and other health and nutrition services, are essential inputs into any program designed to address many of the underlying causes of early childhood malnutrition which are *not* a function of lack of food availability and access. Particularly where malnutrition is heavily influenced by the status of women and poor feeding practices, as in Burkina Faso, sufficient cash resources to support the strategic use of food rations in a PM2A designed to affect long-term nutritional outcomes through behavior change will help to ensure the food rations will represent additional consumption at the household-level, and therefore be Bellmon compliant.

Whichever modalities are proposed, it will be important to avoid duplication of ration coverage, on the one hand, and capitalize on complementary services through coordination of development interventions on the other.

### 1.3 ADEQUACY OF STORAGE AND TRANSPORTATION

The port of choice for Title II food aid is Port Lomé, Togo. The Title II Awardees, which are requesting call-forwards and importing food aid three to four times per year, do not report delays or problems with discharge or transport from this port. The port handles 3 million MT of cargo yearly, and specializes in handling foodstuffs such as bulk corn, rice and sugar. In the event that port storage is needed for Title II food, more than enough storage is available at four transit warehouses (each with at least 7,500 square meters available) as well as more than 200,000 square meters of open space storage. Commodity transport takes on average between three to five days from the time that it leaves the port, clears border customs and arrives in Ouagadougou – a distance of 720 kilometers. All Title II commodities are stored in a large warehouse with a capacity of 6,500 MT in Ouagadougou and more warehouse space is available to rent. The Awardees call-forward three to four shipments per year to keep stock well rotated, and thus the warehouse is more than adequate for the 11,000 MT of food aid in 2009. Based on discussions with Awardees, a review of survey reports and a warehouse visit, the BEST team found that Title II commodities were well managed with minimal spoilage or fumigation problems in part due to the rotation of stock and importation of smaller, well spaced consignments.

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## 2. COUNTRY BACKGROUND & OVERVIEW

### 2.1 ECONOMIC OVERVIEW

One of the poorest countries in the world, the World Bank reports that Burkina Faso's per capita gross domestic product (GDP) is \$458. The 2008 UN Human Development Index reports that more than 70 percent of the population lives on less than \$2 a day, a percentage that puts it 173<sup>rd</sup> out of the 179 listed.

Burkina Faso's population, which is estimated at just more than 14 million, is predominantly rural and has 3.46 percent annual growth rate (Recensement Général de la Population et de l'Habitation (RGPH), 2006). Ouagadougou, the capital and largest city, is home to about 1 million. Other major cities include the important economic center of Bobo-Dioulasso (approximately 500,000) and Koudougou (approximately 100,000). Administratively, Burkina Faso is divided into 13 regions, 45 provinces, and 350 departments.

Many Burkinabé migrate to neighboring countries (e.g. Côte d'Ivoire and Ghana) for seasonal work in agriculture and their remittances are second only to cotton in terms of foreign exchange earnings. Despite the importance of remittances, it is not a significant source of household income.<sup>1</sup>

The World Bank's 2009 "Doing Business" ranked Burkina Faso as one of the top ten reformers for 2009. These reforms include adopting a labor code in May 2008, improving the process of transferring property, eliminating commune authorization requirements, creating a one-stop shop to facilitate construction permits, decreasing the corporate tax rate from 35 percent to 30 percent, and decreasing dividend taxes from 15 percent to 12 percent. In 2008, the Government of Burkina Faso (GOBF) also entered into a \$480 million compact with the Millennium Challenge Corporation (MCC), which should further rural governance reform. According to the International Monetary Fund (IMF), Burkina Faso's gross domestic product increased by 5 percent in 2008, despite global food price spikes and recession.

See Annex 1 for more economic data and trends.

### 2.2 AGRICULTURE OVERVIEW

The country is characterized by five socio-ecological regions: The Sahel, the East, the Centre, the West and the South-West (See Annex 4). Naturally, these characteristics affect the country's economy, which is dominated by the agriculture sector and the related informal sector.

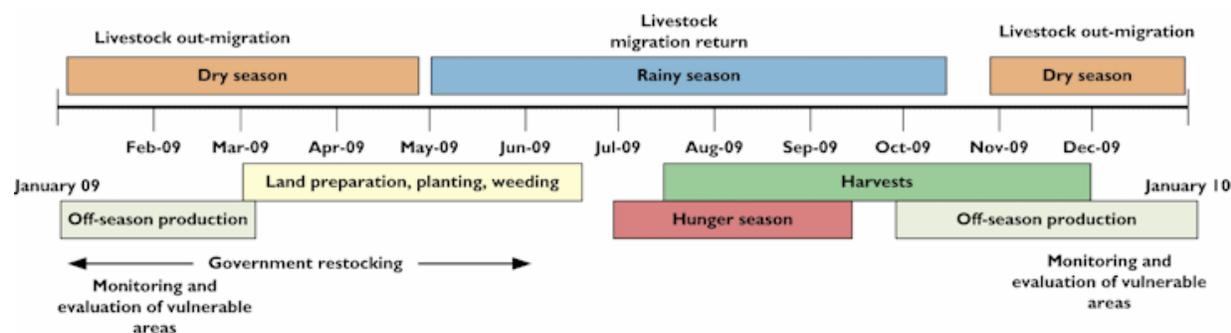
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<sup>1</sup> Direction Générale de la Promotion de l'Economie Rurale (DGPER) National Food Security Report 2007; see Annex 5 for further details.

The main crops cultivated in Burkina Faso include sorghum, millet and maize. Recent increases in maize, rice and sesame reflect government priorities to increase land under production through irrigation and to promote the cultivation of cash crops for national and regional trade.

Burkina Faso has a unimodal rainy season from May to November and a dry season from October to April (see Figure 1). Despite the late onset of the heavy rains, which are critical for a good harvest, government sources are optimistic about the 2009/2010 agricultural season. See Annex 2 for more agriculture data and trends.

**Figure 1: Burkina Faso Rain Season**



Source: *Famine Early Warning Systems Network (FEWS NET)*

### 2.3 POLICY ISSUES

According to a June 2008 joint UN/GOBF/Save the Children-United Kingdom (UK) Report, the food price index had increased by 23 percent between late 2007 and early 2008, leading to demonstrations against rising costs of living (“la vie chère”) in all major towns of the country. In response to the demonstrations and rising prices, the government exonerated a basic food basket from Value-Added Tax (VAT), restricted exports of cereals, implemented price controls on commercial cereal sales, and subsidized the sale of select foods and agricultural inputs, sending mixed signals to agriculture producers about regional and international market trade opportunities.

In terms of early warning and responses to recurrent food crises, the government manages a National Security Stock that can be mobilized in case of large cereal production shortfalls. Its use (free distributions and subsidized sales) is subject to the recommendations of the Technical Committee of the National Food Security Council (CT-CNSA), whose members are the European Union (EU), France, the Netherlands and the World Food Programme (WFP). An Intervention Stock of smaller capacity was also recently created under the government’s full control and management.

The Common External Tariff (CET) streamlined the process of paying different duties – official and not – in each of the 15 countries in the Economic Community of West African States (ECOWAS). Combined with the region’s internal free trade zone, the CET simplified importing into and within West Africa, lowering costs to consumers and processors and making the area more attractive to investors.

Informal trade is commonly assumed to represent 20 percent of total trade. Famine Early Warning Systems Network (FEWS NET) is in the process of setting up a regional cross-border informal trade monitoring system.

There are no restrictions to importing Genetically Modified Organisms (GMO) commodities. To achieve higher prices and yields, Burkinabé farmers are experimenting both with organic cotton and with genetically modified seeds (cowpeas). Table 1 outlines policies relevant for food security programming in Burkina Faso.

**Table 1: Food Aid Policy Matrix**

Area	Policy	Practice	Implications
Transport	Liberalized Markets	Liberalized Markets	Number of small to medium transporter providers available; although poor infrastructure inhibits maximizing access.
GMO	None	Allowing it slowly	Possible increased yields, climate and disease adaptive plants to increase food production.
Food Reserves	Strategic food reserve	Improving in pre-positioning food aid to respond to emergencies	Better at responding to emergencies although still rely heavily on donor aid.
Vouchers	Social protection safety net in urban areas	Government has not yet taken it over	Social protection programs are best supported by government; unclear future of urban voucher programs

Source: BEST Research

### 3. ADEQUACY OF PORTS, STORAGE & TRANSPORTATION

Burkina Faso is a land-locked country in the Sahel region so initial points of entry for all Title II food aid destined for Burkina Faso include the modern and capable Ports of Abidjan in Côte d'Ivoire, Tema in Ghana, and Lomé in Togo. The port of choice for the Title II food aid is currently Port Lomé, which is analyzed below. For information about alternative ports for Title II food aid destined for Burkina Faso, see Annex 6.

#### 3.1 PORTS

Port Lomé is 720 kilometers from Burkina Faso on the Gulf of Guinea (Atlantic) in the extreme southwest corner of Togo. Lomé specializes in handling foodstuffs such as bulk corn, rice, and sugar. According to the port's Web site, port traffic has grown during the last two decades from 400,000 MT annually to 3 million MT. Lomé is a deep-water port that has infrastructure, equipment and storage to quickly discharge containers for transport to Burkina Faso. The port can reportedly handle eight to ten ships at the same time without delay. The port is best known for shipping phosphates and other major exports such as cocoa, coffee, copra, cotton, and palm products. The maximum water draft is 14 meters. The Port of Lomé has rail connections with principal internal and international networks. Four transit warehouses (each with at least 7,500 square meters of capacity) as well as more than 200,000 square meters of open space storage are available. Though Lomé is farther from Ouagadougou than Tema, it is preferable since transit cargo may be stored for up to 30 days at no charge. The Title II Awardees, who imported nearly 11,000 MT of food aid in 2009 report no delays or problems with discharge and transport.

**Table 2: Characteristics of Port Lomé**

Berthing Facilities	Berths	Length (m)	Draft (m)
General Cargo	4	150 to 160	7.5 to 10
Containers	2	220 to 250	11.5 to 12
Bulk Berth	1	210	11.5
Tanker Terminal	1	250	13.5

Source: OT Africa Line

#### 3.2 STORAGE FACILITIES, SPECIFICATIONS, LOCATIONS, OWNERS AND CAPACITY

The Awardees have considerable experience in storing Title II commodities in Burkina Faso and have developed a network of primary and secondary stores consisting of warehouses and storehouses in each of their areas of operation. A well-maintained large warehouse on the outer ring of Ouagadougou is the primary warehouse for Catholic Relief Services (CRS) and Africare Title II distribution and monetization commodities. This warehouse, owned by CRS, can store 6,500 MT. CRS has also identified at least 12,000 MT of storage space available in Ouagadougou to rent from commercial sources, if needed.

WFP has 14 warehouses located throughout their areas of operation, including three main warehouses in Ouagadougou, Dori and Fada N'Gourma. Total national WFP storage capacity amounts to more than 15,000 MT. The Government of Burkina Faso (GOBF) has its own warehouses located throughout the country where it pre-positions emergency food stocks for release during food shocks. Their total capacity available for food aid warehousing is 84,400 MT. For more information about warehouse space for food aid, see Annex 6.

For other findings related to distribution commodity storage and shelf-life based on an on-site visit to the Title II food warehouse in Ouagadougou, see Annex 6.

### 3.3 INLAND TRANSPORTATION

Lomé has access routes that reportedly cost less than operations through Abidjan. Lomé can provide up to 4,000 MT of transport capacity per week if needed. Transport costs are linked to total kilometers and prevailing petroleum prices. Lomé has an arrangement by which trucks from neighboring countries (e.g., Nigeria) can be used to transport goods to Burkina Faso when Burkinabé and national trucks are unavailable. Truck companies in Ouagadougou work under a contract with the Title II Awardees' freight forwarder for cross-border operations between Port Lomé and Burkina Faso. There are several forwarding agents in Burkina Faso.

One recent change that may have a significant impact on inland transportation costs took effect on June 1, 2009. This regulation states that all axle loads must not exceed 11.5 MT per single axle and four meters in height above the road surface. In the past, truckers would overload trucks with as much cargo and goods as possible in order to transport more and thereby yield greater per kilometer revenue. This dangerous practice resulted in frequent break downs due to excessive payload. This axle load regulation complies with l'Union Economique et Monétaire Ouest Africaine (UEMOA) Regulation 2005, which states that Economic Community of West African States (ECOWAS) members should adopt common standards and procedures for control of the gauge, the weight, and the axle load of every vehicle. This new regulation is expected to result in price hikes of nearly 100 percent for goods transported within ECOWAS.

In 2008, CRS used local transporters to move 7,698 MT of distribution food aid commodities to more than 1,580 schools in eight provinces. In FY2009, fewer commodities will be delivered to fewer schools and provinces as part of CRS's phase-out strategy. During the life of the Title II Development Assistance Program (DAP), however, the Ministry of Education has and continues to work closely with CRS to organize the transportation tender for areas located in remote areas with poor roads. Within Burkina Faso, there are many informal transport companies with a small fleet of vehicles that will bid on and provide transport for payloads of varying sizes and distances. Primary factors in transportation costs within Burkina Faso are distance and prevailing gas prices. To ensure accountability of the Title II distribution commodities, CRS uses a system that tracks food aid commodities during each phase of transport from the port to final distribution point. During transport, any commodity loss because of damage or shortages are recorded and reported to USAID and claims are filed with transport providers as needed.

## 4. FOOD AID OVERVIEW

This section outlines previous initiatives, as well as initiatives planned in the next two years. See Annex 8 for more information about ongoing food aid programs.

### 4.1 PREVIOUS INITIATIVES

#### 4.1.1 Title II Awardees Sponsors Operating in Country

Two Awardees (Africare and CRS) are currently implementing five year (FY2004-2009) USAID Title II food aid DAPs in Burkina Faso. Catholic Relief Services (CRS) and Africare monetize Title II parboiled rice to generate local currency to fund development activities.

With USAID Title II monetization funding, Africare has implemented the Zondoma Food Security Initiative (ZFSI) DAP in Burkina Faso since 1999. The project was built on Africare's successful Phase I (ZFSI I) project that reports to have reduced the percentage of chronically food insecure households from 62 percent to 39 percent in 40 villages between 2000 and 2004. The overall goal of the ZFSI Phase II (FY2004-2009) has been to increase the ability of households in the province to manage future risks by building stronger, more diversified livelihood systems based on local resources. This will be achieved through improved agricultural productivity, more diversified income earning opportunities, nutrition education and access to clean water.

With USAID Title II monetization funding, CRS is implementing its FY2004-2009 DAP interventions to support agricultural initiatives, a school feeding program and a micro-finance activity targeting poor rural women. CRS is also working through the MCC to leverage the school feeding program with the Bright Project. In addition to its focus on school feeding, CRS provides micro-credit access to low-income families to improve economic standing and stimulate, revitalize and grow the local economy. Micro-credit is included in a range of other micro-finance services, and allows poor households to transition from day-to-day survival mode to planning for the future, investing in better nutrition, and improving living conditions and children's health and education.

CRS and Africare both work to improve agricultural productivity by promoting water harvesting techniques, promoting crop diversification, improving soil management through integrated natural resource management, providing farmers with access to equipment and storage, and training farmers on no-cost or low-cost adaptations that can be readily implemented. CRS has helped in dry land areas to link water supplies through inexpensive gravity-fed irrigation systems. Access to irrigation equipment and canals has allowed producers to cultivate a wide range of crops such as tomatoes, cowpeas, and rice for marketing and sales both locally and regionally. CRS is also leveraging funding through The Bill & Melinda Gates Foundation to develop a 30-hectare area for irrigated rice in an arid region in northern Burkina Faso.

#### 4.1.2 Total Annual Monetization by Donor and by Commodity

In 2009, 2,910 MT of parboiled rice will be monetized through the USAID Title II funded DAPs, which CRS and Africare are implementing in Burkina Faso. Given that the DAPs are closing out in FY2009, fewer MT of Title II parboiled rice will be monetized in 2009 as compared to prior years.

**Table 3: Summary of Monetization Food Aid by Donor (MT)**

Donor/Program/Commodity	2005	2006	2007	2008	2009
USAID Title II Rice	11,960	6,180	11,840	4,980	2,910
Japan Rice	5,000	5,000	5,000	5,000	5,270
Total	16,960	11,180	16,840	9,980	8,180

Sources: Catholic Relief Services, and Africare documents. JICA July 2009 Bulletin, page 5.

The USAID Title II monetization process is well organized, transparent and ensures competitive prices through a small lot sales methodology. The Title II monetized parboiled rice differs from Asian long grain rice and locally produced rice. The process of parboiling involves soaking, steaming and drying the grains; in the case of rice, it preserves a higher proportion of nutrients in the grain compared with polished or highly refined rice.

The primary market for the USAID Title II parboiled rice is Ouagadougou, though some buyers indicated that wholesalers from the central and northern regions also buy the rice. Sankaryaré market is the largest and most important market in Ouagadougou, supplying other markets within the country and region. Koudougou is located in one of the most populated areas in the country, where a majority of households depend on the market for their food needs. Multiple buyers from each sale allow for the product to be placed in a number of outlets, ensuring a more balanced supply and a less disruptive release to the market. Small to medium lot auction monetization sales work well for products such as rice, allowing many small traders to participate, even those without access to large lines of credit. Commodities such as wheat and milk require large traders and further processing to add value to the bulk commodity, which limits participants to those with substantial working capital or access to credit.

In addition to the USAID Title II rice monetization, the Government of Japan provides rice to Burkina Faso, which is monetized by the state-run Société Nationale de la Gestion du Stock de la Sécurité Alimentaire (SONAGESS) in support of various government food security-related activities.

At present, there is no United States Department of Agriculture (USDA) food aid program in Burkina Faso, although it is on the list of eligible countries for a McGovern-Dole Food for Education Program.

Overall, monetization is well received by the GOBF and producer groups who understand the process, the purpose, the use of the proceeds, as well as the amount of rice imported.

### 4.1.3 Total Annual Distribution of Food Aid by Donor and Commodity

Food aid during the past five years has been distributed through emergency programs implemented by WFP and the Christian Relief Fund (CRF), as well as non-emergency USAID-funded Title II development activities implemented by Africare and CRS.

WFP emergency responses and rations provide for nutritional rehabilitation of malnourished young children, including micronutrient-rich commodities such as corn soy blend (CSB), vegetable oil and iodized salt. The WFP ration also includes sugar to remain consistent with local food-preparation customs. The main food staples in Burkina Faso are cereals (maize meal/sorghum) cowpeas and vegetable oil for cooking. To provide beneficiaries with a nutritionally-balanced ration (protein-enriched porridge) which takes into account their cooking habits, these three commodities are provided to undernourished pregnant and lactating women in addition to CSB and iodized salt. Using private funding sources, Christian Relief Fund (CRF) has distributed 110 MT of cereals during a two-year period in the Sahel Region.

In FY2009, CRS and Africare will import 7,940 MT including cereals and grains (corn soya blend, bulgur wheat), pulses, and fortified vegetable oil. WFP's requirements for calendar year (CY) 2009 are for 12,000 MT, including approximately 80 percent of procurement through local purchases. In response to the 2008 spikes in food prices, WFP is implementing its program, "Emergency Response to High Food Prices in Burkina Faso Main Cities" also known as Emergency Operation (EMOP) 10773. The period of the WFP voucher programming is January through December 2009 in Ouagadougou and Bobo-Dioulasso.

**Table 4: Summary of Food Aid by Donor (MT)**

Donor/Program	2005	2006	2007	2008	2009
CRS (USAID)	11,000	15,580	7,530	5,420	6,260
Africare (USAID)	1,260	1,300	1,100	70	1,680
WFP	3,000	3,200	3,000	2,800	2,400
CRF		100	10		
Total	15,260	20,180	11,640	8,290	10,340

*Source: Catholic Relief Services, Africare, Christian Relief Fund, and WFP documents. WFP figures are for CY 2009 appeals and subject to donor contributions.*

### 4.2 PLANNED INITIATIVES

USAID/FFP will be making available a new round of Title II funding for multi-year activity programs (MYAPs) for Burkina Faso starting in FY2010. Africare and CRS are planning to propose new MYAPs for Burkina Faso. As FY2010-2014 Title II MYAP proposal planning is still in early stages, specific food aid commodity and tonnage requirements are unknown and the depth of possible analysis is constrained at this time.

WFP plans to continue ongoing initiatives including: "Country Program – Burkina Faso, 2006-2010," which will target the geographical areas with the highest prevalence of food insecure households and Protracted Relief and Recovery Operations (PRRO) Burkina Faso 10541.0, which focus on addressing malnutrition in food insecure regions. WFP plans to continue to increase the amount of its food aid through local purchases, especially of maize and beans.

They have a sophisticated process to ensure food delivery as contracted. WFP has plans to conduct more local and regional purchases in the future, linked closely to their Purchase for Progress (P4P) program.

Additional information about distribution rations can be found in Annex 7.

## 5. MONETIZATION ANALYSIS

This Bellmon Analysis evaluates the impact of importing various Title II commodities on local production and marketing in Burkina Faso including rice, edible oil, wheat/wheat flour and nonfat dried milk.

Parboiled rice is recommended for monetization because it is less than 10 percent of estimated import volumes; has been previously monetized; monetization sales occur via auctions and in a competitive environment; and domestic rice production is not enough to meet domestic demand for rice, which is observed in the inverse relationship between production volumes and commercial import volumes. Additionally, parboiled rice takes less fuel to prepare, making it less expensive to cook. There is also a demand for rice in urban and peri-urban areas.

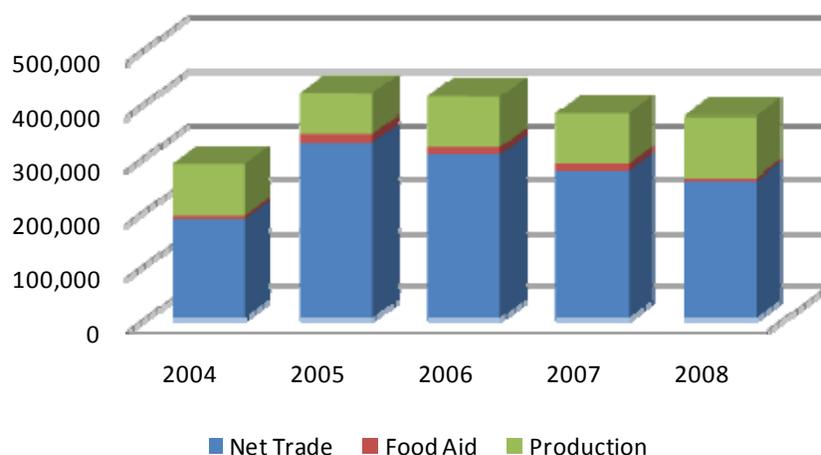
While parboiled rice from the United States and Thailand are substitutes for one another among “high-end” urban consumers, this marketing chain is distinct from that of imported 60 – 100percent broken rice, which serves as a substitute for locally-produced rice for the “relatively poor” in urban areas. Rice is not commonly consumed beyond the urban and peri-urban areas of Ouagadougou and Bobo-Dioulasso. Importers in Africa commonly buy broken parboiled rice from Thailand for the low-end market.

Among the urban poor receiving WFP vouchers in Ouagadougou, a preference for rice over maize was observed. A visit to rural producers in Dakiri, in Gnagna Province, revealed that producers participating in the Gates-funded rice initiative prefer to grow rice as a cash crop over traditional grain subsistence crops.

### 5.1 RICE

#### 5.1.1 Supply Summary

Milled and broken rice are Burkina Faso’s primary rice imports. Rice exports are negligible (less than 1,500 MT per year). U.S.-imported parboiled rice is generally preferred to Asian imports; parboiled rice is fluffy and full, and used for special occasions, while Asian (Chinese and Thai) long-grain rices are regarded as inferior in quality. The June 2009 Ouagadougou prices for imported rice included 50 kg bags of Chinese and Thai long grain broken each retailing between 14,000 CFA (\$30.43) to 19,000 CFA (\$41.30); with 50 kg bags of U.S. parboiled rice retailing at 23,000 CFA (\$50.00). The urban population, including restaurants and hotels, is the main consumer of rice, with rural populations preferring sorghum for consumption.

**Figure 2: Domestic Rice Consumption (MT) in Burkina Faso**

Sources: Comtrade, INSD Burkina Faso

**Table 5: Domestic Rice Consumption (MT) in Burkina Faso**

	2004	2005	2006	2007	2008	Average
1 Imports - Broken Rice	80,593	192,903	188,052	124,153	104,306	138,001
2 Imports - Milled Rice	92,052	133,113	117,056	147,836	149,008	127,813
3 Subtotal Imports	172,645	326,016	305,108	271,989	253,314	265,814
4 Total Rice Imports	183,854	327,223	305,180	272,024	255,347	268,726
5 Exports - Broken Rice	n/a	34	n/a	n/a	n/a	34
6 Exports - Milled Rice	743	1,419	1,000	n/a	n/a	1,054
7 Subtotal Exports	743	1,453	1,000	0	0	1,065
8 Total Rice Exports	743	1,453	1,000	0	0	1,065
9 Net Trade	183,112	325,769	304,180	272,024	255,347	268,086
10 Food Aid	6,473	16,757	13,855	13,855	5,655	11,319
11 Production	95,494	74,501	93,516	93,516	113,724	94,150
12 Total Consumption	285,079	417,027	411,551	379,395	374,726	373,556

1. Comtrade; 2005-2008, INSD Burkina Faso; 2. Comtrade; 2005-2008 INSD Burkina Faso; 3. Sum of lines 1 and 2; 4. Burkina Faso L'Institut National de la Statistique et de la Démographie (National Institute of Statistics and Demography) (INSD), Annuaire Statistique 2008; 2004-2008, sum of all rice imports; 5. Comtrade; 2005-2008, INSD Burkina Faso; 6. Comtrade; 2005-2008, INSD Burkina Faso; 7. Sum of lines 5 and 6; 8. Comtrade; 9. Imports minus exports; 10. Burkina Faso INSD, Annuaire Statistique 2008; 11. Burkina Faso INSD, Annuaire Statistique 2008; 12. Sum of lines 9,10, and 11

Both rain-fed (upland) and irrigated rice are produced in Burkina Faso. Production has averaged 90,500 MT during the past five years (2004-2008). Within Burkina Faso, rice production areas include Comoe, Leraba, Houet and Kenedogou, which are located in the southwest. Bobo Dioulasso is an important center for rice consumption and production – it functions as the economic capital of Burkina Faso and is located in an important cereal production zone.

