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USAID OFFICE OF FOOD FOR PEACE
FOOD SECURITY COUNTRY FRAMEWORK
FOR BURUNDI FY 2014–FY 2019

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Acronyms and Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
AISD	Department of Agricultural Statistics and Information
ANC	antenatal care
ARFIC	Autorité de Régulation de la Filière Café au Burundi
BCC	behavior change communication
BEST	Bellmon Estimation Studies for Title II
BMI	body mass index
CA	conservation agriculture
CAPAD	Confédération des Associations des Producteurs Agricoles pour le Développement
CDC	community development committee
CED	chronic energy deficiency
CFSVA	Comprehensive Food Security & Vulnerability Analysis
CHC	community health committee
CHW	community health worker
CNTA	Centre National de Technologie Alimentaire
DHS	Demographic and Health Survey
DPAE	Department of Agriculture and Livestock
EGP	Economic Growth Project
FAO	Food and Agriculture Organization of the United Nations
FBI	Fonds de Bien-Etre Indigène
FCS	Food Consumption Score
FFP	USAID Office of Food for Peace
FSCF	Food Security Country Framework
GDP	gross domestic product
GHI	Global Health Initiative
GIZ	<i>Deutsche Gesellschaft für Internationale Zusammenarbeit</i> (German Society for International Cooperation)
ha	hectare(s)
HPT	health promotion technician
HIV	human immunodeficiency virus
IFAD	International Fund for Agriculture and Development
IHP	Integrated Health Project
IMCI	Integrated Management of Childhood Illness
IMF	International Monetary Fund
ISABU	Institut des Sciences Agronomique du Burundi
IYCF	infant and young child feeding
km	kilometer(s)
MCH	Maternal and Child Health
MDG	Millennium Development Goal

MINAGRIE	Ministry of Agriculture and Livestock
MOH	Ministry of Health and the Fight Against AIDS
MUAC	mid-upper arm circumference
MYAP	Multi-Year Assistance Program
NAIP	National Agriculture Investment Plan
PHO	province health office
PM2A	Preventing Malnutrition in Children under 2 Approach
PRONIANUT	Programme National Intégré d’Alimentation et de Nutrition
RCB	Red Cross/Burundi
SBCC	social and behavior change communication
SILC	savings and internal lending community
SUN	Scaling Up Nutrition
U.N.	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children’s Fund
USAID	U.S. Agency for International Development
VSL	Village Savings and Loans
WASH	water, sanitation, and hygiene
WFP	World Food Programme
WHO	World Health Organization

Executive Summary

Introduction

U.S. Agency for International Development Office of Food for Peace (USAID/FFP) Title II development food assistance programs are designed to target the underlying causes of hunger and malnutrition, prevent chronic malnutrition among children under 5 and pregnant and lactating women, increase and diversify household income, and strengthen and diversify agricultural production and productivity (USAID 2013).

The purpose of this USAID/FFP Food Security Country Framework (FSCF) for Burundi is to provide programming guidance to current and potential USAID food security partners on designing and implementing a Title II-funded development food assistance program for FY 2014–FY 2019 in Burundi. The FSCF was developed through a comprehensive desk review, secondary data, and meetings with key stakeholders in country. The audience for this strategy includes prospective Title II applicants, USAID/FFP, USAID/Burundi, the Government of Burundi, and other donors and nongovernmental organizations (NGOs) engaged in food security programming in Burundi.

The FSCF examines a range of data on food insecurity and its causes; identifies population groups that face the greatest risk of food insecurity, describes the policies, strategies, and programs addressing food security; and presents key priorities and recommendations to consider for developing a Title II development program in Burundi. The FSCF also identifies key constraints to food security that the Burundi Title II development program aims to address, as well as suggested program strategies that applicants may consider to address those constraints (see **Table ES-1**).

Country Context

Burundi's civil conflict, which lasted from 1993 to 2005, disrupted public services and private investments. Despite reconstruction efforts, gross national product continues to drop (US\$102 in 2011 versus US\$119 in 2007) due to a reliance on subsistence agriculture, undiversified and low-value exports, weak infrastructure, weak governance and institutional capacity, inadequate access to funding, and very low private sector investment (World Bank 2013). Approximately 80% of the estimated population of 10.88 million (CIA World Factbook 2013) lives below the poverty line (less than US\$1.25 per day) (International Monetary Fund [IMF] 2012), which has serious repercussions on the ability of households to meet basic needs (for example, 81% must sell assets or borrow money to cover health costs [Ministry of Health 2012]).

Food Security Context

The prevalence of malnutrition in children under 5 is extremely high in Burundi. The national prevalence of stunting is 58%, underweight 29%, and wasting almost 6%. The prevalence of malnutrition among children under 5 differs greatly between Bujumbura, the capital, where the prevalence of stunting is relatively low, and the rest of the country, where stunting is very high (ranging from 55% to over 62%) and underweight ranges from 25% to 33% (Demographic and Health Survey 2010). Wasting has decreased throughout the country and is now close to 6%, down from 20% in 2007, due primarily to significant emergency therapeutic responses since the end of the crisis in 2005.

Important factors contributing to food insecurity in Burundi include: limited access to agricultural inputs and credit; small household farm plots; poor post-harvest techniques; soil degradation and poor natural resources management; limited off-farm employment opportunities; inadequate water and sanitation coverage and poor hygiene practices; high rates of childhood illness; lack of access to quality health care; and inappropriate infant and young child feeding practices.

Recommendations for a Title II Program in Burundi

Geographic priorities

This assessment proposes that Title II projects should consider targeting areas within **Gitega, Karusi, Kayanza, and/or Kirundo, Muyinga, Ngozi, provinces**, taking into account the benefits of effective complementarity between Title II program activities and USAID/Burundi activities, including the Integrated Health Project (IHP) and the Economic Growth Project (EGP) projects in those provinces (or part of those provinces). The cumulative effect of these investments is likely to have much more impact than the implementation of these projects in isolation. Applicants are encouraged to select one of these provinces for the next program, seeking to cover the entire province and contiguous areas and should select areas that lend themselves to the greatest overlap with IHP and EGP.

Program priorities

The overall goal for the Title II development food aid program(s) in Burundi is to “reduce chronic malnutrition and food insecurity among vulnerable households.” The program should encompass a portfolio of activities designed to synergistically achieve three priorities, shown in **Table ES-1**, which are key to reducing chronic malnutrition and food insecurity in the Title II development program target geographic areas and achieving the overall program goal. The USAID/FFP Country Guidance on Burundi and the Burundi Bellmon Estimation for Title II (BEST) study should also be taken into consideration in Title II non-emergency program application planning.

Table ES-1. USAID/Title II Program Priorities and Activities in Burundi

Overall Goal: To reduce chronic malnutrition and food insecurity among vulnerable households		
Program Priority 1: To reduce chronic malnutrition among children under 5	Program Priority 2: To increase household food availability and access through increased productivity	Program Priority 3: To increase household incomes to improve household diet diversity
Priority Activity 1.1: Prevent chronic malnutrition in children under 2	Priority Activity 2.1: Households increase and diversify crop production through improved productivity	Priority Activity 3.1: Households increase income generated through improved market linkages and off-farm activities
Priority Activity 1.2: Pregnant and lactating women and children seek preventive care and treatment for illness	Priority Activity 2.2: Households increase and diversify livestock production through improved productivity	Priority Activity 3.2: Households increase production and consumption of micronutrient-rich foods
Priority Activity 1.3: Promote healthy family size		Priority Activity 3.3: Design and implement an SBCC strategy to encourage diet diversity and improved nutritional outcomes
Priority Activity 1.4: Increase use of potable water and sanitation infrastructure		
Priority Activity Area 1.5/2.3/3.4: Promote the creation and income generation of savings and credit groups		
Cross-Cutting Program Priority 4: Engage in national policy processes of direct relevance to reducing chronic malnutrition and food insecurity		
Cross-Cutting Priority Activity 4.1: Engage at the national level to strengthen nutrition policy implementation, communication planning, and coordination	Cross-Cutting Priority Activity 4.2: Engage at the national level to strengthen the implementation of climate-smart water resource management and agriculture policies	Cross-Cutting Priority Activity 4.3: Engage at the national level to strengthen the development and implementation of food policies focused on food access, prices, and fortification
Key Design and Implementation Considerations: Integrated programming, geographic and vulnerable group targeting, gender equality and female empowerment, development approach, resilience, sustainability and exit strategy, self-financing and self-sustaining models, early warning and disaster risk reduction, capacity strengthening, social and behavior change, local governance, environmental monitoring and mitigation		

Strategic Partnerships

The Burundi development food assistance program should prioritize strategic partnerships. Partnerships in development can enhance sustainability, mobilize complementary areas of expertise and capacity to an activity, and extend the breadth and reach of programs. To maximize impact in targeted areas, Title II implementers should form strategic partnerships with national, provincial, and district government entities, other USAID-funded projects and NGOs working in the same zone, and the private sector. Applicants should especially develop strong collaborative relationships with government at the district level, including in the areas of agriculture, health, and disaster risk reduction, as well as with commune committees and community-level leaders, committees and groups. Prospective Title II applicants are also encouraged to demonstrate, when feasible, how their programs coordinate with, complement and/or build upon and avoid duplication with programs related to food security funded by other donors such as the European Union, the World Bank, the International Fund for Agricultural Development (IFAD), and the Food and Agriculture Organization (FAO).

Applicants may engage a range of partners in different roles in their programs, based on their own assessments of capabilities required to maximize program impact and sustainability. Applicants should become familiar with the objectives and activities of USAID/Burundi's IHP and EGP programs.

Applicants should indicate how these programs will complement the development food assistance program and vice versa and should include an illustrative results framework that shows the linkages with these other programs.

Particularly important are partnerships with:

- Scaling Up Nutrition (SUN) Coordinator in the Office of the Second Vice Presidency
- PRONIANUT and province-level team
- MINAGRIE and province-level team
- Communes
- Provincial Medical Offices, health districts, and health centers
- USAID's IHP and EGP projects
- U.N. agencies such as UNICEF (nutrition, including fortification); WFP (nutrition, including fortification, emergency response, and early warning); FAO (training and extension services for smallholder producers); and IFAD (livestock);
- University of Ngozi, as a technical and training partner in agriculture and community health; the Bujumbura Agronomy Faculty; and Institut des Sciences Agronomique du Burundi

1. Introduction

Globally, the objectives of the U.S. Agency for International Development Office of Food for Peace (USAID/FFP) Title II development food assistance programs are to target the underlying causes of hunger and malnutrition, reduce chronic malnutrition among children under 5 and improve the nutritional status of pregnant and lactating women, increase and diversify household income, and strengthen and diversify agricultural production and productivity (USAID 2013).

The goal of the USAID/FFP Food Security Country Framework (FSCF) for Burundi is to provide programming guidance to current and potential USAID food security partners on the development of a development food assistance program for FY 2014–FY 2019 in Burundi. To achieve this goal, the FSCF:

- Provides background on relevant contextual factors (**Section 2**)
- Examines data on the levels, temporal and geographic distribution, and causes of and contributors to chronic malnutrition and food insecurity in Burundi (**Sections 3.1–3.3**)
- Identifies the population groups at greatest risk of food insecurity and their coping capacities and strategies (**Sections 3.4–3.5**)
- Describes the institutional context in which the Burundi Title II development program will be implemented, through a synthesis of existing policies, strategies, and programs of the United States Government (USG), the Government of Burundi (GOB), nongovernmental organizations (NGOs), and other key food security stakeholders (**Section 4**)
- Presents key priorities for the Title II development program in Burundi and considerations for applicants for designing program activities (**Section 5**)

The primary audiences for this FSCF include:

- USAID staff in Burundi, East Africa, and Washington, DC, with program management and support responsibilities for the Title II development program and for other programs with nutrition components in Burundi
- Current awardees and prospective applicants that are considering developing proposals for the next phase of the Title II development program in Burundi
- Members of teams, principally at USAID, charged with reviewing Title II development program applications
- GOB, U.N. agencies, NGOs, donors, and other actors that are key current and potential partners in food security and development programming in Burundi

The FSCF identifies the key constraints to chronic malnutrition and food security that the Burundi Title II development program aims to address and the broad objectives and suggested program strategies that applicants may consider to address those constraints. USAID’s strategic approach to nutrition (see **Box 1**) and its definition of food security (see **Box 2**) underpin this FSCF.

Box 3 presents USAID’s definition of resilience, and **Figure 1** presents the conceptual framework that structures the FSCF’s analysis of resilience to food insecurity in Burundi. Each applicant may identify and develop a set of specific project activities that would be most appropriate and effective for the context of their proposed project area, based on their local assessments, research, and internal project development process. Applicants for the Title II development program should also take into account the USAID/FFP Country Guidance on Burundi and the Burundi Bellmon Estimation Studies for Title II (BEST) analysis.

The FSCF was developed through a comprehensive desk review, interviews with key stakeholders, field interviews with current Title II development program implementing partners, and field visits to targeted communities. The document underwent review by USAID/Washington, USAID/Burundi, and the broader community of stakeholders via a public review process.

Box 1. USAID’s Strategic Approach to Nutrition: Improving Nutrition for Women and Young Children

Good nutrition is central to successful development. USAID’s strategic approach to nutrition focuses on:

- Preventing undernutrition through a comprehensive package of maternal, infant, and young child nutrition programs
- Combating micronutrient deficiencies through targeted supplementation to vulnerable groups and food fortification
- Managing moderate or severe acute malnutrition through community-based programs
- Providing nutritional care and support for people living with HIV/AIDS
- Improving nutritional outcomes in food security programs

By 2015, USAID’s nutrition programs will have reduced undernutrition by 20%-30% in 17 priority Feed the Future and Global Health Initiative countries.

Source: USAID 2013.

Box 2. USAID Definition of Food Security

In 1992, USAID’s Policy Determination 19 established the following definition for food security: “Food security exists when all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life.”

The definition of food security used in the FSCF focuses on three distinct but interrelated elements, all of which are essential to achieving food security:

- **Food availability:** Having sufficient quantities of food from household production, other domestic output, commercial imports, or food assistance
- **Food access:** Having adequate resources to obtain appropriate foods for a nutritious diet, which depends on available income, distribution of income in the household, and food prices
- **Food utilization/consumption:** Proper biological use of food, requiring a diet with sufficient energy and essential nutrients; potable water and adequate sanitation; and knowledge of food storage, processing, basic nutrition, and child care and illness management

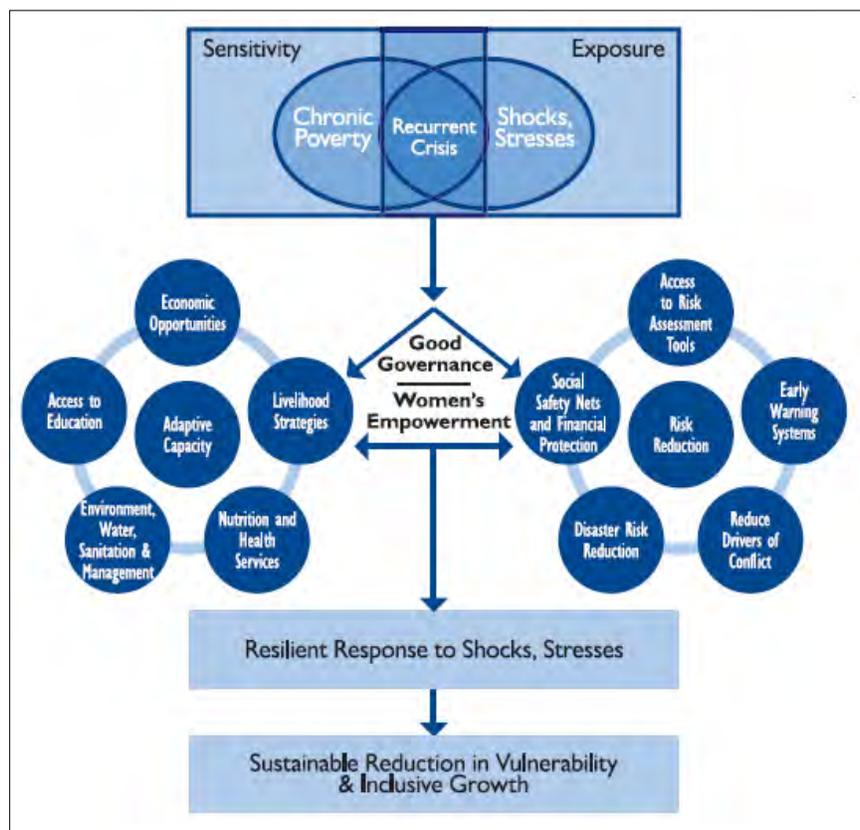
Sources: USAID 1992; USAID 2005.

Box 3. USAID Definition of Resilience

Resilience is the ability of people, households, communities, countries, and systems to mitigate, adapt to, and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth.

Source: USAID 2012.

Figure 1. USAID Conceptual Framework of Resilience



Source: USAID 2012.

The assessment team found that drivers of chronic malnutrition in Burundi include:

- High population growth and density relative to the available cultivable land
- Declining agriculture production due to erosion, lack of inputs, small family plots leading to an overexploitation of land, and limited technical support to producers
- Limited off-farm livelihood opportunities
- Limited ability to purchase food and non-food items
- Imbalance between women's and men's decision making within the household
- Marginalized populations (female-headed households, Batwa households [a minority ethnic group in Burundi], youth, returnees) with limited livelihoods
- A health delivery system with limited capacity to provide preventive health services at scale and meet community health needs
- Insufficient knowledge and practices of Essential Nutrition Actions and key hygiene practices
- Lack of contraceptive use, leading to large families with limited resources
- Poor diet diversity
- Lack of Government focus and coordination on using a multisector approach to reducing chronic malnutrition
- Lack of awareness at all levels of Burundian society of chronic malnutrition and its deleterious impacts on health, education, household income, and the national economy

The assessment team identified these drivers as those that Title II development program partners can address to strengthen the nutritional status of children under 5 and pregnant and lactating women.

2. Country Context

2.1 Background

Burundi's civil conflict, which lasted from 1993 to 2005, disrupted public services and private investments. Despite reconstruction efforts, gross national product continues to drop (US\$102 in 2011 versus US\$119 in 2007) due to a reliance on subsistence agriculture, undiversified and low-value exports, weak infrastructure, weak governance and institutional capacity, inadequate access to funding, and very low private sector investment (World Bank 2013). Approximately 80% of the estimated population of 10.88 million (CIA World Factbook 2013) lives below the poverty line (less than US\$1.25 per day) (International Monetary Fund [IMF] 2012), which has serious repercussions on the ability of households to meet basic needs (for example, 81% must sell assets or borrow money to cover health costs [Ministry of Health 2012]).

2.2 Agriculture and Livestock

Low productivity characterizes every aspect of Burundi's agriculture. Production trends for food crops in Burundi since 2007 have been mostly a mixture of stagnant or falling production with some positive signs compared to average production from 2000 through 2006 with rice, banana, and sweet potato production show an increasing production trend since 2000 (CountrySTAT 2013).

Burundi has an estimated 1 million ha of total arable crop land (about 39% of total land area of 2.56 million hectares [ha]). Population growth (estimated at 2.4% annually [World Bank 2013]) has resulted in continued fragmentation of farming areas per household, with average land per household decreasing from 0.7 ha in 1979 to 0.5 ha in 2009, according to the Burundi Poverty Reduction Strategy Paper II (IMF 2012). Average household size is 5.3 persons (WFP 2008). The 2011–12 Ministry of Agriculture and Livestock (MINAGRIE) survey found that from September 2011 to February 2012 (see season A in **Table 4**), the average planted area was 0.27 ha per household, and 86% of households planted less than 0.5 ha.

Many farmers and staff from MINAGRIE's Department of Agriculture and Livestock (DPAE) indicated that variations in rainfall have increased in the past five years. This has led to rain deficits, localized drought conditions and other weather extremes such as high winds and hail, with resulting decreases in crop yields. Based on 60 years of data, the dry season has become longer in the lowlands and central highlands, and temperatures have risen and are predicted to increase by an average of 1.7° to 3.0° C (mean temperature) by 2050 (Beck 2010). Rainfall is also predicted to change, but the amount of change is difficult to predict. Climate change models show a tendency toward more extreme weather cycles for Burundi, which requires increased concentration on improved climate-adaptable seed varieties and animal breeds and on climate-smart production methods.

MINAGRIE comprises 4 general directorates,¹ with 16 provincial directorates. MINAGRIE oversees three institutional entities: Institut des Sciences Agronomiques du Burundi (ISABU), which is responsible for agricultural research; Centre National de Technologie Alimentaire (CNTA), which supports food processing technical innovations; and Burundi's regulatory authority for coffee, Autorité de Régulation de la Filière Café au Burundi (ARFIC). Reforms have reduced the GOB's role in agriculture. It is no longer heavily involved in the coffee, tea, cotton, and oil palm subsectors, though liberalization of the coffee

¹The General Directorate of Agricultural and Livestock Planning; the General Directorate of Mobilization for Self-Development and Agricultural Extension, which is made up of 2 directorates: the Directorate of Agricultural Training and Animation and the Directorate of Agriculture and Livestock (DPAE); the General Directorate of Agriculture with three directorates (Directorate of Fertilization and Protection of Soils, Directorate for the Promotion of Seeds and Plants, and Directorate of Plants Protection); and the General Directorate of Livestock and its three directorates: the Directorate of Animal Health, the Directorate for the Promotion of Animal Production, and the Directorate of Water, Fishery and Fish Farming.

industry is not complete. Privatization of these subsectors is consistent with the GOB's decentralization move initiated in 2005, which has allowed the emergence of more private sector agricultural development actors, including associations.

MINAGRIE's most direct role in agriculture has been the subsidization of fertilizer since 2001 to respond to the very real threat of nutrient-depleted soils in essentially all arable lands. While the program did increase the amount of fertilizer applied, the annual subsidized volumes have been too variable. In addition, MINAGRIE's process of distributing fertilizer through DPAE commune offices has not been efficient or transparent, and leakages to local markets have been common. The Dutch Embassy; Confédération des Associations des Producteurs Agricoles pour le Développement (CAPAD), an agricultural cooperative federation; and other local and international organizations have collaborated with MINAGRIE to develop a new privatized system, which began in March 2013.

MINAGRIE places an agriculture and livestock extension agent in each of Burundi's 129 communes and an agriculture and livestock service provider in each of the 2,912 commune subdivisions, called Hills or "colline." The Hill service providers have completed primary school and the commune agents are considered agriculture technicians, a position that requires additional education. They receive only a modest amount of training, but it is not comprehensive. MINAGRIE states as much in the National Agriculture Investment Plan (NAIP), where it notes the "irrelevance of the framework and working conditions for agents," which reflects the mismatch between farmer needs and the DPAE's existing structure and minimal outreach (MINAGRIE 2011). The NAIP mentions that MINAGRIE recognizes the importance of capacity strengthening and plans to establish improved training programs for its agents. But according to the director general of Planning, Agriculture and Livestock, who reports directly to the Minister, little progress has been made (Ndabemeye 2013).²

2.3 Health and Nutrition

The population of Burundi is estimated at 10.88 million³ (CIA World Factbook 2013). This reflects a growing youth bulge, with 45% of the total population under 15 years, and 50% of the total population under 20, and a median age of 17 years. The fertility rate in Burundi is high and women enter marriage (*en union*) at the median age of 20.3 years. Each woman, on average, gives birth to 6.4 children. By age 19, 24.1% of young women have experienced a live birth, and 6.9% of young women 15–19 are pregnant. Approximately 22% of live births do not survive (Demographic and Health Survey [DHS] 2010).

Women and men are familiar with traditional and modern methods of contraception. Contraceptives can be obtained at health centers and are generally available. But contraceptive use is estimated at 13% of women age 15–49 (11% modern methods and 2% traditional methods). Use of contraceptives by married women (*en union*) is 18% (modern) and 4% (traditional). Use by sexually active unmarried women is estimated at 27%. The overall unmet need for contraception in Burundi is 54%, indicating that while there is knowledge of and access to contraception, greater efforts are needed to increase use of modern contraceptive methods to space and limit births. The percentage of women 24–35 years of age from the lowest and highest wealth quintiles who spaced births at least 23 months apart is nearly equal at around 40% (DHS 2010).

² Hill service providers are supposed to look to the commune agents (they report to them) when they need assistance, but based on observations by farmers, they rarely are or never seen. In addition, it appears there is little interaction between Hill and commune extension personnel—aside from department meetings—due to the very low level of farmer interaction with Hill extension personnel. When commune agents encounter queries from farmers that they cannot answer, they are expected to seek support from MINAGRIE staff in Bujumbura, Burundi's capital city, which typically results in a delayed response.

³ This census took place in 2008.

The high fertility rate in Burundi is a significant cause for concern as it is fueling rapid population growth that is putting pressure on limited land resources and exacerbating the chronic malnutrition situation. Nearly 60% of children under 5 are chronically malnourished (stunted), ranging from 55% to 62% across the country and as high as 71% in Ngozi province. Chronic malnutrition in Burundi begins early in life and by 24–35 months of age 66% of children are stunted. Inadequate birth spacing and frequent births are clear risk factors for both chronic and acute malnutrition in Burundi. Chronic malnutrition is 60% for children born within 24 months of a previous birth, compared to 53% among children born 48 months after a previous birth. Similarly, acute malnutrition is 30% for children born within 24 months of a previous birth compared to 22% among children born 48 months after a previous birth. This clearly shows the risk that high fertility and frequent birth carry in this context, and as such are significant risk factors for chronic and acute malnutrition in Burundi.

The disease burden in Burundi is dominated by infectious and communicable diseases. Respiratory tract infections, malaria, and waterborne diseases remain the main causes of death in children under 5. While many health indicators are alarming, health-related behaviors and services are improving, with increased antenatal consultations, increased vaccination coverage, and drastic reduction of the incidence of acute malnutrition.

There was an increase in HIV prevalence during the displacement caused by the civil strife between 1993 and 2005. The third country-wide study, conducted by the Ministry of Health and the Fight Against AIDS (MOH) in 2007, indicated that national prevalence of HIV was estimated at 3% and was higher in urban than in rural communities (4.4% and 2.8%, respectively) (DHS 2010). The DHS 2010 also assessed HIV prevalence; results indicate a current (2010) national prevalence of 1.4% among persons 15–49 years of age. The ratio of infection is 1.7 women to 1 man infected in all age groups except for those 15–19 years, whose prevalence is only 0.3%. While this prevalence is low, AIDS-affected households experience the added challenges of meeting the AIDS patient’s nutritional needs, additional expenses related to treatment, and potential stigmatization and marginalization. And, in spite of the relatively low prevalence, significant knowledge of HIV and AIDS awareness among youth 15–24 years is estimated at between 42% and almost 50% (DHS 2010).

The MOH has issued policies addressing community health and nutrition. It has collaborated with U.N., multilateral, and bilateral partners to support its policy and strategy development. The MOH’s responsibilities were decentralized in 2009. Health districts were created as a link in the chain of service delivery and oversight between the province health offices (PHOs) and health centers, which are governed by (recently established) health committees composed of community members. No health staff is seconded to the communes, as is the case with agriculture and livestock extension agents.

In 2012, the MOH also promulgated the establishment of community health committees (CHCs) for each Hill. Volunteer community health workers (CHWs), who have been elected/appointed for each Hill since the 1990s, provide information, education, and health services. Currently additional CHWs are being identified for mobilization at each sub-Hill (which is similar to a sub-village). Although theoretically elected by community members, CHWs may be identified through a consensus among the sub-Hill leader, the commune administrator, and CHC members. The new policy of electing one CHW per sub-Hill replaces the old system where there were two CHWs per Hill.

During the conflict in Burundi, CHWs served as the primary point of contact and intervention for many emergency response partners. CHW functions varied by partner, intervention, tasks, and capacities, and this was reflected in the methods of remuneration (some paying stipends or salaries, others paying per diems and material benefits). Currently, the MOH seeks to return to a strictly volunteer, harmonized CHW function that is more accountable to the health centers and their health planning.

CHWs are supervised by health promotion technicians (HPTs), who are salaried and based at health centers and whose primary works centers on hygiene/sanitation and water interventions. Currently, there are not enough trained HPTs to ensure a presence in each health center. They usually cover at least two to three health center catchment areas, a geographic area too large to adequately supervise CHWs. HPTs are sometimes managed by a province-level HTP supervisor.

The mandate of the MOH’s Programme National Intégré d’Alimentation et de Nutrition (PRONIANUT), which was established in 2009, includes several aspects of research, tool development, training, coordination and monitoring and supervision of all nutrition activities. PRONIANUT launched the National Nutrition Policy in July 2013, in spite of the fact that PRONIANUT is a program and not an MOH department. However, PRONIANUT is not allowed to seek external funding and needs institutional financial strengthening. Burundi has, however, recently joined the Scaling Up Nutrition (SUN) movement and PRONIANUT is the SUN focal point.

2.4 Governance

The GOB consists of sector ministries that are supported by programs and present in all 17 provinces, each of which has ministry-appointed sector management teams. While province governors continue to be appointed by the central government, decentralization of elected governance to communes was initiated in 2005. Communes in Burundi are still very young and have limited resources, but they can establish partnerships independently and receive funding directly for development activities (GOB 2005). Commune officials do not collect taxes from households, although taxes are levied on commercial activities. Among communes’ responsibilities are the review and certification of small-scale local civil society association activities, including simple rotating savings groups. The GOB and some donors contribute to the National Commune Fund, which provides grants to communes.

Five-year commune development plans have been developed with the participation of local public and private sector leadership. These plans are developed by a mixed team of local public officials, civil society and donor partners and consultants who are paid by the Ministry of Decentralization. Annual health and other sector plans are prepared by commune council sub-committees, if the officials and civil participants have the training and resources to do so. A number of donors have contributed via the Ministry of Decentralization to the development of communal plans. These include Germany (the German Society for International Cooperation, or GIZ), Switzerland, and the World Bank. The U.N. Development Programme (UNDP) will soon be funding the development of communal plans where they have not yet been completed.

Population density, hilly terrain, and the need to reach communities off the main road infrastructure are among the conditions that have resulted in instituting administrative oversight through even more localized leadership. Leadership at each of these administrative levels is salaried by the central government.

Table 1. Population Distribution and Administrative Delineation

Description	Communes	Zones	Hills	Sub-Hills
Number, nationally	129	375	2,912	5,824
Population	28,000–156,000		Approx. 10,000	Approx. 5,000
Population density	Variable: 116–474 persons per square km ⁴			

Source: Ministry of the Interior and Public Security, Administrative Delineation, 2005, p. iii.⁵

⁴ Anecdotal evidence indicates that in some locations, the population density exceeds 700 people per square km.

⁵ The Ministry of Interior and the Ministry of Public Security became two separate ministries in 2005.

Zones serve as intermediary administrative sub-units of the commune; their officials have no decision-making authority. Sub-Hill leaders emanate from the traditional leaders (*Nyumba Kumi*), are recognized by the central government and are elected by and accountable to their constituents. Zone, Hill, and Sub-Hill officials are all elected and are accountable to the commune council which, with a two-thirds quorum, has the authority to fire them. Commune officials are also involved in oversight of community development committees (CDCs), while sector-specific committees and associations (health, agriculture) are accountable to the relevant sector staff present within the commune.

Although decentralization is relatively recent and elected officials are not fully integrated into development actions, all local leadership, including traditional leaders, have the potential to become positive agents for local development and investment, sector-specific outreach and promotion among communities, and partners to the ministry services working within their communities. However, the effectiveness of local leaders is not known but is likely to be variable and contingent on the funds available for development activities. Capacity strengthening and relationship-building with sectoral ministries will likely enhance their understanding of their roles and ability to complement community outreach with advocacy and fund-raising.

2.5 Community Development and Civil Society

Recent GOB policies reflect the substantial role that public and civil society organizations play in the community development. In 2012, the GOB initiated the establishment of CDCs. This is relevant to implementing partners' strategies for strengthening the capacity of and partnering with communities, local government, and civil society, and to ensuring sustainability of results.

Cooperatives, or associations, of agriculture and livestock producers are important actors in leveraging inputs, training, and marketing of products for members. It is unclear to what extent farm operations are run by associations and cooperatives. Government-sponsored cooperatives operated between 1980 and 1987 and, according to rural informants, provided a steady source of reliable fertilizer to farmers. After that, and especially during the years of civil conflict, lack of government attention and financing led these cooperatives to close down. Currently, MINAGRIE works with farmer organizations and agriculture cooperatives initiated and managed by farmers. Some require the support of the GOB and donors, while others have relied on strong member support and effective co-op management to establish and maintain their organizations.

Seven agricultural cooperative federations operate in Burundi. Six have a unique commodity or programmatic focus: rice, tea, coffee, palm oil, cotton, and microfinance. The seventh federation, CAPAD, comprises 58 cooperatives, which themselves are made up of 1,700 local associations in 12 of the 17 provinces. Each association has an average of 10 farmers. Total current CAPAD membership is 17,514, which is small relative to the 90% to 95% of the working population (9.8 to 10.3 million) directly involved in agriculture.

Cooperative and association development has lagged for several reasons, including lingering negative reaction to the GOB's failed previous effort in the 1980s to impose cooperative expansion. One critical constraint is members' unwillingness and/or inability to pay sufficient dues to support the groups. For example, CAPAD has to supplement membership fees with donor support, which accounts for more than 70% of its annual operating budget.

Churches and non-religion-based associations are active in various rural development efforts. For example, the Red Cross/Burundi (RCB) mobilizes thousands of community-level volunteers, focusing uniquely on hygiene, sanitation, and keyhole gardens. It was recognized in 2011 by the International Red Cross and Red

Crescent Movement as the most successful member in promoting true voluntary community participation. These volunteers function without remuneration, and some evolve to become CHWs. Also, CHWs have established their own CHW associations, which have benefited from grants for community-based activities.

2.6 Gender,⁶ Youth, and Marginalized Populations

The 1993–2005 conflict continues to have a significant adverse impact on women in Burundi. As with other neighboring countries mired in conflict in the Great Lakes region, it is widely acknowledged that gender-based violence was used as a weapon of war in Burundi. Due to the departure or death of male heads of households, the number of female-headed households increased (Braud and Perschler 2011). However, the legal and social environment restricts women’s purchase and inheritance of land and other assets as well as the sale of their own products. **Table 2** indicates that female-headed households are generally less wealthy than male-headed households (WFP 2008). It has been noted that children from female-headed households often leave school early to help earn income to feed the family (WFP 2008), and girls marry early in an effort to improve their circumstances (Oxfam, Investir dans l’Agriculture au Burundi, June 2011, p. 20).

Table 2. Female-Headed Households’ Position on the Wealth Index

Heads of Households	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	Average
	Poorest → Richest					
Women	27.7	21.4	20.2	11.2	9.5	18.0
Men	72.3	78.6	79.8	88.8	90.5	82.0

Source: WFP 2008.

The GOB developed a national gender policy in 2003 that aims to redress these inequalities (NAIP 2011). The draft law on marital property, inheritance (including women’s inheritance), and gifts/bequests was submitted to the Council of Ministers in 2008, but for a variety of reasons, it was not promulgated. The law aims to provide inheritance rights to women and specify procedures for marital property, inheritance, and gifts/bequests to be claimed since properties and possessions are currently acquired according to traditional customs and cultures. Currently, Burundi is the only country in East Africa that does not have a law providing inheritance rights for women.⁷

As Burundi is a largely patriarchal society, women depend on their relationships with men to access resources. Currently, only 8% of women own land without sharing the title with other family members, while 54% are landowners who share the title with sons, husbands, or fathers. Women who live in urban centers and have a high school education are less likely to be landowners. For common property, such as houses, 46% of titles list women as co-owners (WFP 2008).

During the field visits to Gitega, Karusi, Kayanza, Muyinga, and Ngozi, provinces, the assessment team consistently observed that almost all of the visible farm field work was being done by women. These observations were verified by the men and women farmers who participated in the informal farmer group meetings held by the team. The farmers noted that as climatic variability has increased over the past 3 to 5

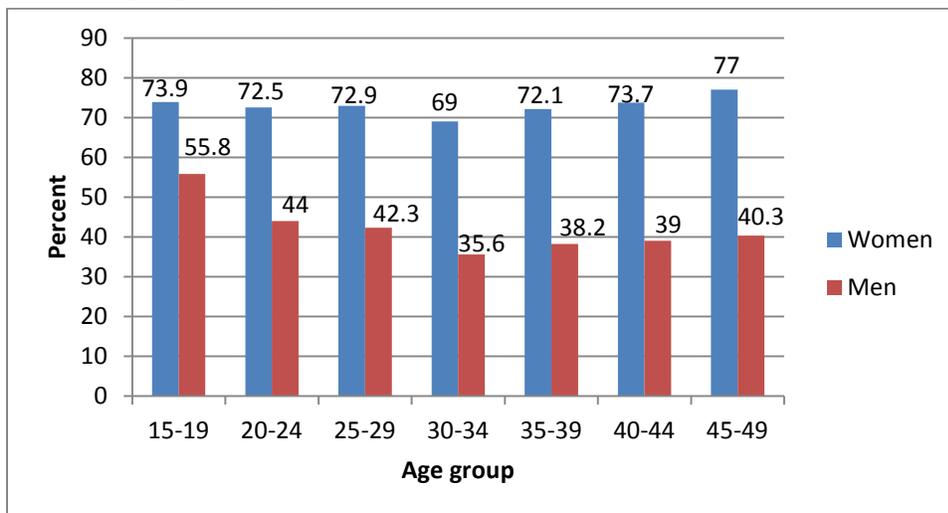
⁶ **Gender equality** is a broad concept and a goal for development. It is achieved when men and women have equal rights, freedoms, conditions, and opportunities for realizing their full potential and for contributing to and benefiting from economic, social, cultural, and political development. It means society values men and women equally for their similarities and differences and the diverse roles they play. It signifies the outcomes that result from gender equity strategies and processes. **Gender equity** is the process of being fair to women and men. To ensure fairness, measures must often be available to compensate for historical and social disadvantages that prevent women and men from otherwise operating on a level playing field. Equity leads to equality.

⁷ Personal communication with Jean-Claude Niyongabo, USAID Democracy and Governance Team Leader. March 5 2013.

years—which they believe has been primarily responsible for reduced crop yields—male household members increasingly have had to seek local off-farm work, if available, or have been compelled to migrate to find work in other provinces or in such neighboring countries as Rwanda and Tanzania.

Another aspect of significant importance in Burundi is women’s experience of domestic violence, given the history of the past conflict and prevailing social norms. While there are no current data on the prevalence of domestic violence in Burundi, **Figure 2** presents women’s and men’s opinions on the use of domestic violence against women (the extent to which they perceive it is acceptable to beat women for various reasons such as burning food, arguing with spouse, going out without telling him, neglecting children, and refusing sexual relations) and indicates that the use of violence against women continues to be viewed as an acceptable practice to redress women. It is interesting to note that women reported the use of violence as acceptable more than men, reflecting how women are socialized to accept violence against themselves as well as their own sense of low self-worth.

Figure 2. Women’s and Men’s Perceptions on the Acceptability of Domestic Violence against Women, by Age Group



Source: Burundi DHS 2010.

Landless households are particularly vulnerable to food insecurity. Among these are Batwa households, whose livelihoods previously were hunting and manufacturing metal hunting and farming instruments. With the degradation of the forest and wild fauna for hunting, the Batwa have largely resorted to selling their labor. This resulted in very little integration into broader social networks (producer cooperatives, for example), leaving the Batwa with a smaller safety net. In some areas of the country, the Batwa represent about 10% of the population.

The residual impact of the civil conflict has resulted in many displaced returnees (repatriates), former combatants, and others who represent a portion of the landless population. The 2008 Comprehensive Food Security and Vulnerability Assessment (CFSVA) reported that 41.5% of households identified themselves as returnees, regardless of the cause and dates of displacement and return. Most of them were internally displaced (58.9%) and refugees (38.6%) (WFP 2008). The GOB’s resettlement process includes offering land in productive areas, especially in the eastern and western lowlands, where more land is available and where significant investments are being made to increase rice production. The western lowlands have traditionally had low population density. The climate in the western lowlands is hotter and suffers from water deficits that make it more suitable for cotton and palm oil production. Additional development of this area will require significant investments in irrigation. The eastern lowlands were

depopulated during the conflict and were the last area to be freed from conflict. However, despite the incentive of land for resettlement, many returnees choose to settle at their place of origin, even when access to their families' land holdings is unlikely.

Repatriates, internally displaced persons, former combatants, and other vulnerable groups continue to be at risk. One of the GOB's priorities in its national reconciliation and peace consolidation policy is to seek a peaceful process for reintegrating these groups. In 2009, the GOB adopted the National Socioeconomic Reintegration Strategy for Persons Affected by the Conflict, which focuses on these three groups and promotes the involvement of host communities to implement reintegration programs (IMF 2012).

3. Nutrition and Food Security Context in Burundi

This section presents the nutrition and food security context in Burundi. As noted earlier, chronic malnutrition is extremely high across Burundi, and this is symptomatic of the broader food insecurity that exists in the country. The high prevalence of chronic malnutrition also has adverse implications for Burundi’s development. Chronic malnutrition is an underlying cause of nearly half of all child mortality, and malnourished children are sick more often, have delayed cognitive development that impairs school performance and enrollment; at an aggregate level this can adversely impact economic productivity (Black et al. 2013, Black et al. 2008, Grantham-McGregor et al. 2007, Pelletier 1994). Nutrition is an essential prerequisite to achieve at least five of the eight Millennium Development Goals (MDGs), as such the high rates of chronic malnutrition in Burundi can hold the country back from achieving the MDG goals and targets. This section begins with a discussion on food availability, followed by a discussion on food access, and nutrition and food utilization.

3.1 Food Availability

3.1.1 Land Availability

According to the CFSVA (and extrapolating to estimate for the country), about 75% of surveyed rural households own land,⁸ and 99% of these household reported being engaged in agriculture (WFP 2008). Nationally, 94% of the households with access to land reported owning some of it, 43% rented land for cash, and 5% rented land for payment in kind. The 48% that rented land represent a large segment of farmers whose owned land is inadequate for food production. While this combined group is not landless, they do not own enough productive land.

Small land holdings dominate agriculture in Burundi, with 86% of households farming less than 0.5 ha (Table 3). In addition, these small land plots are rarely contiguous. For example, the average number of separate parcels of land farmed per household during the late 2011 fall planting season was 4.5 (WFP 2008). Some plots are in close proximity, while other farmers contacted informally during this assessment mentioned distances as far as 2 km between parcels. Female-headed households farm smaller plots than male-headed households; 33% of female-headed households had 0.25 ha of total land or less compared to 18.6% of male-headed households (WFP 2008).