Burkina Faso's smallholder/rain-fed rice producers face various structural constraints that limit productivity due to lack of access to modern inputs and credit, and poor marketing and transport

and rural roads. Rice processing is also constrained by inadequate and inefficient processing equipment. Much of the work is done by hand, especially at the farm and village levels. This has led to the production of poor quality and substandard rice that is not competitive vis-à-vis imported rice. However, there have been some improvements made in the milling of local rice especially in the western parts of Burkina Faso.

**Table 6: Domestic Rice Production (MT)**

2004	2005	2006	2007	2008
95,494	74,501	93,516	93,516	113,724

Source: Burkina Faso INSD (2009), *Annuaire Statistique Edition 2008*

Data from the GOBF show that there was a 22 percent increase in rice production during 2007-2008. However, this was accompanied by a 6 percent decrease in imports and a 3.5 percent increase in population; this single-year increase in rice production should be noted with caution. Nonetheless, there are many initiatives underway to improve agricultural production within Burkina Faso. Within the rice sector, many projects are just starting up, and will require a few years to measure impact, success and linkages with markets. With rice cultivation, for example, to bring into production greater areas or newer higher-yield or disease-resistant varieties will require several steps (e.g., start with a nursery to form seedlings, plant in the paddy, before realizing first harvest). This cycle of steps takes approximately 18 months before the first harvest is realized.

Annex 12 describes some of the key initiatives and projects that must be monitored yearly to measure contributions to food security and self-sufficiency and, therefore, any necessary adjustments for both monetized and distributed food aid.

### 5.1.2 Competitive Environment

Though rice food aid is about half of the 10 percent of estimated commercial rice import volumes, it is nearly double the 5 percent of estimated rice production volumes. With production averaging around 95,000 MT during 2001-2008, food aid averaged around 10 percent of rice production.

Rice is a strategic commodity in Burkina Faso, especially as a preferred food in the urban areas. Although imported milled rice is, on average, more expensive than local rice, many urban consumers still appear to prefer imported milled rice because it is cleaner, has a better appearance and cooks faster. The urban poor purchase broken rice or locally-produced rice, whichever is relatively cheaper. Generally speaking, imported broken rice is relatively cheaper than locally-produced rice because locally-produced rice faces high production, processing and marketing costs.

The urban poor will substitute corn for rice when rice prices rise. Among WFP voucher recipients in urban areas, the BEST team noted recipients' revealed preference for rice (even when rice was not an option) as one example that corn is considered an inferior substitute among this group of beneficiaries.

U.S. commercial rice exports to West Africa have been relatively low.<sup>2</sup> Total exports of U.S. rice to Senegal, Côte d'Ivoire and Togo amounted to 27,600 MT in 2005 and 27,200 MT in 2006, followed by a sharp decrease to 4,500 MT in 2007, and a substantial rebound to 57,600 MT in 2008. Côte d'Ivoire is traditionally the largest importer of U.S. rice in the region; in January 2008, 15,000 MT of U.S. rice was sold to Côte d'Ivoire. The customs duty and taxes for milled rice and paddy rice are 12.5 percent and 7 percent, respectively, for Côte d'Ivoire. Traders import for the local market, as well as re-export for other countries in the region. The port of Abidjan is a transit port for commercial imports to Burkina Faso and Mali.

### 5.1.3 Monetization Past Performance

During the current FY2004-2009 Title II DAP, monetized U.S. parboiled rice sales attracted a pool of approximately 30 different participants with an average of ten or more bidders per sale, making it a competitive process. Both CRS and Africare collectively monetize with CRS as the lead agency on Title II monetization. Monetization sales were conducted in Ouagadougou. For more information about the small lot sales of Title II parboiled rice in Burkina Faso, please see Annex 9.

In agriculture-based countries such as Burkina Faso, small and medium-sized traders and layers of intermediaries are common in the marketing of food staples and other agricultural commodities. Small and medium traders and intermediaries are mainly self-funded because of limited access to credit but maximize the return on their working capital by rapidly turning over small quantities, with little storage costs or needs. They will purchase commodities both domestic and imported if the size of the lot is small and manageable. Future monetization of parboiled rice should continue to remain competitive if this type of sales mechanism remains in place and attracts participation by small and medium traders.

### 5.1.4 Impact Analysis Summary/Import Parity Price (IPP)

Based on commercial import volumes for year 2001-2008, Table 7 outlines the potential proceeds an awardee might anticipate from monetizing rice at three possible volumes.

Given the global food price shocks of 2007/2008, rice prices and sales performance were not normal. In November 2008, small lot sales were introduced in the Title II Program, with more competition and good sales performance, which resulted in an average 94 percent of the estimated import parity price (IPP) during the period from July 2008 to July 2009. Nonetheless, it is apparent that the parboiled rice monetization prices achieved from 2006 to July 2009 reflect a relatively fair market value (just over 85 percent of estimated IPP). See Annex 9.

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<sup>2</sup> Foreign Agricultural Service/Bulk, Intermediate, and Consumer Oriented (FAS/BICO) report data.

**Table 7: Impact Analysis Summary for Rice**

Monetization Scenario*	1%	5%	10%
Est. Comm Imports (MT)	220,939	220,939	220,939
Scenario Volume (MT)	2,209	11,047	22,094
Est. Total Value of Sale (US\$)**	\$1,840,418	\$9,202,092	\$18,404,184

\*% *Estimated commercial imports*

\*\**Sale price estimate is \$833 per MT representing actual sales prices for July 2009.*

The impact analysis table (Table 7) shows the amounts of proceeds that could be generated from the sale of different volumes of monetized rice imports. The estimated commercial imports are based on a seven-year average (median) for 2001-2008. The scenario volume is calculated by taking 1 percent, 5 percent and 10 percent, respectively, of estimated commercial import volumes. The estimated total value of sale is calculated by multiplying the estimated price per MT (\$833) by the respective scenario volume.

Rice imports are subject to various tariffs, with the West African Economic and Monetary Union (UEMOA) countries applying harmonized and lower duties on rice imports, which create incentives for smuggling in neighboring non-UEMOA countries such as Nigeria. The UEMOA countries (Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Togo and Senegal) apply a Common External Tariff (CET) which ranges from 5 percent to 45 percent for rice, depending on the type and grade and on the added taxes applied in each participating country. Rice imports in UEMOA countries attract a maximum customs duty rate of 10 percent plus a 1 percent statistics fee and solidarity tax of 1 percent for imports from non-member countries. VAT, service fees and overcharge taxes apply in some countries. In Burkina Faso, there are no import customs duties for GOBF-registered humanitarian organizations. VAT taxes of 18 percent, however, are collected in the retail market.

Parboiled rice production accounts for nearly half of the world's rice production. Its markets and consumer base are firmly established in South Asia and Africa.<sup>3</sup> Without a doubt, the Title II Burkina Faso monetization program has been very instrumental in helping to create and grow parboiled rice sales through small lot auctions. However, the BEST Team found imported Thai parboiled rice readily available commercially in the Ouagadougou marketplace. The typical specification found for Thai long grain parboiled rice is 5 percent broken. The current Awardees have conducted market and price assessments prior to lot sales, and consistently have included the price for Thai parboiled rice in their surveys as well. The Thai parboiled rice usually is priced slightly higher than the USAID Title II monetization rice based on the historical trends of the surveys. Thai parboiled rice has been actively produced in Thailand for export to countries all over the world. Unfortunately, available import data found for Burkina Faso does not include

<sup>3</sup> Chanakan Prom-u-thai, Longbin Huang, Shu Fukai, and Benjavan Rerkasem. 2009. "Iron fortification in parboiled rice – a rapid and effective tool for delivering Fe nutrition to rice consumers", accessible via <http://repositories.cdlib.org/jpnc/xvi/1095>.

a detailed breakdown of types of rice imported to allow a determination of how much total parboiled rice has been sold in the past five years.

Broken rice is also the main staple for consumers with low income in many developing countries. Importers in Africa commonly buy broken parboiled rice from Thailand for the low-end market.

The impact of locally-grown cereals on rice trade is estimated to be marginal in the near future, as most of the locally-grown crops (i.e., sorghum and millet) are expected to be consumed in rural areas, while the main market of imported rice remains urban areas. Therefore, parboiled rice is an appropriate commodity for monetization at a recommendation level of up to 22,094 MT for FY2010 for Burkina Faso.

## 5.2 EDIBLE OILS

Vegetable oil meets two criteria for monetization: the estimated amount of oil food aid is less than 5 percent of estimated domestic oil production and food aid is slightly less than 10 percent of estimated commercial imports. However, vegetable oil is not recommended for monetization because of consumer preferences (cottonseed oil is preferred to vegetable oil); sector investments (donors are supporting efforts to fortify cottonseed oil); and affordability (cottonseed oil is half the price of vegetable oil).

### 5.2.1 Supply Summary

The primary oilseed crop grown in Burkina Faso is cottonseed. Local production of cottonseed oil in 2008 was about 100,000 MT. In Burkina Faso, cotton is grown mainly for lint and sold as a cash crop to the local mills and international buyers. Oil is a secondary product. Key production areas are located in Tuy, Kenedougou, Houet, Banwa, Les Bales, Mouhoun, Ioba, Bougouriba, Kossi, Sourou, Nayala, Sanguie, Boulkiemde, Sissili, Ziro, Bazega, Comoe, and Leraba Provinces. Cottonseed production is expected to decrease in 2009 because of a drop in world cotton prices. Cottonseed oil is accepted by the local market and is in the early stages of a scale-up of industrial fortification as a means to address micronutrient and vitamin deficiencies in Burkina Faso. Helen Keller International advocates fortifying with vitamin A, which is relatively easy to accomplish during refinement.

### 5.2.2 Competitive Environment

Burkina Faso derives an estimated 98 percent of its edible oil supply from domestic production. Palm oil is the most popular imported oil. According to informants, it is likely that imports and consumption are understated because official import statistics are inconsistent and do not capture informal imports, which are estimated to be 20 percent overall for Burkina Faso. There is limited interest, however, in refined soya oil, which is a higher value product in a price sensitive cooking oil market. Reportedly, wholesalers import palm oil through credit terms established with buyers from neighboring Ghana or Côte d'Ivoire.

### 5.3 WHEAT/WHEAT FLOUR

Wheat and wheat flour are not recommended for monetization because there is lack of competition (monopsony) in the buyer market; an absence of competition in wheat processing (there is only one privatized, formerly parastatal wheat flour processing mill capable of purchasing bulk wheat); contract enforcement is unreliable; and the estimated volume of wheat food aid necessary to generate a reasonable amount of monetization proceeds represents about 20 percent of commercial imports.

#### 5.3.1 Supply Summary

Wheat is a cereal crop of much lesser importance than sorghum, millet, maize and rice; therefore, a very small amount is grown in Burkina Faso. Domestic production is not traded nationally but is kept for household consumption. Domestic wheat production is not enough to meet demand. To bridge the gap between production and consumption, wheat/wheat flour must be imported commercially or donated through humanitarian aid assistance (e.g. Bulgur wheat flour). The 2004-2008 five-year average for wheat/wheat imports was 55,959 MT of wheat per year.

**Table 8: Total Wheat Imports (MT)**

2004	2005	2006	2007	2008
23,315	45,724	56,802	75,961	77,994

Source: Burkina Faso INSD (2009), *Annuaire Statistique Edition 2008, INSD Burkina Faso*

#### 5.3.2 Competitive Environment

Burkina Faso has three flour mills, including Les Moulins d’Burkina Faso, which supplies about 75 percent of the country’s flour needs and has an annual milling capacity of approximately 100,000 MT, although reportedly milling at a level far less. This mill services bakeries, restaurants and hotels with wheat flour for bread and pastries. Reportedly, Les Moulin purchases wheat from a French broker that is purchasing a composite of low-priced wheat sourced from Argentina, Australia, Germany, Russia, Ukraine and the United States. This broker reportedly provides Les Moulins with good credit terms to ensure future sales. The other two mills are much smaller, each purchasing between 500 and 1,000 MT of wheat per month, and with limited on-site storage space.

Title II imports of wheat present no risk of disincentive to domestic production or trade of wheat, given that Burkina Faso produces trace quantities of wheat. The main difficulty in monetizing wheat is to coordinate the specific delivery requirements of buyers with small purchasing requirements without compromising the commercial nature of the transaction. Contract enforcement is unreliable in Burkina Faso and with so few buyers this re-enforces the lack of a competitive sales environment. Therefore, this Bellmon report does not recommend monetization of wheat.

## 5.4 NONFAT DRIED MILK

Nonfat dried milk (NFDM) is not recommended for monetization because of a lack of qualified buyers or competition in the market, and special storage requirement considerations.

### 5.4.1 Supply Summary

A robust livestock industry is the ready source of locally produced and consumed fresh milk in Burkina Faso. Due to an underdeveloped milk processing and cold chain system, however, the fresh milk supply is largely limited to consumption and use in production areas. Milk production is seasonal in Burkina Faso given that cows lack adequate food and water during the dry season (December to May) and thus produce little to no milk.

### 5.4.2 Competitive Environment

Because milk production is both seasonal and largely limited to rural areas, urban areas such as Ouagadougou and Bobo-Dioulasso increasingly rely on imports of processed milk products, such as dry milk and milk creams to meet their needs. According to Comtrade, in 2005, 7,624 MT of milk were imported into Burkina Faso, including 3,465 MT of milk powder.

**Table 9: Milk powder imports (MT)**

2001	2002	2003	2004	2005
172	146	1,867	1,648	3,465

Source: Comtrade

Milk imports to Burkina Faso include whole cream and NFDM products. Dried milk packaged in tins is brought into Burkina Faso in small lots by wholesalers from Ghana and Côte d'Ivoire, who sell to restaurants, bakeries and other institutions. Powdered milk products are not produced domestically and imports principally come from the Netherlands and New Zealand. Milk powder can be sold and used as an ingredient in the local production of processed foods, such as blended foods, yogurt and biscuits. Based on market surveys, however, fewer than 20 food processors with limited production and storage capacity would be potential buyers. Their current purchases range from 5 kilograms to 500 kilograms per month with some type of credit terms for payment.

Both whole and skim milk powder can be fortified with whey-based powders and concentrates which make them attractive in the manufacturing of high-energy milk for therapeutic feeding. Available under the USAID Title II program, dried skimmed milk powder (SMP), and NFDM, has a carbohydrate content of 52 grams and 100 grams, respectively, which is predominantly lactose. Reconstituted milk is obtained by combining dried milk with butter or vegetable oil. It is not recommended to combine dried skim milk with water only, as this produces milk containing less fat and energy than whole milk. Dried skim milk and nonfat dried milk are not interchangeable, although dried skim milk can be used to fortify cereals and porridges or combined with a suitable oil, sugar and vitamin/mineral preparation to make high-energy milk for therapeutic feeding.

Nonfat dried milk must be stored away from direct sunlight and kept cool. This storage requirement would add to the cost of a monetization activity if a small lot sales approach is conducted. Overall, given the desire to ensure that the NFDM would not leak into the “fresh milk” supply as well as a lack of bulk buyers or food processors, and additional storage costs associated with this commodity, this analysis does not recommend monetizing NFDM in Burkina Faso.

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## 6. DISTRIBUTION ANALYSIS

### 6.1 INTRODUCTION

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 in 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.<sup>4</sup> 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 to produce.

This pre-MYAP distribution analysis outlines the most likely distribution modalities for food aid commodities through the upcoming MYAP cycle and provides Bellmon-relevant guidance and scenarios of possible coverage, where appropriate, that will help ensure the minimization of potential impacts on production and markets of such food aid distributions, and as a result are Bellmon compliant. The presentation of possible distribution modalities and program parameters are based on a review of official USAID guidance (via the FSPS) and discussions with stakeholders in the field and in Washington (including USAID/FFP and current Title II awardees CRS and Africare)). These scenarios are meant to serve as illustrative guidance rather than as a prescription given that the potential awardees’ MYAP proposals have yet to be finalized and are not available to inform the present Bellmon analysis.

### 6.2 POTENTIAL FOOD AID DISTRIBUTION MODALITIES DURING FY2010-2014 MYAP CYCLE

There is broad scope and range for an array of Title II-funded development interventions in Burkina Faso. For the upcoming MYAP cycle, however, several modalities appear most likely: Food For Work (FFW), Food For Education (FFE) and Maternal Child Health Nutrition (MCHN) interventions, likely in the form of a Prevention of Malnutrition in Children Under Two Approach (PM2A). To help ensure proposed food aid programs will not result in substantial disincentive or disruption of markets, presented below are: (1) a set of key considerations for all distributed food aid interventions in Burkina Faso, and (2) an outline of general guidelines for each of these three most likely modalities. This analysis focuses special attention on PM2A for three reasons:

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<sup>4</sup> Ideally, one would conduct household surveys to assess whether or not food aid would represent additional consumption. However, because household surveys are both extremely expensive and time-consuming, proxy indicators of ‘additionality’ can be used to assess the potential for the household to sell food aid, reduce market purchases of food and/or increase household farm sales. This is the approach taken in the present analysis.

(1) it is an evidence-based MCHN intervention designed to promote long-term human capital outcomes, and therefore a logical focus of any non-emergency Title II program wherever a MCHN intervention is warranted; (2) because PM2A is a new method, not only is there need for broad-based understanding of activity design among key decision makers, but probable room for adjustment in ration design among potential awardees; and (3) most important for the present analysis, because it is designed to prevent malnutrition rather than recuperate children and mothers who are already malnourished, it has greater potential to over-provide food rations, which could potentially cause Bellmon concerns.

### 6.3 KEY CONSIDERATIONS FOR ALL DISTRIBUTED FOOD AID INTERVENTIONS IN BURKINA FASO

#### ***Finding the Right Balance Between Title II Food and Cash Resources***

For distributed food aid in Burkina Faso, as in any other development program, the volume of distributed food rations should be calibrated based on the cash resources necessary to fund all of the inputs required to obtain desired program impact. These resources include staff, non-food ration health and nutrition services and inputs (e.g., community health volunteers, preventive and curative medicines, etc.), and ongoing monitoring and evaluation (M&E), etc. In the case of PM2A, these necessary cash inputs may be greater than in other direct feeding interventions.

Each direct feeding program will involve different levels of food and non-food costs. The BEST Team tabulated estimates for program scenarios to illustrate the potential monthly food cost per beneficiary household. Applying the standard food distribution ration formula used by the WFP for FFA, and BEST calculations for PM2A, the estimated costs of providing monthly rations to each beneficiary household in Burkina Faso are presented in Table 10. The estimates show that the per beneficiary month cost would be \$38.55 for FFW and \$3.79 for FFE; PM2A with both individual mother/child and household rations distributed year-round would cost \$9.87, whereas if mother/child rations are distributed year-round but distribution of household rations to all PM2A-eligible households is limited to lean season months, PM2A would cost an average of \$5.29.

**Table 10: Estimated Cost of Monthly Rations, by Modality, for Burkina Faso**

FFW <sup>5</sup>	FFE <sup>6</sup>	PM2A <sup>7</sup> (mother/child ration plus household ration year-round)	PM2A (mother/child ration year-round but household ration limited to lean season)
\$38.55	\$3.79	\$9.87	\$5.29

The cost per beneficiary household for *implementation* of each distribution activity will vary widely depending on, among other things, awardees' capacity, beneficiary coverage and the level of integration of program interventions. Non-food ration costs are excluded for purposes of this illustration. Those costs include any non commodity resource or management such as technical specialists, monitoring and evaluation and technical materials. The full cost estimates could be considerably different from those presented in the table. The PM2A interventions are expected to play an important part of a much broader and integrated development intervention.

***Local Diet Should be Considered in the Selection of Appropriate Commodities for Distribution***

More food secure households prefer to eat whole rice versus broken rice, and millet and maize as a staple, or a high quality food to complement the staple such as fish or meat.

Cereals are the staple food and main source of energy. Title II options include wheat, sorghum, maize, rice, cereal flours, processed cereal grains, soya fortified grains. Commercial processing of whole grain cereals form a variety of food aid commodities: flour and meal; parboiled rice; bulgur wheat; soya-fortified cereal grains; soya-fortified bulgur wheat, soya fortified wheat flour (SFWL), soya fortified corn meal (SFCM), and soya-fortified sorghum grits (SFSG). Compared to unprocessed cereals, processed cereals are quicker to cook, more fuel efficient, and therefore preferable, given the extensive environmental degradation in Burkina Faso.

Pulses (cowpeas, beans, and lentils) are critical in the diets of rural Burkinabé, as meat is cost prohibitive and eaten only during special holidays. People prefer to consume sorghum and millet in rural areas, and rice in urban/peri-urban areas. Maize is consumed in both areas as a

<sup>5</sup> Based on a monthly ration of 63.13 kilograms per household of six persons and consisting of dry corn grains (25 kilograms), cornmeal (25 kilograms), chickpeas (10 kilograms) and vegetable oil (3.13 kilograms); 6 months of coverage per year.

<sup>6</sup> Based on a monthly ration of 2.8 kilograms per household of two school-going children and consisting of dry corn grains (2 kilograms), chickpeas (0.6 kilograms) and vegetable oil (0.2 kilograms); 10 months of coverage per year.

<sup>7</sup> For illustrative purposes, BEST assumed the following about the size and composition of the PM2A rations: Individual monthly rations of 6 kilograms of Corn Soya Blend (CSB) for pregnant and lactating mothers and 3 kilograms of CSB for children 6-24 months. Monthly household rations of 9.5 kg per household based on a household of 6 persons, and consisting of bulgur (6.5 kg), lentils (2 kg) and vegetable oil (1 kg) distributed either year-round or during a four-month-long lean season. The calculations underlying these estimated ration costs are detailed further in Annex 11.

secondary staple preference. Cottonseed and/or palm cooking oil is used to prepare dishes and sauces in both rural and urban areas.

Informants noted that as a result of nutritional counseling and training and promotion of marketing vegetable activities, consumption of vegetables and fruits is increasing. Onions, Irish potatoes, orange-fleshed sweet potatoes and mangoes are important locally produced foods.

Beneficiaries identified ease of milling, preparation and cooking as important factors determining the utility of the distribution to the household. Other critical considerations included fuel economy and the availability and accessibility of other non-food requirements such as salt, sugar and sauces to complement the staple product or porridge.

Beneficiaries are more likely to optimize the food aid as designed if the commodity is culturally-acceptable and/or the distribution is accompanied by nutrition education and awareness. Interviews with beneficiaries and food aid representatives revealed that Title II lentils, pinto beans, bulgur, and vegetable oil were well-liked and acceptable to beneficiaries.

### ***Timing of Ration Delivery is Critical***

Food distributed during “la période de soudure,” the lean season, is more likely to be consumed by beneficiaries because of shortages of household stocks combined with high market prices. The high variability of staple prices between seasons affects household income and consumption. The lean season in Burkina Faso is generally July to mid-September/October, though there are important regional variations (i.e. a two to four week lag for northern areas). The lean season is generally July – mid-September in the south, and July – early October in the north.<sup>8</sup>

Where food aid distribution is viewed as either a short-term and/or unreliable source of food, subsistence farmers will be less likely to adapt planting decisions in response to distributed food aid rations. Informants noted that beneficiaries occasionally sell a portion of the food aid ration at the local market in exchange for more preferred commodities. During in-country market visits and surveys, however, no Title II commodities were found in the marketplace.

According to informants, a household in Burkina Faso is typically defined as “people who live together and share food from a common pot.” Polygamy is commonly practiced, meaning that a number of people (husband, wives and their children) will form one household. For the practical purpose of calculating household sizes and adequate food needs, WFP provides rations based on the mother and her children, up to a total of six rations. Current programs are designed so that the ration size does not exceed the needs of the household, lessening the chance that food would be resold.

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<sup>8</sup> The new FEWS NET seasonal calendar is expected to document these regional differences. Please see the current FEWS NET seasonal calendar on page 5.

## 6.4 GENERAL GUIDELINES TO HELP ENSURE PROPOSED FOOD AID PROGRAMS WILL NOT RESULT IN PRODUCTION DISINCENTIVE OR MARKET DISRUPTION

### 6.4.1 Food For Work (FFW)

The intent of FFW is to create food-wage employment during the hunger period when rural unemployment increases. The rise in unemployment results in lower rural incomes at precisely the time of year when staple prices tend to spike because of food shortages in local markets. FFW activities will vary, but often involve construction and maintenance of productive community assets. Wage payments are generally made in-kind, as food rations rather than in cash. If designed correctly, this practice can stabilize the price of staples in the market and improve food consumption and nutrition of participating households. If designed and implemented appropriately, FFW can also increase productivity on semi-subsistence farms.<sup>9</sup>

#### **Key considerations to ensure Bellmon compliance of proposed FFW programs:**

To encourage self-targeting, the income transfer value of the ration should be set at slightly less than the prevailing rural wage and include slightly less preferred food aid commodities. If the value of the FFW ration is too high, it can disrupt local labor markets by attracting more laborers and the food may not benefit the most needy individuals, i.e., women and families. Inclusion of a food used commonly in child feeding may also help in self-targeting women.

*Timing of food distribution is critical.* FFW commodity distribution will be less disruptive if distributed during the lean season rather than during the harvest season. During the lean period, rural households, especially the poorest, have little reserves of food from markets because of high prices. By carefully timing FFW activities to coincide with the lean season, FFW will maximize food security impact.

As mentioned earlier, the lean season in Burkina Faso is generally July to mid-September/October, though there are important regional variations (i.e. a two to four week lag for northern areas). The lean season is generally July – mid-September in the south, and July – early October in the north.<sup>10</sup>

*There must be sufficient supervisory capacity for any proposed FFW activities to minimize possible leakages.* Where warranted and possible, FFW should target female-headed households, as recent evidence suggests female-headed households are more vulnerable.<sup>11</sup> Prior to such targeting, awardees should investigate the availability of female labor during the

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<sup>9</sup> Abdulai, A., C. B. Barrett, and J. Hoddinott. 2005. "Does food aid really have disincentive effects? New evidence from sub-Saharan Africa." *World Development* 33:10.

<sup>10</sup> The new FEWS NET seasonal calendar is expected to document these regional differences. Please see the current FEWS NET seasonal calendar on page 5.

<sup>11</sup> ENIAM 2009.

typical lean periods to ensure women could participate effectively in such gender-targeted FFW activities.