A MINAGRIE survey (MINAGRIE 2012) indicated that 10.6% of land parcels are farmed by individuals, versus 89.4% farmed by a “collective,” which is defined by the GOB as producer associations that rent land or a group of family members (an important distinction that is not differentiated at the national level). Information gathered from the field indicates families report the land as collectively owned although children are allocated a portion of the land for their families. Unfortunately, we cannot be certain whether the average land holdings per household reflect the collective total (children and parents) or the separate allocations among family members.⁹

Table 3. Land Areas Farmed by Households

Percentage of Households	Farming Area (ha)
21	Less than 0.1
39	0.1 to 0.25
26	0.25 to 0.5
8	0.5 to 0.75
5	0.75+

Source: MINAGRIE 2011–2012 survey.

⁸ Based on an estimated population of 10.88 million, approximately 1.5 million households own land.

⁹ The assessment team did not ascertain to what extent the collectives are managed by men or women. Most households are headed by men and, while much of the farm labor is female, most of the household decision-making is by males.

The Land Commission is responsible for overseeing the land repatriation process for returnees, but it has limited resources. The commission has repatriated about 10,000 ha and projects that an additional 6,000 ha will be returned to previous owners by the end of 2013 (Bambonanire 2013). The commission's preferred solution is to move many of the 700,000 returnees to lowlands in Moso, which are sparsely populated due to low rainfall and poor soils, and other areas where the GOB has substantial land holdings that it will offer at no cost. However, the commission has found that most returnees do not want to move away from the Hills in which they lived.

The diminishing size of plots has been fueled by population growth, which directly affects households' ability to produce food. However, land tenure is another factor affecting land use decisions. Most returnees who were forced to flee Burundi for political reasons during the conflict were land owners. Upon their return to Burundi, most previous owners (the Land Commission lacks data on the number of owners) found people occupying their land with no ownership papers or with improper or forged documentation. Burundi statutory law clearly supports the rights of the previous owners to evict people who lack legal rights to the land. However, customary and statutory laws are inconsistent in this regard. Customary law grants land ownership to households that have managed or cultivated a plot of land over a certain period. This customary right of occupation is not recognized by statutory laws, resulting in the many conflicts over ownership. These conflicts can be resolved outside the legal system through ad hoc arbitration councils at the Hill or commune level but sometimes are handled with violence.

Another aspect of land tenure is the lack of recognition of the rights of women to inherit land. Again, statutory and customary laws differ. Statutory law does not prevent daughters from inheriting family land, but customary law does. A land law intended to address land disputes and inequities was passed in July 2012, but implementation has been slow with little visible impact to date.

3.1.2 Production Systems

Agriculture is the dominant source of employment in Burundi, making up 90% to 95% of formal and informal jobs. However, it contributes a relatively modest 35% of gross domestic product (GDP) (IMF 2012). About 87% of the cultivable land (roughly 1 million ha) is devoted to food crops, of which 80% is self-consumed (MINAGRIE, 2011). Seven percent of the productive area is planted with coffee, cotton, tea, and palm oil cash crops, which are important export crops that constitute about 80% of Burundi's foreign exchange earnings (IMF 2012). The remaining 6% of arable land is marshlands that require drainage and irrigation improvements to support crop agriculture.

Burundi has two primary cropping seasons: Season A from September to February and season B from February to July (**Table 4**). Season C covers the long dry summer period, when cropping is possible only with irrigation, invariably in the marshland areas. Season B is the primary production period, accounting for 50% to 65% of production largely because this period is less prone to drought or floods. Season A accounts for 20% to 35%, and season C accounts for 10% to 15% (BEST Analysis Fintrac, 2012).

Table 4. Cropping Seasons Calendar

Climate and Cropping Seasons Calendar														
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug		
Climate		Short Wet			Short Dry			Long Wet			Long Dry			
Season A	X	X	X		Y	Y	Y	Y						
Season B							X	X	X		Y	Y	Y	Y
Season C	Y	Y	Y	Y	Y	Y				X	X	X	X	X
	Planting X													
	Harvesting Y													

Source: FINTRAC 2012

Crops associated with each cropping season are:

- Season A – maize, sweet and Irish potato, sorghum, banana, groundnut
- Season B – beans, Irish and sweet potato, vegetables
- Season C – rice, maize, Irish and sweet potato, beans

Burundi’s predominantly hilly landscape plays a substantial role in farming. A large percentage of farming is done on hillside slopes, which contributes to erosion and can be problematic for using animal- or petroleum-powered traction.¹⁰

Table 5. Farmland Topography

Feature	Percentage of Farmland
Hill Slopes	44
Hill Base	21
Hill Top	13
Plains	13
Marshlands	9

Source: MINAGRIE 2012.

Fifteen percent of households keep land uncultivated; reasons include allowing the land to lie fallow (35% of households), poor soil fertility (18%), or a lack of necessary laborers in the household (18%) (WFP 2008). This indicates that a number of households have encountered problems associated with soil depletion and have opted to leave the land fallow to reverse the negative trend. The 2012 MINAGRIE

survey reports that the average household expended 231 hours of labor in agriculture during the previous season A (September–February). Land preparation is the most strenuous and time-consuming labor category, requiring nearly 12 days on average for hoeing and digging. Planting requires about 7 days, and weeding almost 7 days of labor during a planting season that can range from 60 days to close to 200 depending on the crop. Women dominated each of the activities—land preparation, planting, cultivation, and harvest—accounting for 62% of the work hours (**Table 6**). (MINAGRIE 2012) In addition, because land parcels are rarely contiguous and can be far apart, women face the added transaction costs of walking from parcel to parcel.

¹⁰ Though farming of food crops is done almost exclusively by hoe with manual labor, the growth in the cattle herd will lead to more opportunities to use animal traction.

Table 6. Average Number of Hours Worked by Men and Women by Activity in Season A

Activity	Men	Women	Total Hours
Land Preparation	36	58	94
Planting	23	36	59
Weeding/cultivation	19	33	52
Harvest	8	17	26
Total Hours	87	144	231

Source: MINAGRIE 2012.

3.1.3 Shocks Related to Food Availability

Risks to food availability most commonly noted by farmers in the informal group meetings held during this mission were changes in precipitation perceived to be caused by climate change.¹¹ Extremes of drought as well as heavier and untimely rains (even hail) reduce crop yields and induce shocks that asset-poor households can ill afford, as they have few assets to sell to raise the cash needed to cope. For example, rice is particularly vulnerable to early rains during the flowering period; if the flowers are removed from the plant, yields fall dramatically. New crop varieties that are resistant to drought, cold, heat, and (water) submersion and have shorter maturities can serve as partial remedies if climate changes are relatively consistent. However, improved varieties are not solutions to the increasing variability in temperature and precipitation.

Climate change may also be influencing new patterns of pest or crop disease infestations that require different agronomic applications—more or different pesticides or revised Integrated Pest Management approaches—neither of which are currently readily available to resource-poor farmers. For example, throughout East Africa increasing temperatures are pushing coffee growers to higher altitudes to avoid more numerous outbreaks of the damaging coffee borer, which leads to increasing competition from food crops in the new areas. The leanest seasons for households, when harvests from the previous agriculture seasons begin running out, are the months of October and April (WFP 2008).

3.1.4 Insufficient Swampland Production

Irrigation potential in Burundi is underdeveloped, with only 10% to 12% of the marshland areas developed for agriculture (IMF 2012). During the wet seasons in unimproved or non-irrigated marshlands, excess water makes production problematic for all crops except rice. And during the dry summer months (season C), irrigation is required in marshlands for some crops like vegetables to permit a third crop. There are also few examples of drip irrigation to allow a third crop season during the dry summer period in other topographies in the country.

3.1.5 Crop Diversity

Many households in Burundi practice subsistence agriculture because of several factors including limited land holdings, low productivity, and few income-generating opportunities outside agriculture. These factors should force households to diversify production to safeguard food supplies if there is a shortfall in the production of one crop. During the 2011–2012 crop season (season A), a minority of households (32%) practiced undiversified monoculture (growing a single crop), while 68% produced multiple crops, with 49% growing two or three crops, e.g., maize and cassava; maize and beans; maize, beans, and

¹¹ The CFSVA reported that 66% of respondents cited drought among their three primary shocks. Other frequently reported shocks include inflation, hail, pests, and plant diseases (WFP, p. 12).

cassava; or maize, beans, and bananas (IMF 2012). However, increased resilience depends on even greater diversification (including livestock) as climatic changes occur.

Maize is the dominant cereal, produced by 87% of households during the 2011–2012 season A, with relatively low variance by province (**Table 7**). The primary maize production provinces are Ngozi and Bururi; 61% of Ngozi households reported growing the crop, which may indicate larger-scale operations, compared to Bururi where 91.1% of households are growing maize, suggesting more smaller-scale operations. Sweet potatoes and cassava are the primary tubers. Sweet potatoes can be grown essentially year round, which contributes to their popularity as a staple food crop. Cassava is generally ground into flour and is considered a lower-cost alternative to other food staples. If properly stored, cassava flour can be an important food to fill part of the food gap during the lean times.

Table 7. Percentage of Farming Households Growing Selected Food Crops

Crops	Percentage of Households Producing September 2011–January 2012 Season
Bananas (beer production)	65
Bananas (for cooking)	70
Cassava	77
Common beans (bush varieties)	67
Maize	87
Sweet potato	74

Source: MINAGRIE 2011.

Common beans are the dominant pulse crop, primarily grown in season B (February through July). Beans are more prominent in areas of greatest population density where there are few alternative protein sources. Beans are considered a higher risk crop than maize and tubers because they are more vulnerable to pests (viruses and fungi) and because untimely rains during the flowering stage cause very low yields.¹² About 18% of bananas are consumed as fruit or, in the case of plantains, used in cooking, while 82% is used to produce beer or wine, which is done by either women or men to generate household income.

3.1.6 Low Agricultural Productivity

As noted earlier, agricultural productivity in Burundi is low. The average value added per agriculture worker¹³ in 2010 was US\$84 (in constant 2000 U.S. dollars) for Burundi, compared to US\$322 for developing countries in sub-Saharan Africa and US\$1,077 for the world (World Bank 2013). The value added,¹⁴ among the lowest in the world, is reflected in very low average yields, which underpin the problem of inadequate food production (**Figure 3**), which in turn affects household food availability by contributing to food gaps and poor food access by limiting surpluses that can be sold. The food deficit in Burundi has worsened since the mid-1980s as kcal per capita available from staple foods has declined from over 1,400 kcal in 1985 to under 1,100 in 2009 (FAOSTAT 2013). The entire food basket available for consumption declined from just under 2,000 kcal per capita in 1985 to just over 1,600 kcal in 2009. As a result, the majority of households cannot produce enough food to feed their families until the following crop harvest, much less sell a portion of the produce to generate income. Thus, households become more vulnerable to shocks—crop failure, serious sickness, or death in the family—and lack the resilience to recover from shocks. This vulnerability also makes many Burundian farmers risk averse, i.e., they adhere to low-input (and low-cost) traditional agriculture, which relies on extensive farming

¹² Based on discussion with farmers and DPAE staff.

¹³ “Agriculture” includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production.

¹⁴ Value added is the net output of all of the above subsectors (all outputs less intermediate inputs). Depreciation of assets is not considered.

practices (bringing additional land into production) rather than intensive farming practices (increasing production on existing land).

As noted earlier, production of food crops in Burundi has been mostly stagnant or declining since 2007 (Table 8). Increases have been realized in important food crops including sweet potatoes, rice, and sorghum, with modest gains in maize and decreases in cassava and beans.

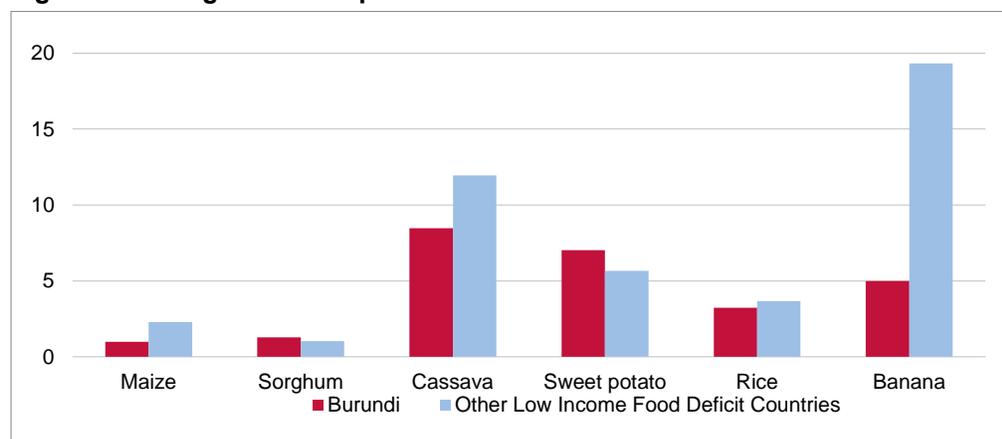
Table 8. Food Crop Production 2000–2011 (in tons)

Food Crop	Average 2000–2006	2007	2008	2009	2010	2011
Bananas	1,576,036	1,700,597	1,807,279	1,845,824	1,912,665	1,846,180
Beans	221,832	205,196	189,661	207,273	201,551	200,673
Maize	122,302	111,408	117,762	122,052	126,403	128,483
Rice	62,942	74,111	74,224	82,095	86,863	95,643
Sorghum	72,632	85,565	79,818	83,023	81,177	86,854
Finger Millet	14,796	10,741	10,742	10,846	10,846	10,777
Wheat	7,772	7,987	8,094	9,034	8,583	9,787
Sweet Peas	31,726	32,557	30,939	32,700	31,533	31,406
Sweet Potato	805,441	873,663	896,883	926,508	966,343	955,103
Cassava	681,596	558,557	582,463	586,140	598,410	508,735
Irish Potato	27,164	26,693	27,375	29,051	28,506	27,144
Taro	69,668	58,125	58,341	58,578	58,853	58,331
Yams	9,856	9,901	9,901	9,899	9,916	9,895

Source: CountrySTAT 2013.

Small holders rarely use animal traction and petroleum-fueled tractors or other powered farm equipment because of limited resources and because farming on slopes in most cases preclude the use of animals or tractors. The team observed only manual land preparation and plowing, with hoes as the dominant tool¹⁵ (WFP 2008). This contributes to uneven seed placement depths, planting rows, and spacing between plants, all which compromise optimal plant production.

Figure 3. Average Food Crop Yields for Burundi and Other Low-Income Food-Deficit Countries



Source: FAOSTAT 2013. Note: The low-income food deficit list comprises 65 countries.

¹⁵ The most commonly owned assets in 2008 were a hoe (97%), followed by a machete (62%), and an axe (47%). Some items related to livelihood activities were available but were borrowed or rented, including a mill (1%), sewing machine (1%), pirogue (1%), and fishing equipment (0.6%). Few households owned a means of transport, including a bicycle (16%), motorbike (0.5%), or a vehicle (0.1%). Thirty-eight percent have radios.

The major diseases that damage food crops are the cassava mosaic disease, cassava brown streak disease, and banana xanthomonas (bacterial) wilt. Agriculture extension agents indicated that the viruses were the critical constraint to increasing cassava production in Burundi. The virus has affected an estimated 75% to 90% of the country's production area in varying degrees.

Soil conditions in Burundi are generally poor as a result of continued planting with little or no fallow seasons. Many areas have acidic soils (36% of total arable land [MINAGRIE 2011]), which results from an absence of manure and lack of lime amendments. In addition, farming on hillsides contributes to significant soil erosion of an estimated 4 tons per ha per year in the eastern lowlands, 18 tons per ha per year in the center east hilly region, and more than 100 tons per ha per year in some western areas where hills are higher and steeper slopes are common (MINAGRIE 2011).

3.1.7 Post-Harvest Losses

Post-harvest storage losses further constrain availability of food as well as seeds. Losses depend on site-specific humidity and temperature but can easily exceed 25%, particularly in high temperature, high humidity environments. Farmer-saved seeds also lose viability and germination potential under high moisture conditions. Maize and groundnut are susceptible to aflatoxin formation, chemical poisons produced by a fungus—*aspergillus flavus*—that are carcinogenic. The fungal toxins suppress the immune system, impede growth and development, and cause liver disease and death. In general, Burundians are unaware of the dangers of aflatoxin, and women, children, and the poor are particularly vulnerable.

One low-cost intervention has been developed to improve post-harvest storage for cereals. Researchers at Purdue University (Purdue University 2013) developed the Purdue Improved Cowpea Storage (PICS) bag, a woven external polypropylene bag that contains two internal high density polyethylene bags (HDPE).¹⁶ When properly sealed, the bags create an oxygen-free environment that prevents insects from creating the water they need to survive. The bags come in different sizes (25 and 50 kg are common) and can be used for home storage (25 and 50 kg) and for collective storage by producer groups, where each farmer's bag is tagged for identification.

On the higher-cost side, the University of California, Davis has been testing and disseminating a new seed drying technology developed by Rhino Research through producer association research in Thailand. The product, Zeolite, is a ceramic bead (0.2 to 0.3 inch diameter) with several pores the size of water molecules. In any simple airtight container, the beads behave like molecular sieves and can dry seeds to water content below 1%, which prevents molds and insect infestation. The beads are costly but can be reused indefinitely by heating to remove the moisture.

3.1.8 Agriculture Trade

Most (80%–90%) of Burundi's cereal needs are provided by domestic production, with officially reported import volumes roughly following domestic production variations since 2006. Bean imports have been insignificant, while maize imports have varied between 14% and 38% of total supply and rice between 4% and 15% of total supply. Only in the wheat subsector have imports been a significant factor, but with dramatic variations, e.g., ranging from 0% to 70% since 2006. Much of the wheat used by Burundi flour millers is sourced from monetized food aid, while most domestic demand is met through commercial

¹⁶ A number of commercial storage bags are also available. GrainPro, for example, sells a bag for dry beans that has an outer bag similar to the PICS bag but uses only one internal bag that is manufactured with a patented coating process. Because of this patented process, GrainPro does not license the technology for local production. GrainPro bags sell in Western African countries at US\$4 to US\$5 delivered. Most GrainPro bags are produced in GrainPro's plant in Subic Bay, Philippines. The Bean/Cowpea Collaborative Research Support Program has been actively involved in research on using multilayered plastic bags for storage.

imports, with only negligible supplies from domestic sources (BEST Fintrac 2012).¹⁷ Wheat flour is imported primarily from Tanzania via formal and informal channels. Rice imports have not varied as much as wheat.¹⁸

Discussion with traders indicated that informal imports of rice, beans, potatoes, and maize from Tanzania, Rwanda, and Uganda are common and that informal exports, though less common, also occur. This anecdotal evidence suggests that food imports are a major component of Burundi's food supply. Official agriculture exports are minor.

3.1.9 Scarcity of Livestock

Livestock contributes about 14% to GDP and is overshadowed by crop agriculture. Livestock constitutes only about 30% of total agriculture GDP. Livestock herds were decimated during the many years of civil conflict as indicated by the Burundi livestock index, which fell from 117.2 in 1993 to 83.68 in 2004 (Index Mundi 2013). The herd size in all categories has increased substantially since 2000, and 70% of households own some livestock (Table 9). According to the WFP, of every 10 surveyed households, 9 owned a goat and poultry, 4 owned a guinea pig, and 2 owned cattle and a rabbit (WFP 2008).¹⁹ Poultry and goat ownership compares favorably to Rwanda, where an average of 6 out of 10 households owned a goat and a chicken. However, cattle ownership in Burundi is only half the level in Rwanda (WFP 2009). Because of the cost of fodder and higher prices compared to that of smaller animals, cattle herd rebuilding is more difficult for smallholders who lack assets and resilience.

Table 9. Numbers of Livestock, 2000–2011

	Average 2000–2006	2007	2008	2009	2010	2011	Annual Growth Rate %
Cows	379,213	479,106	471,614	554,236	596,412	653,580	8.1%
Goats	1,096,533	1,606,717	1,616,873	1,782,227	2,162,800	2,285,693	9.2%
Sheep	243,572	292,916	281,190	292,147	295,739	332,463	3.2%
Poultry	857,253	1,315,788	1,524,007	1,610,565	1,719,296	2,552,656	18.0%
Pigs	162,968	189,505	166,721	207,181	244,791	443,908	23.7%
Rabbits	271,056	315,112	390,641	388,433	410,707	524,229	13.6%

Source: CountrySTAT 2013.

The reduced numbers of animals during the conflict has had a lingering significant impact on soil depletion as less manure was applied for many years without offsetting increases in inorganic fertilizers or compost. Burundi has struggled to catch up. In 2011, 1,150 tons of fertilizer, equivalent to an application of only 2 kg per ha countrywide,²⁰ was imported at an estimated cost of 45 billion Burundi francs (about US\$375 million) (IMF 2012). The GOB remains committed to rebuilding the national herd by supporting intensive livestock breeding, distributing fodder seed, and strengthening veterinary service capacities. The GOB considers small livestock programs as a key component of food security for poor rural households (IMF 2012).

¹⁷ Title II awardee CRS monetized an annual average of 8,950 tons of wheat during 2008–2011. Total monetized wheat grain represented about 28% of Burundi's total wheat supply, with annual monetized tonnages ranging between about 20% and 30% of total wheat grain imports.

¹⁸ The BEST analysis reported that rice imports were a greater proportion of rice supply in 2010. It reported imports of 40,000 tons in 2010, compared to the 15,600 tons shown in the FAO data series used in this analysis.

¹⁹ Data reflected by regions as defined by UNICEF (DHS 2010).

²⁰ Comparative fertilizer application data per ha for 2008 shows that Tanzania used 5.5 kg, Uganda 3.0, and Rwanda 8.3.

3.2 Food Access

Nationally, almost 28% of households have borderline or poor food consumption scores (FCS) (WFP 2008). Asset-poor households were found to have poor consumption patterns; among households with the poorest consumption pattern (with tubers consumed most frequently and other foods less frequently), 84% also have a poor FCS. The 2008 WFP vulnerability assessment, which provides analyses of household food consumption patterns as measured by a wealth index, found that poorer households in Burundi are more likely to have wasted children and that stunting among children is related to low average food and non-food expenditures (WFP 2008, 2012).

Poor consumption patterns are consistently cyclical; in October and April (lean months between harvests), an estimated 40% to 60% of households have poor diet diversity and limited consumption (WFP 2008).

3.2.1 Smallholder Marketing

The food crops generally produced for home consumption include maize, beans, sweet potatoes, cassava, and bananas. Households often sell some portion of their bean and banana crop and sometimes surplus cassava, sweet potatoes, and Irish potatoes as well as vegetables, which are considered a cash crop. Households' decisions about selling and storing food are based on factors such as immediate and near-term cash needs, as well as the condition and capacity of their home storage.

The markets for most food commodities are competitive. Poor road infrastructure, limited storage capacity, and limited rural consumer purchasing power results in trade dominated by small and medium-size traders. In most areas, the easiest sales outlet for farming households is small rural traders who combine small household lots to sell to medium-size and larger traders and wholesalers. However, rural traders are more reluctant to operate in the most remote areas where the transaction and assembly costs are high. Households then must transport their goods to village or commune center markets. Some households that sell to a local trader sometimes circumvent the trader to gain a higher price by selling to larger traders or directly to retailers in larger markets.

Though feeder road networks are poor, the network connecting provincial and commune centers allows wholesalers to aggregate volumes for relatively efficient truckload shipments to Bujumbura, Gitega, and other provincial centers. Commodities moving into Bujumbura dominate trade flows in Burundi, and the seven large markets in the capital influence commodity prices throughout the country. The larger cities are also supplied by imports from neighboring countries.

3.2.2 Poverty and Food Purchases

Household food security is directly linked to wealth and asset ownership. In Burundi, food-insecure households have less access to land, use smaller plots (owned and rented), rarely cultivate cash crops, and produce fewer overall varieties of crops. Over 90% of all agriculture households owned some land, 48% rented land, and 7% borrowed land (WFP 2008). The average household owned 76% of the area they cultivated, and 51% owned all the land they cultivated (WFP 2008). Limited sales of cash crops reduce household purchasing power for other foods.

Per capita production in Burundi is roughly equivalent to 1,400 kcal per day, which is clearly deficient in terms of macro calorie availability, and demonstrates the need for substantial imports. Shortfalls are evident: 67% of total expenditures by rural households are used to purchase food, with almost 45% of total monthly expenditures spent on staple foods such as pulses, cassava, tubers, maize, and rice. Among the largest livelihood groups (agriculturalists, agro-sellers, agro-laborers, and laborers), laborers spend the

highest proportion of their household expenditures on food (76%). This is not surprising considering laborers potentially have the least involvement with agriculture among these groups (WFP 2008).

Based on average income and consumption levels and average bean prices, a household could spend up to about 40% of monthly income on beans alone, consumed almost daily among most households. Thirty-three percent of rural households' monthly expenses are for non-food costs. The largest expenditure is on tools and equipment (6.1% of total expenditures), followed by medical expenses (5.8%), and alcohol and tobacco (5.2%). Clothing, education, and other expenses total slightly over a quarter of total non-food monthly expenditures (WFP 2008).

3.2.3 Livelihoods

Agriculture remains the primary driver of jobs in the Burundi economy, but most agriculture labor (outside of a household's own farm) is considered part-time work. According to the Burundi Poverty Reduction Strategy Paper II, 70% of persons 15–64 years of age worked in agriculture in 2009, but full-time agricultural employment declined substantially between 2006 and 2009, from 18% to 11%. Conversely, informal agricultural jobs (jobs in family-owned enterprises and independent employment, which include part-time work) jumped from 44% to 59% in 2009. The non-agricultural sector apparently has not provided new job opportunities for Burundi households. The labor issue is particularly problematic for youth, which makes for a significant political and social challenge, particularly in rural areas. The absence of alternative off-farm livelihood opportunities is the main reason for seasonal and longer-term migration by male household members and has severely constrained per capita income growth in the country (IMF 2012).

3.2.4 Shocks Related to Food Access

As noted earlier, farmer groups mentioned economic shocks, including increasing crop, food, and fuel prices. Smallholders who produce enough crops or a sufficient diversity of crops for sale benefit from rising crop prices, but even these groups noted that crop income is overshadowed by the added costs of food and other household essentials.

Disasters also have a significant impact on livelihoods and food security. In the informal group meetings, farmers consistently mentioned that changes in precipitation (perceived to be caused by climate change) have reduced yields and household incomes.²¹ See Section 3.1.3 for a discussion of climate-related shocks.

3.2.5 Lack of Access to Credit and Working Capital

Agriculture contributed an average 32% of household income (WFP 2008). On average, manual labor contributed 34% of household income. Other sources of income include brewing, small trade (buying and selling small lots), and livestock rearing. Average annual income from all sources was about US\$250 (WFP 2008). This low income level coupled with low asset ownership often causes households to seek credit to buy food during the lean period or meet unexpected cash needs.

The WFP found that 74% of surveyed households had access to credit, though most credit access was limited to friends and families (61%), with 47% having access to local commercial lenders (WFP 2008). The WFP survey found that over 90% of all household purchases were in cash. The 2012 MINAGRIE

²¹ The CFSVA reported that 66% of respondents said that drought among their three primary shocks. Other frequently reported shocks include inflation, hail, pests, and plant diseases (WFP, p. 12).

survey reported that farming households paid cash for 97% of the fertilizer purchased and 93% of pesticides purchased (MINAGRIE 2012).

3.3 Nutrition and Food Utilization/Consumption

3.3.1 Anthropometric Status

The prevalence of malnutrition in children under 5 is extremely high in Burundi. The national prevalence of stunting is 58%, underweight 29% and wasting almost 6% (**Table 10**). The prevalence of malnutrition among children under 5 differs greatly between Bujumbura, the capital, where the prevalence of stunting is relatively low, and the rest of the country, where stunting is very high (ranging from 55% to 62% regionally and over 71% in Ngozi province) and underweight ranges from 25% to 33%. At the time of this assessment, WFP and PRONIANUT reported that wasting has decreased throughout the country from 20% in 2007 due primarily to significant emergency therapeutic responses since the end of the crisis in 2005 (DHS 2010). The prevalence of stunting and underweight are higher in rural regions compared to urban regions, as noted in Table 10 (see **Table 12** for breakdown of provinces per region).

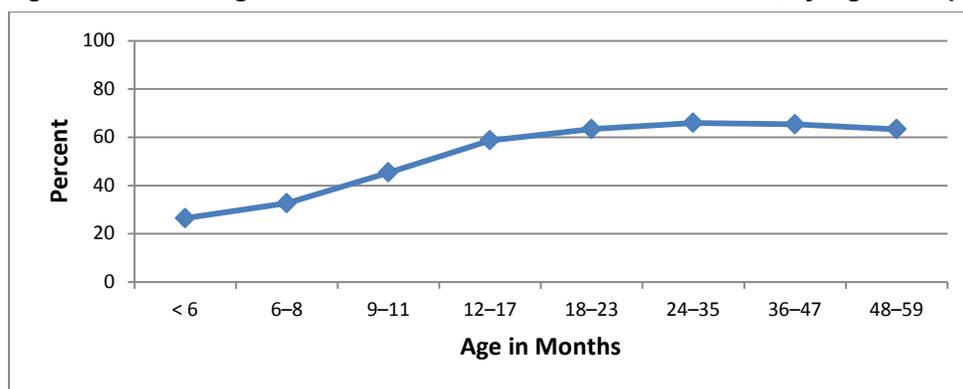
Table 10. Trends in Child Nutrition and Health Status

	Bujumbura Municipality	Northern	Central-Eastern	Western	Southern	National	Urban	Rural
Prevalence of Malnutrition								
Percentage of children under 5 stunted	27.6	62.1	61.5	55.1	56.0	57.7	37.8	59.5
Percentage of children 6–59 months underweight	15.2	32.1	33.1	25.1	25.0	28.8	18.0	29.7
Percentage of children 6–59 months wasted	6.1	5.5	5.4	6.2	6.4	5.8	4.8	5.9
Micronutrient Status								
Percentage of children under 5 who are anemic, hemoglobin <11.0 g/dl	39.0	44.9	44.0	50.5	40.4	44.5	39.7	45.0
Percentage of children 6–23 months consuming iron-rich foods in the past 24 hours	50.2	22.9	19.5	36.7	35.4	28.6	49.1	26.7
Percentage of children 6–23 months consuming vitamin A-rich foods in the past 24 hours	76.5	84.3	83.2	82.2	85.9	83.5	79.4	83.9
Percentage of children 6–59 months living in a house with adequately iodized salt	100.0	98.8	99.1	81.0	100.0	95.6	100.0	95.2
Percentage of children 6–59 months who have received a vitamin A supplement in the past 6 months	93.3	83.8	80.7	72.4	81.2	80.7	88.7	80.0
Infant and Young Child Feeding								
Percentage of children born in the last 2 years who were put to the breast within 1 hour of birth	63.8	69.4	83.6	74.9	68.7	73.6	65.4	74.4
Median duration (months) of exclusive breastfeeding among children born in the past 3 years	2.8	4.0	3.9	3.5	4.6	4.7	3.0	4.0
Complementary Feeding Practices among Children 6–23 Months								
Percentage of children with minimum diet diversity	36.8	17.5	13.8	14.2	25.0	18.5	35.0	16.9
Percentage with minimum feeding frequency	46.4	29.2	31.6	25.6	42.9	32.8	46.5	31.5
Percentage with minimum acceptable diet	19.5	6.8	7.8	4.8	14.1	8.8	18.5	7.9
Illness Prevalence and Prevention								
Percentage of children 6–59 months who received deworming treatment in the past 6 months	83.8	69.8	57.8	52.9	61.3	62.4	79.6	60.8
Percentage of children under 5 who have slept under an ITN the past night	62.9	34.6	44.8	64.6	39.5	45.5	64.5	43.8
Percentage of children under 5 who experienced diarrhea in preceding 2 weeks	19.7	30.4	22.9	26.1	20.2	25.0	21.2	25.4

Source: Burundi DHS 2010

The 1,000 days from the start of pregnancy until a child reaches 2 years is the crucial period of growth and development for children. While there are other opportunities for physical growth later in the childhood years, the majority of a child’s brain development is complete by 2 years of age. As such, early nutrition deficits impair children’s cognitive development in the first 2 years of life. **Figure 4** indicates that by 6 months of age, 26.5% of children already are already stunted, and the prevalence of stunting gradually increases and peaks by age 24–35 months. The prevalence of stunting in Burundi is 66% among children 24–35 months and 63.3% among children 48–59 months. Nationally, boys have a higher prevalence than girls of stunting (62.1% versus 53.1%) and wasting (6.2% versus 5.5%). This pattern is commonly observed in undernutrition, with boys tending to be more vulnerable to becoming malnourished.

Figure 4. Percentage of Children in Burundi Who Are Stunted, by Age Group



Source: Burundi DHS 2010

The WFP vulnerability analysis identified five significant variables relating to children’s stunting (WFP 2008):

- Sex of the child—boys are more likely than girls to be stunted, which is consistent with the DHS survey findings
- Age of household head—the older the head of household is, the less likely children 6–59 months are to be stunted
- Total food expenditures—children 6–59 months are less likely to be stunted as total food expenditures increase (not non-food expenditures alone)
- Mother’s middle-upper arm circumference (MUAC)—children ages 6–59 months who have mothers with a low MUAC are more likely to be stunted
- Land access—children ages 6–59 months in households with 0.25 ha of total land or less are more likely to be stunted

The high total fertility rate in Burundi of 6.4 births per woman of childbearing age adversely impacts the nutrition of children as well. For example, higher order births (the last few children born to a mother) are more likely to have a low birth weight and are more prone to malnutrition. In Burundi, inadequate birth spacing and frequent births are clear risk factors for both chronic and acute malnutrition (DHS 2010). Chronic malnutrition is 60% for children born within 24 months of a previous birth compared to 53% among children born 48 months after a previous birth. Similarly, acute malnutrition is 30% for children born within 24 months of a previous birth compared to 22% among children born 48 months after a previous birth.

In addition, the high fertility rates and closely spaced births likely reduce the time mothers have to provide optimum care to each young child. Furthermore, low birth weight, which is estimated to be 10.7%, and poor breastfeeding practices are likely underlying causes of Burundi's high rates of stunting by an early age, with 26.5% of infants stunted at 6 months (DHS 2010). In addition, the gradual increase in the prevalence of malnutrition up to 24–35 months of age suggests that poor infant and young child feeding practices up to the age of 2, as well as repeated infections and illness up to the age of 5, are major concerns in Burundi as well. Although fertility rates are high, only 11% of girls 15–19 begin childbearing during adolescence and the median age at marriage is 20.3 years. This further suggests that the high fertility rate with frequent and closely spaced births is more of a risk factor for child malnutrition than early childbearing per se.

3.3.2 Micronutrient Status

Micronutrients are essential nutrients for the growth and development of children under 5. In Burundi, iron-deficiency anemia is widespread—affecting 44.5% of all children under 5—and consumption of iron-rich foods is low. However, consumption of foods rich in vitamin A and vitamin A capsule distribution are high; 83.5% of mothers of children ages 6–23 months reported that their child consumed a vitamin A-rich food in the previous 24 hours, and 80.7% of mothers with children under 5 reported that their children received a vitamin A capsule in previous 6 months. Similarly, the use of iodized salt appears to be widespread; as 95.6% of households with children under 5 reported using it. But without data on serum retinol and urinary iodine, which are more robust measures of vitamin A and iodine deficiency, the data based on self-reports should be interpreted with caution as there is likely to be some over-reporting and bias.

3.3.3 Infant and Young Child Feeding Practices

Appropriate feeding practices up to the age of 2 years are essential to lay the foundation for adequate growth and development throughout a child's life. These practices include an early initiation of breastfeeding (within 1 hour of birth), exclusive breastfeeding for the first 6 months of life, and continued breastfeeding up to 24 months and beyond, as breast milk provides numerous nutritional, immunological, and developmental benefits for the child.

In Burundi, early initiation of breastfeeding within an hour of birth, as reported by mothers, is 73.6%; 69% of infants less than 6 months reportedly are exclusively breastfed and the average duration of exclusive breastfeeding is 4.7 months. However, the data on exclusive breastfeeding should be interpreted with caution as mothers who report having exclusively breastfed in the past 24 hours may have introduced other foods or liquids before the survey.²² This indicates that a proportion of infants are introduced to other foods and liquids before 6 months of age, which increases the risk of diarrhea and infection and consequently impairs nutritional status. More efforts are needed to promote, support, and enable mothers to exclusively breastfeed for 6 months. Breastfeeding practices do not vary based on the sex of the child, and both girls and boys are breastfed for the same length of time.

The timely and age-appropriate introduction of complementary foods is another set of practices that can prevent the onset or gravity of malnutrition. Continued breastfeeding, diet diversity, and feeding frequency are the three indicators that form the basis of the indicator on the minimum acceptable diet. In Burundi, however, complementary feeding practices among children 6–23 months are poor. Diet diversity and feeding frequency (at least one meal a day or more) are very low at 18.5% and 32.8%, respectively;

²² Personal communication with UNICEF/Burundi noted that although the DHS data suggest widespread exclusive breastfeeding, in practice many mothers are introducing other foods and liquids early to their children.

as a result only 8.8% of children age 6–23 months have the minimum acceptable diet (DHS 2010). This indicates that a greater focus on improving infant and young child feeding (IYCF) practices is essential to prevent malnutrition.

Another important practice is providing young children with increased food and fluids during and following illness. The Burundi DHS finds that among children under 5 who were reported to have experienced a bout of diarrhea in the 2 weeks preceding the survey, 60.3% received either oral rehydration solution or increased fluids during this episode of diarrhea.

3.3.4 Child Health

Nutritional status and infections are synergistic: Children who are malnourished are prone to infection, and children who fall repeatedly sick are at risk of malnutrition. Reducing exposure to infections is a significant pathway to reducing a child's risk of becoming malnourished or more malnourished. The most common illnesses in children under 5 in Burundi are malaria, water-borne illnesses, and respiratory infections (DHS 2010). Vaccination coverage across the country is high: 83% of children 12–23 months are vaccinated. Although diarrheal disease is a major cause of illness among children under 5, 57.4% of children with diarrhea are taken to the health center for treatment and 60.3% of children receive additional fluids or oral rehydration solution during an episode of diarrhea. However use of zinc supplements to reduce the severity and length of a diarrheal episode is only 0.1%, indicating that there is a need to expand the use of this prophylaxis. The WFP vulnerability analysis indicates that malaria, hookworm, and other infectious diseases are factors in anemia prevalence. In Burundi, 45.5% of children reportedly slept under an insecticide-treated bed net (ITN) the previous night (with the lowest use in the Northern region), and 62.4% of children under 5 received deworming treatment in the previous 6 months.

3.3.5 Maternal Health and Nutrition Status

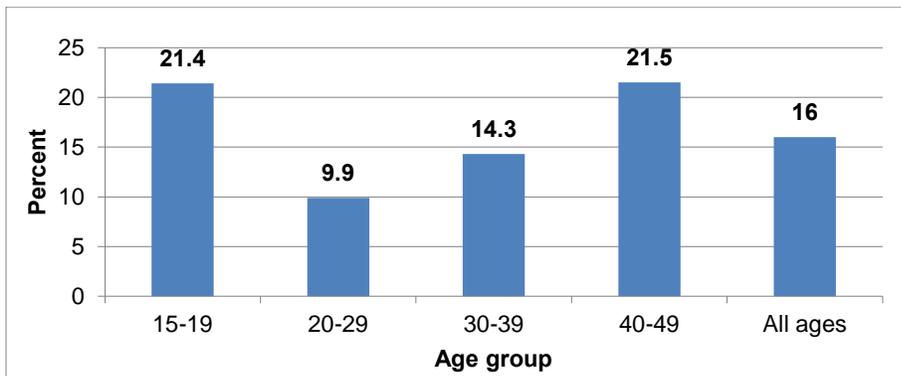
Women's health and nutrition affect newborns' birth weight, and the mother's ability to breastfeed her infant for the first 6 months. The main causes of women's morbidity and mortality in Burundi are malaria, HIV/AIDS, and tuberculosis (MOH 2009 Annual Health Statistics, 2011). According to this same source, maternal mortality in 2008 was 866 per 100,000 live births.

While medical consultations and care are free for pregnant women and children under 5, the quality and quantity of infrastructure, equipment, staff, and services are insufficient to ensure complete coverage of the entire population (MOH 2013). Infrastructure, equipment, and staffing disparities exist among various regions of the country.

Chronic energy deficiency (CED), as measured by body mass index (BMI) (height/weight in kilograms²), is a measure of women's nutritional status. In Burundi, 16% of women of childbearing age have CED.

Figure 5 shows the proportion of women of childbearing age with a BMI <18.5 by age group. Both adolescent girls 15–19 years and women 40–49 years are slightly more likely to have CED (DHS 2010).

Figure 5. Proportion of Women with BMI <18.5, by Age Group



Source: Burundi DHS 2010.

The DHS also shows that:

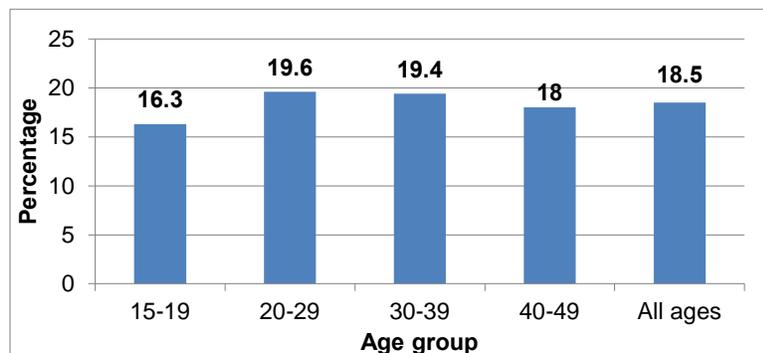
- Rural women are more likely to have CED relative to urban women (17% versus 10%)
- Women with no schooling or who only attended primary school are more energy-deficient than women who attended secondary school (17% versus 12%, respectively)
- 22% of women in lowest wealth quintile have a BMI < 18.5

CED in women differs among regions, with higher rates of low BMI in the North and Central-East.

Young women 15–19 years are less affected by anemia than women 20–39. Anemia in women is most prevalent (around 22%) in poorer households and among women with four to five children (21%).

Anemia is a significant risk factor for postpartum hemorrhage at delivery, which can lead to maternal death and perinatal mortality. The pattern for the prevalence of anemia in Burundi is consistent with the pattern of childbearing, in that women 20–39 years of age have the highest fertility rates and are most likely to give birth and have closely spaced pregnancies. High parity and short birth intervals are also significant risk factors for anemia.

Figure 6. Prevalence of Anemia among Women, by Age Group



Anemia is most prevalent in the North and West regions. In the North and Central-East regions, the overall prevalence of anemia among men is similar to that of women (16.0% and 15.2%, respectively), reflecting the general prevalence of this deficiency among poor households in those regions (16%) (DHS 2010).