**For further guidance on the appropriate design of FFW activities**, please see USAID's Commodities Reference Guide, accessible via [http://www.usaid.gov/our\\_work/humanitarian\\_assistance/ffp/crg/module2.html](http://www.usaid.gov/our_work/humanitarian_assistance/ffp/crg/module2.html)

#### 6.4.2 Food For Education (FFE)

Food For Education activities (sometimes called “school feeding”) are designed to provide nutritional supplements to school-age children and increase school attendance. By increasing school attendance, FFE can enhance productivity, increase incomes and result in greater gender equity.

Because free meals at school represent an income transfer to the student’s household, FFE can make it feasible for families to send their children to school. In some FFE programs, take-home rations are provided and act as an additional contribution to household access to food.

#### **Key considerations to ensure Bellmon compliance of proposed FFE programs<sup>12</sup>:**

- Geographic targeting of food insecure areas.
- Sufficient supervisory capacity for any proposed FFE activities to minimize possible leakages.
- “Wet” meals, or meals served in the school, will help ensure food rations are consumed by the intended beneficiary, the student.

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<sup>12</sup> For additional USAID Food for Peace information about FFE guidance, please see *Fiscal Year 2010: Title II Proposal Guidance and Program Policies Draft Date: August 2009*. For additional information about FFE programming objectives, please see Bergeron, Gilles and Joy Miller Del Rosso. 2001. “Food For Education Indicator Guide”. Washington DC: Food and Nutrition Technical Assistance Project, AED. For a review of the effectiveness of FFE interventions, see Adelman, S., D. Gilligan and K. Lehrer. 2008. “How Effective are Food for Education Programs? A Critical Assessment of the Evidence from Developing Countries,” International Food Policy Research Institute Food Policy Review 9, accessible via: <http://www.ifpri.org/sites/default/files/publications/pv09.pdf> Applicants considering FFE as a component of their MYAP proposals need to ensure that an appropriate package of interventions clearly linking resources and activities through integrated programming is included. When applicable, FFE activities in MYAP proposals should improve and strengthen the provision of school health and nutrition services and education and sanitation infrastructures as well as contribute to a larger effort in improving education, including national education policy reform, curriculum design and teacher training programs. This includes innovative approaches such as adult literacy and informal education courses and food for vocational training of youth programs for PLHIV. Food and nutritional interventions must be programmed within the context of other interventions that focus on the quality of education. Transition strategies, including phase-out or phase-over planning, should also be detailed in the proposal with established benchmarks.

Take-home rations can act as an effective incentive to promote school attendance, particularly of girls, by partially compensating poor households for the lost income or the time children would normally have spent working at home during school hours.

Awardees should determine whether or not take-home rations are appropriate to ensure school-based meals are not substituting for home consumption, but are in fact additional consumption.

**For further guidance on the appropriate design of FFE activities,** please see USAID's Commodities Reference Guide, accessible via [http://www.usaid.gov/our\\_work/humanitarian\\_assistance/ffp/crg/module3.html](http://www.usaid.gov/our_work/humanitarian_assistance/ffp/crg/module3.html)

#### 6.4.3 Prevention of Malnutrition in Children Under Two Approach (PM2A)

PM2A presents both an opportunity for long-term human capital investment and a unique challenge to avoid disincentives in the short-to-medium term. While the traditional recuperative approach targets children who are already malnourished and may have severe, irreversible physical and cognitive damage, PM2A provides food aid to all children between the ages of 6 to 24 months and within a target geographic area. As with the traditional recuperative nutrition approach, the PM2A also targets pregnant and lactating women with Behavior Change Communication (BCC), preventive health care, and food supplementation. Because the key PM2A targeting criteria are based on a child's age and a women's physiological status, rather than on an estimated household food deficit, distributed rations under PM2A activities have greater potential to provide food aid to households for whom the food aid would not represent additional consumption. Initial geographic targeting of areas with a greater proportion of food-deficit households, as identified by secondary sources prior to program implementation, will help avoid disruption of local production and markets.

#### **Geographic Targeting and Beneficiary Coverage**

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 which 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.

To assess the relative absorptive capacity of food aid on a sub-national basis in Burkina Faso, thereby providing Bellmon guidance on the appropriate magnitude of distributed food aid under a PM2A activity, this report relies on two proxy indicators of additionality: cereal poverty and chronic malnutrition of children under five years of age. Based on a review of the most recent secondary data including Enquête Nationale de l'Insécurité Alimentaire et de la Malnutrition (ENIAM) 2009, Food Security Programming Strategy (FSPS) 2009, Demographic and Health Survey (DHS), Direction Générale de la Promotion de l'Economie Rurale (DGPER) 2009, World Health Organization (WHO) 2005,<sup>13</sup> cereal poverty and stunting prevalence (height-for-

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<sup>13</sup> DGPER (2009) is source of cereal poverty data. OMS (2005) is source of HFA data reported in ENIAM.

age z-score (HAZ) of <-2 standard deviations (SD)) in children under five years of age appear to be the best available indicators of the relative absorptive capacity of food aid on a sub-national basis for Burkina Faso, which is important to inform initial geographic targeting given the nature of the PM2A activity.

Neither cereal poverty nor stunting in children under five years old are quantitative measures of a current household food gap, which could then be compared with the ration under the proposed food aid program to determine to what degree the “food gap” might be filled (or potentially overfilled) under the program. Both, however, provide strong indications of chronic household food deficits and are, therefore, reasonable proxy indicators of the probability that food aid rations would represent additional food consumption.

By geographically targeting areas with a high prevalence of both households in cereal poverty and chronically malnourished children, a PM2A activity will help ensure that any given PM2A beneficiary household will *more than likely* increase overall household food consumption, relative to households in other geographic areas with lower rates of cereal poverty and lower rates of malnutrition among children under age five.

In accordance with formative research on the underlying causes of early childhood malnutrition, PM2A activity guidance includes BCC messages and a suite of health and nutrition-related services. By delivering the food ration as part of a carefully designed package of MCHN interventions custom-tailored to beneficiary communities, a PM2A program will increase further the likelihood that direct beneficiaries will consume and correctly use additional food, which will simultaneously maximize nutritional impact and minimize any potential Bellmon concerns.

There are no current Title II awardees implementing MCHN activities in Burkina Faso. Therefore, it is difficult at this stage to anticipate what geographic coverage or ration might be proposed for distribution should a MYAP propose a PM2A activity. Beneficiary targeting will likely focus on regions identified as chronically food insecure in the USAID Food Security Country Framework (FSCF) for Burkina Faso for FY2010-2014 and by the suggested indicators of “additionality.” For the sake of this presentation, cereal poverty and stunting in children under five years old were used as proxies for chronic food insecurity.

Table 11 provides an overview of the estimated number of households potentially eligible for a PM2A intervention, and the number of PM2A-eligible households for which food aid would be most likely to represent additional consumption. The right-most column, which shows the estimated number of households who are both PM2A-eligible and among the poorest households in terms of cereal poverty (and therefore most likely to benefit from food aid as additional consumption), provides a rough guideline of the number of households that could be targeted for year-round household rations within each district without introducing Bellmon concerns. These figures are meant to serve as general guidance since they are based on analysis of secondary data which, by its nature, will provide less precise guidance than well-designed and implemented baseline surveys in awardee implementing areas.

**Table 11: Estimated Number of PM2A-eligible Households for Whom Food Aid Would Be Most Likely to Represent Additional Consumption**

Region	1A Population (proj. 2010)	1B Households (pop/ household size )	2 % Households in cereal poverty	3 Food insecure households using cereal poverty as indicator	4 % stunted under 5s (HAZ <-2 SD)	5 Est. pop. of eligible children & mothers	6 Households in cereal poverty w/ an eligible child & mother
Boucle du Mouhoun	1,615,879	276,976	19.4	53,733	37.8	116,343	22,571
Cascades	595,625	97,666	17.9	17,482	42.2	42,885	7,676
Centre	1,934,677	396,414	36.3	143,898	26.3	139,297	50,565
Centre-Est	1,267,858	209,140	49.3	103,106	38.3	91,286	45,004
Centre-Nord	1,346,268	199,752	35	69,913	40.2	96,931	33,926
Centre-Ouest	1,328,954	194,274	22.3	43,323	38.2	95,685	21,338
Centre-Sud	718,416	118,178	43.3	51,171	35.7	51,726	22,397
Est	1,357,758	215,784	28.3	61,067	43.9	97,759	27,666
Hauts-Bassins	1,645,956	289,672	11.8	34,181	33.4	118,509	13,984
Nord	1,328,092	205,110	30.3	62,148	40.8	95,623	28,974
Plateau Central	779,937	119,357	36.5	43,565	41.1	56,155	20,497
Sahel	1,084,655	204,701	32.7	66,937	42.7	78,095	25,537
Sud-Ouest	695,259	116,316	28	32,569	35.2	50,059	14,016
TOTAL / AVG	15,699,333	2,643,341	29.6	783,095	38.7	1,130,352	334,584

Notes: [1A] and [1B] Population and household figures based on 2006 census, projected to 2010 using a factor of 1.12 and actual average household size. [2] DSAP/DGPER/MAHRH "Etat de Pauvreté Alimentaire en 2006 et 2007, Burkina Faso" May 2009 [3] column [1B] times column 2 [4] GOBF/MAHRH/DGPER, ENIAM (2009) [5] Estimated population of children under two years old and pregnant/lactating mothers, based on author's calculations using World Bank WDI 2009, UNICEF and INSD Enquêtes démographiques (1960/61 and 1991), Recensements (1975, 1985, 1996 and 2006) [6] column 2 times column 5. Shaded rows represent FSCS target regions. Joint mission by WFP in 2006 identified Sahel, North, Centre-north, East and South-west as regions with greatest levels of chronic food insecurity.

Since an awardee's catchment areas may cover only part of one or more regions, potential awardees must conduct a more careful enumeration of PM2A-eligible households within their proposed catchment areas to determine possible levels of coverage. However, the second column from the right provides a rough estimate of the maximum number of PM2A-eligible households within each region, and therefore provides a guideline for the number of beneficiary households that might be targeted to reach 100 percent coverage by region.

Columns 2 and 4 in Table 11 show the regional prevalence of cereal poverty and chronic stunting. Selecting regions with cereal poverty near or above the national average (30 percent), the BEST analysis indicates that Center, Center East, Center North, Center South, East, North, Central Plateau and Sahel regions are the most food (cereal) insecure. In addition, using the World Health Organization (WHO) threshold for moderate or severe stunting (HAZ < -2 SD) of 40 percent and the national average stunting rate among children of five years old and below (38.7 percent), Cascades, Center North, East, North, Central Plateau and Sahel regions record stunting problems near or above the average. Among the regions, Center, Center East and Center South record high cereal poverty but moderate stunting rates below the national

average. In contrast, Cascades region record one of the highest child stunting rates but the second lowest cereal poverty rate.

Combining the two indicators, the BEST analysis concluded that Center North, East, North, Central Plateau and Sahel regions are the regions where food aid would be most likely to represent additional consumption, and therefore least likely to pose any Bellmon concerns. These regions coincide with the regions identified in the FSCS as potential targets. These regions are characterized by high cereal poverty and high stunting rates (please see Annex 5 for further details). The figures in the right-most column provide a rough guideline of the number of households that could be targeted for year-round household rations within each district without introducing Bellmon concerns. These figures are meant to serve as general guidance since they are based on analysis of secondary data which, by its nature, will provide less precise guidance than well-designed and implemented baseline surveys in awardee implementing areas.

Given the need for intense monitoring and follow-up, and costs per beneficiary of the non-food related costs,<sup>14</sup> the cost effectiveness of targeting the Sahel region is questionable. The Sahel region is not only sparsely populated but its inhabitants are semi-nomadic herders, which would make monthly tracking and monitoring daunting.

### **Strategic Use of Food Rations to Achieve Maximum Impact on Nutritional Outcomes**

There are no current Title II awardees implementing MCHN programs in Burkina Faso. Therefore, it is difficult at this stage to anticipate what geographic coverage or ration might be proposed for distribution should a MYAP propose a PM2A as one part or its entire proposed MCHN program.

### **Individual Rations for Mother and Child**

Individual PM2A rations are expected to cover all pregnant or lactating mothers and children under two years of age within a catchment area. The purpose of the individual rations directed towards pregnant and lactating mothers and children under two is nutritional supplementation, which narrows the appropriate composition and size of the mother and child rations to those that follow nutritional guidelines for individual physiological needs. For the purposes of the present BEST analysis, the ration is assumed to be composed of blended cereals, while the ration size is assumed to provide approximately 500 kcal per person per day for children 6 to 24 months of age, and 1000 kcal per person per day for pregnant or lactating mothers.<sup>15</sup>

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<sup>14</sup> For a discussion of food ration versus non-food ration costs, please see Maluccio John and Cornelia Loechl. 2006. "Preventive versus Recuperative Targeting of Food Aid: Accounting for the Costs" accessible via [http://www.fantaproject.org/pm2a/IFPRI\\_R2\\_0306.pdf](http://www.fantaproject.org/pm2a/IFPRI_R2_0306.pdf).

<sup>15</sup> For purposes of the Bellmon analysis, the individual rations and kcal per person per day needs have been utilized for mother and children commodity calculations as indicated. However, please see FANTA-2's PM2A Technical

Labeling individual rations as “special” food may help to ensure that food aid is consumed by intended beneficiaries. Nutrition interventions such as PM2A that target pregnant and lactating mothers and children under two may be neutralized if the beneficiary household chooses to reallocate resources away from the mother and child as a result of receipt of individual PM2A rations. While there is some evidence<sup>16</sup> that transfers may not be reallocated away (a phenomenon termed an intra-household 'flypaper effect' because the transfer 'sticks' to the mother or child), labeling individual rations as “special” food may help to ensure the nutritional supplements are consumed by the intended individual beneficiaries, which will maximize the nutritional benefits of PM2A interventions.

In accordance with formative research on the underlying causes of early childhood malnutrition, PM2A guidance requires BCC messages and a suite of health and nutrition-related services as integral components of a preventive approach to malnutrition. By delivering the food ration as part of a carefully-designed package of MCHN interventions custom-tailored to beneficiary communities, a PM2A program will increase further the likelihood that direct beneficiaries will consume and correctly use additional food, which will simultaneously maximize nutritional impact and minimize any potential negative Bellmon impacts.

### **Household Ration**

Unlike individual rations, the household ration is not intended to serve as nutritional supplementation; rather, it can serve several different purposes, including:

- Protection of mother and child rations from diversion or dilution to other household members,
- An additional incentive for the mother and/or other household members to participate in key PM2A activities (BCC messages, attendance at health clinics for growth monitoring or other well visits, etc.)

A household ration may also act as an additional income transfer which enables extremely poor households to more effectively participate in integrated development programs. Given that PM2A activities (inclusive of ration provisions to individual and household beneficiaries) are intended to form one part of an overarching integrated rural development program, there may, however, be other mechanisms through which awardees would choose to provide such an additional income transfer.

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Resource Materials (TRM) and other related guidance on calorie needs accessible via <http://www.fantaproject.org/pm2a/index.shtml>.

<sup>16</sup> Islam, Mahnaz and John Hoddinott. Feb 2008. “Evidence of Intra-Household Flypaper Effects from a Nutrition Intervention in Rural Guatemala,” working paper, accessible via: <http://ssrn.com/abstract=1262368>.

Precisely because it is not intended as a nutritional supplement and because it can serve several purposes, a household ration is more malleable in terms of contextualization to reflect community norms and needs. The preventive approach that was successfully piloted in Haiti provided a household ration composed of blended foods, pulses and oil to all households within the catchment area on a year-round basis, regardless of household wealth status or food deficit. Future awardees may consider different scenarios depending on a variety of factors (e.g., community needs, food preferences and logistics, etc.), which may lead to a more strategic use of household rations, both in terms of household ration composition, size, and frequency and timing of delivery. Based on formative research, future awardees may consider different household ration designs, which will require ongoing monitoring and evaluation to ensure the household ration is appropriately designed to ensure protection of individual rations while maintaining acceptable levels of program participation.

As noted above, no Title II Awardee is presently implementing MCHN interventions in Burkina Faso. A potential awardee must conduct formative research to ensure design intervention and most effective ration size and composition to address nutritional needs of mothers and children while minimizing potential negative impacts on markets and production. To determine the appropriate size of a household ration, potential awardees should review all available evidence of estimated household food gaps within the proposed targeted communities.<sup>17</sup>

Whether it will be critical to the success of a PM2A intervention to provide household rations year-round to all PM2A-eligible households to discourage diversion of individual rations to other household members can only be determined through formative research to understand key health and nutrition behaviors and current barriers to change. While potential awardees must target individual rations to all pregnant and lactating mothers and children under two within a catchment area on a year-round basis, awardees may consider a number of different options for inclusion of household rations. Among the many options, two possibilities are:

1. target household rations year-round but only to the most food insecure households as an additional income transfer
2. target household rations to *all* PM2A-eligible households, regardless of household food insecurity or wealth status, but limit distribution of household rations to the lean season months

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<sup>17</sup> One potential source of estimated food gaps is the new Food and Agriculture Organization (FAO) “depth of hunger” estimates which estimate the national average food deficit (in kcal/person/day) for the undernourished population. The most recent estimated food deficit for the undernourished population in Burkina Faso (2003-2005) is 210 kcal per person per day. For purposes of cost calculations, described more fully in Annex 11, the household ration assumed for illustrative purposes in this analysis is designed to meet 101% of the estimated household deficit of the average undernourished population, and 12% of the total household monthly caloric requirements.

Whatever coverage and delivery frequency of the household ration is ultimately deemed most appropriate for the target communities, awardees are expected to ensure that household rations are sufficient to protect the woman and child individual rations without reducing participation while minimizing Bellmon concerns.

The sections that follow present two possible PM2A funding scenarios regarding the individual and household rations, with associated commodity volumes and potential beneficiary household coverage. The first scenario is based on the ration design from the Haiti pilot in which a monthly ration was provided to individual beneficiaries (mother and child) and beneficiary households for each month of participation, but the child rations are reduced to reflect the physiological capacity of children under two. The second scenario is based on the same principle of coverage, in which mother and child rations are provided on a year-round basis, and household rations are again provided to all PM2A-eligible households but limited to lean season months. The third scenario limits household rations to only the most food insecure households and limits delivery of household rations to lean season months. For simplicity, the percentage of households considered most food insecure is assumed a uniform 33 percent of all PM2A-eligible households within a given catchment area.<sup>18</sup>

Whether the scenarios represented in Table 12 below are the most appropriate levels of intervention will depend critically on (1) whether there are sufficient cash resources available to effectively support a PM2A intervention, even if appropriately geographically targeted to chronically food insecure communities in Burkina Faso; and (2) whether potential awardees determine through formative research and their ongoing monitoring and evaluation efforts that it is necessary to provide household rations year-round to all PM2A households to achieve desired nutritional outcomes.<sup>19</sup>

**Table 12: Funding outlines for PM2A**

Country Program Funding Devoted to PM2A Rations	Total Annual Volume of Commodities	Ration <sup>20</sup>	Number of Beneficiary Households Covered Under Activity
\$4.5 million	6,245 MT	<ul style="list-style-type: none"> <li>• mother/child rations year-round to all PM2A-eligible HHs</li> <li>• HH rations year-round to all PM2A-eligible HHs</li> </ul>	37,994
\$6 million	8,325 MT		50,659
\$7.5 million	10,407 MT		63,323
\$4.5 million	6,270 MT	<ul style="list-style-type: none"> <li>• mother/child rations year-round to all PM2A-eligible HHs</li> <li>• HH rations year-round to all PM2A-eligible HHs but limited to lean season</li> </ul>	70,888
\$6 million	8,362 MT		94,518
\$7.5 million	10,452 MT		118,147

<sup>18</sup> This percentage is based on the approximate national average one-third of households who are in cereal poverty (see Table 11 above).

<sup>19</sup> For a discussion of food ration versus non-food ration costs in a PM2A program, please see Maluccio John and Cornelia Loechl. 2006. "Preventive versus Recuperative Targeting of Food Aid: Accounting for the Costs" accessible via [http://www.fantaproject.org/pm2a/IFPRI\\_R2\\_0306.pdf](http://www.fantaproject.org/pm2a/IFPRI_R2_0306.pdf)

<sup>20</sup> The calculations underlying these estimated ration costs are detailed in Annex 11.

The hypothetical funding scenarios and the table of the potential beneficiary households show that a funding level at approximately \$7.5 million (50 percent of estimated total funding allocation) could cover approximately 63,323 households if both individual and household rations are provided to all PM2A-eligible households on a year-round basis. If the household ration is instead provided to all PM2A-eligible households but limited to the lean season, the number of households that could potentially be covered nearly doubles to 118,147. Depending on the ultimate size of the indirect household ration, by adding in the additional income transfer throughout the year, program coverage is necessarily reduced, perhaps significantly. However, such an additional income transfer may be very appropriate particularly when targeting communities with a large percentage of extremely poor households.

The level of coverage is important from a Bellmon perspective because not only does it translate into a volume of food aid commodities being introduced into a local area (and therefore potentially affecting markets and incentives to produce), it hints at the non-food ration costs that must be available to effectively support all of the other program activities.<sup>21</sup> BCC and other health and nutrition services are essential inputs into any food aid program designed to address many of the underlying causes of early childhood malnutrition which are *not* a function of lack of food availability. Particularly where malnutrition is heavily influenced by poor feeding practices, as in Burkina Faso, sufficient cash resources to support the strategic use of food rations in a PM2A activity designed to affect long-term nutritional outcomes will help to ensure the food rations will represent additional consumption at the household-level, and therefore be Bellmon compliant.

Whether it is necessary to provide household rations year-round to all PM2A households in order to achieve desired nutritional outcomes, it will be important that food aid be provided as one element of an integrated development program and that the number of beneficiaries receiving food aid ideally should not exceed the number that can be supported by the associated income-generating and agricultural development activities. As such, it is anticipated that the availability of finance for integrated development activities will limit beneficiary coverage and constrain the use of food aid rations, rather than the availability of food aid itself.

**For further guidance on the appropriate design of MCHN interventions generally, and PM2A specifically,** please see USAID's Commodities Reference Guide, accessible via [http://www.usaid.gov/our\\_work/humanitarian\\_assistance/ffp/crg/module1.html](http://www.usaid.gov/our_work/humanitarian_assistance/ffp/crg/module1.html), and FANTA-2's PM2A Technical Resource Materials (TRM) and other related guidance accessible via <http://www.fantaproject.org/pm2a/index.shtml>.

### **Existing Food Aid and Cash Transfer Programs**

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<sup>21</sup> For a discussion of food ration versus non-food ration costs in a PM2A program, please see Maluccio John and Cornelia Loechl. 2006. "Preventive versus Recuperative Targeting of Food Aid: Accounting for the Costs" accessible via [http://www.fantaproject.org/pm2a/IFPRI\\_R2\\_0306.pdf](http://www.fantaproject.org/pm2a/IFPRI_R2_0306.pdf)

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Whichever modalities are proposed, it will be important to avoid duplication of ration coverage, on the one hand, and capitalize on complementary services through coordination of development interventions, on the other.

Two Awardees (Africare and CRS) are currently implementing five year (FY2004-2009) USAID Title II food aid development programs in rural, food insecure areas of Burkina Faso. CRS and Africare monetize Title II rice to fund their development activities, and distribute Title II pulses, cereals and vegetable oil to vulnerable populations. In addition, WFP implements food aid focused distribution programs with its partners: Helen Keller International (HKI), Doctors without Borders, CRS, Africare, UNICEF and FAO. Christian Relief Fund has also been operating a very small distribution program of about 110 MT of cereals distributed between 2005 and 2007 to villages in the Sahel during periods of high food insecurity or drought. Distribution programs have been sensitive to local food customs; however, field informants report household sharing of food is common.

At the government's request, WFP initiated a voucher program in 2009 to assist urban populations to buy food given the global food price hikes. Access, as opposed to availability, was threatened by the unrelenting price increases and the voucher program helped to re-stimulate local markets. Vouchers improve consumer access to a specified range of commodities and support traders in supplying these commodities. Vouchers give some flexibility to beneficiaries in the types of food they can purchase, or beneficiaries may be given a choice between food and necessary non-food items, such as soap. The urban feeding program applies strict targeting criteria (e.g. pregnant and lactating women and children under three years old).

In terms of early warning and responses to recurrent food crises, the government manages a National Security Stock that can be mobilized in case of large cereal production shortfalls. Its use (free distributions and/or subsidized sales) is subject to the recommendation of the Technical Committee of the National Food Security Council whose members are the EU, France, the Netherlands and WFP. An Intervention Stock of a smaller capacity has also recently been created under the government's full control and management.

Annex 8 provides more details of food aid programs in the five regions identified as geographic priorities for the upcoming MYAP cycle.

## ANNEX 1: ECONOMIC DATA & TRENDS

### Gross Domestic Product (GDP) per capita

**Table 13: GDP, Population and Growth Rates, 2004-2008**

	2004	2005	2006	2007	2008	
GDP (current US\$) (billions)	5.11	5.43	5.77	6.77	7.87	*
Agriculture, value added (% of GDP)***	31.6	32.8	31.5	29.3	30.8	
Industry, value added (% of GDP)***	22.9	22.6	33.7	23.8	24.2	
Services, etc., value added (% of GDP)***	45.5	44.6	45.8	46.9	45.1	
Real GDP (annual % change)*	4.6%	7.1%	5.5%	3.6%	5%	*
Consumer Price Index (annual % change)*	-0.4%	6.4%	2.4%	-0.2%	10.7%	
Total population (million)	13.51	13.93	14.36	14.78	15.29	**
Population growth rate	3%	3.10%	3%	2.90%	3.46%	**
GDP per capita (\$)	378.24	389.81	401.81	458.05	514.61	
GDP growth per capita	15.9%	3.1%	3.1%	14%	12.3%	

Sources: *The World Bank, Development Data Platform Quick Query*, <http://ddpext.worldbank.org/ext/DDPQQ/report.do?method=showReport>

\*International Monetary Fund, <http://www.imf.org/external/pubs/ft/weo/2009/01/pdf/text.pdf>

\*\*based upon projections forecast by the Rencensement Général de la Population et de l'Habitation de 2006 (RGPH)

\*\*\* L'Institut National de la Statistique et de la Démographie (INSD) <http://www.insd.bf/>

### Poverty Rates

**Table 14: National Poverty Rates**

	1994	1998	2003
Poverty Line (CFA)	41,099	72,690	82,672
CFA to USD*	283	590	581
Poverty Line (USD)*	145	123	142
Incidence of Poverty	44.50%	45.30%	46.40%
Depth of Poverty	13.90%	17.70%	15.60%
Severity of Poverty	6%	5.90%	7.10%

Sources: 2008 Annuaire Statistique, from INSD,

Enquêtes prioritaires 1994 et 1998,

Enquête burkinabé sur les conditions de vie des ménages 2003,

\*World Bank Development Indicators

Poverty rates are not estimated on an annual basis in Burkina Faso, but rather calculated from national household surveys. The next Burkinabé investigation into household conditions of life (EBCVM) is scheduled for 2009-10. The most recent 2003 round found the greatest incidence, depth and severity of poverty in the North, Centre-Sud and Boucle du Mouhoun regions.