Source: Burundi DHS 2010

3.3.6 Water, Hygiene, and Sanitation

Access to clean and safe water and food sources, latrines, a clean household environment, and good hand washing and hygiene practices are key to preventing or reducing infections and ensuring an adequate environment for the growth and development of children. In rural Burundi, 1% of the population has a water faucet installed in or near their home, and 22% has access to a public water fountain. Of the

remaining population—who do not have access to water pumps —25% access water from non-improved sources, 15% of which are unprotected (DHS 2010).

The DHS results indicate that 60% of the population uses unimproved latrines, 56% of which are open holes. In rural Burundi, 64% use unimproved latrines, and only 5% use shared improved latrines (DHS 2010). Cultural norms may play a significant role in how best to improve use of latrines (Bukuru 2013).²³

3.3.7 Gender and Nutrition

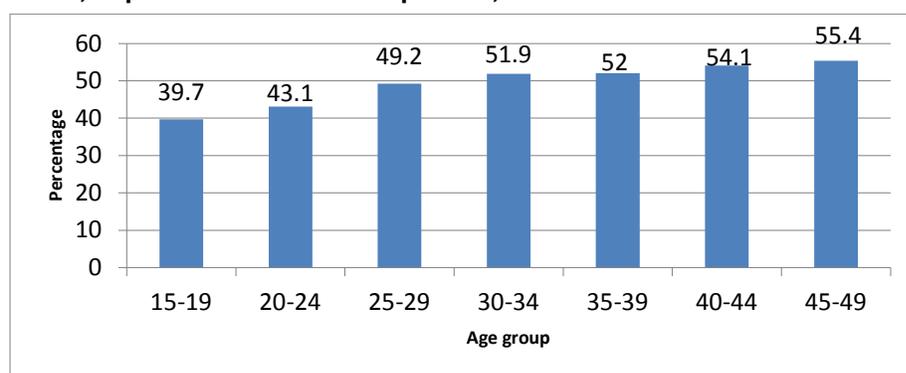
It is well established that gender inequality adversely affects young child health and nutritional status (Smith et al. 2003). In Burundi, high fertility rates combined with women’s lack of control over resources and assets, limited decision-making power, and lack of time likely contribute to the widespread problem of malnutrition. In particular, the large family size most likely results in women neither having the time nor the capability to provide optimum care to young children who are most at risk of becoming chronically malnourished— as such, this is an important factor that must be considered in program design. While there are limited data on gender constraints in Burundi, the data that are available suggest that gender inequality is deeply entrenched. Women’s decision-making power increases with age (**Figure 7**), but overall women have less decision-making power than men and most often participate in joint decision making. As noted in **Table 11**, joint decision making regarding women’s health, important household purchases, and women’s visits to their relatives are significantly influenced by men. But in half of all households, women and men make decisions jointly.

Table 11. Gender and Household Decision Making in Burundi

Household or personal decisions	Percentage women	Percentage men	Percentage together
Women’s income*	40.6	4.3	55.0
Men’s income	2.7	47.6	49.5
Women’s health costs	13.6	22.6	63.6
Important household expenses	7.9	42.2	49.5
Women’s visits to relatives	11.7	21.9	66.0

Source: DHS 2010. *Ages 25–49 only.

Figure 7. Women of Childbearing Age Who Report Participating in Decision Making on Health Costs, Important Household Expenses, and Visits to Their Relatives²⁴



Source: Burundi DHS 2010

²³ Mr. Pamphile Bukuru, head of the Information, Education, and Communication Service in the MOH, noted that some rural populations prefer individual holes, which are used to locate tree planting; an attempt to create multi-user latrines failed.

²⁴ Visiting relatives is an important marker for autonomy. Also, in cases of domestic violence, men’s controlling behavior in the relationship often prevents women from visiting their family; as such participation in deciding whether one can visit family members reflects a degree of autonomy.

The importance of women's decision making and self-perception of worth in the household is related to food security and nutrition, given women's preponderant agriculture labor (See Section 3.1.2). While the situation improves as women age, during their reproductive years not only do women have less control over the resources they generate through their field labor, they are consequently less able to ensure optimal diets for their children with these resources.

3.4 Regions and Populations Vulnerable to Food Insecurity

USAID/FFP advises that the development food assistance program target regions and population groups at greatest risk of chronic food insecurity, based upon an understanding of the food security shocks these populations face, their sources of vulnerability, and their capacity to mitigate the effects of shocks. The USAID conceptual framework for resilience on page 3 provides a lens through which contributing factors to food security can be examined. In Burundi, these factors are:

- **Chronic poverty.** Poverty is endemic, with 81% of the population earning less than US\$1.25 per day (UNICEF 2009).
- **Exposure to shocks and stresses.** Climate-change-induced weather patterns resulting in irregular rains (lost seedlings, requiring several re-plantings), rainfall deficits, and hail have reduced agriculture production. Continued resettlement of displaced populations in their places of origin or their integration in other regions of Burundi cause economic and social adjustments by both the returnees and their communities.
- **Adaptive capacity.** Chronic malnutrition rates are very high, primarily due to dietary insufficiency. Constraints in agriculture production are related to lack of availability of proper inputs, very small land plots to cultivate per family, and general degradation of lands.
- **Risk reduction.** There is currently no commune- or community-based risk assessment mechanism to promote disaster mitigation and prevention.
- **Governance.** Local governance is young and not yet fully equipped with the tools necessary to lead or solicit participation of communities in development planning.
- **Gender equality.** Women in rural areas bear a large part of the responsibilities for agriculture production but are not yet fully involved in making decisions regarding household expenditures or use of land.

Food insecurity is present throughout Burundi. WFP's poverty and food security indexes (WFP 2008) and the GOB and UNICEF's estimation of chronic malnutrition (DHS 2010) correlate to some extent (the studies resulting in these analyses were not conducted the same year or with the same respondents) and indicate that populations in the South region fare better than others (given the demographic, geographic, and climatic differences and the impact of recent conflict). Within each region, populations in some provinces are more food-secure than others.

Table 12. Poverty, Food Security, and Chronic Malnutrition, by Region

Region	Province	Poverty		Food Security			% Chronic Malnutrition
		% Asset Poor	% Lowest Wealth Quintile	% Poor FCS	% Borderline FCS	% Acceptable FCS	
Northern	Kirundo	23.9	24.5	2.2	22.8	75.0	62.1
	Muyinga	26.7	24.5	8.6	22.6	68.7	
	Ngozi	26.6	17.8	8.2	33.1	58.7	
	Kayanza	28.4	27.8	1.3	29.7	69.0	
Central Eastern	Cankuzo	30.1	22.0	8.7	25.4	66.0	61.5
	Ruyigi	28.6	13.7	4.4	20.8	74.9	
	Karusi	38.6	29.7	10.6	30.4	59.0	
	Gitega	26.0	35.7	3.7	18.4	77.9	
Western	Cibitoke	33.4	37.8	7.7	28.6	63.7	55.1
	Bubanza	36.1	46.3	3.8	26.5	69.7	
	Bujumbura Rural	30.0	28.1	6.0	24.1	69.9	
Southern	Bururi	17.9	15.2	1.0	8.8	90.2	56.0
	Makamba	20.7	15.6	0.6	7.1	92.3	
	Rutana	22.7	16.9	3.1	16.2	80.7	
	Mwaro	16.8	29.4	2.6	25.8	71.7	

Sources: Burundi DHS 2010 and CFSVA WFP 2008

The central highlands—Karusi, Ngozi, Gitega, and Kayanza provinces—share similar geographic and climatic conditions (significant hillside soil erosion, intermittent rainfall deficits, periodic hail, and undeveloped swamplands). They are among the provinces with the highest prevalence of chronic malnutrition and include vulnerable populations with limited livelihood opportunities (no on-farm options and very few non-farm options). They are also areas of high population density. Among the children in Ngozi and Kayanza (North), 99.7% are either stunted, underweight, or wasted, as are 100% of the children in Karusi and Gitega (Central-East) (DHS 2010). Although the prevalence of wasting in these two regions is lower, that of stunting and underweight is higher. There are more female-headed households (29%) among households deemed food-insecure than among households with borderline FCS (24%) and households with an acceptable consumption score (17%). Heads of food-insecure households were also more frequently single (i.e., widow(er), divorced, single never married) (WFP 2008).

Particularly vulnerable populations are:

- **Women.** Women fill critical roles in agriculture and livestock production, as well as savings and income-generation activities. They are also at risk of chronic malnutrition and influence the health and nutrition status of their young children.
- **Children under 2 years.** These children are at extreme risk of underweight and potential stunting.
- **Youth.** Much of the rural youth have grown up in an environment of low productivity and risk losing agriculture skills. The job opportunities are very limited for youth in many areas, which is why most of them prefer to migrate to towns.
- **Landless laborers and returnees.** Landless laborers include the Batwa,²⁵ who have lost traditional livelihoods, and resettled returnees. Both groups, with very different profiles, may not yet have gained the skills and resources necessary to fully integrate into the local economy.

²⁵ While the Batwa are traditionally marginalized, the GOB has increasingly integrated them into participatory development actions. There is no indication that they would not welcome participation in development food assistance activities.

3.5 Coping Capacities and Strategies of Populations Vulnerable to Chronic Malnutrition and Food Insecurity

3.5.1 Livelihoods

As noted previously, the majority of employment in Burundi is in the agriculture sector. Formal agricultural employment, which presumably offers more stable wages and reliable employment, comprised only about 11% of the workforce in 2009 while informal agricultural jobs made up about 59% (IMF 2012). Students and the unemployed accounted for 17% of the workforce, followed by workers in public administration (2.6%), small scale trading (1.9%), and independent small businesses (1.7%). The average formal unemployment rate in Bujumbura is 14.4%, 9% in Gitega, and 6.5% in Karusi (Burundi, African Economic Outlook 2012). The absence of livelihood opportunities outside of agriculture and the small number of full-time agriculture jobs have severely constrained per capita income growth in the country (IMF 2012), which can limit vulnerable populations' ability to cope with chronic malnutrition and food insecurity. (See **Annex 1** for the WFP survey's employment breakdown.)

3.5.2 Consumption Adaptations

Coping strategies reported by the WFP vulnerability analysis were: limit meal quantity (88.8%), consume less preferred or cheaper food (88.7%), reduce adults' meal size for children (65%), reduce the number of meals (60.3%), purchase food with credits (58.9%), and borrow (52.2%). The report also noted that these coping strategies were highest among laborers (67.9%), marginal households (58.3%), and agro-exploiters (56.1%) (WFP 2008).

3.5.3 Credit with Family and Friends

Credit is a critical component to filling food gaps during lean times in Burundi, and it can be an important element for incentivizing farmers to use higher-cost improved seed varieties and implement improved crop production techniques. Credit also can allow households the flexibility to purchase food after harvest when prices are low so they can store a portion of their harvest to sell when prices rise. As noted earlier, WFP found that 74% of surveyed households had access to credit, though most credit access was limited to friends and families (61%), with 47% having access to local commercial lenders (WFP 2008). The survey found that over 90% of all household purchases were in cash.²⁶

Numerous formal microcredit institutions have been established. Since 2009, CARE has helped develop and support 8,086 women-based savings and loan associations, with nearly 158,000 members (Ndayiragije 2013). In 2004, World Relief—with USAID and Belgian government support—started a microfinance institution, Turame, which is now fully functioning in several regions.²⁷ Savings and internal lending communities (SILC), a community-level micro-finance system, was introduced by Catholic Relief Services in five provinces (Kayanza, Kirundo, Muyinga, Cankuzo, Ruyigi) where two USAID/FFP-funded development programs were implemented. The SILC model is less formal and seems to be very successful and sustainable.

²⁶ In informal group discussions with farmers in Gitega, Ngozi, and Kayanza, the FSCF assessment team found many examples of women farmers who belong to associations that serve as microcredit facilities that permit members to borrow when the association has a capital surplus.

²⁷ SILCs typically comprise 15–20 people who agree to pool a set amount each week to establish a capital base. The groups contribute to two capital funds, one for productive loans and the other for household emergencies. After several weeks of saving, the group allows members to borrow against the relevant capital base with a 3-month repayment schedule at 10% interest. The objective is to allow each member to borrow in this fashion. The SILC operates on a 12-month cycle. After 9 months of lending and collecting repayments, the lending ceases for the last 3 months of the cycle, and all repayments are collected. Each SILC member receives a dividend proportional to their equity. Then another 12-month cycle starts.

4. Current Policies, Strategies, and Programs

This section provides an overview of the policies, strategies, and programs of relevance for the next Title II development food assistance program. These include:

- The GOB development strategy for the next few years, which revolves around the Burundi Growth and Poverty Reduction Strategic Framework II
- The emerging SUN coordination, which currently represents an opportunity to broaden the stakeholders of food security/nutrition linkages
- The National Program for Food Security and Nutrition

Given the range of policies, strategies, and programs related to nutrition and food security, multisector integration is vital to the success of the development food assistance program. Most implementing partners supporting stand-alone nutrition interventions have no sustainable links with complementary agriculture or livelihood projects, even when they are in the same geographic area. However, implementing agencies now recognize the need to integrate food security/agriculture with nutrition activities. Few efforts are addressing the prevention of chronic malnutrition directly. The Title II *Tuburamure* program being implemented in Cankuzo and Ruyigi is one of the few programs focused on undertaking research on preventing chronic malnutrition among children under 2. Some implementing partners use the Care Group model, which aims to improve mothers' knowledge and behavior regarding exclusive breastfeeding for children under 6 months, the composition of the diets of children 6–23 months, and the Essential Nutrition Actions. Many food security interventions, including the previous Title II programs, have introduced savings and credit to complement a range of improved agriculture, increased animal husbandry, and capacity-strengthening interventions (although data directly demonstrating that these interventions impact the rates of chronic malnutrition are not yet available). The significant work done in the areas of microcredit, women's savings and credit, cooperative development, agriculture research and outreach, prevention of chronic malnutrition research, and Community-Based Management of Acute Malnutrition can be integrated to compound the impact among food-insecure households.

Additional information on the activities relevant to food security and nutrition by other bilateral and multilateral partners are provided in **Annex 2**.

4.1 Government of Burundi Strategies, Policies, and Programs Addressing Chronic Malnutrition and Food Security

Since 2000, the GOB has reinstated organizations and systems that had stopped functioning fully due to conflict. This process continues as demographic growth, limited infrastructure, scarce human resource capacities, and opportunities to modernize and join global technical advances prompt further reform of these systems. The GOB's resources are limited, and external assistance have addressed fragile post-conflict health and agriculture conditions with food aid, emergency interventions, institution building, and transitional programming. The GOB and its partners are now at a crossroads where strategies and policies have been developed, and new funding commitments are needed to promote more integrated development programming.

The recently released Hunger and Nutrition Commitment Index 2012 measures political commitment to reduce hunger and undernutrition as reflected in a country's legal frameworks, policies and programs, and public expenditures. Burundi's aggregated scores resulted in a low ranking: 42nd among 45 countries

assessed (Institute of Development Studies 2013). Scores reflected a “very low commitment” to addressing stunting levels for children under 5 (over the past 20 years), which is characterized as “alarming” and meriting donor support for significant high-level advocacy. According to this analysis, stunting rates in Burundi continue to rise despite increases in gross national income. However, more recently, as government effectiveness has improved, so has the commitment to address hunger and nutrition in Burundi, reflected in the GOB’s recent adherence to the SUN movement.

GOB policies and strategies have been developed and evolved since 2000, and significant training has been done either project by project or with the intention to build national leadership capacity. As noted earlier, the GOB development strategy revolves around the Burundi Growth and Poverty Reduction Strategic Framework II, which identifies six objectives: 1) controlling population growth, 2) stimulating agricultural production and marketing activities, 3) more effective public spending, 4) a dynamic private sector, 5) significant increase in electricity production, and 6) strengthening human resource capacities, institutional structures, and legal and institutional frameworks.

Given changing climate conditions (delayed rains, increased drought, and hail) and their impact on agriculture production, food security, and prevalence of chronic malnutrition, integrated early warning systems are increasingly necessary. Currently, the Emergency Response secretariat is mandated to respond to localized emergencies related to the resettlement of post-conflict returnees as sporadic incidents of insecurity and displacement of populations continue on Burundi’s eastern border with Tanzania and its northern border with Rwanda. There is no national multisectoral early warning entity that analyzes multidimensional data to produce vulnerability assessments; however, FEWSNET maintains remote monitoring of Burundi, and WFP undertakes vulnerability assessments every few years. Agriculture season data are collected biannually, but collection at the community level is sporadic, and coverage is incomplete. The agriculture and livestock statistics are managed by MINAGRIE with significant support from the Food and Agriculture Organization (FAO). The MOH manages the health management information system (principally incidence of illnesses) with UNICEF support.

Early warning systems that include community-level indicator development, monitoring, and mitigation and response planning may exist in isolation. An integrated system that enables the GOB to regularly assess and support mitigation activities would support solutions to food insecurity.

Food security is a central focus of the MINAGRIE’s Department of Agricultural Statistics and Information (AISD), reflecting the Ministry’s effort to increase productivity and overall national food security. There is no physical security stock for the GOB to release to markets at subsidized prices during peak hunger periods (between harvests). There is also no financial reserve for purchasing staples either in anticipation of or in response to an urgent need.

The focus on the high rates of chronic malnutrition comes after years of efforts by the GOB and its partners to address high rates of acute malnutrition, which have stabilized at 6% after reaching 20% in 2007. The policy framework to address chronic malnutrition is not yet fully defined, nor are human and other resources yet dedicated to reducing it. This is due to the multisectoral nature of food security and nutrition, and the difficulty in integrating actions by multiple actors. Efforts to improve this began in 2010 with a broad-based food security forum, which led to Burundi joining the SUN movement in early 2013, and the President launching the new National Nutrition Policy in July 2013.

The University of Ngozi’s Agriculture Department and its Institute of Public Health, situated in the capital of Ngozi province, are both active and seek to extend their outreach to communities. The latter provided trainers to the Fonds de Bien-etre Indigène (FBI), a training center in Buyé, about 10 km from Ngozi, for 4 years. The FBI training center, situated on the extensive grounds of a Red Cross Burundi

(RCB) dispensary, has also trained RCB volunteers in hygiene interventions and keyhole gardens. The MOH is seeking to restart the FBI training program for nutritionists to meet current and future demand.

The MOH's National Nutrition Policy (MOH 2012) is complemented by the National Protocol for Integrated Treatment of Acute Malnutrition, which includes guidance for inpatient care and community-based Positive Deviance/Hearth (PD/Hearth) actions. This protocol was drafted by PRONIANUT with the contribution of UNICEF and implementing partners. However, to date there is no protocol addressing identification, prevention, and remediation of chronic malnutrition.

In light of the variety of approaches being used to implement PD/Hearth to address acute malnutrition, the GOB's desire to reduce dependency, harmonize health staff's functions across provinces, and ensure that MOH-promulgated guidelines are adhered to, PRONIANUT has indicated that all future PD/Hearth activities will be introduced and monitored by CHWs and HPTs, especially in the absence of an external partner. Health and international nongovernmental organization staff deem that populations are generally too poor to contribute to demonstration meals at PD/Hearth sessions. They believe that, without external provision of basic commodities to conduct the sessions, participation will dwindle. Given the CHWs' core job description, skills, and insufficient supervisory structure, it is ambitious to have them introduce, organize, and monitor all PD/Hearth activities.

4.2 USAID/Burundi Mission Strategies and Programs

4.2.1 USG Global Health Initiative Strategy for Burundi

The Global Health Initiative (GHI) is the conduit through which the USG helps partner countries improve health outcomes through country-owned and sustainable strategies. This initiative supports achievement of the health-related Millennium Development Goals (MDGs) and specific targets related to maternal, newborn, and child health; reproductive health/family planning; HIV/AIDS; malaria; and tuberculosis. To promote synergy of USG investments, the GHI seeks to leverage, build on, and strengthen systems in partner countries, creating efficiencies and impact (USAID, Global Health Office 2013). USAID/Burundi is planning to spend up to US\$160 million over the next 5 years on GHI activities in four areas: HIV/AIDS, malaria prevention, maternal and child health, and family planning.

The USG builds on successes and lessons learned to support GOB priorities in maternal, newborn, and child health; reproductive health/family planning; malaria; nutrition; and HIV/AIDS for the 2011–2015 period. This is done through investments and activities aimed at achieving three interrelated results:

- Strengthened health management information systems
- Improved behavior and demand for health services
- Improved quality of health services

4.2.2 Recent, Planned, and Ongoing USAID Projects

The Maternal and Child Health program, implemented in Muyinga and Kayanza provinces, focuses on service provision and health system strengthening at the facility and community levels. Key areas supported include: antenatal care (ANC), immunization, malaria and HIV/AIDS prevention and treatment, integrated management of childhood illness (IMCI), Essential Nutrition Actions, monitoring and evaluation, improving the technical capacity of health care providers, quality assurance, and awareness raising.

Two Title II development food assistance programs funded through USAID/FFP have operated in Kayanza, Kirundo, Muyinga, Cankuzo, and Ruyigi provinces. The Multi-Year Assistance Program

(MYAP) conducted in Kirundo, Kayanza, and Muyinga (initiated in 2009) was completed in August 2012; activities in the other two provinces (initiated in 2010) continue through October 2014. These programs support antenatal and postnatal care, breastfeeding, child growth monitoring, immunization, IMCI, essential nutrition and hygiene actions, food diversification, recuperation of malnourished children, behavior change communication (BCC), improving the technical capacity of health care providers, quality assurance, and awareness raising focused on these key areas. Both programs use the Care Group model with “lead mothers”²⁸ living alongside community members to complement activities of CHWs.