**Table 15: Poverty Indices by Region, 2003**

REGION	Incidence of Poverty	Percentage Contribution	Depth of Poverty	Percentage Contribution	Severity of Poverty
Boucle du Mouhoun	60.4%	15.9%	21.3%	16.6%	9.6%
Cascades	39.1%	3.1%	14.6%	3.4%	7.4%
Centre	22.3%	4.9%	7.1%	4.6%	2.9%
Centre-Est	55.1%	9.8%	19.7%	10.4%	9.1%
Centre-Nord	34%	6%	8.2%	4.3%	2.8%
Centre-Ouest	41.3%	7.7%	14.1%	7.8%	6.8%
Centre-Sud	66.1%	6.1%	26%	7.2%	13.5%
Est	40.9%	7.5%	12.3%	6.7%	5.3%
Hauts-Bassins	34.8%	8.1%	10.6%	7.3%	4.5%
Nord	68.6%	12.7%	24.7%	13.6%	11.8%
Plateau Central	58.6%	7.6%	20.3%	7.8%	9.5%
Sahel	37.2%	4.6%	12.6%	4.7%	5.8%
Sud-Ouest	56.6%	6%	17.5%	5.5%	7.3%
Burkina Faso	46.4%	100%	15.6%	100%	7.1%

Source: INSD, EBCVM 2003

## Global/Regional Economic Linkages/Memberships/Agreements/Partners

Burkina is party to several economic memberships, most notably the eight-member West African Economic and Monetary Union (UEMOA), seated in Ouagadougou, Burkina Faso. The unit of local currency, the West African CFA franc (currency code XOF), is pegged to the Euro and printed for the member states of UEMOA in Dakar, Senegal. In addition to using a common currency, UEMOA members have lifted tariffs on agricultural and artisanal goods, livestock and certain industrial products. UEMOA members also agree to set a maximum external customs duty of 20 percent for non-member imports.

**Table 16: Economic Partnerships**

Trade Agreement / Organization	Member Countries	Purpose
Organization of African Unity (OAU), predecessor to the African Union (AU) Year of membership: 1963	Angola, Algeria, Botswana, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo (Brazzaville), Congo (Léopoldville), Dahomey, Djibouti, Egypt, Eritrea, Ethiopia, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Côte d'Ivoire, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Sao Tome and Principe, Seychelles, Somalia, South Africa, The Sudan, Swaziland, Tanganyika, Togo, Tunisia, Uganda, Upper Volta, Western Sahara, Zambia, Zanzibar, Zimbabwe	Promote unity and solidarity among African states, to eradicate all forms of colonialism. OAU was established on 25 May 1963. It was disbanded on 9 July 2002 and replaced by the AU .
African Union (AU) Year of membership: 2002	Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroun, Cape Verde, Central African Republic, Chad, Comoros, Congo, DRC, Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea Bissau, Guinea, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Western Sahara, Zambia, Zimbabwe	Establish a Union Government of Africa and single-currency African Economic Community. Currently, eight Regional Economic Communities (RECs) exist, including ECOWAS
Economic Community Of West African States (ECOWAS) Year of membership: 1975	Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo	ECOWAS Bank for Investment and Development

Trade Agreement / Organization	Member Countries	Purpose
African, Caribbean, and Pacific Group of States (ACP) Year of membership: 1975	Angola, Antigua and Barbuda, Bahamas, Barbados, Belize, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, CAR, Chad, Comoros, Congo, Cook Islands, Côte d'Ivoire, Cuba, DRC, Djibouti, Dominica, Dominican Republics, Equatorial Guinea, Eritrea, Ethiopia, Fiji, Gabon, Gambia, Ghana, Grenada, Guinea, Guinea-Bissau, Guyana, Haiti, Jamaica, Kenya, Kiribati, Lesotho, Liberia, Madagascar, Malawi, Mali, Marshall Islands, Mauritania, Mauritius, Micronesia, Mozambique, Namibia, Nauru, Niger, Nigeria, Niue, Palau, Papua New Guinea, Rwanda, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Solomon Islands, Somalia, South Africa, Sudan, Suriname, Swaziland, Timor-Leste, Togo, Tonga, Trinidad and Tobago, Uganda, Tanzania, Vanuatu, Zambia, Zimbabwe	Yaoundé Conventions, Lomé Conventions, Cotonou Agreements: 20 year partnership with the EU, including negotiations towards Economic Partnership Agreements (EPAs)
West African Economic and Monetary Union (UEMOA) Year of membership: 1994	Benin, Burkina Faso, Guinea Bissau, Côte d'Ivoire, Mali, Niger, Senegal, Togo	Elimination of non-tariff barriers, reduction of common tariffs, adoption of harmonized systems of accounting (SYSCOA, IHPC), printing of CFA Franc at the Central Bank of West African States (BCEAO), located in Dakar, Senegal.
World Trade Organization (WTO) Year of membership: 1995	153 member states and 30 observers. Non-members include: American Samoa, Anguilla, Antarctica, Aruba, Bermuda, Bouvet Island, British Indian Ocean territory, Cayman islands, Christmas Island, Cocoa Islands, Cook Islands, East Timor, Falkland Islands, Faroe Islands, French Guiana, French Polynesia, French Southern Territory, Gibraltar, Greenland, Guadeloupe, Guam, Heard & McDonald Island, High Seas, Iran, Iraq, Libya, Martinique, New Caledonia, Niue, Norfolk Island, Pitcairn, St. Helena, St. Pierre & Miquelon, Syria, Tokelau, Turkmenistan, Turks & Caicos Islands, US Minor Outlying Islands, Virgin Islands, Wallis & Futuna Islands, Western Sahara	Reduction of tariffs and elimination of non-tariff barriers to trade, settlement of trade disputes, agriculture, labor standards, environment, competition, investment, transparency, patents etc
Community of Sahel-Saharan States (CEN-SAD) Year of membership: 1998	Benin, Burkina Faso, CAR, Chad, Djibouti, Egypt, Eritrea, Gambia, Libya, Mali, Morocco, Niger, Nigeria, Senegal, Somalia, Sudan, Togo, Tunisia	Strengthening of peace, security and stability to achieve global economic and social development

Sources: <http://fr.reingex.com/fr139m.asp>; [http://www.nyulawglobal.org/Globalex/CEMAC\\_ECOWAS.htm](http://www.nyulawglobal.org/Globalex/CEMAC_ECOWAS.htm); <http://www.uemoa.int/uemoa/historique.htm>; <http://www.africa-union.org/root/AU/MemberStates/map.htm>; <http://en.reingex.com/en139censad.asp>; [http://www.unctad.org/en/docs/tdstat33fas\\_enfr.pdf](http://www.unctad.org/en/docs/tdstat33fas_enfr.pdf); <http://cen-sad.org>; <http://www.acpsec.org/>; <http://www.ic.gc.ca/eic/site/lbi-iai.nsf/eng/bi18694.html>

## Major Products and Service Industries

**Table 17: National Accounts, 2004 – 2008**

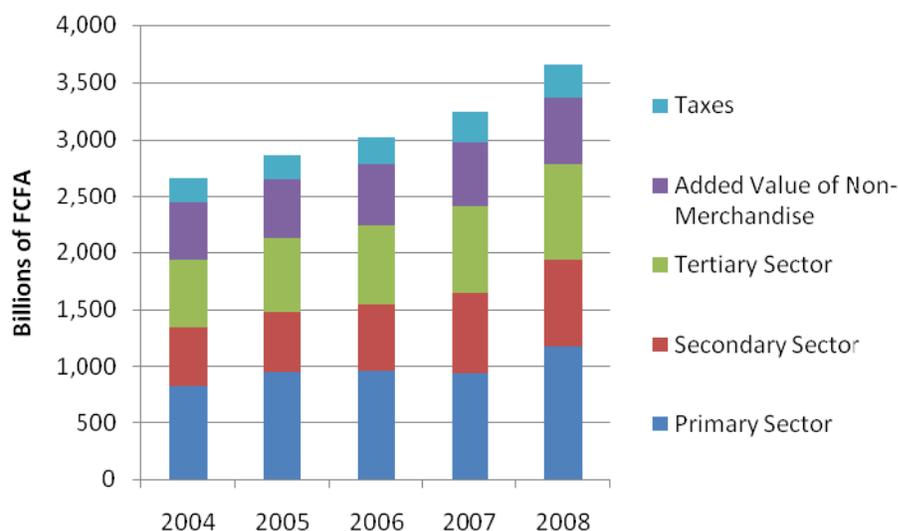
Value Added, by sector	National Accounts (in billions of CFA)				
	2004*	2005*	2006*	2007**	2008***
Primary Sector	823.7	944.5	964.9	942.4	1,169.8
Agriculture	450.1	551.3	551.5	507.3	689.7
Livestock	328.3	343.8	359.8	376.6	416.3
Forest and Fishing	45.3	49.4	53.6	58.5	63.8
Secondary Sector	519.5	530.5	571.8	702	765.1
Extraction (mines, oil, ...)	8.7	10.9	15.1	25.2	63.8
Manufacturing Industries	369.9	364.1	362.7	407.8	417.4
Electric, water and gas	26.2	32.7	36.2	42.2	46
Buildings and public works	114.7	122.9	157.8	226.8	237.9
Tertiary sector	594.9	653	697.4	752.3	842.8
Transport, warehouses & communications	108.3	120	132.2	147.2	158.3
Commerce	268.6	294.9	302	328.6	404.4
Banks and insurance	35.9	39.6	44.5	46.4	49.7
Other service merchandise	182.1	198.5	218.8	230	230.4
Merchandise Sector, Total Value Added	1,938.1	2,128	2,234.1	2,396.7	2,777.8
Non-Merchandise Sector, Total Value Added	506.2	515.7	549.9	576.4	582.3
Indirect Measures of Financial Intermediary Services	-27.4	-30.3	-34	-35.4	-37.9
Value Added Tax + Import Taxes	239.3	248.7	267.5	300.5	335
GDP	2,656.2	2,862.1	3,017.5	3,238.1	3,657.2
Merchandise GDP	2,150	2,346.5	2,467.6	2,661.8	3,074.9
Non-merchandise GDP	506.2	515.7	549.9	576.4	582.3
Goods and Service Imports	655.2	733.3	768.6	802.1	952.2
Total Resources	3,311.4	3,595.5	3,786.1	4,040.2	4,609.4
CONSUMPTION	2,762.7	2,846.1	3,011.2	3,192.1	3,384.6
Private Consumption	2,159.2	2,213.4	2,319.9	2,451.8	2,636.2
Public Consumption	603.5	632.7	691.3	740.3	748.4
CAPITAL FORMATION	254.9	464.1	427.4	508.7	841.5
Formation of fixed capital	381.9	410.1	510.6	678.2	727.7
Private	215.5	228.8	306.3	492.5	535.7
Public	166.4	181.4	204.4	185.8	192.1
STOCK FLUCTUATIONS	-127.1	54	-83.2	-169.5	113.7
Goods and Services Exports	293.9	285.2	347.5	339.4	383.3
TOTAL EMPLOYMENT	3,311.4	3,595.5	3,786.1	4,040.2	4,609.4

Source: INSD, personal visit

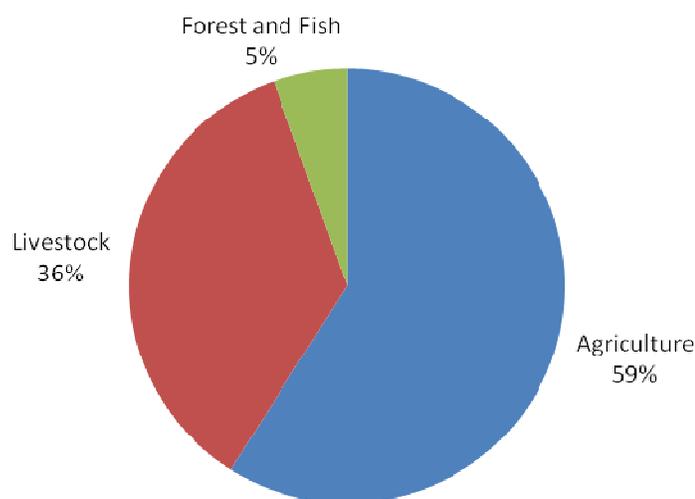
\* Estimated, \*\*Provisional, \*\*\*Projected

Gross Domestic Product, and Value Added by sector, are displayed in Table 17 above. Figure 3 below is a graphical representation of the contribution of component sectors to GDP between 2004 and 2008. The primary sector has accounted for between 29 and 33 percent of GDP from 1999 through 2008. A decomposition of the 2008 primary sector is presented in Figure 4.

**Figure 3: Burkina Faso Gross Domestic Product, 2004 - 2008**



**Figure 4: Composition of the Primary Sector, 2008**

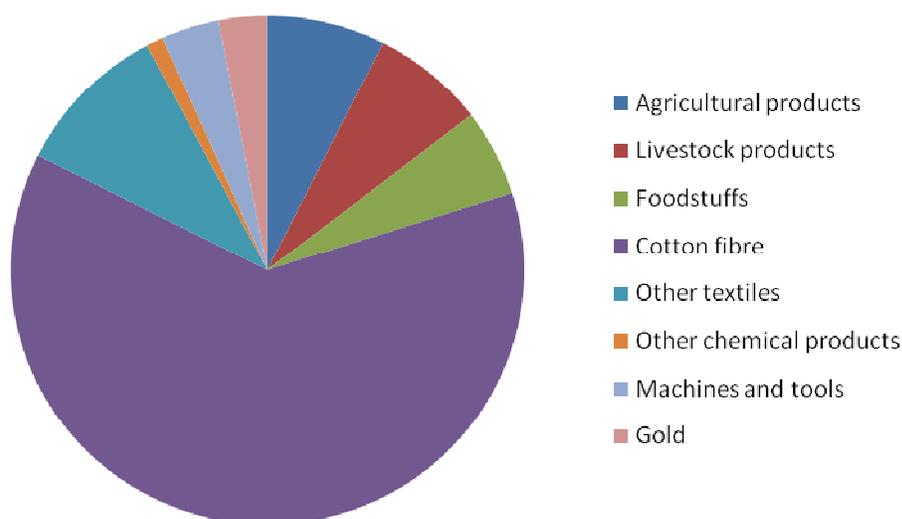


Between 2004 and 2008, exports have varied between 10 and 11.5 percent of GDP, while imports have hovered around 25 percent of GDP. The principle components of GDP are detailed in Table 18. Textiles, particularly cotton fiber, are the most significant export commodity, accounting for an average of 62 percent of exports in the last five years, dwarfing

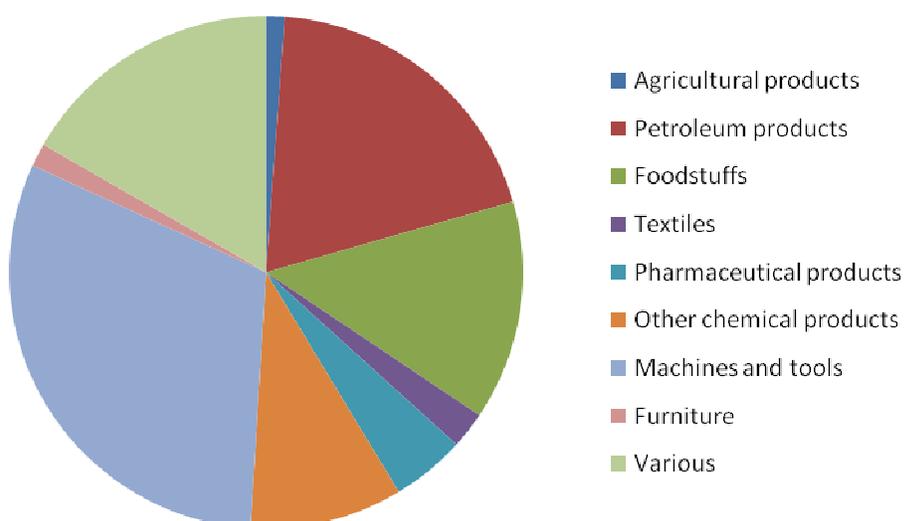
both agricultural products as well as livestock products, which contributed an average of 7.5 and 6.6 percent to GDP, respectively.

**Table 18: Components of Burkina Faso's GDP**

	2004	2005	2006	2007	2008
<b>Principal Exports</b>					
Agricultural products	25.6	20.7	25.2	24.6	27.8
Livestock products	15.1	19.8	24.1	23.5	26.6
Foodstuffs	10.7	15.3	18.6	18.2	20.6
Cotton fibre	191.7	173	210.8	205.8	232.5
Other textiles	23.6	27.2	33.1	32.3	36.5
Other chemical products	0.9	3	3.6	3.5	4
Machines and tools	9.5	10.1	12.3	12	13.5
Gold	8.1	8.5	10.4	10.1	11.4
Various	8.6	7.8	9.4	9.2	10.4
<b>Total Exports</b>	<b>293.9</b>	<b>285.2</b>	<b>347.5</b>	<b>339.4</b>	<b>383.3</b>
<b>Principal Imports</b>					
Agricultural products	9.3	8.6	9	9.4	11.1
Petroleum products	116.3	142.1	149	155.5	184.6
Foodstuffs	77.4	101.7	106.5	111.2	132
Textiles	18.2	16.9	17.7	18.5	21.9
Pharmaceutical products	31.1	34	35.7	37.2	44.2
Other chemical products	69.1	70.5	73.9	77.1	91.6
Machines and tools	218.1	226.3	237.2	247.6	293.9
Furniture	9.6	10.7	11.2	11.7	13.9
Various	106	122.5	128.3	133.9	159
<b>Total Imports</b>	<b>655.2</b>	<b>733.3</b>	<b>768.6</b>	<b>802.1</b>	<b>952.2</b>

**Figure 5: 2008 composition of official exports (projected)**

Burkina Faso's major imports include machinery and tools, petroleum products, foodstuffs and other chemical products. A graph representing the composition of 2008 imports is presented in Figure 6.

**Figure 6: 2008 composition of official imports (projected)**

### Major Shifts in Policy, Structure or Performance

Several recent policies have been enacted or are in the process of being adopted or discussed, each with the potential to impact production and/or commerce. Table 19 offers a brief summary of current policies, their status, and potential impact.

**Table 19: Current policies in Burkina Faso relevant to production and trade.**

Description	Status	Impact
Axle limits	Enacted	Safety-driven mandated reduction in axle load has the potential to increase costs of truck transport by as much as 100 percent. Increased transaction costs to affect consumer price.
Rural land tenure law	Passed by Parliament in 2009, yet to be signed by President as of July 2009.	Individuals to receive 99 year leases on currently communal-held lands. Designed to increase investment in land, to reduce rural land conflict, to improve women's access to land, and to improve household access to microfinance.
Increased coordination among food aid entities	Presidential directive	May result in increased government structure participation in the coordination of food aid.
Inter-professional organization guidelines	Under discussion in Parliament	May dictate the terms of engagement between members of inter-professional organizations.

## ANNEX 2: AGRICULTURE SECTOR

### Production Base and Trends

The main crops cultivated in Burkina Faso include sorghum, millet and maize. Recent increases in maize, rice and sesame reflect government priorities to put more lands in production through irrigation and to promote the cultivation of cash crops for national and regional trade.

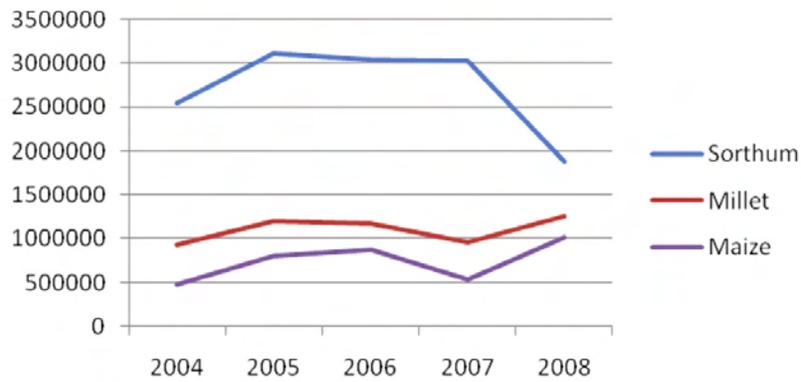
**Table 20: Production base and trends**

		2004/05	2005/06	2006/07	2007/08	2008/09*	Average (2004-2008)
<b>CEREALS</b>							
Sorghum	Sorgho	1,134,212	1,552,909	1,515,775	1,507,162	1,875,046	1,517,021
Millet	Mil	937,628	1,196,251	1,175,039	966,017	1,255,189	1,106,025
Maize	Mais	481,473	799,053	866,666	533,873	1,013,633	738,940
Fonio	Fonio	9,067	7,801	9,473	12,844	19,544	11,746
Rice	Riz	74,501	93,518	113,725	68,916	195,103	109,153
<b>TOTAL CEREALS</b>		<b>2,636,881</b>	<b>3,649,532</b>	<b>3,680,678</b>	<b>3,088,812</b>	<b>4,358,515</b>	<b>3,482,884</b>
<b>OTHER CROPS</b>							
Cotton	Cotton	535,367	712,708	759,860	377,365	720,676	621,195
Cowpeas	Niebe	276,349	444,710	436,153	253,190	537,680	389,616
Groundnuts	Arachide	245,307	220,525	215,449	244,921	346,294	254,499
Sesame	Sesame	11,793	25,058	22,887	18,802	51,926	26,093
Sweet potato	Patate	40,864	70,818	81,432	61,915	73,220	65,650
Yam	Igname	89,695	18,323	22,158	19,685	43,295	38,631

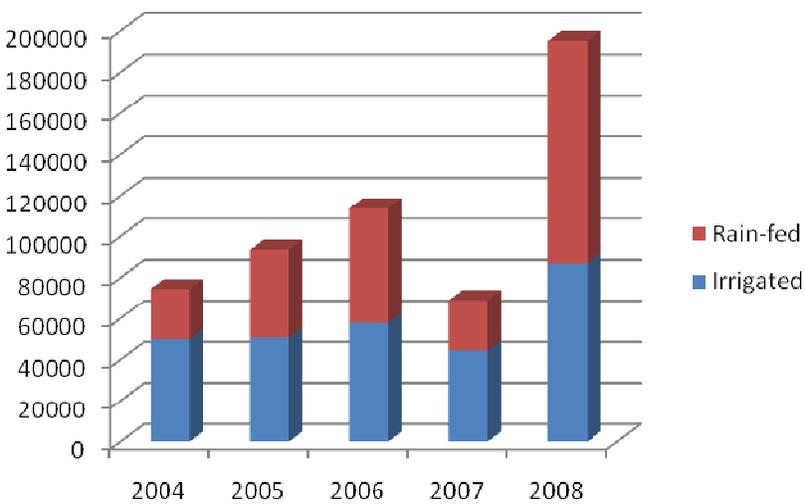
Sources: *DSAP/DGPER/MAHRH*  
<http://stat.uemoa.int/countrystat/show.asp?gourl=tables.asp&csname=burkina&pageid=pxweb/database/main/burkina/MEGA/>  
 \* *DSAP/DGPER/MAHRH "Situation Alimentaire et Nutritionnelle Définitive de la Campagne 2008/2009"*

Graphically, the trends in major cereals and rice production are represented in Figures 7 and 8.

**Figure 7: Major Cereal Production in Burkina Faso, 2004 - 2008**



**Figure 8: Rice production in Burkina Faso, 2004-2008**



Areas in the west of the country, particularly Bouclé du Mouhoun and Hauts-Bassins, are considered to be the bread basket of Burkina Faso due to their favorable climactic conditions and generous yields relative to the rest of the country. Table 21 shows cereal yields across this region from 2004 through 2008.

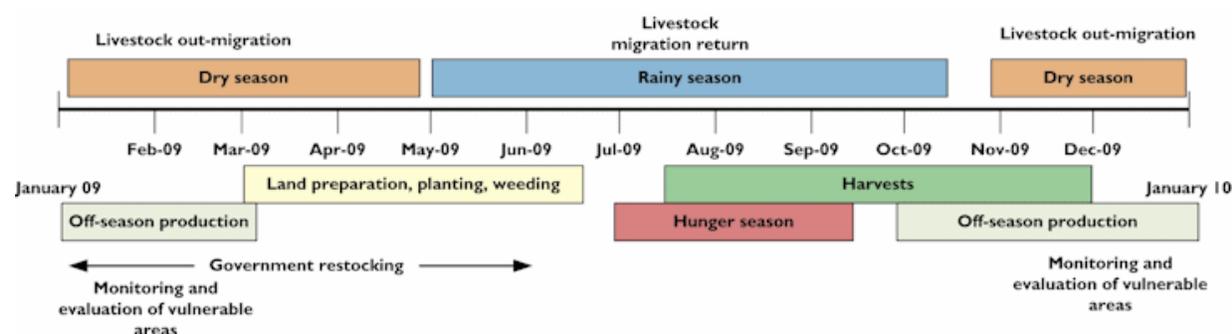
**Table 21: Cereal Production (MT) by Region, 2004-2008**

REGION	2004	2005	2006	2007	2008
Boucle du Mouhoun	438,351	605,173	693,507	533,774	757,986
Cascades	92,591	124,850	151,434	146,221	218,359
Centre	33,432	47,776	43,699	26,744	55,504
Centre-Est	174,335	240,390	229,309	181,468	344,494
Centre-Nord	245,784	294,756	213,380	204,216	275,952
Centre-Ouest	317,044	346,728	326,085	287,422	416,176
Centre-Sud	118,849	159,515	141,534	118,892	194,550
Est	305,209	277,854	233,853	242,187	513,540
Hauts-Bassins	336,231	564,337	628,905	447,970	675,590
Nord	232,100	343,625	400,057	311,070	265,839
Plateau Central	82,839	180,172	163,428	147,704	174,466
Sahel	107,407	310,225	268,615	268,437	210,508
Sud-Ouest	152,709	154,131	186,872	172,707	255,551
Burkina Faso	2,636,881	3,649,532	3,680,678	3,088,812	4,358,515

Source: DSAP/DGPER/MAHRH

## Seasonality

**Figure 9: Seasonal Calendar for Burkina Faso**



Source: <http://www.fews.net/Pages/timelineview.aspx?gb=bf&tln=en&l=en>

## Domestic Production and Processing of Inputs

In Burkina Faso, most agricultural inputs are imported, including all chemical pesticides and fertilizers, as well as machinery. L'Institut de l'Environnement et de Recherches Agricoles (INERA) has five research stations in Burkina Faso tasked with improving production systems of

traditional crops, market gardening, rice, cotton, livestock, and forest products. Only six to eight percent of certified seeds planted in Burkina Faso are domestically produced.<sup>22</sup>

## **Imports and Exports**

The following section on commodity imports and exports illustrate the relative size of the four commodity markets selected for monetization analysis: rice, oil, milk, and wheat.

### **Rice**

Burkina Faso is a net rice importer. Commercial rice imports have averaged close to 270,000 MT per year over the past five years, with commercial imports far outweighing food aid imports. During 2004-2008, on average, food aid imports were roughly 20 times lower than the volume of commercial imports. Although also a producer of rice, not enough rice is produced to meet domestic demand. Over the past five years, average production was about four times lower than the volume of commercial plus food aid imports. Rice is imported from Asia (Thailand and China).

### **Oil**

Burkina Faso has been producing on average 740,000 MT of edible oils per year over the past five years. Primarily cottonseed oil is destined for export, and there are efforts to expand cottonseed oil production further. While domestic production is adequate to cover most of the domestic demand for oil, it has been importing on average an additional 18,500 MT per year of edible oil, which is nearly exclusively palm oil, with food aid imports being negligible (1,850 MT per year on average). The main countries from which palm oil is imported are Ghana, followed by Côte d'Ivoire and Togo.

### **Milk**

Burkina Faso has been producing on average about 220,000 MT of milk per year, importing an additional 9,000 MT per year from primarily the Netherlands and France. There are no data on food aid, which indicates that Burkina Faso has never had food aid imports of milk. Domestically-produced milk products appear destined primarily for domestic consumption, as average exports are nearly non-existent.

### **Wheat**

Even though Burkina Faso does produce some wheat, no data are available on wheat production. Wheat imports more than tripled during the last five years, reaching 78,000 MT by 2008, with wheat flour, wheat and meslin being the main imports. Over the past five years, commercial imports have met domestic demand for wheat, with food aid being nearly non-

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<sup>22</sup> DSAP/DGPER/MAHRH, Bulletin Trimestriel d'Information sur la Sécurité Alimentaire au Burkina Faso, No 17, 2009.

existent. The vast majority of commercial wheat imports come from France, with a sizeable amount coming from Togo.

### Food Balance Sheet

In the twelve-year period between 1997 and 2009, the National Cereal Balance Sheet has shown a surplus, with the exceptions of the 1997/98 and the 2000/2001 agricultural seasons. It should be noted that the National Cereal Balance Sheet does not take into consideration informal imports and exports, which are anecdotally prolific in the region. Table 22 displays the regional cereal needs coverage. Eight of Burkina Faso's thirteen administrative regions (Centre, Centre-Est, Centre-Nord, Centre-Sud, Est, Nord, Plateau Central and Sahel) have produced less than their cereal needs during two or more of the last five seasons.

**Table 22: National Cereal Balance Sheet, 1997 – 2008**

Agricultural Year	Cereal Availability (MT)	Cereal Needs (MT)	SURPLUS/DEFICIT (MT)
1997/1998	1,945,600	2,105,100	-159,800
1998/1999	2,463,100	2,118,400	344,700
1999/2000	2,625,800	2,183,300	442,500
2000/2001	2,198,600	2,280,700	-82,000
2001/2002	2,851,800	2,366,300	485,500
2002/2003	3,015,700	2,468,800	547,000
2003/2004	3,250,758	2,483,048	996,736
2004/2005	2,714,764	2,520,934	430,181
2005/2006	3,111,131	2,617,366	704,527
2006/2007	3,328,009	2,676,937	970,925
2007/2008	3,117,757	2,874,958	242,799
2008/2009*	3,782,506	3,168,231	614,275

Source: DSAP/DGPER/MAHRH

\*Situation Alimentaire et Nutritionnelle Définitive pour la Campagne Agricole 2008/09

**Table 23: Cereal needs coverage (in percentage), by region**

REGION	2004/2005	2005/2006	2006/2007	2007/ 2008	2008/2009*
Boucle du Mouhoun	140	184.3	205.8	160.9	218.1
Cascades	97.5	128	165.4	115.2	151.3
Centre	13.2	16.4	14.4	7.3	12
Centre-Est	106.9	99	91.2	67.7	119.5
Centre-Nord	99	115.7	81.3	73.2	92.9
Centre-Ouest	148.1	140.2	128.7	104.9	143.4
Centre-Sud	106.3	109.1	92.9	79.9	126.1
Est	129.1	110.8	87.7	84.9	167.3
Hauts-Bassins	119.4	181.3	193.9	135.3	179.7
Nord	91.2	132.6	145.5	114	93.2
Plateau Central	70.2	111.5	99.3	92.1	103.9

REGION	2004/2005	2005/2006	2006/2007	2007/ 2008	2008/2009*
Sahel	53.7	151.2	127.4	118.6	87.8
Sud-Ouest	158.9	128.7	152.9	117.5	169
Burkina Faso	102	125.1	122.2	96	125.7

*Source: 2008 Annuaire Statistique*

*\*Situation Alimentaire et Nutritionnelle Définitive pour la Campagne Agricole 2008/09*

## ANNEX 3: NATIONAL HOUSEHOLD CONSUMPTION & EXPENDITURES

### Sources of Food/Local Diets/Main Supplies

As shown in Table 24, cereals form the basis of both urban and rural household diets across dietary diversity groups. While rural households with weak dietary diversity scores limit their intake to cereals, urban households with similar scores complement their cereal intake with oils. Oils and fish are present in the diets of households with medium and high dietary diversity scores, while fruits and meat are the exclusive domain of households boasting high dietary diversity scores.

**Table 24: Food consumption by Dietary Diversity Groups**

Rural			Urban		
Weak	Medium	High	Weak	Medium	High
Cereals			Cereals		
Leafy vegetables			Leafy vegetables		
	Oil		Oil		
	Fish			Fish	
		Other vegetables		Other Vegetables	
		Other fruits			Fats
					Vitamin A rich fruits
					Meat

Source: GOBF/MAHRH/DGPER, ENIAM (2009)

Table 25 (below) illustrates that the distribution of dietary diversity scores is not homogeneous across regions. Sahel, Est and Boucle du Mouhoun display the largest preponderance of weak dietary diversity scores. The fact that Boucle de Mouhoun is a high production area yet suffers from weak dietary diversity might be indicative of a bifurcation in the production system, i.e. a

few large-scale industrial producers accounting for the vast majority of production, while most households engage in subsistence agriculture, compounded by weaknesses in utilization.

**Table 25: Dietary Diversity by Region**

REGION	Dietary diversity (SDA9)		
	Weak Dietary Diversity	Medium Dietary Diversity	High Dietary Diversity
Boucle du Mouhoun	64.6%	25.7%	9.7%
Cascades	24.4%	35.2%	40.3%
Centre	41.3%	33%	25.6%
Centre-Est	49.1%	31.2%	19.7%
Centre-Nord	53.3%	30.4%	16.3%
Centre-Ouest	50.7%	26.6%	22.7%
Centre-Sud	36.9%	30%	33.1%
Est	73.2%	16.8%	10%
Hauts-Bassins	37.8%	34.6%	27.6%
Nord	43.7%	28.2%	28.2%
Plateau Central	61%	28.7%	10.3%
Sahel	79.2%	17.4%	3.4%
Sud-Ouest	41.8%	38.7%	19.5%
Burkina Faso	50.5%	29%	20.5%

Source: GOBF/MAHRH/DGPER, ENIAM (2009)

## Sources of Income

Table 26 displays the primary source of household income by region. More than 50 percent of households in the regions of Boucle du Mouhoun, Cascades, Centre-Ouest, Centre-Sud, Est, Nord, Plateau Central and Sud-Ouest reported agriculture as their primary source of household income. Livestock figured prominently in the incomes of households in Centre-Est, Centre-Nord, Sahel and Est.

**Table 26: Primary source of household income, by Region.**

REGION	Activity Groups								
	Staples Agriculture	Revenue Agriculture	Livestock	Other agricultural activities	Commerce	Salary	Transport and artisanal	Transfers, aid and pension	Other sources
Boucle du Mouhoun	40.5%	16.4%	9.6%	0.2%	9.4%	13.6%	4.4%	4.3%	1.6%
Cascades	52.9%	8.6%	6.2%	1.4%	6.1%	16.8%	3.5%	2.8%	1.6%
Centre	3.8%	0.1%	0.6%	0.6%	24.2%	37.5%	9.4%	12.6%	11.4%
Centre-Est	16.3%	1.1%	38.4%	0.3%	14.5%	13.7%	6%	8.8%	0.9%
Centre-Nord	28.3%	0.1%	39.9%	1%	8.8%	11.9%	1.6%	2.2%	6.2%

REGION	Activity Groups								
	Staples Agriculture	Revenue Agriculture	Livestock	Other agricultural activities	Commerce	Salary	Transport and artisanal	Transfers, aid and pension	Other sources
Centre-Ouest	51.7%	7.8%	12.4%	2.7%	4.3%	14.3%	0.8%	4.3%	1.7%
Centre-Sud	47.9%	3%	18.3%	2.7%	9%	11.2%	2.4%	2.7%	2.8%
Est	53.4%	4.5%	23.4%	0.2%	3.5%	9.8%	1.1%	2.3%	1.8%
Hauts-Bassins	15.3%	13.9%	1.4%	2.9%	14.4%	30.2%	6.8%	10.5%	4.6%
Nord	51.5%	0.1%	10.6%	2.8%	5.7%	18.5%	2.4%	2.9%	5.5%
Plateau Central	49.7%	1.6%	19.5%	2.9%	6.4%	13.9%	2.1%	2.3%	1.5%
Sahel	46.5%	0.1%	26%	1.4%	10.4%	7.3%	1%	2%	5.2%
Sud-Ouest	44.6%	12.2%	5.7%	0.7%	17.3%	6.7%	2.2%	6.2%	4.4%
Burkina Faso	28.2%	5.2%	13.3%	1.3%	13.4%	21.2%	4.8%	7.2%	5.4%

Source: GOBF/MAHRH/DGPER, ENIAM (2009)

### Expenditure Patterns/Budgets

As illustrated in Table 27, food, drink and tobacco is the primary source of household expenditure across all regions ranging from 33.4 percent of household expenditure in Centre up to 76 percent in Centre-Sud. Health expenditure ranges from a mere 1.6 percent of household budget in Sahel up to 8.5 percent in Plateau Central. Purchases of food as a percentage of household expenditures are illustrated in Figure 10 and Table 27.

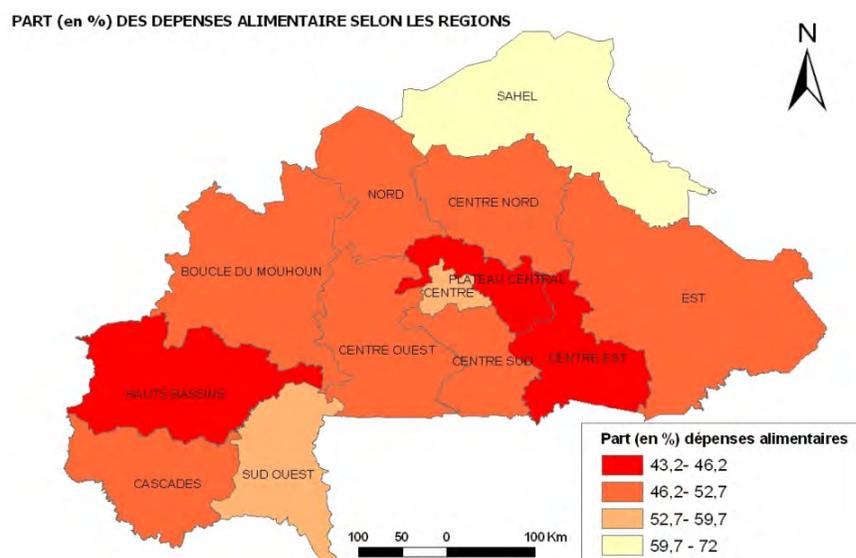
**Table 27: Household expenses (in percentage) by category and region**

REGION	Food, drink & tobacco	Clothes & footwear	Lodging, Water, electricity, gas & other combustibles	Furniture, household equipment & upkeep	Health	Transportation	Hobbies, Events & Culture	Education	Hotels, cafes & restaurants
Boucle du Mouhoun	57.4	6.6	17.5	3.3	3.3	3.6	3	1.2	2.7
Cascades	40.3	10.4	15.5	3.8	5.1	12	6.4	0.9	4.6
Centre	33.4	3.8	15.1	3.8	4.4	9.2	0.1	1.6	4.9
Centre-Est	48.3	6.1	17.5	4	7.3	3.4	6.9	1.5	3.2
Centre-Nord	58.3	8.4	16	3.8	1.8	4	3.9	0.6	1
Centre-Ouest	46.3	7.5	17.1	4	6.6	6.9	4.9	1.5	3.5
Centre-Sud	76	3.7	7	3.0	2.2	1.3	3.8	0.9	1.3
Est	59.2	8.2	12.5	3.2	2.6	3.6	3.6	0.6	5.6
Hauts-Bassins	44.3	6.6	17.9	3.1	4.2	11.3	3.7	2.2	4.1
Nord	61.2	6	15.5	2.5	2	6.4	1.7	1.2	1.3

REGION	Food, drink & tobacco	Clothes & footwear	Lodging, Water, electricity, gas & other combustibles	Furniture, household equipment & upkeep	Health	Transportation	Hobbies, Events & Culture	Education	Hotels, cafes & restaurants
Plateau Central	43.7	7.8	17.7	4.2	8.5	5.7	6.3	0.9	3.9
Sahel	56.4	13.1	10.1	5	1.6	4.5	2.5	0.3	5.5
Sud-Ouest	58.9	4.8	10.8	4.7	3.4	7.6	4.3	0.8	1.8
Burkina Faso	48.8	6.8	17.8	3.6	4.4	7	4.1	1.9	3.5

Source: INSD, EBCVM (2003)

**Figure 10: Food Purchase as a Percentage of Household Budget, by Region**



Source: GOBF/MAHRH/DGPER, ENIAM (2009)

Detailing the composition of food purchases, the Enquête Nationale de l'Insécurité Alimentaire et de la Malnutrition (ENIAM) study asked sampled households to recall the amount spent on various food items over the course of the preceding 30 days. Table 28 shows that the purchase of cereals accounted for greater than half of the average household food budget across regions, save Boucle du Mouhoun and Cascades where the average household spent just less than half of the food budget on cereals. Average households in Centre-Est, Centre-Ouest, Centre-Sud and Sahel spent less than ten percent of their food budgets on meat, fish, poultry and eggs, whereas average households in other regions spent between 11.1 percent (Nord) and 20 percent (Boucle du Mouhoun) on these high protein items. Beans comprise an average of 8.2 percent of the food budget, ranging from 4.8 percent in Sahel up to 11.9 percent in Centre.

**Table 28: Structure (in percentage) of 30-day recall food expenditures, by region**

REGION	Cereals	Meat, fish, poultry & eggs	Leguminous plants	Beans	Milk & dairy	Cooking oil	Sugar
Boucle du Mouhoun	45.4%	20%	0.6%	10.9%	0%	8.8%	13.1%
Cascades	49.3%	14.9%	3.3%	11.4%	2.6%	7.5%	10.1%
Centre	57.5%	13.1%	5.9%	11.9%	1.9%	6.4%	3.1%
Centre-Est	64.6%	9%	5.1%	10.1%	0%	6.5%	4.7%
Centre-Nord	69.5%	10%	1.7%	6.1%	0.5%	6.5%	5.2%
Centre-Ouest	68.2%	9.2%	4.4%	7.2%	0%	5.7%	5.2%
Centre-Sud	62.4%	9.5%	7.9%	6.6%	0.3%	6.1%	4.4%
Est	64%	13.9%	3.2%	7%	0%	6.7%	3.1%
Hauts-Bassins	53.2%	16.3%	4.2%	8.6%	1.4%	7.6%	8.6%
Nord	63.1%	11.1%	0.8%	7.1%	0.3%	7.2%	8.6%
Plateau Central	61.3%	11.2%	5%	8.2%	0.8%	7.5%	4.8%
Sahel	72.6%	6.6%	0.5%	4.8%	1.6%	3.7%	8.8%
Sud-Ouest	63.1%	14.5%	1.2%	7.7%	0%	8.2%	4.2%
Burkina Faso	61.8%	11.7%	3.7%	8.2%	0.9%	6.5%	6.2%

Source: GOBF/MAHRH/DGPER, ENIAM (2009)

## ANNEX 4: GEOGRAPHICAL, DEMOGRAPHY & INFRASTRUCTURE

### Land Characterization, Position, User

The 2003 Burkinabeé Household Living Conditions Survey (EBCVM) classified five agroecological zones across Burkina Faso. Land characterization and use are detailed in Table 29.

**Table 29: Agroecological Zones and Land Uses**

Agroecological Zones		Homogeneous Zones		Agricultural Production Systems	Animal Production Systems
Number	Name	Number	Name		
1	Sahel	1	Sahel	Extensive livestock rearing in the north. Semi nomadic or transhumance in the south. Traditional cereal cultivation in the south with some production of peanuts and sesame.	Extensive livestock rearing.
2	Est	2	Est-Nord	Traditional cereals. Peanuts and beans. Reception and transit zones for livestock.	Slightly populated Zone, implicating a need to control migration.
		3	Sud Est hors Bagré	Traditional cereals. Peanuts, niébé. Cotton crop extension zone. Market gardening and rice, including irrigation schemes. Horticulture (bananas) upstream of Kompienga.	Slightly populated Zone, implicating a need to control migration. Reception and transit zones for livestock.
		4	Réserves et Parcs Nationaux de l'Est	Cultivation prohibited.	Domesticated animals prohibited.
		5	Périmètre de Bagré	Rice throughout zone in the dry season, complemented with corn and market gardening	Zones prepared for semi-intensive and intensive animal husbandry. Animal husbandry integrated with agriculture.
3	Centre	6	Zone Centrale	Traditional Cereals. Peanut, sesame, beans. Rice and market gardening in the lowlands. Cotton in prepared valleys.	Very degraded soils due to high population density. Exodus towards the east and even to the Sahel.
		7	Centre-Sud	Traditional Cereals. Maize, peanut and beans. Tubers. Rain-fed rice. Cotton and non-traditional export (bananas, mangos, citrus, cashews) extension.	Animal husbandry noted for integration with agriculture
4	Nord-Ouest	8	Nord-Ouest hors Sourou	Traditional cereals. Sesame, peanut and niébé. Market gardening and rice in lowlands.	Predominance of small ruminants.

Agroecological Zones		Homogeneous Zones		Agricultural Production Systems	Animal Production Systems
Number	Name	Number	Name		
		9	Périmètre de Sourou	Rice throughout zone. Majority of dry season rice complemented with corn and with market gardening.	No animal husbandry.
5	Ouest	10	Nouna	Traditional cereals. Rice in lowlands. Peanuts, sesame and beans.	Agro-pastoral cattle rearing. Transhumance zone.
		11	Bobo/Dédougou	Traditional cotton production zone. Traditional cereals and maize. Rice in lowlands. Non-traditional exports and market gardening.	Agro-pastoral cattle rearing. Transhumance zone.
		12	Périmètres de la vallée du Kou	Rice throughout zone. Majority of rice complemented with corn and with market gardening.	No animal husbandry.
		13	Banfora/Niangoloko	Maize. Traditional cereals. Cotton extension zone. Tubers. Peanuts, sesame and beans. Rapid development of non-traditional market exports.	Agro-pastoral cattle rearing. Transhumance zone. Sedentarization of herders.
		14	Périmètre sucrier de Banfora	High performance sugar cane.	No animal husbandry.
		15	Gaoua	Traditional cereals. Maize, peanuts and beans. Tubers (especially igname).	Transhumance zone. Sedentarization of herders.

Source: INSD, EBCVM (2003)

## Population

The 2006 census in Burkina Faso counted a total population of 14,017,262 inhabitants, including 6,768,739 males and 7,248,523 females. Distribution across age group and region are given in Tables 30 and 31.

**Table 30: 2006 Population by age groups and sex**

Age	RGPH 2006		
	Total	Men	Women
0 - 4	2,436,913	1,230,610	1,206,303
5 - 9	2,315,710	1,176,473	1,139,237
10 - 14	1,746,588	900,103	846,485
15 - 19	1,475,285	710,323	764,962
20 - 24	1,185,378	530,425	654,953
25 - 29	1,009,285	448,431	560,854
30 - 34	794,820	363,408	431,412
35 - 39	656,824	298,236	358,588

Age	RGPH 2006		
	Total	Men	Women
40 - 44	549,287	250,143	299,144
45 - 49	427,739	195,016	232,723
50 - 54	358,810	166,281	192,529
55 - 59	273,563	132,254	141,309
60 - 64	238,962	111,176	127,786
65 - 69	163,609	80,542	83,067
70 - 74	136,282	63,727	72,555
75 - 79	77,113	37,186	39,927
80 - 84	96,607	40,643	55,964
n/a	74,487	33,762	40,725
Total	14,017,262	6,768,739	7,248,523

Source: INSD, Recensement (2006)

**Table 31: Population by province, urban/rural, and sex (2004)**

REGION	Urban			Rural			Total		
	Households	Men	Women	Households	Men	Women	Households	Men	Women
Boucles du Mouhoun	23,244	60,990	60,933	224,056	653,352	667,474	247,300	714,342	728,407
Cascades	20,469	51,743	50,669	66,733	209,625	219,771	87,202	261,368	270,440
Centre	308,380	745,616	730,223	45,561	121,394	130,157	353,941	867,010	860,380
Centre-Est	37,522	94,911	103,585	149,210	434,422	499,098	186,732	529,333	602,683
Centre-Nord	18,011	48,235	49,227	160,339	517,751	586,812	178,350	565,986	636,039
Centre-Ouest	28,501	76,141	79,954	144,958	470,684	559,787	173,459	546,825	639,741
Centre-Sud	13,446	32,762	34,878	92,070	270,097	303,706	105,516	302,859	338,584
Est	15,602	40,723	38,992	177,062	554,145	578,424	192,664	594,868	617,416
Hauts-Bassins	106,437	275,789	276,992	152,199	450,440	466,383	258,636	726,229	743,375
Nord	25,595	68,241	71,344	157,539	486,451	559,760	183,134	554,692	631,104
Plateau Central	10,173	26,122	28,827	96,396	298,466	342,957	106,569	324,588	371,784
Sahel	12,739	32,573	32,283	170,030	448,802	454,784	182,769	481,375	487,067
Sud-Ouest	14,042	35,049	35,165	89,812	264,215	286,338	103,854	299,264	321,503
<b>Burkina Faso</b>	<b>634,161</b>	<b>1,588,895</b>	<b>1,593,072</b>	<b>1,725,965</b>	<b>5,179,844</b>	<b>5,655,451</b>	<b>2,360,126</b>	<b>6,768,739</b>	<b>7,248,523</b>

Source: INSD, Recensement (2006)

## Malnutrition Rates

Table 32 shows various measures related to malnutrition as collected in the 2007 Questionnaire des Indicateurs de Base du Bien-être (QUIBB). Growth retardation among children was particularly prevalent in the Sahel and Est regions, while greater than 20 percent of sampled children were classified as emaciated in Boucle de Mouhoun, Cascades, Centre-Ouest, Est,

Hauts-Bassins, Nord, Plateau Central and Sud-Ouest. The weights of greater than 40 percent of sampled children were classified insufficient in Cascades, Est and Sud-Ouest.

**Table 32: Nutritional indicators by region, 2007**

REGION	% growth retardation	% emaciated	% insufficient weight	% participation in a nutritional program	% participation in growth monitoring
Boucle du Mouhoun	33.4	22.6	38.5	31.2	57.1
Cascades	35.1	23.7	46.3	1.7	93.7
Centre	30.2	14.4	21.7	10.8	38.7
Centre-Est	39.2	19.7	28.8	14.7	86.4
Centre-Nord	39.1	12.1	26.9	19.5	71.5
Centre-Ouest	33.8	23	37.2	4	46
Centre-Sud	23.8	15.7	28.2	6.8	90
Est	46.4	23.6	46.8	8	43.9
Hauts-Bassins	37.2	20.1	24.8	18	52.8
Nord	35.1	20.3	33.5	32.6	46.1
Plateau Central	32.5	21.7	28.6	4.4	44.7
Sahel	57	11.2	20.9	20.8	30.1
Sud-Ouest	39.4	25	40.3	2.7	75.7
Burkina Faso	35.9	19.3	31.7	15	59.6

Source: INSD, QUIBB (2007)

## Water, Sanitation and Health Access

As shown in Table 33 below, boreholes serve as the primary source of water across Burkina Faso, with the exception of Centre region. Traditional wells continue to be a main source of drinking water for households in Nord and Boucle du Mouhoun. Time required by households to search for potable water is reported in Table 34.