Adopting a preventive approach, one program specifically targets pregnant and lactating women and children under 2 to take advantage of the critical 1,000-day window for a young child’s physical and cognitive development. The *Tubaramure* program (“Let’s help them grow” in Kirundi) uses the Preventing Malnutrition in Children under 2 Approach (PM2A) and aims to reduce chronic malnutrition by providing rations of corn-soy blend and oil to pregnant and lactating women and children 6–23 months, as well as a protective household ration. The program also requires beneficiaries to participate in social and behavior change communication (SBCC) activities and requires the use of preventive and primary health care and nutrition services.

Several research activities are embedded within the project, including an impact evaluation of various durations and timing of distribution of the rations, a process evaluation of the delivery of the project, and a cost and cost-effectiveness study. While the project’s results will not be available until 2014, there is some concern that the project’s heavy reliance on the provision of food aid to prevent malnutrition is contrary to current GOB ambitions to limit dependency on external aid.

USAID/Burundi’s Health sector issued the Integrated Health Project (IHP) request for proposals on June 8, 2013. The project, which will operate from FY 2014–FY 2019 with a budget of US\$45 million to US\$71 million, is intended to help the GOB, communities, and civil society improve the health status of populations in the targeted project areas of Karusi, Kayanza, Kirundo, and Muyinga provinces. Building on previous and ongoing USG investments, the project will focus on increasing the use of quality integrated health and support services, underpinned by strengthened health systems and structures. At the end of the project’s five years, the GOB, civil society organizations, and supported communities will have demonstrably increased capacity to deliver quality integrated health and support services and communications and behavioral interventions (USAID 2013).

USAID/Burundi’s Economic Growth sector is planning the multi-year Economic Growth Project (EGP) project. EGP’s preliminary focus will be to reduce food insecurity and improve household nutrition through increased availability of and access to a diverse set of foods. EGP will develop value chains for legumes and coffee and will promote market linkage access to these value chains for producer groups and other future Title II beneficiaries.

Other USAID projects include:

- Economic Development Loan Guarantee Fund through Interbank Burundi (2008–2015)
- Ngozi University Higher Education Development, implemented by University of South Carolina (2008–2013)
- A seed and food testing laboratory established at Ngozi University (2012–2014)
- Family planning and reproductive health programs
- Health management information systems

²⁸ A lead mother is identified by her peers to be a role model of good conduct, use of resources, and hygiene practices.

5. Recommendations for a Title II Program in Burundi

5.1 Objectives and Desired Outcomes

The overall goal for the Title II development food aid program in Burundi is to “reduce chronic malnutrition and food insecurity among vulnerable households.”

This FSCF guides targeting and programming of Title II resources to reduce the chronic malnutrition and food insecurity and strengthen the economic status of poor and vulnerable populations, while also investing to connect producers to markets, strengthen nutrition-related health services, and improve local food security governance.

The Title II program will help improve the nutritional status of pregnant and lactating women and children under 2 in vulnerable households, as well as food availability, access, and utilization. The program also will help reduce the vulnerability to food insecurity of individuals, households, and communities. The program will enhance resilience among food-insecure households by increasing their skills and assets, diversifying their livelihoods, and strengthening beneficiaries’ ability to deal with and recover from the shocks that compromise their food security and fuel the vicious cycles that lead to persistently high levels of chronic malnutrition. To strengthen and complement efforts to reduce chronic malnutrition and food insecurity among vulnerable households in selected communities, the next Title II program must also engage at the national level to strengthen the development, adoption, and implementation of national policies with direct relevance to nutrition and food security. The program will also coordinate closely with GOB and USAID partners to strengthen and increase access and utilization of family planning services and promote diet diversification.

All activity pathways will lead to the reduction of chronic malnutrition, and program impact will be measured primarily by reductions in rates of chronic malnutrition among children under 5 (i.e., height-for-age).

Program outcomes and intermediate results for the Title II program should derive from the results framework proposed in the application. The program priorities and priority activity areas discussed below can be organized into a range of different results frameworks depending upon how the applicant organizes project activities. The program priorities and priority activities in this FSCF represent a road map to achieving sustainable reductions in chronic malnutrition and food insecurity in target communities. Applicants’ results frameworks should show linkages/complementarities with USAID/Burundi’s new Integrated Health Program (IHP) and Economic Growth Project (EGP) program.

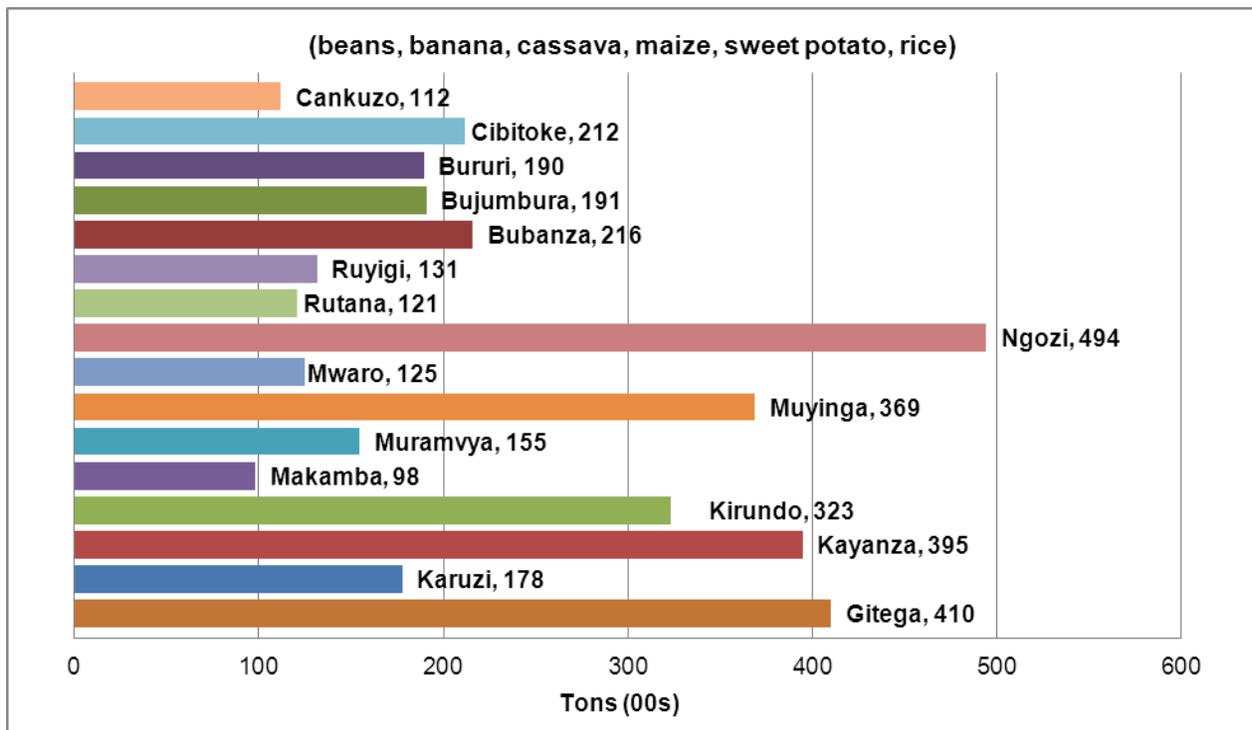
5.2 Geographic Priorities

This assessment proposes that the Title II development food assistance program should consider targeting areas within **Gitega, Karusi, Kayanza, and/or Kirundo, Muyinga Ngozi, provinces**, taking into account the benefits of effective complementarity between Title II activities and activities of IHP and EGP in those provinces (or part of those provinces). The cumulative effect of these investments is likely to have much more impact than the implementation of these projects in isolation. Applicants are encouraged to select one of these provinces for the next program, seeking to cover the entire province and contiguous areas, and should select areas that lend themselves to the greatest overlap with IHP and EGP.

The countrywide prevalence of malnutrition suggests no particular provincial targeting. The broad food basket consumed by most households in the country (bananas, cassava, climbing and bush beans, maize, sweet potatoes, taro, and Irish potatoes) tends to mitigate provincial differences in crops grown. Cropping patterns also do not suggest a particular geographic focus, particularly considering that the leading crop-producing areas are also the most densely populated. A synthesis of poverty, chronic malnutrition (stunting), and food security data shows that Gitega, Kayanza, Karusi, and Ngozi currently have the highest incidence of chronic malnutrition.

In terms of the aggregate production of the primary food crops—beans, maize, cassava, bananas, sweet potatoes, and rice—the top five producing provinces are Ngozi, Gitega, Kayanza, Musinga, and Kirundo. They are also the country’s most populated provinces. The five are geographically contiguous, with four stretching across Burundi’s northern boundary and Gitega in the country’s midsection. The five provinces nearly envelop Karusi (except on the southeastern side). As the BEST analysis points out, a GOB survey (Evaluation des Récoltes, des Approvisionnements Alimentaires, et de la Situation Nutritionnelle, Saison 2010 A) shows that Kirundo and Ruyigi were the most food-insecure in 2010, followed by Ngozi, Kayanza, Gitega, Karusi, Cankuzo, Musinga, and Rutana. Ruyigi had the highest food deficits during 2009–2010, and Cankuzo ranked second.

Figure 8. Combined Crop Production by Province



Source: CountrySTAT 2013

The choice of areas of intervention should take into account the high prevalence of chronic malnutrition and food insecurity (provinces or targeted communes within provinces) and should complement the work of USAID’s IHP and EGP projects in those same areas.

Table 13. Synthesis of Provinces with Highest Need and Geographic Complementarity with Other USAID Programs

Location	Highest rates of food insecurity	Highest rates of stunting	Lowest BMI rates	Highest incidence of poverty	IHP	EGP	Provinces with the most need and optimal overlap
Ngozi	In some communes	X		X		X	X
Gitega	In some communes	X	X			X	X
Muyinga		X			X	X	X
Karusi		X			X	X	X
Kayanza	In some communes	X	X	X	X		X
Kirundo	X	X		X	X		X

Sources: DHS 2010, IHP Request for Proposals 2013, EGP Concept Paper 2012.

5.3 Recommended Program Priorities

The development food assistance program in Burundi should encompass activities designed to synergistically achieve the following three key priorities for addressing chronic malnutrition and food insecurity in the targeted geographic areas:

- Program Priority 1: To reduce chronic malnutrition among children under 5
- Program Priority 2: To increase household food availability and access through increased productivity
- Program Priority 3: To increase household incomes to improve household diet diversity
- Cross-Cutting Program Priority 4: Engage in national policy processes of direct relevance to reducing chronic malnutrition and food insecurity

The FSCF assessment team developed the recommended priorities for the next phase of the Title II program based on interviews with a range of GOB, bilateral, multilateral, U.N., and NGO stakeholders; semi-structured group interviews with community members and beneficiaries of the current MYAP; and a systematic review of GOB, international public organization, NGO, and other program documentation, sector studies, policy papers, and population surveys. These priorities were also identified in the context of USAID and GOB strategies and priorities for the country. The priorities also reflect the observations and expertise of the authors and the accumulated experiences of current Title II partners in Burundi.

For each priority activity presented in **Table 14**, the FSCF highlights specific project activities that applicants may consider as well as key priorities for implementing the activities effectively. This FSCF does not address in detail the full range of project activities that may be conducted in every potential target zone. Based on their local assessments, applicants may identify, prioritize, and design project activities (with a corresponding results framework) that they believe will most effectively reduce chronic malnutrition and food insecurity in a specific setting.

Each priority activity area should strengthen resilience for sustainable impact, including reducing the risks and impact of shocks, increasing adaptive capacities, and improving governance. Resilience focuses on the overlap of poverty and shocks, which produces household, community, or regional crises that magnify

vulnerabilities and erode household assets. Shocks and stresses may have a collective impact on households in an area or region and may take the form of sudden natural events such as floods or landslides, or may occur more gradually such as increasing temperature trends or economic volatility. Other household events are more idiosyncratic, such as a family death, prolonged sickness, or loss of remittance support. These various shocks can have profound impacts on households regardless of income or social status. For the poorest and most vulnerable, even small shocks can put households over the edge, requiring them to sell productive assets, forgo health care, or reduce food consumption. Recovery potential for these households is low. Consequently, the Title II program interventions should directly or indirectly address resilience because it is directly linked to improved social and economic conditions of the program's targeted vulnerable population.

The Title II program should undertake activities related to food security in accordance with conservation agriculture (CA)—environmental protection and restoration principles that are essential to integrating resilience into the agriculture sector. Some rural communities may have little appreciation for the importance of reforestation, watershed management, and erosion control. For example, loss of topsoil on Hill slopes has become a greater threat to productivity as Hill households have extended slope planting by removing trees and shrubs, which are natural erosion inhibitors. Sensitization will be needed beginning in the project's early stages when communities and Title II program staff discuss and plan project activities.

CA in Burundi involves three improved agriculture practices: minimum soil disturbance (especially through direct seeding rather than plowing), permanent organic soil cover (especially through use of cover crops), and crop rotation and intercropping. Sensitization is required in this context to encourage adoption of these practices. Other improved practices to consider include use of improved seeds, integrated pest management techniques to reduce the use of pesticides, improved soil fertility management, and careful water management.

Applicants also should note that feeder road construction and maintenance in Burundi have worsened deforestation, as newly accessible areas are often cleared of trees for charcoal production. Road construction activities may be accompanied by reforestation to protect the environment and to provide income-earning opportunities on nearby communal lands, using trees like eucalyptus and pine.

Table 14. USAID/Title II Program Priorities and Activities in Burundi

Overall Goal: To reduce chronic malnutrition and food insecurity among vulnerable households		
Program Priority 1: To reduce chronic malnutrition among children under 5	Program Priority 2: To increase household food availability and access through increased productivity	Program Priority 3: To increase household incomes to improve household diet diversity
Priority Activity 1.1: Prevent chronic malnutrition in children under 2	Priority Activity 2.1: Households increase and diversify crop production through improved productivity	Priority Activity 3.1: Households increase income generated through improved market linkages and off-farm activities
Priority Activity 1.2: Pregnant and lactating women and children seek preventive care and treatment for illness	Priority Activity 2.2: Households increase and diversify livestock production through improved productivity	Priority Activity 3.2: Households increase production and consumption of micronutrient-rich foods
Priority Activity 1.3: Promote healthy family size		Priority Activity 3.3: Design and implement an SBCC strategy to encourage diet diversity and improved nutritional outcomes
Priority Activity 1.4: Increase use of potable water and sanitation infrastructure		
Priority Activity Area 1.5/2.3/3.4: Promote the creation and income generation of savings and credit groups		
Cross-Cutting Program Priority 4: Engage in national policy processes of direct relevance to reducing chronic malnutrition and food insecurity		
Cross-Cutting Priority Activity 4.1: Engage at the national level to strengthen nutrition policy implementation, communication planning, and coordination	Cross-Cutting Priority Activity 4.2: Engage at the national level to strengthen the implementation of climate-smart water resource management and agriculture policies	Cross-Cutting Priority Activity 4.3: Engage at the national level to strengthen the development and implementation of food policies focused on food access, prices, and fortification
Key Design and Implementation Considerations: Integrated programming, geographic and vulnerable group targeting, gender equality and female empowerment, development approach, resilience, sustainability and exit strategy, self-financing and self-sustaining models, early warning and disaster risk reduction, capacity strengthening, social and behavior change, local governance, environmental monitoring and mitigation		

Title II program staff should be trained to treat the agricultural interventions as having food access, income, and diet quality/diversity objectives to avoid stove-piping agricultural activities solely as income generators. It is vital that projects work with community leaders and groups to develop a conceptual and cultural framework for defining nutrition and food security objectives. This, and their active participation and awareness of project activities, will enable community members to better understand that nutrition, health, food access, agriculture, livelihoods, gender issues, and income should all be given appropriate weight in project planning and implementation.

Program Priority 1: To Reduce Chronic Malnutrition among Children under 5

More than half the children under 5 in Burundi are stunted, and in certain areas stunting reaches 70%. This is indicative of chronic intergenerational malnutrition and has dire consequences for the development of the child and the community. It is well established that stunted children have a greater risk of morbidity, mortality, decreased schooling, and decreased earnings later in life (Black et al. 2008). The most immediate causes of malnutrition are inadequate dietary intake and disease. Inadequate dietary intake can stem from household food insecurity, inadequate care, and/or lack of knowledge of desired feeding practices. Disease can be also caused by inadequate care, an unhealthy household environment, and/or lack of access to health services. As the causes of malnutrition are multifaceted, integrated

programming addressing its various determinants within the community has the greatest potential to improve the nutritional status of children.

Efforts to address chronic malnutrition in Burundi are nascent. PRONIANUT developed a 2013 National Strategic Multi-Sectoral Plan to Fight against Malnutrition (MOH, draft July 2013) that translates the 2012 National Nutrition Policy into concrete interventions, which in the case of chronic malnutrition is limited to the promotion of breastfeeding, micronutrient supplementation, and the establishment of PD/Hearth. However, despite the efforts of PRONIANUT and other major stakeholders to coordinate on nutrition, major constraints remain, including a general lack of awareness and understanding of what chronic malnutrition means, including its deleterious impacts, the scale of the problem, and the lack of commensurate funding. PRONIANUT, as a part of the MOH, does not have the autonomy to ensure adequate funding. During the launch of the SUN movement and the multisector platform on food security and nutrition, the GOB's major recommendation was to remind stakeholders to always follow the new national strategy. The need to strengthen coordination among partners was also highlighted.

The Title II program, with its coordinated multisector activities, has a large role to play in preventing malnutrition in the communities where it intervenes. In addition to the agricultural and livelihoods activities, preventive maternal and child health, nutrition, and child-spacing activities need to be implemented. It will be important that these and other similar program components that place a particular emphasis on delivering benefits to women include substantial sensitization components among men, community leaders, and other applicable role models (e.g., mothers-in-law) so that efforts to improve women's access to resources do not have an unintended negative impact on women's labor or time.

Priority Activity 1.1: Prevent Chronic Malnutrition among Children under 2

Focus on the 1,000 days. The first 2 years of a child's life are critical for his/her growth and development. As seen in Figure 4: Percentage of Children in Burundi Who Are Stunted, by Age Group, these are also the years in which significant growth faltering occurs in Burundi and after which the rate of stunting peaks at an alarming level. Therefore, efforts at preventing growth faltering and chronic malnutrition rates should be focused on the first 2 years of life and the pregnancy period (the critical "1,000 days"), in addition to the preconception period. Attention should also be paid to maintaining these gains throughout the first 5 years, the most developmentally formative years of children's lives.

A life-cycle preventive approach to addressing malnutrition starts with ensuring adequate nutrition in the mother before conception. The high fertility rates in Burundi are also a risk factor for young child malnutrition. Adolescent mothers—and their children—are at an especially higher risk of malnutrition; these women also face increased risk of adverse pregnancy outcomes. It is essential for the Title II program to educate the community on the importance of adequate nutrition for women prior to pregnancy as well as during pregnancy and in addition increase knowledge of and refer women and men to family planning services. A preventive MCHN program should include the following activities:

- Promoting child spacing and use of family planning
- Social and behavior change communication (SBCC)
- A conditional preventive food ration for the mother and child during the 1,000 days and a protective household ration
- Promoting Essential Nutrition Actions and Key Hygiene Behaviors
- Improving infant and young child feeding practices (IYCF) including promoting exclusive breastfeeding in the first 6 months
- Strengthening the use of health services
- Water and sanitation

- Antenatal care (ANC)
- Immunizations
- Micronutrient supplementation
- Deworming
- Malaria prevention and control

The Title II program will work in a complementary, reinforcing manner with other USAID and other government and donor programs. Although the Title II program is not expected to deliver all of the interventions and messages above, it should seek opportunities for partnership to ensure the availability and the quality of such services in the communities they serve.

Priority Activity 1.1a: Children under 2 Are Fed Appropriately for Their Age

The breastfeeding trend is positive; the median duration of exclusive breastfeeding in Burundi is 4.7 months, compared to the international recommendations of 6 months (DHS 2010). Recent gains in breastfeeding should be maintained, and therefore the promotion of early initiation and exclusivity should continue, as they are life-saving practices with significant nutrition benefits.

Complementary feeding indicators show poor feeding practices for infants and young children. It is intended for these Title II projects to increase food availability and access within the household and to diversify food availability for household consumption and for purchase within the broader community. Activities should encourage and promote the consumption of a nutritious complementary diet for children 6–23 months, with a focus on the appropriate diversity and number of food groups and on the frequency of feeding appropriate for each age group. Increased harvests will engender disposable income to increase food purchases, which will aid in diversifying children’s diets. Given women’s limited control over resources and decision-making power, particularly among young women, it will be critical to actively involve men in maternal and child nutrition. It is important for project participants to be involved in both the agriculture and livelihoods activities as well as those targeting improved health.

Local determinants of malnutrition. Before the Title II program is implemented in any commune, awardees are strongly encouraged to conduct formative research to better understand the causes of malnutrition in their areas of intervention and to set baseline and life-of-program targets. This research should include qualitative and quantitative data collection. Qualitative data collection could include interviews with key informants (CHWs, primary health center staff) and potential beneficiaries to understand attitudes and behaviors that may help explain the prevalence of malnutrition in the targeted communities. Previous knowledge of the local determinants of malnutrition is helpful in guiding the formative research but should not replace an awardee’s own efforts to conduct focused data collection to inform programming. For example, awardees might discover that the behavioral determinants of malnutrition vary widely from region to region and are likely to require varying SBCC strategies and messages to address the appropriate determinants. A Local Determinants of Malnutrition study for some provinces (former MYAP and current Title II research areas) may be available.