**Table 33: Distribution of households (in percentage) across the principal source of drinking water, by region**

REGION	Principal source of drinking water of the household								#
	Bottles or sachets of mineral water	Running tap water	Spring	Boreholes	Improved wells	Traditional wells	Marigot, river, stream, rain	Other	
Boucle du Mouhoun	0.2%	1%	4%	32.7%	34.4%	27.8%	0%		920
Cascades	0%	6.3%	14.4%	55.4%	10.3%	10%	3.6%		941
Centre	1.5%	50.8%	25.5%	18.4%	1.1%	2.5%	0.2%		951
Centre-Est	0.2%	3.4%	11.1%	69.6%	6.5%	6.2%	3%		913
Centre-Nord	0.3%	3%	4.1%	71.6%	10.5%	8.6%	1.8%		908

REGION	Principal source of drinking water of the household								#
	Bottles or sachets of mineral water	Running tap water	Spring	Boreholes	Improved wells	Traditional wells	Marigot, river, stream, rain	Other	
Centre-Ouest	0.4%	2.5%	2%	62.9%	9%	19.7%	3.3%	0.1%	895
Centre-Sud	0.5%	1.5%	4.1%	72.1%	10.3%	10.6%	0.9%		910
Est	0.5%	0.9%	2%	73.9%	10%	9.1%	3.2%	0.2%	941
Hauts-Bassins	0.2%	17.7%	17.1%	30.6%	10%	23.4%	1.1%		911
Nord	0.2%	2.5%	7%	41.5%	16.7%	30.3%	1.8%		902
Plateau Central	0.1%	1.6%	7.4%	82.2%	3.7%	3.9%	1%	0.1%	900
Sahel	0.1%	0.6%	0.9%	66.4%	6.1%	16.4%	8.5%	1%	873
Sud-Ouest	0.4%	0.2%	1%	47%	18.7%	7.1%	25.6%		889
Burkina Faso	0.4%	7.3%	7.8%	55.6%	11.3%	13.5%	4.1%	0.1%	11,852

Source: GOBF/MAHRH/DGPER, ENIAM (2009)

**Table 34: Distribution of households (in percentage) according to the amount of time used to collect water, by region**

REGION	Time to collect water					#
	In the house or concession	Less than 15 minutes	15 to 30 minutes	30 to 60 minutes	60+ minutes	
Boucle du Mouhoun	10.5%	32.7%	40.6%	10.6%	5.6%	920
Cascades	12.6%	18.8%	29.5%	23.9%	15.2%	941
Centre	44.8%	16.6%	16.3%	13.9%	8.3%	951
Centre-Est	2.5%	22.3%	31.4%	23.6%	20.2%	913
Centre-Nord	3.9%	13.7%	26.8%	28.6%	27%	908
Centre-Ouest	4.1%	20.9%	26.4%	23.4%	25.3%	895
Centre-Sud	1.9%	20.3%	32.8%	30.2%	14.8%	910
Est	1.1%	16.9%	37.3%	30.5%	14.3%	941
Hauts-Bassins	30.6%	29.7%	24.4%	10.6%	4.7%	911
Nord	3.1%	15.2%	27.5%	30.7%	23.4%	902
Plateau Central	3%	16.8%	26.1%	20.6%	33.5%	900
Sahel	2.4%	14.6%	22%	28.6%	32.4%	873
Sud-Ouest	1.7%	19%	40.9%	26.3%	12.1%	889
Burkina Faso	9.6%	19.8%	29.4%	23.1%	18.1%	11,852

Source: GOBF/MAHRH/DGPER, ENIAM (2009)

Sanitation access is proxied by principle type of toilet used by households. As indicated in Table 35, 67.1 percent of the population uses neither toilets nor latrines for their sanitation needs. The preponderance of brush toilets is particularly high in Est (87.6 percent), Sub-Ouest (86.6 percent), Sahel (82.9 percent) and Centre-Sud (81.7 percent).

**Table 35: Distribution of households (in percentage) according to the principal type of toilet used, by region**

REGION	Principal type of toilet used by household					#
	Toilet with running water	Private latrine	Public latrine	Brush	Other	
Boucle du Mouhoun	0%	32.3%	2.9%	64.5%	0.2%	920
Cascades	1.1%	47.8%	0.8%	50.2%	0.1%	941
Centre	5.4%	78.9%	1.4%	13.8%	0.5%	951
Centre-Est	0.8%	20.9%	4.2%	74%	0.1%	913
Centre-Nord	0.5%	22.9%	2.3%	74%	0.3%	908
Centre-Ouest	0.1%	15.6%	3.9%	79.7%	0.8%	895
Centre-Sud	0.7%	10.5%	6.5%	81.7%	0.7%	910
Est	0.7%	10.8%	0.7%	87.6%	0.3%	941
Hauts-Bassins	2%	65.7%	3.1%	29.2%	0%	911
Nord	0.1%	20.9%	5.2%	69.8%	3.9%	902
Plateau Central	0.1%	24.3%	1%	74.2%	0.3%	900
Sahel	0.2%	12.1%	4.6%	82.9%	0.1%	873
Sud-Ouest	0%	11.9%	1.1%	86.6%	0.4%	889
Burkina Faso	0.9%	29.1%	2.9%	66.5%	0.6%	11,852

Source: GOBF/MAHRH/DGPER, ENIAM (2009)

Both the 2007 QUIBB and the 2008 Statistical Annual of Health provide information on access to healthcare. The QUIBB defines households with access to healthcare as those situated within thirty minutes of a health center using typical means of transportation (Table 36). The Statistical Annual also reports on the type and number of health institutions across regions (Table 37).

**Table 36: Household Access, Needs, Use and Satisfaction with Medical Services**

REGION	Medical Services			
	Access	Need	Use	Satisfaction
Boucle du Mouhoun	35.2%	8%	5.3%	75.1%
Cascades	46.4%	5.1%	3.6%	89.7%
Centre	74.4%	14%	12.1%	78.4%
Centre-Est	35%	9.7%	7.4%	82.8%
Centre-Nord	26%	7%	4.5%	90%
Centre-Ouest	30.5%	11.8%	8.6%	82.6%
Centre-Sud	17.8%	8.7%	6.5%	85.8%
Est	22.9%	6%	3.8%	85.8%
Hauts-Bassins	49.4%	7.8%	6.2%	84%
Nord	48.9%	7.9%	6.4%	85.2%
Plateau Central	31%	6.3%	5%	82.5%
Sahel	10.5%	5.2%	3.1%	82.2%
Sud-Ouest	15%	8.1%	5.5%	59%

Source: INSD, QUIBB (2007)

**Table 37: Health infrastructure, by region**

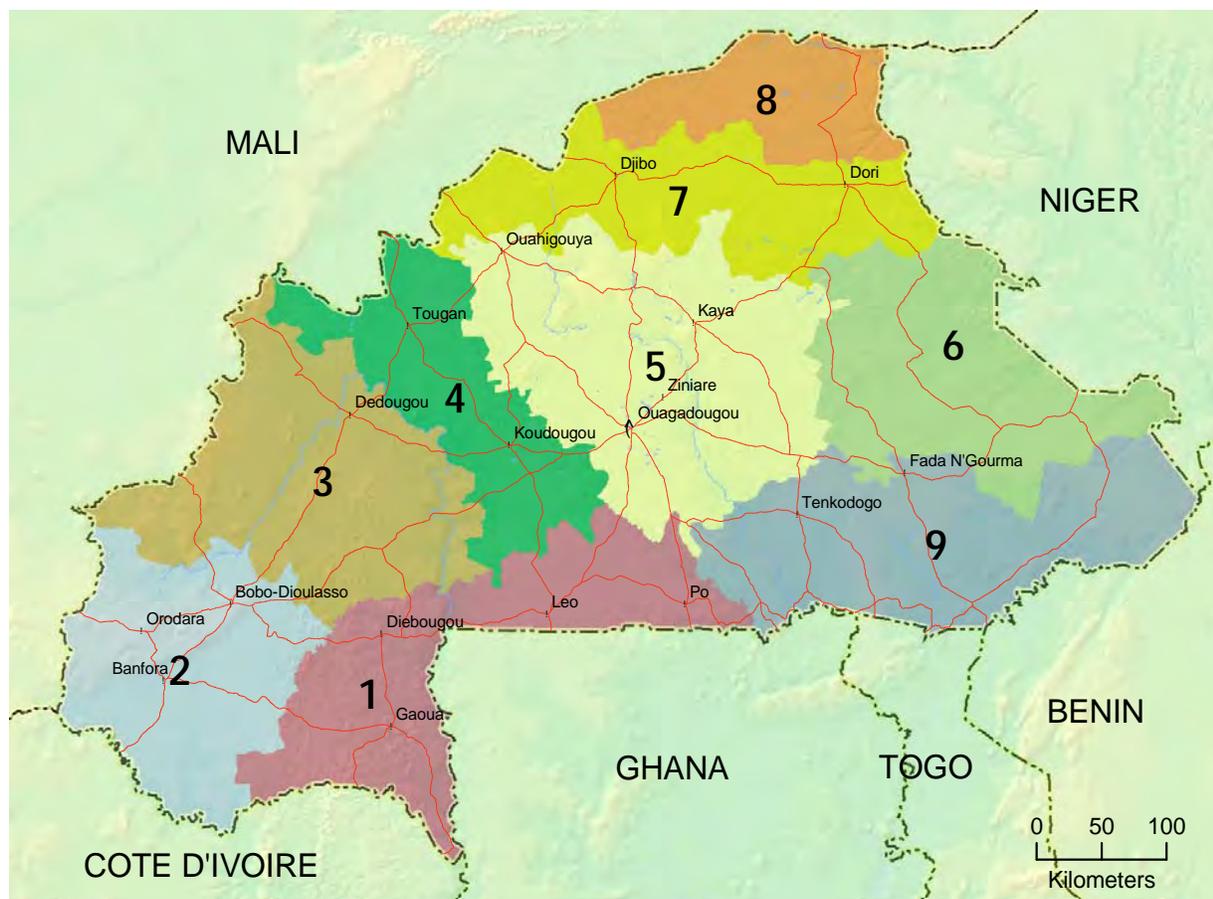
REGION	University Hospital	Regional Hospital	Medical Centre with surgical capacity	Medical Centre	Center of Health & Social Promotion	Dispensary	Maternity	Private Sanitation Training	Denominational Sanitation Training	Private Depots
Boucle du Mouhoun	0	1	5	6	143	7	0	6	3	33
Cascades	0	1	1	1	60	8	0	6	1	38
Centre	2	0	4	12	70	17	1	203	18	30
Centre-Est	0	1	3	3	110	1	2	8	2	66
Centre-Nord	0	1	3	1	100	5	0	7	7	31
Centre-Ouest	0	1	2	3	122	11	1	14	3	54
Centre-Sud	0	0	4	1	82	4	0	4	2	39
Est	0	1	3	1	94	1	2	12	9	53
Hauts-Bassins	1	0	5	0	133	13	2	84	12	48
Nord	0	1	3	2	139	16	8	12	3	38
Plateau Central	0	0	3	0	85	3	2	6	5	32
Sahel	0	1	3	0	63	6	0	2	2	20
Sud-Ouest	0	1	3	3	67	9	3	7	2	22
Burkina Faso	3	9	42	33	1 268	101	21	371	69	504

Source: Direction des Etudes et de la Planification / Ministère de la Santé (2008)

## ANNEX 5: FOOD INSECURITY

### Livelihood Zones (From FEWS NET)

The Famine Early Warning System Network (FEWS NET) is in the process of modifying livelihood definitions and zones<sup>23</sup> with the expectation that future food security investigations will use livelihood zones as the unit of analysis. The map below illustrates the current livelihood zones as defined by FEWS NET, and descriptions of livelihoods follow below.



Source: FEWS NET, <http://www.fews.net/Pages/country.aspx?gb=bf&l=en>

<sup>23</sup> FEWS anticipated publication of a revised livelihoods document in the last week of July 2009.

## General Description

### Burkina Faso Livelihood Zones

Zone 1- Root crops and maize		
Food crops	Maize Root crops	Rainfall is an average 900 mm per year. Agriculture is mainly rain fed with little mechanization. This is a seasonal grazing area for transhumant herds. Main income earning activities are cross border trade, timber cutting, hunting and fishing, tourism, and migrant laborers from the plateau. Major hazards are flooding, conflicts between pastoralists and cultivators over crop damage, high incidence of animal parasites especially trypanosomiasis.
Income	Cross-order trade, timber cutting, hunting and fishing, tourism.	
Livestock	cattle	

Zone 2- maize, rice, fruit, cotton		
Food crops	maize, rice	Rainfall is around 100mm per year. Agriculture is rain fed and irrigated. There is off season cultivation. Income generating activities are small industry employment, intensive livestock husbandry, highly mechanized cotton cultivation, petty trade, tourism, hunting and fishing and seasonal agriculture employment. This zone is the main international road entry point. It is also a seasonal grazing area and transit area for transhumant herders. Major hazards include incidents of conflict between cultivators and pastoralists over crop damage, floods and animal parasites especially trypanosomiasis.
Income	fruit, cotton cultivation, small industry employment, livestock husbandry, petty trade, tourism, hunting and fishing and seasonal agriculture employment	
Livestock	Cattle	

Zone 3- maize, rice, fruit, cotton		
Food crops		Rainfall is between 700 and 900 mm per annum. There is livestock husbandry towards the north with limited grazing migration. About 4000 hectares are under irrigation. Income generating activities are cotton production, maize sales. There are generally no problems of food sufficiency. The main hazard is trypanosomiasis, an animal parasite.
Income	cotton production, maize sales	
Livestock	cattle	



<b>Zone 4- sorghum, millet, cotton</b>		
Food crops	Sorghum, millet	Rainfall is between 700 and 900 mm per annum. There are more than 100 hectares under rice cultivation. Plow cultivation is highly developed, and there is sedentary livestock husbandry. It is also a major seasonal grazing area for incoming herds. Milk is highly consumed, and middle income households have about two milk cows and up to 20 goats or sheep. Poorer households have up to ten small stock and ten chickens. There are local opportunities for paid agriculture labor, but young men generally migrate to Ouagadougou city, and also from the north to the west of the zone. There are pockets of frequent rain failure, but generally rainfall is moderate. Major cash crops are susceptible to price swings, especially cotton. Chronic malnutrition is a problem documented in several studies.
Income	cotton production, milk, paid agricultural labor	
Livestock	Cattle, goats, sheep, chickens	

<b>Zone 5-</b>		
Food Crops		This is a densely populated zone around the central plateau area surrounding Ouagadougou city. Rainfall is between 600 and 800mm per year, and major crops produced are green beans, tomatoes, and cabbages. There is small scale livestock husbandry, and this is a transit zone for migrating herds. Local animals are subject to limited grazing land. A peri urban milk sales network is developing. Cereal production is practiced intensively, semi intensively, and extensively. Much work out migration is taking place. Most households have no cattle but five to ten small stock and some poultry. Poor households have about one hectare of arable land, middle income groups have roughly three hectares, and the better off have ten to twenty hectares. Population pressure makes for continuous sub division of family land and land degradation. Major hazards are frequent meningitis outbreaks, insecurity, property and livestock thefts, and Newcastle disease among poultry. This is the most food insecure zone in the country.
Income		
Livestock		

<b>Zone 6- Sorghum, millet, cotton, sedentary livestock</b>		
Food sources	Sorghum, millet	Rainfall is an average 600-800mm per year. There is a relatively sparse population practicing sedentary livestock husbandry. Cultivation is on relatively small areas of about one hectare, but it is nevertheless a main source of grain for the Sahel region. Roads are often impassable during the rainy season and the road network is weak.
Sedentary livestock,	cotton	
Livestock	Sedentary livestock,	

<b>Zone 7- Livestock and millet</b>		
Food sources	Cereals	Annual rainfall is between 400 and 600mm per annum. An average household has two to six cattle and fifteen to twenty small stock. Poor households have three to six small stock and some poultry. There is the general problem of isolation from markets. Poor households have to sell livestock locally at low prices and buy cereals coming in from further south at high prices. Work migration is to Ivory coast, and also to local gold digging sites. This augments basic livestock and cereals production especially in bad rainfall areas. Major hazards are rain shortfalls, periodic droughts and conflict over land resources between livestock and crop producers.
Income	Selling livestock	
Livestock	Cattle small livestock, poultry, sedentary livestock	



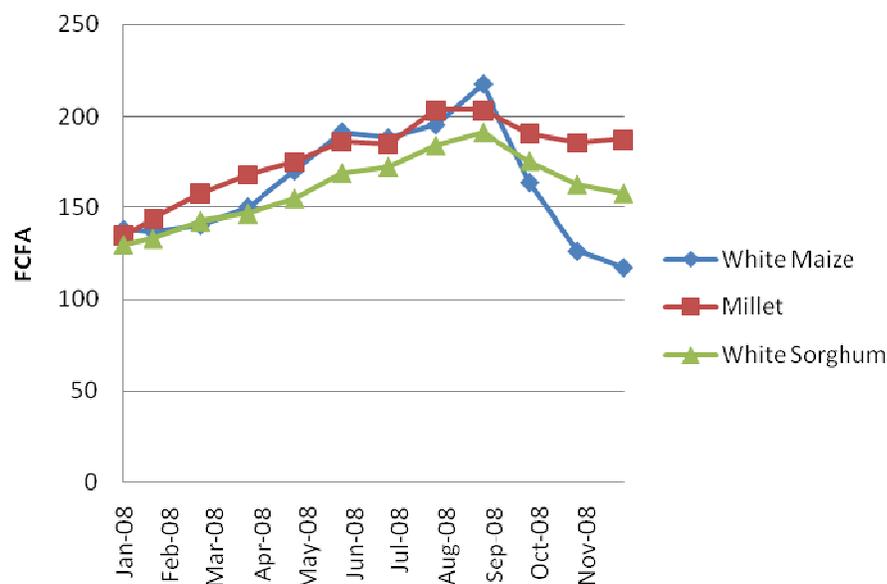
<b>Zone 8- Transhumant pastoralism and millet</b>		
Food sources	millet	Rainfall is between 300 and 500mm per year. This is a zone of wide rangelands where livestock herding is the primary economic activity as both transhumant and nomadic pastoralists. Seasonal migration happens southwards during bad years. Cattle and camels are main livestock, but sale of small stock is used to pay for the staple grain. During drought periods cattle is sold and small stock is purchased. A middle income household has ten to twenty cattle and fifteen to twenty small stock and several donkeys. Poor households have between two and ten milking cows, and five to ten small stock and mainly live by working for others. Agriculture production is a minor activity, although enough millet is grown for trade. Drought resistant cow peas are the main cash crop in rain short times. Cash crop trade is women dominated while the livestock trade is a male domain. Major hazards are rainfall shortfalls, grasshopper attacks, and flash floods. This is a high risk production environment.
Income	millet trade,	
Livestock	Cattle, small stock, camels, donkeys	

<b>Zone 9- millet, groundnuts, sorghum, cross border trade, tourism, hunting</b>		
Food sources	millet, groundnuts, sorghum,	Rainfall is an average 1000mm per year. This a high savannah region, and main crops are long cycle millet, sorghum, and groundnuts are a major cash crop. There are classified forest areas. Main income earning activities are cross border trade, hunting, and tourism. Good cash earnings are made from trade because of the sparse population and limited interest in crop cultivation. There is more interests in gardening.
Income	cross border trade, tourism, hunting	
Livestock		

## Seasonality of Prices and Market Integration

Unimodal rains and a single harvest result in predictable seasonal variation in prices of major cereals. As seen in Figure 11, average monthly consumer prices of white maize, millet and white sorghum on Sankaryaré, the main cereal market of Ouagadougou, increase during the lean season peaking during September-October, then fall with the harvest.

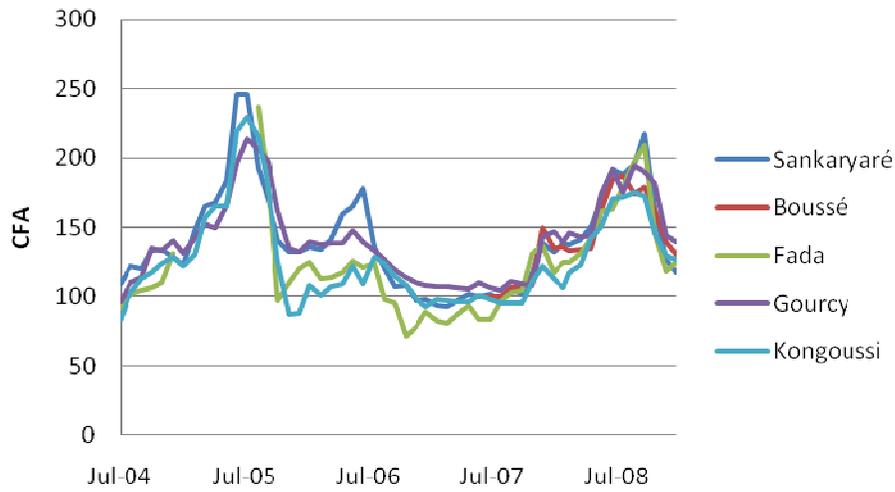
**Figure 11: Average monthly prices of cereals in Ouagadougou's Sankaryaré Market (2008)**



Source: GOBF/MAHRH/DGPER, <http://www.sisa.bf/sisa/>

To investigate integration between national markets in different regions, a time series of average monthly consumer prices of white maize, millet and sorghum across four markets was analyzed. Data availability dictated the choice of markets, comprised of Sankaryaré in Ouagadougou (Centre), Boussé (Plateau Central), Gourcy (Nord), Fada (Est) and Kongoussi (Centre-Nord). Figures 11, 12 and 13 show the evolution of cereal prices from July 2004 through December 2008. Prices in Sankaryaré tend to be the highest across the markets, suggesting its role as a terminal market. Prices of white maize co-move more closely than prices of millet or white sorghum across markets, implying that the maize market is the most efficient and highly performing.

**Figure 12: Average monthly price of white maize 2004 – 2008**

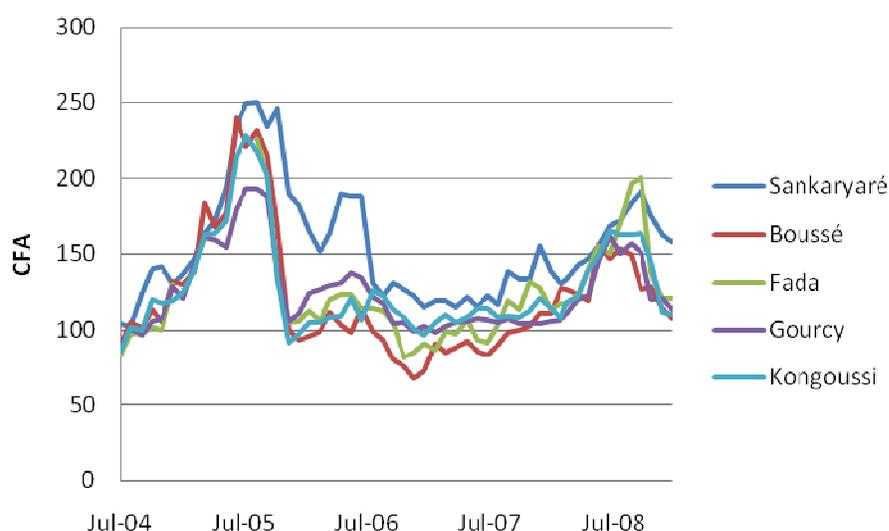


Source: GOBF/MAHRH/DGPER, <http://www.sisa.bf/sisa/>

**Figure 13: Average monthly price of millet 2004 – 2008**



Source: GOBF/MAHRH/DGPER, <http://www.sisa.bf/sisa/>

**Figure 14: Average monthly price of white sorghum (2004 – 2008)**

Source: GOBF/MAHRH/DGPER, <http://www.sisa.bf/sisa/>

Markets for staples, such as maize, sorghum and millet, appear highly integrated across Burkina Faso. Tables 38, 39 and 40 present the correlation coefficients of maize, millet and sorghum prices across five selected regional markets. The coefficients are not only strong but also highly significant. They show that the food prices, in particular maize, track each other closely across the markets. In terms of magnitudes, Sankaryaré market prices are the least integrated with the rest of the markets, more so for sorghum. Sankaryaré and Kongoussi markets, in particular, are the least integrated for the three commodities.

**Table 38: Correlation coefficients between average monthly white maize prices in various markets**

MAIZE	Boussé	Fada	Gourcy	Kongoussi	Sankaryaré
Boussé	1.000				
Fada	0.913	1.000			
Gourcy	0.968	0.895	1.000		
Kongoussi	0.945	0.900	0.903	1.000	
Sankaryaré	0.955	0.888	0.919	0.884	1.000

Source: Author's Calculations based on data from GOBF/MAHRH/DGPER, <http://www.sisa.bf/sisa/>

**Table 39: Correlation coefficients between average monthly millet prices in various markets**

MILLET	Boussé	Fada	Gourcy	Kongoussi	Sankaryaré
Boussé	1.000				
Fada	0.872	1.000			
Gourcy	0.918	0.881	1.000		
Kongoussi	0.893	0.760	0.852	1.000	
Sankaryaré	0.870	0.857	0.907	0.791	1.000

Source: Author's Calculations based on data from GOBF/MAHRH/DGPER, <http://www.sisa.bf/sisa/>

**Table 40: Correlation coefficients between average monthly white sorghum prices in various markets**

SORGHUM	Boussé	Fada	Gourcy	Kongoussi	Sankaryaré
Boussé	1.000				
Fada	0.863	1.000			
Gourcy	0.902	0.889	1.000		
Kongoussi	0.921	0.915	0.924	1.000	
Sankaryaré	0.785	0.727	0.832	0.744	1.000

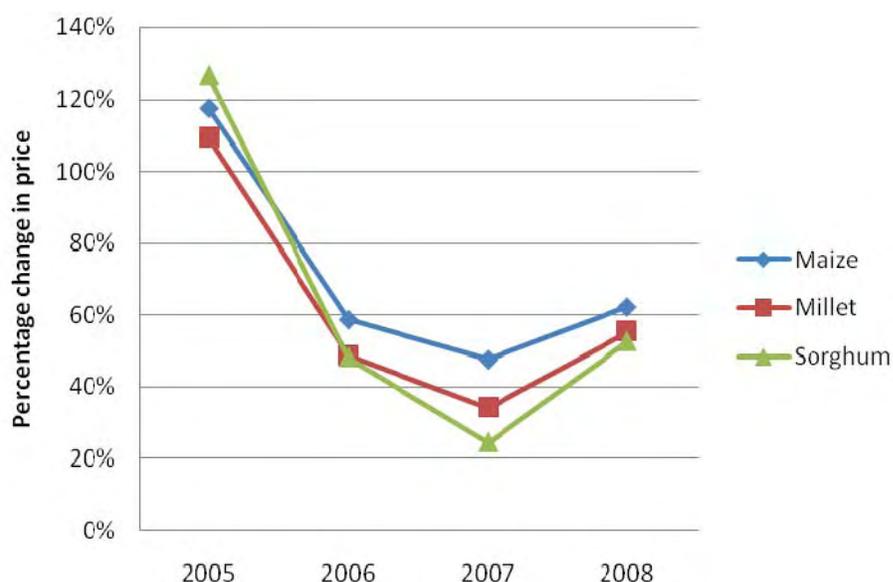
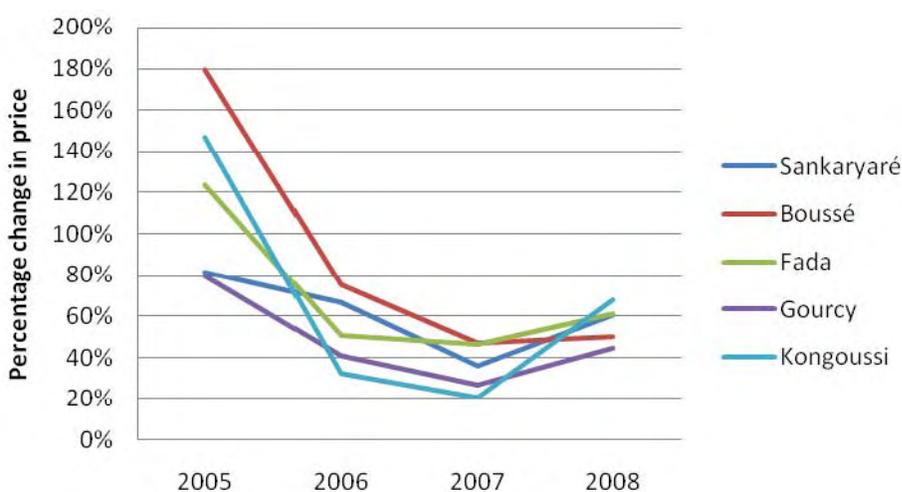
Source: Author's Calculations based on data from GOBF/MAHRH/DGPER, <http://www.sisa.bf/sisa/>

Prices of staples, such as maize, sorghum and millet, fluctuate dramatically in Burkina Faso. Table 41 presents annual percentage price change over the course of a calendar year for three staples across five markets. 2005 was a particularly turbulent year in prices due to a combination of a locust invasion, which disrupted supply, coupled with trader speculation.

**Table 41: Percentage change in prices between January-December, by year, commodity and market**

Commodity	Market	2005	2006	2007	2008
Maize	Sankaryaré	100%	84%	49%	85%
Maize	Boussé	n/a	n/a	50%	43%
Maize	Fada	144%	77%	70%	77%
Maize	Gourcy	64%	36%	40%	40%
Maize	Kongoussi	163%	38%	28%	65%
Millet	Sankaryaré	63%	52%	24%	51%
Millet	Boussé	201%	81%	57%	62%
Millet	Fada	64%	36%	40%	40%
Millet	Gourcy	92%	47%	30%	40%
Millet	Kongoussi	128%	28%	19%	84%
Sorghum	Sankaryaré	82%	65%	35%	47%
Sorghum	Boussé	157%	70%	34%	45%
Sorghum	Fada	163%	38%	28%	65%
Sorghum	Gourcy	82%	38%	9%	53%
Sorghum	Kongoussi	149%	30%	15%	53%

Though the annual variation in price does not differ much between these staples (Figure 15), the variation did differ across markets. Figure 16 combines the average annual price fluctuation of maize, millet and sorghum for each market, illustrating that 2005 prices were particularly volatile in Boussé, Fada and Kongoussi, which are located in Sahelian areas particularly hit by the locust plague. Insufficient production, due to highly degraded soils and high population density, coupled with close proximity to Ouagadougou (which absorbs Boussé's production) results in high fluctuations of price in Boussé relative to other markets.

**Figure 15: Average annual change in maize, millet and sorghum prices (2005-2008)****Figure 16: Average annual change in main staple prices (2005-2008)**

The most stable of the markets, Gourcy, experienced an average annual staple cereal price fluctuation of 48 percent, while Boussé, with the least stability in prices, averaged 90 percent across the four-year period between 2005 and 2008. Substantial price fluctuations represent a challenge to producer households who are driven by cash needs to sell immediately after harvest only to buy back grains during the lean season when prices are significantly higher. Improved storage capacity and market integration would help to reduce price volatility.

## Remittances

Despite the significant Burkinabé diaspora, remittances remain an insignificant source of income for most households. DGPER's National Food Security Report of 2007 found that transfers represented merely two percent of average household income in Centre Sud and one percent in

Nord. In other regions, the magnitude of transfers did not attain one percent of average household income (See Table 42).

**Table 42: Structure of household revenue, by region**

REGION	Cereals	Revenue Agriculture	Staples Agriculture	Market gardening	Fruits	Livestock	Commerce	Artisanal	Transfers	Services & other skills
Boucle du Mouhoun	8%	43%	5%	1%	0%	1%	26%	12%	0%	4%
Cascades	5%	54%	1%	1%	1%	8%	18%	4%	0%	7%
Centre	5%	3%	2%	1%	0%	16%	30%	37%	0%	7%
Centre-Est	7%	9%	2%	0%	0%	22%	31%	24%	0%	5%
Centre-Nord	3%	3%	5%	1%	0%	36%	27%	22%	0%	2%
Centre-Ouest	9%	18%	5%	0%	0%	16%	36%	8%	0%	6%
Centre-Sud	11%	20%	6%	1%	0%	19%	26%	11%	2%	3%
Est	6%	14%	2%	0%	0%	25%	39%	12%	0%	2%
Hauts- Bassins	10%	57%	2%	1%	0%	7%	15%	4%	0%	3%
Nord	1%	2%	7%	1%	0%	18%	28%	29%	1%	13%
Plateau Central	4%	3%	4%	1%	0%	13%	47%	28%	0%	1%
Sahel	1%	0%	0%	0%	0%	47%	25%	19%	0%	7%
Sud-Ouest	13%	29%	4%	0%	2%	9%	29%	12%	0%	2%
Burkina Faso	6%	25%	4%	1%	0%	17%	27%	15%	0%	4%

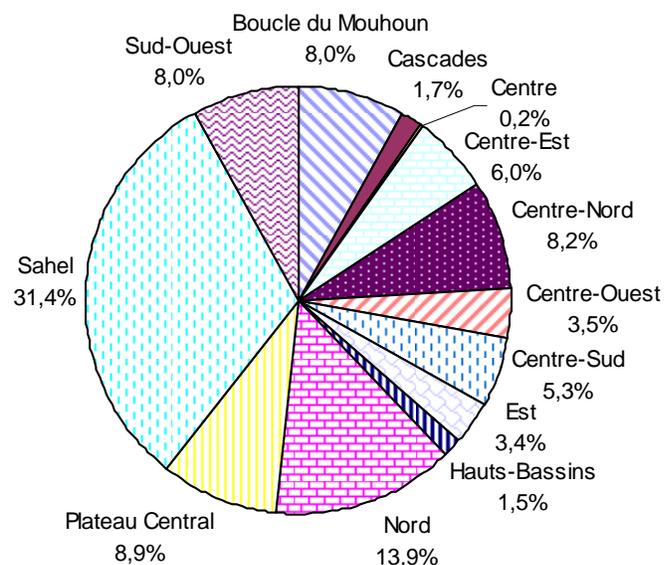
Source: GOBF/MAHRH/DGPER, *Rapport National sur la Sécurité Alimentaire (2007)*

Figure 17 represents the distribution of transfers across regions in 2008. Though the ENIAM findings do not report the values of transfers relative to household income, the figure below indicates that 31.4 percent of households reporting transfers were located in Sahel, 13.9 percent in Nord and 8.9 percent in Plateau Central.

While data from the GOBF indicate that, overall, internal and international remittances are not an important source of income for households, an International Food Policy Research Institute (IFPRI) study using data collected during a 2003 survey of 223 households across four villages in the Central Plateau show that remittances comprise 10 percent of household income for households with an internal migrant – two-thirds of these households live above the poverty line. For households with an international migrant, the contribution of remittances to household

income increases to 41 percent – approximately four-fifths of such households live above the poverty line.<sup>24</sup>

**Figure 17: Distribution of transfers received across regions**



Source: GOBF/MAHRH/DGPER, ENIAM (2009)

<sup>24</sup> Wouterse, F.S. 2008, "Migration, Poverty, and Inequality: Evidence from Burkina Faso," IFPRI Discussion Paper 786, Washington, DC: International Food Policy Research Institute.

**Table 43: Key Food Insecurity/Vulnerable Populations**

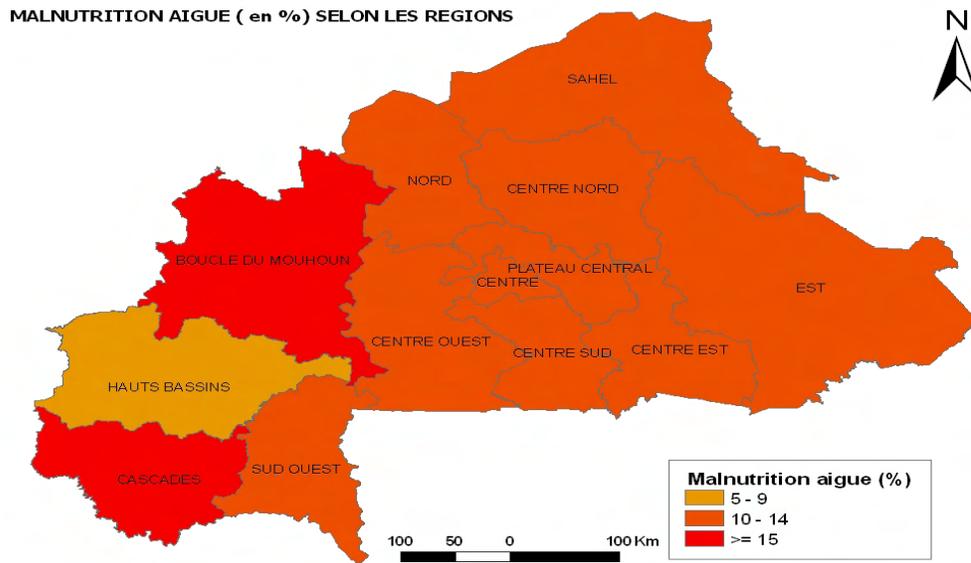
Region	Cereal Stocks (ENIAM 2008)			Dietary Diversity (ENIAM 2008)			Nutrition indicators (EA QUIBB 2007)			Avg HH total income (DGPER 2008)	Poverty (INSD 2003)			Cereal poverty (FSCS)	Months of cereal stock per capita*
	Sufficient cereal stocks	Insufficient cereal stocks	No cereal stocks	Weak Diversity	Medium diversity	High diversity	% growth retardation	% emaciated	% insufficient weight		Incidence	Depth	Severity		
Boucle du Mouhoun	33.6	42.8	23.5	64.6	25.7	9.7	33.4	22.6	38.5	693181	60.4	21.3	9.6	19.4	3.62
Cascades	47.1	18.5	34.4	24.2	35.2	40.3	35.1	23.7	46.3	898530	39.1	14.6	7.4	17.9	2.06
Centre	2.6	5.9	91.5	41.3	33	25.6	30.2	14.4	21.7	252833	22.3	7.1	2.9	36.3	0.15
Centre-Est	13.4	43.8	42.3	49.1	31.2	19.7	39.2	19.7	28.8	380802	55.1	19.7	9.1	49.3	1.37
Centre-Nord	8.8	54.5	36.7	53.3	30.4	16.3	39.1	12.1	26.9	251516	34	8.2	2.8	35	0.65
Centre-Ouest	11.9	54.2	33.9	50.7	26.6	22.7	33.8	23	37.2	344289	41.3	14.1	6.8	22.3	1.30
Centre-Sud	9.7	33.8	56.5	36.9	30	33.1	23.8	15.7	28.2	273535	66.1	26	13.5	43.3	1.08
Est	32.2	43.7	24.1	73.2	16.8	10	46.4	23.6	46.8	352267	40.9	12.3	5.3	28.3	1.41
Hauts-Bassins	20	30.9	49.1	37.8	34.6	27.6	37.2	20.1	24.8	925862	34.8	10.6	4.5	11.8	1.84
Nord	24.5	50.1	25.4	43.7	28.2	28.2	35.1	20.3	33.5	397746	68.6	24.7	11.8	30.3	1.78
Plateau Central	14.8	54.3	30.9	61	28.7	10.3	32.5	21.7	28.6	655262	58.6	20.3	9.5	36.5	1.41
Sahel	18.1	41.4	40.5	79.2	17.4	3.4	57	11.2	20.9	286856	37.2	12.6	5.8	32.7	0.62
Sud-Ouest	20.5	43	36.6	41.8	38.7	19.5	39.4	25	40.3	192835	56.6	17.5	7.3	28	0.70
Ensemble - Average	19.9	39.7	40.4	50.5	29	20.5	35.9	19.3	31.7	451212	46.4	15.6	7.1	29.6	1.71

SOURCE: ENIAM Report 2009, Table 11, page 44

INSD, Enquête burkinabé sur les conditions de vie des ménages 2003

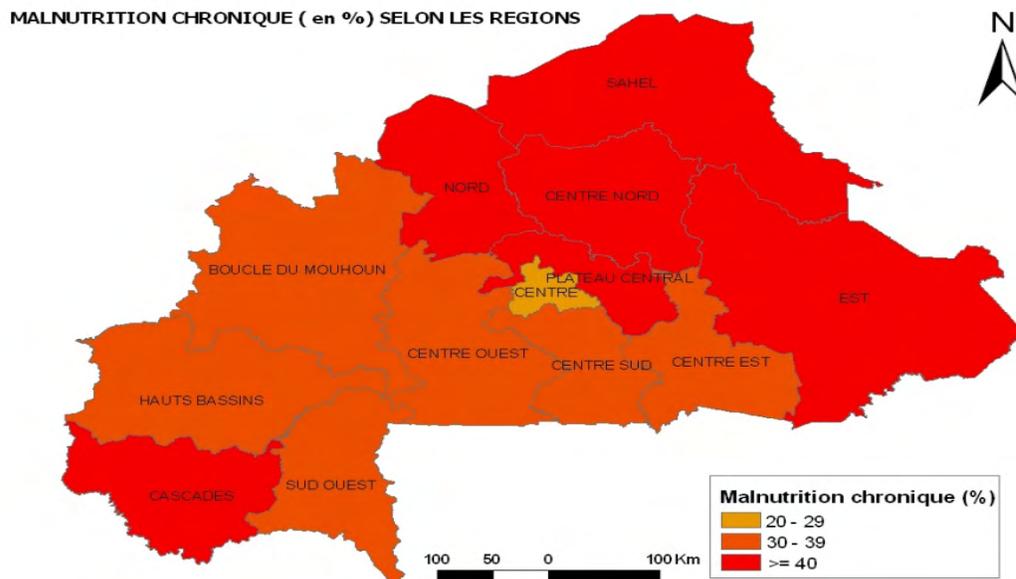
\* Column "Months of cereal stock per capita" is a BEST calculation derived from cereal stock per region (DSAP/DGPER/MAHRH, personal communication), divided by rural population per region in 2008 (Based upon Ministère de l'Economie et des Finances/Comité National de Recensement/Bureau Central de Recensement, "Recensement Général de la Population et l'Habitation (RGPH): Résultats Définitifs" July 2008)

**Figure 18: Acute malnutrition, by region**



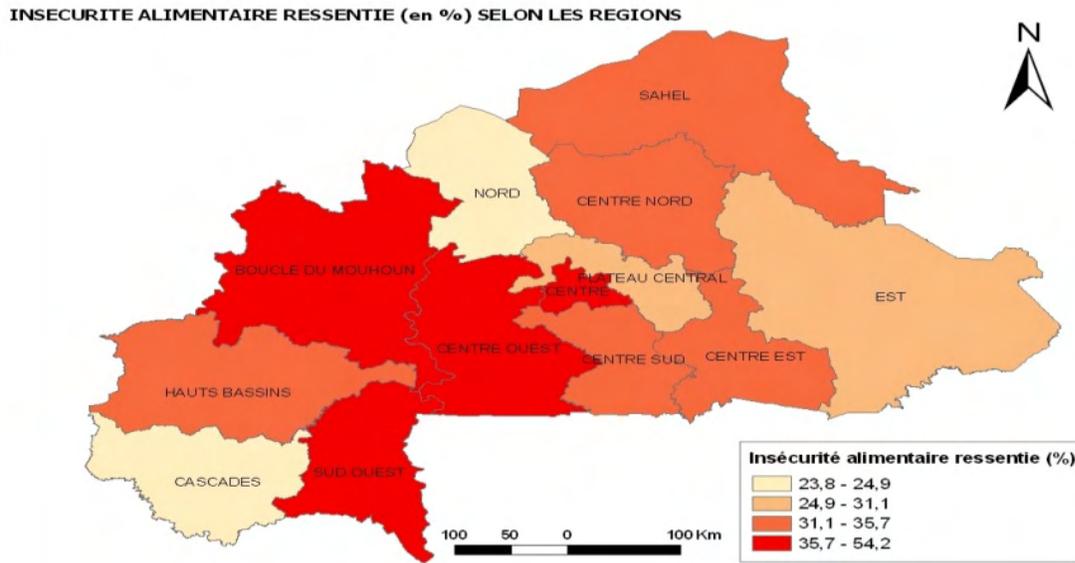
Source: GOBF/MAHRH/DGPER, ENIAM (2009)

**Figure 19: Chronic malnutrition, by region**



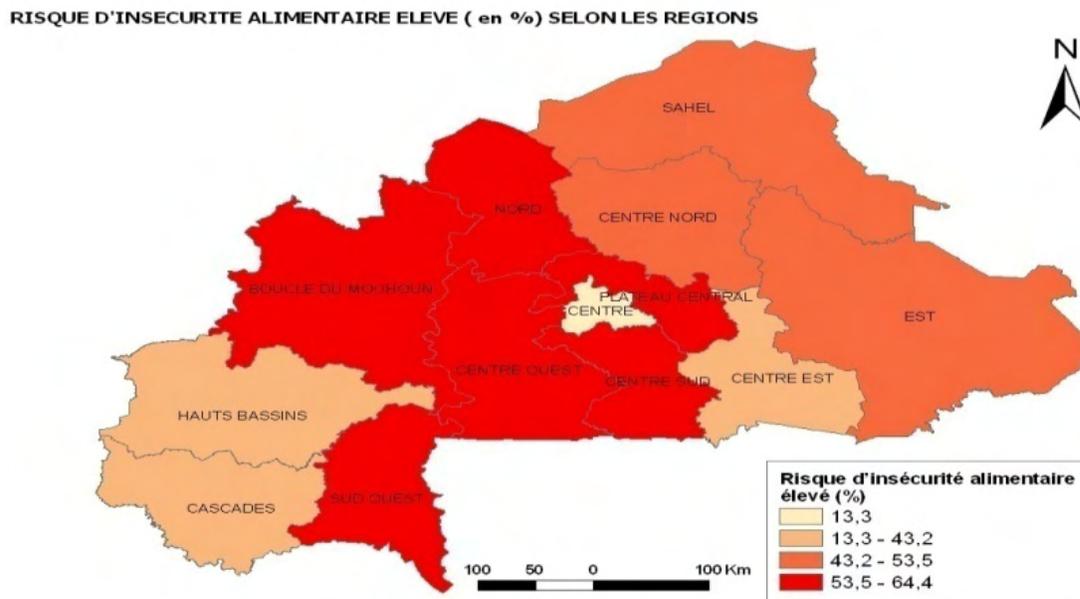
Source: GOBF/MAHRH/DGPER, ENIAM (2009)

**Figure 20: Food insecurity experienced, across regions**



Source: GOBF/MAHRH/DGPER, ENIAM (2009)

**Figure 21: High risk of food insecurity, across regions**



Source: GOBF/MAHRH/DGPER, ENIAM (2009)

### Underlying Causes of Food Insecurity

DGPER's 2003 report entitled "Stratégie Opérationnelle et Programme de Sécurité Alimentaire Durable dans une Perspective de Lutte Contre la Pauvreté" differentiates between short-term

and chronic causes of food insecurity. Short-term causes include highly variable rainfall and distribution of rains, weak soil fertility and the preponderance of pests, notably crickets. Table 44 summarizes the structural causes of food insecurity.

**Table 44: Underlying structural causes of food insecurity**

AVAILABILITY	Weak organization of producers
	Limited management training of producers
	Inefficient water utilization
	Producer difficulties in accessing factors of production (inputs, credit, equipment, land)
	Insecurity of access to factors of production
	Deterioration of natural resource base (soils)
	Insufficient use of appropriate production technologies
	Poor post-harvest management due to limited storage and transformation capacity
ACCESS	Low incomes, particularly in rural areas
	Low diversity in income streams
	Highly variable price of foodstuffs
	Weak access to finance
	Poor rural transport and communications infrastructure
	Poorly integrated markets
UTILIZATION	Insufficient nutritional education
	Illiteracy
	Limited access to healthcare, drinking water and sanitation
	Birth spacing and early pregnancies
FACTORS LINKED TO INSTITUTIONAL FRAMEWORK	Insufficient cooperation and coordination of food aid
	Weak information systems
	Lack of financing structures
	Limited involvement by private sector, rural organizations and NGOs

Source: GOBF/MAHRH/DGPER, *Stratégie Opérationnelle et Programme de Sécurité Alimentaire Durable dans une Perspective de Lutte Contre la Pauvreté (2003)*

### Typical Hazards/External Shocks

ENIAM investigated the negative shocks experienced by sampled households over the course of the last twelve months. The prominent shocks experienced are displayed in Table 45. Late rains/drought was reported as the primary shock experienced by households in all regions with the exception of Centre, home to urban Ouagadougou. Floods and serious illness or accident of a household member also impeded a substantial proportion of households across regions. A significant proportion of households in Centre and Hauts-Bassins (the regions of Ouagadougou and Bobo Dioulasso) reported the increase in food prices as the most important shock experienced, while the increase in the cost of agricultural inputs affected predominantly Cascades and Haut-Bassins.

**Table 45: Most important shock experiences by households over the last twelve months**

Region	Most important shock experienced by the household								
	Late rains/ drought	Floods	Death of an active household member	Death of another household member	Serious illness or accident of household member	Livestock disease	Increase in food prices	Increase in cost of agricultural inputs	No shock
Boucle du Mouhoun	36.7%	14.4%	3.7%	2.6%	10.4%	0.5%	5.1%	0.8%	17.7%
Cascades	25.5%	4.3%	3.8%	3.2%	14.3%	5.3%	9.4%	4%	20.5%
Centre	4.4%	0.3%	4.8%	6.6%	23.2%	0%	14.6%	0%	32.6%
Centre-Est	29.6%	17.2%	3.5%	3.2%	17.3%	4%	5.5%	0.2%	13.6%
Centre-Nord	28%	2.1%	2.9%	3.8%	19%	4.1%	5.8%	0.4%	13.3%
Centre-Ouest	40.8%	8.6%	3.5%	6.3%	20.8%	1.4%	2.7%	0.3%	7.4%
Centre-Sud	25.1%	17.1%	3.4%	4.2%	23.6%	0.7%	1.1%	0%	19.1%
Est	29.2%	2.5%	2.4%	3.2%	17.2%	1.5%	2.2%	0%	32%
Hauts-Bassins	31%	3.3%	1.4%	2.3%	11.4%	1.2%	15.9%	2.9%	13.7%
Nord	34.3%	7%	3.6%	4.2%	12.5%	0.6%	1.9%	0%	28.3%
Plateau Central	33.6%	1.4%	3.9%	5.1%	19.4%	2.2%	2.1%	0.3%	22.1%
Sahel	24.3%	1.1%	1.5%	3.1%	7.8%	0.6%	7.8%	0%	46.4%
Sud-Ouest	29.2%	0.4%	5%	7.8%	11.2%	0.9%	1.2%	0%	40.6%
Burkina Faso	28.5%	6.2%	3.3%	4.3%	16%	1.8%	5.8%	0.7%	23.6%

Source: GOBF/MAHRH/DGPER, ENIAM (2009)

Household perception of the effects of the primary shocks experienced are reported in Table 46. With the exception of urban Centre, a significant percentage of households across all regions suffered from reduced income due to the primary reported shock, and a substantial number of households in Centre-Nord and Sahel reported reduction in harvest (22.5 percent and 22.3 percent, respectively). Significant proportions of households in Hauts-Bassins, Centre, Plateau Central, Cascades and Centre-Ouest reported reductions in livestock numbers.

**Table 46: Effects of primary shock**

REGION	Effect of primary shock			
	Income reduction	Harvest reduction	Livestock reduction	Purchasing power reduction
Boucle du Mouhoun	70.1%	1.6%	8.4%	1%
Cascades	48.1%	7%	25.2%	1.4%
Centre	6.1%	2.1%	36.4%	1.4%
Centre-Est	56%	9%	21.4%	0.3%
Centre-Nord	56.2%	22.5%	14.9%	1.9%
Centre-Ouest	62.9%	4.3%	24.7%	0.7%
Centre-Sud	56.8%	5.1%	17.7%	0.8%
Est	55%	11.9%	10.9%	2.1%
Hauts-Bassins	52.4%	3.2%	42.8%	1.5%

REGION	Effect of primary shock			
	Income reduction	Harvest reduction	Livestock reduction	Purchasing power reduction
Nord	68.1%	5.3%	13.6%	1.2%
Plateau Central	63.4%	16.9%	27.9%	0.7%
Sahel	48.2%	22.3%	17.5%	2.3%
Sud-Ouest	61.6%	7.3%	11.4%	0.6%
Burkina Faso	54.7%	8.8%	21.4%	1.2%

Source: GOBF/MAHRH/DGPER, ENIAM (2009)

## ANNEX 6: PORT INFRASTRUCTURE

The initial point of entry for all Title II food aid currently destined for Burkina Faso include the modern and capable Ports of Abidjan in Côte d'Ivoire, Tema in Ghana, and/or Lomé in Togo. Presently, the port of choice is Lomé, but provided below is port and transportation related information for the two alternatives: Abidjan and Tema.