To ensure full impact of the SBCC strategy, approaches should include key community leaders (sometimes referred to as notables or kings). In addition, the SBCC strategy should target and involve men as a part of an inclusive approach to include both parents in maternal and child nutrition activities. Men’s support is essential to promote and improve household behaviors and support women in adopting and practicing appropriate health and nutrition behaviors. These recommendations for SBCC messages, audiences, and strategies are not exhaustive; awardees will need to adapt them to the local context and to the results of their formative research.

Essential Nutrition Actions and key hygiene practices. USAID and its partners developed seven Essential Nutrition Actions (ENA), which are proven interventions to reduce child malnutrition that are centered on the first 1,000 days (Guyon and Quinn 2011). It is recommended that the Title II program also adopt and promote the ENA in tandem with the promotion of key hygiene behaviors as outlined in **Box 4**.

Box 4. Essential Nutrition Actions and Key Hygiene Actions

Essential Nutrition Actions

1. Promotion of optimal nutrition for women
2. Promotion of adequate intake of iron and folic acid and prevention and control of anemia for women and children
3. Promotion of adequate intake of iodine by all members of the household
4. Promotion of optimal breastfeeding during the first 6 months
5. Promotion of optimal complementary feeding starting at 6 months with continued breastfeeding to 2 years of age and beyond
6. Promotion of optimal nutritional care of sick and severely malnourished children
7. Prevention of vitamin A deficiency in women and children

Source: Guyon and Quinn. Booklet on Key Essential Nutrition Action Messages, 2011.

Key Hygiene Actions

1. Safe treatment and storage of water at point-of-use

- Treat water to make it safe to drink. Treatment options include:
 - Hypochlorite (chlorine) solution
 - Boiling
 - Solar disinfection
 - Commercial filter
- Store treated water safely in a covered narrow-neck container with a tap, if possible. Pour water into a clean pitcher to serve or use a ladle that hangs on the wall to dispense water. Do not touch the water inside the container with hands.

2. Safe preparation and storage of food

- Wash hands before preparing food and feeding children.
- Use clean utensils and dishes.
- Clean food preparation areas with soap and water.
- Cover food with netting or cloth or store food in covered containers to protect it from insects, pests, and other animals.
- Separate raw and cooked food.
- Eat food within 2 hours of preparation.
- Use treated water to wash raw foods.
- Cook food thoroughly.

3. Wash hands using correct technique at critical times

- Handwashing with **soap** is the best way to prevent the spread of infection from person to person.
- Just rinsing hands is not enough. You have to use soap or ash every time you wash your hands.
- Wash hands under poured or flowing water. This removes the dirt and germs. A wash basin in which many people wash their hands in the same water does not prevent infection.
- Wash your hands **before** handling, preparing, or eating food and before feeding someone or giving medicines, and wash hands often during food preparation.
- Wash your hands **after** going to the toilet, cleaning a person who has defecated, blowing your nose, coughing, sneezing, or handling an animal or animal waste
- Wash your hands both before and after tending to someone who is sick.

4. Sanitary disposal of feces

- Always use a latrine.
- Dispose of the infant's/child's feces in a latrine.
- Wash hands after going to the toilet, changing a child's diaper, or cleaning a person who has defecated.
- Keep the house and compound clear of animal feces

Source: Integrating Water, Sanitation and Hygiene into Nutrition, WASHplus. 2013; World Health Organization; USAID. 2010. How to integrate water, sanitation and hygiene into HIV programmes.

Food aid. In food-insecure environments with high prevalence of child malnutrition, there is evidence that preventive food aid rations can be an effective complement to preventive MCHN programming. Preventive rations have been shown to be more effective at reducing stunting, when compared with recuperative supplementary feeding (similar to the existing PD/hearth approach in Burundi) (Ruel et al., 2010, FANTA-2, 2010). To prevent malnutrition among children under 2 using the 1,000-day approach, food aid rations can be integrated into a standard package of health and nutrition interventions for all pregnant and lactating women, children 0–23 months, and caregivers of children under 2. Age-based targeting of food rations to all children 6–23 months and pregnant and lactating women, independent of nutritional status, is an effective approach to reduce and prevent chronic malnutrition at a population level in a targeted program area. Research on the Preventing Malnutrition among Children under 2 Approach (PM2A) is currently being implemented in the northeastern regions of Burundi. Embedded within the current PM2A program is a series of research activities that aim to answer questions regarding various aspects of the PM2A, such as the duration and timing of the intervention needed to achieve the greatest impact on malnutrition. In addition, research is being done in other settings on the adequate size and type of both the individual and household rations. Valuable lessons will be learned from this research, and the next round of Title II development programs should seek to apply these lessons in the design and implementation of their programs.

This approach includes three core services provided to MCHN beneficiaries:

- Food rations provided for the individual woman and child, conditional on participation in MCHN services (An additional household ration may also be provided, to accommodate for sharing.)
- Preventive and curative health and nutrition services for children and women, according to national protocols
- SBCC, generally through community-level participation in MCHN-focused activities

In implementing this food-assisted approach, applicants should also provide a sound exit strategy for the food aid component such that beneficiaries graduate from the program and benefit from other program elements, such as livelihoods and savings/credit activities. While the next Title II program in Burundi will initially directly distribute food aid to MCHN program beneficiaries during the first 1,000 days and monetize food aid to cover the costs of program operations, an important opportunity may exist in the program’s later years to use a portion of monetization proceeds to purchase locally grown foods, e.g., using domestic cereals and other local ingredients to produce complementary foods for infants that can be fortified. This approach could be used for sustainable development and be expanded to provide support for Burundi’s agriculture and increase availability of nutritious foods after the program ends.

Box 5. Where Can the Food-Assisted 1,000-Day Approach Be Fully Implemented?		
Appropriate in food-insecure communities with:		Situation in highly food-insecure areas of Burundi
1	High levels of stunting or underweight	✓ Yes, very high level, warranting intervention (WHO)
2	An accessible minimum package of maternal and child health services	✓ Burundi is working toward providing access to health and nutrition services that would benefit from Title II support
3	Relative political and social stability	✓ Yes
4	Limited in- and out-migration	✓ Yes
5	Capacity to absorb the food without distortions to markets	✓ Yes
6	Host-country government support for PM2A	✓ Targeting of vulnerable groups expressed in National Nutrition Policy (2012)

Source: Title II Technical Reference Materials 2010

Priority Activity 1.2: Pregnant and Lactating Women and Children Seek Preventive Care and Treatment for Illness

Diarrhea, respiratory infections, and parasitic infections can impact children's growth. Treatment requires access to health services, but access to transportation is the major obstacle for the use of health services in Burundi. Identifying solutions to this and other identified obstacles requires joint efforts with actors in various technical fields and could include input from livelihoods activities (e.g., road rehabilitation) and SBCC interventions (e.g., to increase awareness among women and men of the importance of care-seeking for mothers and children).

In the process of mobilizing participating households to participate in targeted nutrition and health activities (Priority Activity 1.1), it will be important to work in coordination with health center treatment activities (including treatment of acute malnutrition), conducted at each sub-Hill by CHWs, especially for activities such as growth monitoring, referrals for diagnosis and treatment, family planning, agriculture, water and sanitation. All local resources should be integrated whenever possible, not excluding CHWs, HPTs, and other health center staff, especially as trainers or resource persons, and local leadership should have a role in mobilizing and monitoring activities.

Coordination with health programs. USAID's IHP has the mandate of assisting the GOB, communities, and civil society to improve the health status of assisted populations in the targeted program areas. IHP will focus on increasing the use of quality integrated health and support services, underpinned by strengthened health systems and structures. Given similar geographical coverage, the Title II program should identify opportunities to collaborate with the IHP. This includes regular community-level growth monitoring, counseling, and referrals for definitive diagnosis and treatment by health centers.

MOH districts and local officials, with UNICEF's support, have conducted successful national maternal and child health weeks in all communities throughout Burundi. The Title II program should coordinate with and support this effort, which provides immunization, deworming, and vitamin A services.

Rehabilitation of acutely malnourished children. Despite preventive efforts, some children may become moderately or severely acutely malnourished. It will be necessary to screen children for moderate and severe acute malnutrition. Children identified as severely acutely malnourished with medical complications should be referred and admitted to a facility that treats children with severe acute malnutrition (SAM). Children with SAM who do not have complications should be referred to the Community-Based Management of Acute Malnutrition activities in the area. As Food for Peace is currently funding the supplementary feeding program in eight provinces through WFP, as well as the therapeutic feeding program (using RUTF) in all provinces through UNICEF, Title II program beneficiaries in need could be referred to these programs.

Priority Activity 1.3: Promote Healthy Family Size

Strengthening delivery of and referral to family planning services. Given Burundi's high fertility rate and its impact on young child nutrition, it will be important for the next Title II program to work toward strengthening the family planning service delivery system in partnership with the GOB and other implementing partners in the targeted geographic area. It also will be necessary to establish an effective referral system so women participating in program activities can access family planning services through the government health system or other implementing partners, such as IHP. The Burundi DHS 2010 finds that contraceptive use is only 13% among married women of childbearing age and that the unmet need for contraception is 54%; as such increasing knowledge, access, and use of contraceptive methods will need to be an important emphasis of the next program. This is important to emphasize to men and women of

childbearing age, including adolescent girls and pregnant and lactating women. Title II program activities should use a multilayered SBCC approach that targets audiences at multiple levels to provide men and women with information on family planning methods and improve linkages to services with the aim of improving knowledge of these methods and of promoting a healthy family size. The Title II program should coordinate effectively with both IHP and GOB family planning services.

Priority Activity 1.4: Increase Use of Potable Water and Sanitation Infrastructure

The next Title II development program in Burundi should use a community-based approach to improve households' access to safe water supplies, use of water treatment, and use of safe water storage, as well as access to and use of sanitary facilities. In coordination and collaboration with commune officials and water management committees (where they exist), water point development plans should be established and water management committees elected by communities and strengthened to help ensure water is available for household and garden use.

In addition, the Title II program should use SBCC activities to improve handwashing behaviors at critical moments. The program should partner with other organizations working in this area and involve local partners and leaders to build culturally acceptable household latrines, as well as install and maintain sanitation infrastructure in public venues such as markets, schools, and health centers.

Program Priority 2: To Increase Household Food Availability and Access through Increased Productivity

Improved agricultural productivity is essential to decrease food insecurity and hunger, and is a critical factor in increasing household incomes and reducing poverty. The program should address several important constraints to agricultural productivity, including land and soil degradation; poor water resource management; lack of access to quality seeds, fertilizer, and other inputs; limited use of improved agriculture techniques; absence of GOB or private extension and support services; absence of drying, processing, and storage infrastructure; lack of access to credit; and low human capital and organizational capacity. The Title II program can build on existing initiatives including the IFAD livestock program in several provinces and MINAGRIE's national Livestock Restoration project.

Priority Activity 2.1: Households Increase and Diversify Crop Production through Improved Productivity

A primary factor to consider when selecting crops is their ability to shorten the lean season peaks (March–April and October–November) for participating farmers. The crops selected should enhance resilience by increasing food availability, increasing the nutritional composition of foods provided for household consumption, diversifying household production, and reducing the level of overall vulnerability to climatic and other shocks. This effort can be enhanced by testing improved varieties with shorter maturities or greater tolerance to drought, heat, or cold. Collectively, the crops selected should enhance production for both household consumption and sale.

Burundi's development food assistance program should design agricultural activities in the context of a comprehensive, sustainable, and transparent land use plan that includes irrigated land, including marshland rehabilitation, rainfed/upland plots, and household gardening. Applicants should also explore opportunities for advocacy on land tenure issues, which have become a major problem for post-conflict returnees resettling in Burundi. Land use and ownership are governed by conflicting customary practices and statutory law. Development projects may explore opportunities for sensitively advocating for these

landless people and other land-poor individuals, such as widows. Transparency and equity in community land use planning and in planning by producer groups will also reduce the potential for conflict over land.

Organization and capacity strengthening of producers. The Title II program should establish associations and informal producer groups, emphasize good governance practices, build general human capacity, train extensively in improved production practices, and link with existing technical, extension, and market actors for sustainability. Training topics should include literacy and numeracy instruction, improved production practices, and methods to promote linkages with existing extension services and market actors.

Establish demonstration plots. These plots can be created in each Hill (hilltops, slopes, and flat lands/marshlands) to field-test improved varieties (rice, beans, maize, cassava, sweet potatoes) with a small area devoted to vegetables. Improved agronomic practices such as land preparation; seed planting spacing, depth, and timing; fertilization with manure and inorganic fertilizer; weeding; pest management; harvesting; and post-harvest handling should be compared and evaluated in terms of cost and returns as well as crop quality. Plot location can be determined by the community and association members. Plots on slopes should include erosion control measures and fodder plantings. Men and women should be involved in the crop demonstrations based on their respective roles in farming. This will allow for nutrition counseling to be tied into the crop demonstrations. Field days at demonstration plots should include DPAE agriculture extension agents and an association member tasked to provide support services to other association members.

Establish seed multiplication. Seed multiplication of preferred varieties can be determined based on demonstration plot performance and member feedback. Projects can provide vouchers to participating households for the initial two to three production seasons to facilitate purchase of improved seeds and fertilizer. Projects also can negotiate with the association managing the multiplication for a portion of the multiplied seed to be distributed to other associations or non-association members at below-market rates.

Improve drainage and irrigation infrastructure systems. More extensive and costly marshland drainage and irrigation improvements can be done in a selected number of marshlands. Drip irrigation can be incorporated into all plots on slopes and hilltops to offer an additional comparative measure of productivity.

Reduce post-harvest losses. Tests can be conducted with low-tech methods using locally available materials (e.g., enclosed and sealed structures above ground level) and imported relatively low-cost products such as grain bags to determine efficacy, costs, and benefits in reducing post-harvest losses. Testing may also include more costly ceramic beads for groups with greater resources. Busoni and Bugabira communes in Kirundo province can serve as examples.

Priority Activity 2.2: Households Increase and Diversify Livestock Production through Improved Productivity

A livestock component offers multiple benefits—such as household production diversification, improved soil fertility, income generation, and diet diversity opportunities—and can be implemented simultaneously as an association or community program with direct individual household benefits. This component should use strategic, holistic land and livestock management to strengthen resilience by reducing land deterioration and boosting production of crops or forage. This approach is analogous to CA in that it teaches livestock management principles and practices that result in “ecologically regenerative, economically viable, and socially sound management” (The Savory Institute, 2013).

Increase animal ownership. Initial focus should be on increasing animal ownership via vouchers for households without animals (local cow breeds, goats/sheep, pigs, and native chickens, particularly layers). More expensive cattle should be limited to households with sufficient land and the resources to raise forage. Recipient households will agree to participate in training for feeding, animal health, hygiene and sanitation, and reproduction. Recipients should be required to contribute cattle, goat, and pig offspring or to provide siring services to others in the association or community. Lessons can be drawn from IFAD livestock projects and the one-cow-per-family program in Rwanda.

Inputs and veterinary services. Where national or private veterinary services are inaccessible, applicants should consider establishing such services, such as by employing and training local paravets and/or by supporting project-affiliated retail outlets to offer veterinary supplies. A fee-for-service model should be considered to ensure financial viability. A veterinary center should be established in each commune, most likely at DPAAE offices, to provide training on artificial insemination, proper animal husbandry, disease management, and other topics to DPAAE agents and association or other community members. Private vets should be invited to participate in training to improve or refresh their competencies. The Institut Pasteur currently works in animal health in Burundi and may be a good source of additional information on these types of activities.

Artificial insemination. A cow breeding improvement program based on artificial insemination should be established with imported Friesian semen to produce exotic crossbreeds that can produce more milk for household consumption and surplus sales, as well as more manure.

Forage, grazing, and feed production. The importance of feed availability requires that forage production be integrated into the livestock component. Though forage production may be considered an alternative, and therefore even a competitor, of staple crop production, emphasis on planting forage on slopes as an erosion control measure will mitigate this potential concern. Other feeding sources may include cassava and maize crops and residues and banana beer mash.

Grazing lands are increasingly pressured by land degradation, overgrazing, climate change, and population encroachment. Applicants may wish to explore controlled grazing, which promotes soil and grass restoration, reduces risk of theft, facilitates milk production, and protects young animals from predators.

Program Priority 3: To Increase Household Incomes to Improve Household Diet Diversity

The role of increased availability and access to food in improving nutritional outcomes, i.e., the linkages between agriculture and nutritional outcomes, is tenuous. Researchers and development practitioners tend to agree that while the availability of more and better quality food as well as greater household income is not sufficient to improve nutrition, it is necessary for sustainable improvements.

Priority Activity 3.1: Households Increase Income Generated through Improved Market Linkages and Off-Farm Activities

In addition to strengthening production, key factors for increasing income include organizing and training producers for commercialization, improving market linkages for selling surplus raw and processed products, investing in processing, strengthening quality control and introducing quality standards, improving collection efforts, and reducing transport costs.

Alternative livelihood opportunities through off-farm activities offer additional household income potential for improving household resilience through purchase of foods, productive assets, or increasing savings. This activity area is designed for all households in the target areas with particular emphasis on

landless households, poorer female-headed households, youth, or others who cannot take advantage of the crop demonstration knowledge transfer and input vouchers. Tailored capacity strengthening, and perhaps vocational training, will be required for these participants. A life-skills approach may be appropriate in which the training package aims to build practical skills, confidence, self-esteem, and a narrow set of income-generating skills among these socially marginalized participants. Improving the income-generating potential for youth is equally important, and they should be considered for participation in livelihood skills improvements. While projects should include both young men and women, specific outreach should target young women and encourage their participation in savings groups and education sessions, either separately or with mothers.

Organization and capacity strengthening of producers. Not all individuals and producer groups will be ready to engage in agribusiness. But as farmers produce more surplus over household consumption needs, groups should move toward agricultural commercialization. Key areas for training include literacy, numeracy, value chain concepts, market analysis, establishing linkages to market actors, and rudimentary sorting and grading to achieve premium prices. Also, analysis of costs and returns to group sales can encourage farmers to work together. The Title II program may support establishment of links between agribusiness groups and other institutions that can help provide technical assistance with marketing. Organizing producers to assemble products at a greater volume also reduces costs for traders, an important factor in cases where transport costs can easily account for half of a commodity's final retail price. Women tend to manage household income in Burundi (although they do not always have an equal voice on household expenditures). Because of this, women may be welcomed into agribusiness activities and serve as treasurers of group leadership committees. SBCC will be required to enable women to move into committee chair positions or to interact directly with market or agency actors.

Increase processing. Demonstration plot activities (Priority Activity Area 2.1) can be expanded to include solar and other low-cost technology for drying cassava, sweet potatoes, vegetables, and fruits. Local markets for value-added products should also be explored, such as cassava and maize flour as ingredients for complementary foods or as livestock feed additives, or starch as an industrial input for glues or paper finishing. The weak electricity grid is a substantial hindrance to expanding most processing activities. The absence of a cold chain is a significant problem for the small but growing fresh milk and processed dairy products value chains, and as food processing grows, power interruptions will become a greater constraint. One solution is costly petroleum-based generators; another is flexible timing of processing runs to avoid brownout periods.

Market information systems. While some smallholders check market prices via cellphone before selling, most smallholders are pure price takers with little knowledge of market prices and specific seasonal price trends. Projects should investigate the feasibility and costs of SMS-based systems for transmitting market prices to help producers earn higher unit prices by selecting when and where to market their products.

Vocational training. Landless laborers include the Batwa population, which has lost traditional livelihoods, and resettled returnees. Both groups, which have very different profiles, may not yet have gained the skills and resources necessary to fully integrate into the local economy. The Title II program should conduct a market analysis to identify viable livelihood activities for which unmet demand exists. Livelihood alternatives such as vocational training should be a target for those who are involved in informal or part-time agriculture and the unemployed. Though the Title II program should improve household incomes from agriculture—which will indirectly improve the incomes of others in the nearby

Hills and communes via the multiplier effect²⁹—these households can also benefit from vocational training to improve their off-farm labor opportunities.

Food for Work or Assets. Food for Work or Food for Assets can be used to improve market infrastructure, such as building or expanding market facilities, maintaining or rehabilitating market feeder roads, developing marshlands irrigation, or erosion control plantings on slopes.

Additional income generating activities that may be considered by Applicants include the following:

Small grants program. Small grants may be provided to groups and associations investing in health and nutrition activities—such as small yogurt and cheese processing operations, milling, flour fortification, or sanitation campaigns—and in support of animal husbandry and small ruminants. This program should include pre-application training in the sub-grant application process, transparent and participatory award selection, and monitoring of activities. This may also include sub-grantee training in financial management and reporting.

Provide crop insurance. This may be considered for users of improved inputs for two to three crop seasons to reduce the risk of unfavorable weather impact on crop yields and mitigate farmer reticence to try new production methods. The primary objective is for the project to encourage trial and adoption of improved inputs and techniques over the short term. While a sustainable crop insurance scheme is a preferred outcome, it is beyond the scope of the program. A committed local public or private entity would be required to ensure a sustainable outcome for crop insurance.

Introduce a warrantage system to communities.³⁰ Producer group storage facilities offer an opportunity to facilitate credit access through a warrantage system whereby producers use stored grain as collateral to obtain credit from a bank or other credit institution. Group members agree to store a specified volume of grain in a secure warehouse in exchange for credit to buy inputs for the next season (or finance income generating activities), which also allows the members to take advantage of later seasonal sales when prices are generally higher. The project can facilitate access to credit institutions.