**Table 47: Key Port Characteristics**

Characteristics	Abidjan	Tema	Lomé
Specialty	Containers; railroad link	Containers; transshipment; export of cocoa and other agriculture commodities	Foodstuffs; Metals and Oil; Containers; transshipment; railroad link
Time from Port to Ouagadougou	Varies 7-10 days by rail/land – distance 800 miles	3 days by land – distance 550 miles	3 days by land – distance 720 miles
Quay Berths	34	12	8
Covered Storage	124,000 sq. m.	53,000 MT	235,000 sq. m.
Annual Traffic	15,330,000 MT	6,000,000 MT	3,000,000 MT

### Port of Abidjan

Port of Abidjan serves as transit for commercial imports -- from EU and other countries-- to landlocked countries such as Burkina Faso, Mali and Niger. Abidjan is the largest port on the West Coast of Africa. In addition, the port of Abidjan has a rail station to facilitate inland transport to other countries. Imports into Côte d'Ivoire for transit to the landlocked countries usually enter Côte d'Ivoire duty-free. A railroad links Abidjan to Ouagadougou via Bobo Dioulassou, and current development plans call for it to be extended 360 km (224 mi) north to the Mali border. Typically on a per MT basis, shipping cargo by railway is cheaper than by truck. Previously, USAID Title II food aid would arrive via Abidjan and loaded on railcars bound for Burkina Faso, and was the preferred Port for the Title II Program. However, due to political instability in the early 2000s and transporter strikes in Côte d'Ivoire, both commercial and food aid traffic has been increasingly shifting to neighboring ports, such as Lomé and Tema. Since shifting commodity discharge from the Port of Abidjan to Lomé, the USAID Title II Awardees have found it to be an efficient, modern port with ample warehouse and storage facilities and no delays. Given the continued periodic security concerns in Côte d'Ivoire, the Awardees prefer to maintain Lomé as the port point of entry.

### Port of Tema

The Port of Tema has benefited from the political instability and strikes in Côte d'Ivoire. Tema city and port lies in southeastern Ghana along the Gulf of Guinea (Atlantic Ocean), 18 miles (29 km) east of Accra. Tema Port, the larger of two sea ports in Ghana, is supported by the Takoradi port, about 300 kilometers east of Tema, where eight berths are available. In addition, charges imposed for slow discharge rates (e.g., a 1,000 MT per day minimum reported for Lomé) or demurrage charges (e.g. a reported \$8,000 per day for a 1,500 MT shipment of wheat

in Tema) encourage quick turnaround. Despite the improved infrastructure and services at the Tema Port and its relative proximity to Burkina (550 miles from Ouagadougou ), some Burkina freight forwarders and wholesalers indicate delays at the port requiring additional fees for storage and double handling.

### Inland Transportation

Like Lomé, Tema has access routes, which are reported to be less costly than operations through Abidjan. In recent years, Ghana has been actively courting Burkina bound traffic on the basis of lower port and inland transport costs. In an attempt to improve port services, and as part of the World Bank's Regional Project of Transport and Transit Facilitation in West Africa [PRFTTAAO], the computing systems of Ghana and Burkina Faso are to be interfaced. The PRFTTAAO program is implemented by ECOWAS and the Union Economique et Monétaire Ouest Africaine (UEMOA). The PRFTTAAO aims to improve Ghanaian port operations and to facilitate the efficient movement of traffic along the Tema-Ouagadougou-Bamako (Mali) transport corridor.

As mentioned in the Inland Transportation section, one recent change that may have a significant impact on inland transportation costs took effect on June 1, 2009. This regulation states that all axle loads must not exceed 11.5 MT per single axle and 4 meters in height above the road surface. In the past, truckers would overload trucks with as much cargo and goods as possible in order to transport more and yield greater per kilometer revenue. This dangerous practice resulted in frequent break downs due to payload. This axle load regulation complies with UEMOA Regulation 2005, which states that ECOWAS member states should adopt common standards and procedures for control of the gauge, the weight, and the axle load of every vehicle. This new regulation is expected to result in price hikes of nearly 100 percent for goods transported from the Port of Tema to Burkina Faso. Although the current Title II DAP Program did not yet have any direct billing experience under the new regulation, freight agents report that it will make transport between Tema and Ouagadougou less attractive. Due to this regulation as well as rising petroleum prices for trucked good, the security situation in Côte d'Ivoire should be monitored closely to determine if Abidjan Port and rail connection to Burkina Faso can be resumed in the future, thereby reducing inland transport costs for Title II food aid.

### Storage Facilities, Specifications, Locations, Owners, and Capacity

**Table 48: Warehouse Space for Food Aid**

Client	Total MT Available	Total # of Warehouses Available
Title II Awardees	6,500	2
World Food Programme	15,000	14
Govt. of Burkina Faso	84,400	131
Total	105,900	147

**Other findings** related to distribution commodity storage and shelf-life based on an on-site visit to the Title II food warehouse in Ouagadougou:

Dried products like cereal flour and blended food easily become damp when improperly packaged under humid conditions, causing deterioration. To prevent this, they are packed in

plastic lined, airtight bags. Proper storage conditions – such as adequate ventilation, separation from floors and walls, were observed.

Lightproof and airtight packaging are required to protect cooking oils from turning rancid. Metal cans, food-grade plastic bottles or jerrycans are the most suitable containers.

Processed cereals are susceptible to insect attack, so care must be taken to keep these products clean and uncontaminated.

Fortification (e.g., creation of fortified blended foods) may reduce the expected shelf-life due to instability created by added vitamins. Foods fortified with vitamin A, such as oil or blended food, have a shelf-life of six months after which the potency of vitamin A decreases and the blended food is more likely to become either unpallatable or rancid. Based on industry best practices for commodity management in the context of high moisture environment, the limited shelf-life of fortified food requires greater care to maintain the packaging integrity and to use these foods within six months of production.

Proper attention to the above was observed during a site visit of the CRS warehouse in Ouagadougou.

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## ANNEX 7: DETERMINING IMPACT OF FOOD AID DISTRIBUTION

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 distributed food aid has the potential to result in disincentive to local production and markets rests fundamentally on whether or not 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.

### **Why Would Food Aid Introduce a Substantial Disincentive to Local Production and Markets?**

Though 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;
- Use a portion or all the food aid to displace market purchases that otherwise would have been made;
- Use a portion or all the food aid to substitute for the home consumption of 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 consume other food and non-food goods.

Effective targeting of food-deficit households will avoid substantial disruption of local production and markets caused by providing food aid to households who would reduce market purchases and/or household production of staples after receiving food aid.

In the case of a distribution activity such as PM2A, which has a very specific goal of preventing early childhood malnutrition and therefore targets pregnant women, lactating mothers and children under two years old, 'effective targeting' from a Bellmon perspective would involve initial geographic targeting based on household food deficits, followed by targeting households based on a PM2A activity eligibility (i.e., all children 6-23 months and all pregnant/lactating women).

## **How Can We Determine Whether A Specific Proposed Food Aid Distribution Would Introduce a Substantial Disincentive?**

The key to determining whether or not food aid would result in a substantial disincentive is to assess whether or not food aid would represent additional consumption. Ideally, one would conduct household surveys to determine whether or not a household would consume the food aid without changing their production and purchasing behavior, which would indicate whether or not food aid would represent additional consumption for the household. However, because household surveys are expensive and time-consuming, proxy indicators of ‘additionality’ can be used to assess the potential for leakage. This is the approach taken in the present analysis.

Among the other possible proxy indicators of additionality are an estimated nutrition gap, food consumption score (or some other measure of actual consumption), sources and levels of income, malnutrition rates and other food insecurity classifications (e.g., Integrated Phase Classification (IPC)), or some combination of these indicators.

### **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 population in countries across the globe. According to the most recent estimates for Burkina Faso (2003-2005), the estimated food deficit for the undernourished population of Burkina Faso is 210 kcal per person per day based on a Minimum Daily Energy Requirement of 1730 kcal per person per day. 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 this report makes use of these figures to develop an illustrative household ration under PM2A, the analysis nevertheless maintains 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.

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## **Prevalence of Malnutrition in Children**

While analysis of livelihood strategies may allow food insecurity to be assessed on the basis of the availability of and access to food, the analysis can ignore other effects including the degree to which food is effectively utilized. The relation between income and food security is context- and location-specific, with livelihood strategies as intervening variables. Such factors as disease, social customs and food storage and preparation practices can all influence the extent to which available food is effectively utilized and will contribute to the ultimate level of nutrition. Where wealth and nutrition outcomes are strongly and positively correlated, improving food access will help to improve nutritional outcomes. Conversely, where wealth status and nutritional status are only weakly correlated, increasing access alone will very likely be an insufficient intervention to reversing malnutrition. Where intra-household resource allocation, poor feeding practices, or disease burdens are a significant underlying cause of malnutrition, distributed food aid will be more effectively used as an incentive to attend nutrition and health training.

The direct determinants of child malnutrition (lack of breastfeeding and complementary food, disease incidence and lack of access and utilization of healthcare) may be more important factors in determining the prevalence of child malnutrition than household food security.

## **Integrated Phase Classification (IPC)**

The Integrated Phase Classification scheme represents a collaborative effort of CARE, Joint Research Center of the European Union (JRC), FAO, FEWS NET, Oxfam, Save the Children UK, Save the Children United States and WFP to create a common classification system to represent food insecurity. The IPC scale classifies areas as moderately/borderline food insecure based on key reference outcomes including indicators of food access and availability, crude mortality rate, acute and chronic malnutrition, water access and availability, dietary diversity, hazards, coping strategies, livelihood assets and structural hindrances to food security.

## **Assessing “Additionality” in Burkina Faso**

The GOBF Permanent Agricultural Survey (Enquête Permanent Agricole, EPA), an annual report based on household surveys, reports the percentage of the population, by region, with insufficient food access uses two measures of cereal poverty: "percent not self-sufficient in cereals" using the "autonomous food poverty" criteria, and "percent in cereal poverty" using the "apparent food poverty criteria." Chronic malnutrition rates, by region, are reported in the 2009 ENIAM.

## ANNEX 8: CURRENT FOOD AID & CASH TRANSFER PROGRAMS

### Food Aid and Cash Transfer Programs in five select regions

#### AFRICARE

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Geographical Location: Zondoma

Period of Intervention: FY2004-2009

**Type of Intervention:** Food for Work (FFW)

**Timed:** During lean season; **Frequency:** monthly distribution

**Ration Basket:** Soy Fortified Bulgur, 0.176 kg/person/day; Pinto Beans, 0,15 kg/person/day; and Vegetable Oil, 0,125 kg/person/day.

#### AFRICARE

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Geographical Location: Zondoma

Period of Intervention: FY2004-2009

Type of Intervention: General Relief

**Timed:** During lean season; **Frequency:** monthly distribution

**Ration Basket Kilograms/person/day (kg/person/day):** Soy Fortified Bulgur, 0.35 kg/person/day; Pinto Beans, 0,30 kg/person/day; and Soy Flour, 1.176 kg/person/day; and Dehydrated Potato Flakes, 0.02 kg/person/day.

#### World Food Programme

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**Geographical Locations:** Ouagadougou, BoboDioulasso

**Period of Intervention:** January-December 2009.

“Emergency response to High Food Prices in Burkina Faso main cities” EMOP 10773

Monthly Voucher Distributions for 12 months

**Type of Intervention:** Voucher, Supplementary feeding.

Ration Basket: gram/day (g/day)

Vouchers are valued at 1500 Francs CFA = \$3 for each family member, maximum six vouchers per household. Beneficiaries exchange the vouchers against selected food items from the registered grocers: Maize, Vegetable Oil, Salt, Sugar and Soap.

Children: *Plumpy Doz* 46.3 g/day.

Nutrition Value 247 kcal.

Pregnant and Lactating Women: CSB 250 g/day, Vegetable Oil 20 g/day and Sugar 10 g/day.  
Nutrition Value 1,200 kcal.

**Total MT distributed/planned:** Value of vouchers \$5,670,000. Tonnage of food 4,980 MT.

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## **World Food Programme**

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**Geographical Locations:** Sahel Region. North, Centre North, Eastern Regions.

**Period of Intervention:** 1 January 2006- 31 December 2010

Burkina Faso CP 10399.0: "Country Programme - Burkina Faso"

Type of Intervention: Food Assistance

There are three components/activities under the program:

Component 1: "Support for Basic Education"

Beneficiaries: 55,000 school children.

Ration Basket: gram/day (g/day)

Literacy: Cereals 200 g/day, Beans 50 g/day, Vegetable Oil 20 g/day and Salt 5 g/day.

Nutrition Value 1045 kcal.

School Canteens: Breakfast and Lunch

Breakfast: Maize Meal 40 g/day, Blended Food (CSB) 60 g/day and Sugar 10 g/day.

Nutrition Value 1139 kcal.

Lunch: Cereals 120 g/day, Beans 40 g/day, Vegetable Oil 20, g/day and Salt 3 g/day.

Dry ration for girls' cereals 10 kg/month (monthly ration).

Component 2: "Nutrition Support to Vulnerable Groups and to People Living with HIV/AIDS"

Beneficiaries: 49,800 malnourished children and women, 13,000 people infected and/or affected by HIV/AIDS.

Ration Basket: gram/day (g/day)

Mother and Child Health: Maize Meal 200 g/day, Blended Food (CSB) 100 g/day,  
Vegetable Oil 20 g/day, Salt 5 g/day and Sugar 20 g/day.

Nutrition Value 1337 kcal.

Fortified porridge: Maize Meal 100 g/day, Beans 60 g/day and Vegetable Oil 10 g/day.

Nutrition Value 640 kcal.

People living with HIV/AIDS: Maize Meal 400 g/day, Beans 40 g/day, Vegetable Oil 25, Blended Food (CSB) 50 g/day, Salt 5 g/day, and Sugar 20 g/day.

Nutrition Value 2092 kcal.

Component 3: "Support for Rural Development"

Beneficiaries: 50,000 food insecure vulnerable farmers.

Ration Basket: gram/day (g/day)

Food for Work: Cereals 300 g/day, Beans 60 g/day, and Vegetable oil 25 g/day.

Nutrition Value 1472 kcal.

## **World Food Programme**

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**Geographical Locations** 7 Regions: Sahel, North, Centre North, Eastern, Centre East, Centre South and South West

**Period of Intervention:** January 2007- December 2009.

Protracted relief and Recovery Operations Burkina Faso PRRO 10541.0: "Reversing growing undernutrition in food insecure regions"

**Type of Intervention:** Supplementary Feeding Food Assistance

Ration Basket: gram/day (g/day)

Malnourished children under three: Blended food (CSB) 250 g/day,

Vegetable Oil 25 g/day, Salt 5 g/day and Sugar 20 g/day.

Nutrition Value 1250 kcal.

Malnourished pregnant and lactating women: Cereals 200 g/day,

Pulses 35 g/day, CSB 100 g/day, Vegetable Oil 15 g/day and Salt 5 g/day.

Nutrition Value 1300 kcal.

Sensitization awareness sessions for children under three years old:

Cereals 100 g/day, Pulses 60 g/day and Vegetable Oil 10 g/day.

Nutrition Value 640.

## ANNEX 9: MONETIZATION SALES

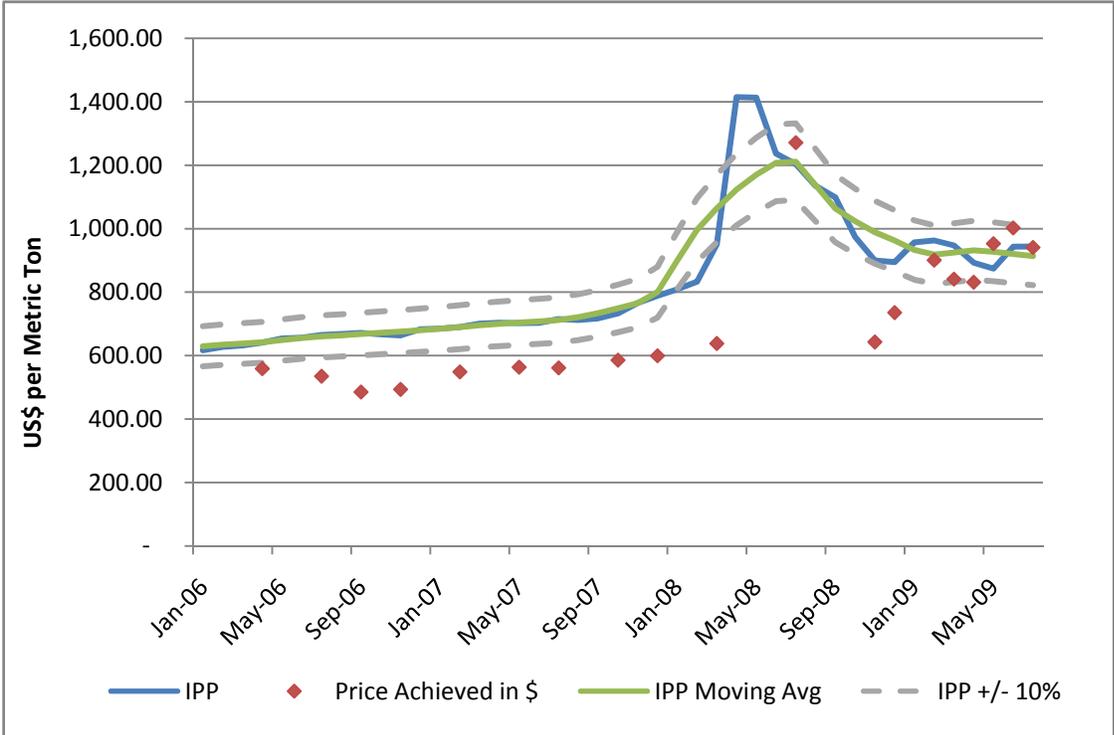
**Table 49: Small lot Sales of Parboiled Rice in Ouagadougou, Burkina Faso**

Bid Month	#Bids	Quantity Offered MT	Quantity Sold MT	Award Price – CFA
Dec. 2004	9	1,900	1,900	231,842
March 2005	10	2,900	2,900	234,527
June 2005	9	3,300	3,300	237,593
Aug. 2005	13	2,800	2,800	252,681
Dec. 2005	8	2,600	2,600	273,948
April 2006	8	1,000	1,000	287,645
July 2006	7	1,500	1,500	265,592
Sept. 2006	6	800	800	240,000
Nov. 2006	7	2,500	2,500	241,734
Feb. 2007	11	2,500	2,500	264,808
May 2007	15	1,812	1,812	263,787
July 2007	7	2,742	2,742	263,687
O ct. 2007	10	63	63	264,865
Dec. 2007	15	2086	2085	264,865
March 2008	15	2045	2045	264,865
May 2008	15	1000	1000	264,865
July 2008	11	1200	200	517,838 (1)
Nov. 2008	14	500	500	325,000 (2)
Dec. 2008	22	1000	1000	351,350
Feb. 2009	18	600	500	451,850
March 2009	24	500	210	415,000
April 2009	20	500	500	405,000
May 2009	26	500	500	450,000
June 2009	20	500	220	460,000
July 2009	19	600	600	430,000

Source: CRS Burkina Faso Title II Results Reports (FY2005-2008); FY2009 information provided by CRS.

Notes: (1) July 2008 sale was an outlier due to the price spikes and speculations in the preceding months; (2) Sales modality approached changed in November 2008 to more frequent sales but smaller tonnages offered per sale.

Figure 22: Small lot Sales of Parboiled Rice in Ouagadougou, Burkina Faso in US\$, relative to Import Parity Price (IPP)



## ANNEX 10: CONTACT LIST

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Name	Organization	Meeting Date	Purpose/Information Expected	City	Phone 1	Phone 2	E-mail
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Alleluia Alimentaire	Commercial	4-Jul-09	Commercial Cereal and Oil Retail	Ouagadougou	50 31 73 88		
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UFMB	Commercial	4-Jul-09	Value Added Food Production	Ouagadougou	20975234		
Sodas	Commercial	4-Jul-09	Value Added Food Production	Ouagadougou	50314657		
Amadou Mactar Fonate	CILSS	1-Jul-09	Food Security	Ouagadougou	503 741 125	704 43 360	<a href="mailto:konate.amadou@cilss.bf">konate.amadou@cilss.bf</a>
Alimentation Bon Marche	Commercial	4-Jul-09	Commercial Cereal and Oil Retail	Ouagadougou	50353003		
Alimentation de Somgande	Commercial	4-Jul-09	Commercial Cereal and Oil Wholesaling	Ouagadougou	50356079		
Alimentation Dolcezza Di Napoli	Commercial	4-Jul-09	Commercial Cereal and Oil Wholesaling	Ouagadougou	50363734		

Name	Organization	Meeting Date	Purpose/Information Expected	City	Phone 1	Phone 2	E-mail
Alimentation du Levant	Commercial	4-Jul-09	Commercial Cereal and Oil Wholesaling	Ouagadougou	50366576		
Alimentation Generale De Larle	Commercial	4-Jul-09	Commercial Cereal and Oil Wholesaling	Ouagadougou	50392843		
Alimentation Generale Le Nid	Commercial	4-Jul-09	Commercial Cereal and Oil Wholesaling	Ouagadougou	50387504		
Alimentation Martha Market	Commercial	4-Jul-09	Commercial Cereal and Oil Wholesaling	Ouagadougou	50360210		
Alimentation Wen Panga	Commercial	4-Jul-09	Commercial Cereal and Oil Wholesaling	Ouagadougou	50358009		

## ANNEX 11: RATION COSTS CALCULATIONS

The assumptions made to calculate monthly PM2A ration costs are outlined below. These scenarios are meant to be illustrative only of the general differences in commodity volumes and potential beneficiary coverage since the ration size, composition (and delivery frequency of household rations) that might be proposed for any upcoming PM2A is unknown at this time.

### HAITI PILOT (for reference):

Ration size and composition as used in preventive interventions in Haiti trial:

- Individual mother ration, individual child ration and household ration provided on year-round basis to all households within catchment area
- 29 kilograms per month per beneficiary household composed of CSB, WSB, pulses and oil

### INDIVIDUAL RATIONS:

- Ration size and composition based generally on ration used in preventive interventions in Haiti trial, but scaled down partially to reflect maximum physiological capacity of children under 23 months of age
- Mother's ration of 6 kg of CSB per month provided for 12 months (assuming detection of pregnancy in 4<sup>th</sup> month of gestation through exclusive breastfeeding period of infant's first 6 months of life)
- Child's ration of 3 kg of CSB per month provided for 18 months (between 6 – 24 months)
- One child 6-23 months of age or one pregnant or lactating mother per household
- July and August 2009 Commodity Calculator food and freight costs

### HOUSEHOLD RATIONS:

According to FAO "depth of hunger" estimates for Burkina Faso for 2003-2005, the estimated food deficit for the undernourished population is 210 kcal per person per day based on a Minimum Daily Energy Requirement of 1730 kcal per person per day. For purposes of ration cost calculations, the household ration assumed in this analysis is designed to meet 101% of the estimated household deficit of the average undernourished population, and 12% of the total household monthly caloric requirements.

- 9.5 kilograms per month per beneficiary household, composed of 6.5 kg bulgur, 2 kg of lentils and 1 kg of vegetable oil
- For calculations involving distribution limited to lean season, a four-month lean season is assumed

- One child 6-23 months of age or one pregnant or lactating mother per household
- July and August 2009 Commodity Calculator food and freight costs

While specific commodities were assumed for purposes of this illustration, please consult with Food For Peace to determine if a specific commodity, particularly a specific pulse, is available in sufficient quantities to fulfill program needs.

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## ANNEX 12: KEY INITIATIVES AFFECTING AGRICULTURE SECTOR

This annex outlines some of the key initiatives and projects that must be monitored yearly to measure contributions to food security and self-sufficiency and, therefore, any necessary adjustments for both monetized and distributed food aid.

1. The **Comprehensive Africa Agriculture Development Program (CAADP)**, which Burkina Faso is a participant in, has established several key strategic areas to stimulate economic growth and reduce poverty and food and nutrition insecurity. The areas include increasing competitiveness and seizing opportunities in domestic, regional and international markets. This will be translated into concrete support for new and emerging value chains and agricultural trade facilitation and regional markets and potential for cross-border trade.
2. The **Alliance for a Green Revolution in Africa (AGRA)** is an African-based and African-led organization working with partners to catalyze change that rapidly and sustainably increases the productivity and incomes of smallholder farmers, especially women, and achieve food security for Africa. AGRA drives innovation, funds demonstration and works with partners and Africa's farmers to scale-up successes in smallholder farming, with a strong focus on staple food crops in high-potential agricultural production areas.
3. In July 2008, the **Millennium Challenge Corporation (MCC)** signed a five-year, \$480.9 million Compact with the GOBF aimed at reducing poverty and stimulating economic growth through strategic investments in four projects. The projects will increase investment in land and rural productivity through improved land tenure security and land management; expand the productive use of land in order to increase the volume and value of agricultural production in project zones; enhance access to markets through investments in road networks; and increase primary school completion rates for girls. The MCC Compact in Burkina Faso entered into force in July 2009, initiating the five-year timeline for project implementation. This is envisioned to help increase basic staple crop production (including rice) and overall food security in Burkina Faso, and thus will require close monitoring to ensure the Title II programs are not creating disincentives in future years.
4. **Food and Agriculture Organization (FAO)** implements agricultural production programs in five regions characterized by high and medium-high agricultural potential. These programs promote the reduction of chemical use, the production of oilseed and pulses, and increased basic nutrition education.
5. **World Food Programme's Purchase for Progress (P4P)** is in its early phases in Burkina Faso but is envisioned to connect small-scale farmers to markets. Through P4P, WFP plans to expand its food procurement activities, as a support to local markets,

so that they better support sustainable crop production and help to address the root causes of hunger. The vision behind this initiative is that by 2015, a significant number of smallholder farmers – including women – will produce large surpluses of food, sell them at a fair price and earn better incomes.

6. In terms of early warning and responses to recurrent food crises, the GOBF manages a **National Security Stock** that can be mobilized in case of large cereal production shortfalls. Its use (free distributions and/or subsidized sales) is subject to the recommendation of the Technical Committee of the National Food Security Council (CT-CNSA) whose members are the EU, France, Netherlands and WFP. An Intervention Stock of a smaller capacity has also recently been created under the government's full control and management.

Given price fluctuations as well as availability of stocks, signals to producers must be consistent and provide an incentive for investment. Though the incentives outlined above should assist producers, policy disincentives must also be monitored. GOBF policy must strike a balance to protect consumers from higher food prices as well as maintain incentives for productivity-raising investment and supply response, particularly for staple grains and cereals (including rice). According to FAO's study on food price hikes, the GOBF took the following specific policy responses to protect consumers from rising commodity prices in 2008<sup>25</sup>:

- Provided school/hospital feeding with a basic meal;
- Consumer price control and stabilization on most staple foods;
- Reduction/elimination of consumption taxes on grains and other staple foods;
- Reduction in producer taxes on grains and other staple foods;
- Adjustment of export quotas/control on staples;
- Reduction/elimination of import tariff and quotas on staple foods; and
- Partial payment of poor households' energy and water bills.

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<sup>25</sup> FAO. 2009. "The State of Agricultural Commodity Markets: High Food Prices and the Food Crisis – Experiences and Lessons Learned."

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