Priority Activity 3.2: Households Increase Production and Consumption of Micronutrient-Rich Foods

Promote production of indigenous plants. Underused and neglected indigenous plant species have been traditionally used for their food, fiber, fodder, oil, or medicinal properties. In Burundi these include wild species of lenga-lenga (amaranth), which is found in more arid eastern regions. Domesticated lenga-lenga is milder in taste and requires more water to grow. Some varieties of eucalyptus leaves are commonly used to treat nausea, while other weeds are used to brew tea to sooth sore throats. These species fall within the broad basket of minor crops. These were once more widely grown but are falling out of favor for a number of reasons, such as an emphasis on staple crop production, changing tastes, or planting commercial vegetable varieties to meet market demand. They are typically easier to grow because they are adapted to marginal soils, require no fertilizer, are more resistant to pests and diseases than other

²⁹ The multiplier effect has shown that the growth of the agricultural sector strongly influences the growth of the non-agricultural sector in rural areas, the value of which reflects country-specific parameters. A number of studies by John Mellor and other practitioners have shown that rising agriculture sector incomes stimulate demand for locally produced goods and services in rural areas, i.e., households with more income purchase more clothing, household items, school supplies, carpentry services, etc. The income of people selling these goods and services to farming households increases, which increases their consumption spending.

³⁰ The IMF currently supports a warrantage system in Burundi. CAPAD, the federation of agriculture co-ops, worked with the IMF to establish a loan program for small rice farmers. Farmers receive a loan against their harvest, which is then placed in community storage for later sales when prices are higher. CAPAD guaranteed 25% of the value of each loan. CAPAD hopes to expand on this success in other crops.

varieties, and can help diversify household production systems, income, and diets. These traditional plant species may provide a niche opportunity in some Title II program areas where soil depletion is severe or in more remote areas.

Promote production of nutrient-rich varieties. In mid-2012, 13 new climbing bean varieties were released in Rwanda, including 5 biofortified varieties rich in iron and zinc. The varieties were bred by the Rwanda Agriculture Board in partnership with the International Center for Tropical Agriculture (CIAT) over an 8-year period using conventional breeding methods. These varieties are or will soon be available in Burundi and can be included for planting comparisons in some of the demo plots discussed in Priority Activity 2.1. Other biofortified crop varieties include orange-fleshed sweet potatoes, which are rich in vitamin A; cassava varieties with higher levels of beta carotene; and golden rice with higher vitamin A content. Other developments include iron-rich rice, beans, and pearl millet; vitamin A-rich maize, and zinc-rich rice and wheat.

Promote food fortification through public-private partnerships. Micronutrient fortificants can be added to food at different stages of the value chain, e.g., applying zinc to the soil, adding iodine in irrigation water, fortifying cereal flour in the milling process, and households adding micronutrient powders (MNP) to prepared foods. Some of these approaches such as promoting MNP or mill fortification will likely require coordination with and perhaps the approval of GOB. Other approaches may pose an opportunity for the Title II program to support public-private partnerships for food fortification. One example which has replication potential is the BASOMA project near Gitega, which is supported by the Free Methodist Church. The operation uses two small milling machines to produce a maize, soya, and sorghum flour blend for complementary feeding of children in a nearby hospital and school; however, the flour has no micronutrient fortification. The Title II program could identify communities that have an interest in committing in-kind resources to establish a similar operation with the added fortification step.

Priority Activity 3.3: Design and Implement an SBCC Strategy to Encourage Diet Diversity and Improved Nutritional Outcomes

There are a host of culturally influenced behaviors that are damaging to the nutritional status of adolescents, women, and children. Programs will need to identify high impact, achievable behaviors on which to focus their community-based behavior change program. Community mobilization, counseling, education/group counseling, and community mobilization around these issues can achieve meaningful, long-lasting change.

Conduct formative research. Formative research can be used to develop SBCC tools, materials, and approaches to improve household diet diversity and nutrition practices. The Title II program should build on and work in tandem with the SBCC activities under Program Priority 1, adapting messages and materials to local norms and barriers, which vary across the program area. Because women's empowerment and decision making are limited, social and behavior change that improves the enabling environment and works with household decision-makers and influencers will be essential. This research can address the issue of gender inequity when there is insufficient food for the household, finding ways to share the burden among adult household members especially when a woman is pregnant or lactating and requires even more calories. It can be useful in developing approaches to encourage consumption of animal-source foods, indigenous plant species, nutrient-rich foods, more equitable intra-household food allocation, and confronting unhealthy food taboos.

Household nutrition counseling. Care groups, savings and credit associations, producer associations, and community gardens present ideal fora for introducing household nutrition counseling and

demonstrations, individually or in groups. The products of farm production and of keyhole gardens can be used to complement purchased food items. This may be reinforced through home visits for households with underweight and malnourished children. School gardens and active learning by children in-school and out-of-school also serve as excellent learning environments for children and their parents.

Priority Activity 1.5/2.3/3.4: Promote the Creation and Income Generation of Savings and Credit Groups

Once the first or second increased harvest allows households to create some surplus, projects could introduce activities directly addressing the creation of a household safety net and optimum utilization of foods, including training households and producers in relevant basic business skills and family financial management. The Title II program could establish savings groups and provide training on basic financial management. These groups could also serve as venue for discussions on household decision making, women's empowerment, and good nutrition practices. There are many issues around household cash management that are relevant to food security and warrant attention when designing SBCC messages. For example, men's expenditures on alcohol are both a public health hazard and a tremendous economic expense.³¹ Formative research is essential for identifying priority messages about supporting health and nutritional status through household expenditure and investment.

Experience shows that savings and credit groups can be a valuable add-on to MCHN programs, as they provide participants (mainly women) with resources to undertake MCHN-related activities such as buying vegetable or fruit seeds/seedlings for gardening. For this reason, savings and credit groups are presented as a cross-cutting priority activity area. They can be linked to women's groups established for disseminating best practices for prevention and rehabilitation of child malnutrition, agricultural producers' groups (even before entering into formal agribusiness activities), and income-generating groups (e.g., for female-headed households). There may be opportunities to work with agricultural microfinance institutions to develop and pilot the very small-scale products most appropriate for the kinds of producer groups Title II programs traditionally target.

Cross-Cutting Program Priority 4: Engage in National Policy Processes of Direct Relevance to Reducing Chronic Malnutrition and Food Insecurity

Support to national-level nutrition priorities. The significant need for support to reduce chronic malnutrition in Burundi, the increasing number of GOB and civil society organizations engaged in addressing this issue, and the potential for private sector contribution argue in favor of targeted support to national-level policy and coordination efforts. Illustrative examples are support for:

- Development of the GOB's National Nutrition Policy communication strategy
- PRONIANUT's development of guidance addressing chronic malnutrition
- The SUN coordination's work plan in areas such as monitoring and evaluation or donor coordination
- A national food fortification policy focusing on the micronutrient needs of children, especially those under 5
- The National Water Policy to improve community-level management of ground and surface water in view of increasing food production, potable water supply, and sanitation

³¹ Burundi ranks among the top 30 countries in the world in terms of recorded alcohol consumption. It ranks among the top 15 for estimated unrecorded alcohol consumption (WHO Global Status Report on Alcohol 2004).

Cross-Cutting Priority Activity 4.1: Engage at the National Level to Strengthen Nutrition Policy Implementation, Communication Planning, and Coordination

The GOB and many partners are increasingly addressing chronic malnutrition through a variety of initiatives. The recent launch of the National Nutrition Policy, the membership of the GOB to the SUN movement, and the general commitment of donors and implementing partners to better integrate interventions to maximize results argue for improved coordination and robust communication and training tools. The Title II program can support USAID/Burundi in its commitment to assist the GOB to reduce chronic malnutrition by providing short-term technical assistance in a number of areas, such as the National Nutrition Policy communication plan, the SUN coordination's monitoring and evaluation plan or coordinating mechanism, and PRONIANUT's development of guidance for MOH health center and outreach staff for community-level prevention, identification and care for chronic malnutrition. Key stakeholders are the MOH, MINAGRIE, PRONIANUT, U.N. agencies, and other implementing partners.

Cross-Cutting Priority Activity 4.2: Engage at the National Level to Strengthen the Implementation of Climate-Smart Water Resource Management and Agriculture Policies

Water systems for agriculture blend private initiatives such as digging shallow tube wells and constructing small water catchment basins with public infrastructure such as major marshland irrigations systems, dams, and surface water canals and drainage systems. Water systems for sanitation and other household uses have been a publicly managed service. Seventy-two percent of the population has access to safe drinking water and 46% have access to basic sanitation facilities. Only 12%–15% of the marshes are developed to support agriculture, and the Moso and Imbo lowlands have not been adequately developed for irrigated production (IMF 2012). Increased food production and improved water supply for drinking, sanitation, and other household uses will require improved public sector water management of ground and surface water, considering water recharge rates and environmental impacts of marshlands rehabilitation. The Title II program may assist USAID in its support of the GOB's Integrated Water Resources Management Action Plan, which is an objective of the National Water Policy (IMF 2012). The key stakeholders are the Ministry of Water, Environment, Planning and Development; the Directorate General for Water and Energy; the Directorate General of Rural Water and Electricity; and MINAGRIE.

Cross-Cutting Priority Activity 4.3: Engage at the National Level to Strengthen the Development and Implementation of Food Policies Focused on Food Access, Prices, and Fortification

Some efforts to address micronutrient deficiencies can be driven by the Title II program, such as promoting the production of micronutrient-rich crops like iron- rich beans or orange-fleshed sweet potatoes, or supporting public-private partnerships to establish small enterprises to produce fortified flour. Other activities such as promoting the use of MNP, scaling up flour milling fortification, or promoting food fortification standards, will involve the participation of GOB and thus is beyond the implementation scope of a Title II program. The Title II program can help USAID support the GOB in drafting a national fortification policy that meets international standards and support the rollout of a national household fortification program that focuses on micronutrient needs of children, especially those under 5. Title II program efforts may include assisting USAID to develop policy position briefs and building support among program partners and beneficiaries. Key stakeholders are the SUN focal point in the Office of the Second Vice President, PRONIANUT, U.N. stakeholders, and civil society.

5.4 Key Design and Implementation Considerations

Strengthening resilience among households and communities is an essential consideration for all design elements of the Title II program; program strategies, approaches, and methodologies should demonstrably contribute to strengthen resilience.

Integrated programming. The sustainability of program results can be improved by well-implemented integrated programming. In a development food assistance program, integrated programming must simultaneously address chronic malnutrition and food availability, access, and utilization issues in all geographic target areas and sustainably strengthen resilience. Effective integrated programming requires applicants to be adept at promoting information sharing internally across technical sectors and externally with other USAID and non-USAID programs, and encouraging joint field visits. Only when the MCHN staff, for example, understand the objectives and approaches of the livelihoods team or the agronomists on staff, will efforts to integrate programming truly begin.

Program sustainability also can be improved through the use of community participatory approaches. These approaches focus on ensuring community ownership and responsibility from the beginning of implementation, with communities helping to establish program objectives and engaging in the planning and monitoring processes.

It is advisable that prevention of chronic malnutrition, implementation of agriculture and livestock production, and increasing household expenditures on more nutritious foods for household consumption be seamlessly interwoven with existing service providers (health center- and community-based) and supported by community and government leaders at all levels. This will increase the likelihood of targeting the same households with knowledge and opportunities to expand their current livelihoods and ability to avoid chronic malnutrition.

The program should work closely with activities conducted by MINAGRIE, the MOH, and partner communes and should ensure complementarity of planning, technical expertise, and monitoring. Targeting and coordination should be complementary with other projects and programs within the same geographic area, including other USG and other donor programs and projects and, for IHP and EGP, share a common set of indicators.

Geographic and vulnerable group targeting. Given the imperative for the program to coordinate closely with health districts and health centers, it is advisable that the selected communes be contiguous and fall within the same health district for efficiency and impact. Although commune and health district borders are not totally aligned, this will nonetheless facilitate complete project integration within a commune and support collaboration between both entities on health-related activities. It is also advisable to include all the communes within a health district, as health district staff must dedicate efforts equitably throughout the catchment area.³² This will also promote long-term partnerships between health districts and communes in addressing local health issues.

It is recommended to target all households within a community. While landless laborers comprise the most vulnerable households, there are few off-farm livelihoods to satisfy their resource needs. It is anticipated that the demand for their labor will increase when program objectives are met.

Monitoring and evaluation. As is the case for every Title II development program, applicants should develop an effective monitoring and reporting system that is responsive to internal management needs, USAID's Evaluation Policy,³³ and the reporting requirements of USAID/FFP, the Mission, and the U.S. Department of State. Program success at impact and higher-level outcome levels will be measured by the collection of baseline and final evaluation indicators. These will be collected either by awardees or by an external contractor supervised by USAID/FFP (USAID/FFP will make a determination on who should

³² This results in the following estimates: 4–6 communes, 80–100 Hills, and an estimated 50,000–60,000 total beneficiary households (or 425,000–500,000 persons).

³³ The USAID Evaluation Policy can be found at <http://www.usaid.gov/sites/default/files/documents/1868/USAIDEvaluationPolicy.pdf>.

collect the data for each award). Baseline and final evaluation indicators will examine changes in economic status and household access to food, as well as children's and women's nutritional status. Some of these indicators are contextual only. In addition, awardees must collect USAID/FFP annual monitoring indicators. Several of the annual monitoring indicators are "Required"; all programs must collect them. Others are "Required if Applicable" and must be collected by all programs implementing relevant program interventions. "Standard" indicators make up the third category. These are not required, but USAID/FFP strongly recommends their collection for programs implementing relevant interventions. Finally, awardees are responsible for planning and implementing a mid-term evaluation approximately halfway through the life of each program. Applicants should refer to the current set of USAID/FFP indicators for clarification on USAID/FFP baseline/final evaluation and annual monitoring indicators.

Gender integration in programming design and implementation. The USAID Gender Policy clearly identifies Gender integration as a mandatory consideration in all USAID programming; The USAID Gender Policy can be found at <http://www.usaid.gov/what-we-do/gender-equality-and-womens-empowerment/addressing-gender-programming>. Gender integration requires identifying and addressing, in all policies and programs, gender differences and inequalities, as well as the roles of women and men. The goal of gender integration is to promote gender equality and improve programming and policy outcomes. Applicants are required to explain explicitly how gender issues (such as identifying and understanding the causes of gender inequalities; the differences in roles, responsibilities, and needs of men and women; and the relationships between men and women, within the same sex, and between older and younger men and women) are linked to the three dimensions of food security and how gender will be integrated into all program elements.

A gender analysis must be completed within the first year of the new program and can be undertaken in tandem with the formative research that will be conducted to strengthen program design. Gender analysis refers to the systematic gathering and analysis of information on gender differences and social relations to identify and understand the different roles, divisions of labor, resources, constraints, needs, opportunities/capacities, and interests of men and women (and girls and boys) in a given context. The objective of the gender analysis is to provide a deeper understanding of current gender issues at the community and household levels in program target areas, and this analysis should extend beyond a review of aggregate national level data on gender. At the community level, gender issues are dynamic and can change in positive or negative ways—promoting or undermining gender equality. The gender analysis should seek an understanding of current issues and changing trends that may affect program implementation. A better understanding of the influence of gender in program target areas— particularly how gender issues affect access to program interventions, decision making, and behavior change or program uptake—is important for achieving program nutrition and food security objectives.

Title II development programs must ensure a gender-sensitive program design by including such approaches as providing women entrepreneurs with access to financial services, encouraging women's and girls' involvement in decision making at the community level, improving access and control over health care, and involving women in all conflict resolution and peace-building activities. Burundian women face a significant disadvantage as evidenced by their limited decision-making power and lack of access to productive resources and improved inputs for farming. In addition, women tend to have a higher share of the labor burden within the household. Although the government is trying to rectify some inequities through pending legislation, cultural factors that form gender roles and attitudes are not easy to change. Identifying and addressing the current gender constraints will be extremely important to ensure that programs reach their objectives. Some lessons learned from recent Title II programming reveal that:

- Gender must be core to project design.

- Localization and careful timing of activities including skills building allows easy participation by women.
- A group approach is more attractive to women than men and provides peer support and learning for women.
- Given the skewed workload between men and women, new agriculture and irrigation approaches should aim to reduce the labor burden on women.
- Male involvement in maternal and child health and nutrition should be mainstreamed through training and relevant materials.
- Implementers should have a strong understanding of gender and decision-making dynamics around use of income from agribusiness and VSL.

Integrating gender into a Title II development program does not mean that the program must be exclusively or even primarily focused on women. Integrating gender is about sufficiently understanding the social context in the program area to create an enabling environment at the community level so that men and women can interact, participate, and gain equitably from program efforts in nutrition and food security.

The revised version of the Automated Directives System (ADS) 205, issued in July 2013,³⁴ provides guidance on how to implement USAID’s gender equality and female empowerment policy. Applicants applying for the next Title II program in Burundi should note the requirements in ADS 201, 202, 203, and 205 for integrating gender equality and women’s empowerment into all phases of programming, budgeting, and reporting. ADS 205 will define what a gender analysis is and explain how program offices and technical teams must incorporate the findings of the gender analysis throughout the program cycle, including in country strategies and projects.

Environmental monitoring and mitigation. The identification and prevention of potential detrimental environmental impacts of USAID Title II assistance are critical to ensuring that interventions do not harm the intended beneficiaries or general environment. Mitigation and management of potential environmental impacts must be an integral part of program design. USAID’s Regulation 216 has a range of procedures and tools to assess and mitigate potential environmental impacts of USG-funded activities. Once environmental impact management actions are identified in the planning stage, implementers can integrate these activities throughout the course of the project. Programmatic integration will ensure more consistent management of potential and identified environmental impacts. Prospective applicants should prepare an environmental mitigation and monitoring plan providing guidance on how technical assistance will be used to mitigate impacts throughout the project.

Development approach, sustainability, and exit strategy. USAID/FFP seeks to implement effective models, build capacity, and create an enabling environment adapted to the Burundi context. Therefore, applicants must provide an overall development strategy that seeks to create, wherever possible, self-financing and self-transferring models that will continue to spread under their own momentum both during and after the project. It is the expectation that these models will be adopted and adapted by a significant proportion of the population. Many examples of this type of intervention exist, but one particularly successful example of this type of model is the Farmer-Managed Natural Regeneration system that is spreading in Niger.³⁵

³⁴ ADS 205 can be found at <http://www.usaid.gov/ads/policy/200/205>.

³⁵ A paper describing this system can be found here: <http://www.ifpri.org/publication/agroenvironmental-transformation-sahel>.

Part of a Title II development program’s ability to sustain program impacts depends on exit strategies that are well thought out and implemented. An exit strategy describes how the program intends to withdraw its resources while assuring that the achievement of development goals is not jeopardized and that progress toward these goals continues. An exit strategy may use graduation from specific project areas as steps toward the eventual total withdrawal of resources, or an exit may take place at one time across the entire program area. Steps for developing a successful exit strategy include establishing a clear but flexible timeline linked to the program funding cycle; incorporating exit plans from the beginning of program implementation; implementing exit plans in a gradual, phased manner; and considering an exit timetable that allows sequential graduation of communities and/or components. In circumstances where Title II activities rely on the distribution of imported food aid, sustainability and exit strategies—developed at the program outset—will, over time, indicate how less costly locally produced or regionally procured food can be substituted for Title II commodities.

The impact of the development food assistance program in Burundi is most likely to be sustained in areas where the following factors exist:

- Adequate transfer to community members, groups, and service providers of the skills and knowledge needed to generate desired outcomes
- Empowerment of individuals, communities, and service providers to demand quality services
- Strengthened institutional capacity of community-based organizations and health facilities, as well as improved capacity of key individuals in those organizations
- Recognition by community members of activities’ proven value and their visible outcomes
- Ownership and commitment to continue activities on the part of the community, community group, or government
- Explicit plans for resource generation when consumable supplies (e.g., medicines and immunizations, seeds and agrochemicals, food) are needed to sustain impact (Rogers and Macías 2004), including integration of activities with local food production.

Early warning and disaster risk reduction. The Burundi development food assistance program should strengthen resilience by helping communities undertake a multidimensional analysis of the risks they face and their sources of resilience. This process builds community understanding of the causes and effects of acute and chronic malnutrition and food insecurity. This process also lays a foundation for informing and explaining Title II program design, builds interest in participating in disaster risk reduction activities, clarifies the link between such risk reduction and other program activities (e.g., agriculture and health), and helps lead to the establishment of locally managed mechanisms to respond to local shocks.

The Burundi development food assistance program also should embody disaster risk reduction by lessening people’s exposure to food security shocks and reducing their vulnerability to the adverse effects of those shocks. Applicants may consider including activities to reduce risk in the following areas, based on their own local risk assessment: peace-building, conflict resolution, and governance; gender; community and local government emergency response planning; and community-based sustainable natural resource management and land use planning. Applicants should take into account any early warning mechanisms already existing locally (either community-based or within sectoral ministries—or a network thereof—or local governments).

The projects should be aware of potential crises and be able to adjust implementation schedules and activities accordingly. Projects should also keep informed of the evolution of the design and application of performance-based financing indicators for nutrition and community health, and the application of agriculture indicators already adopted. Noting how health and agriculture offices document and analyze these indicators and understanding the results will inform the projects, partner communes, and

communities of the results and lay the foundation for community-based early warning in health and agriculture.

Capacity strengthening of public and private institutions. Effective partnering and capacity strengthening can improve program implementation, effectiveness, scale, coverage, and sustainability. The process promotes cross-fertilization, transparency, and enhanced potential for a coordinated programming approach. For example, strengthening the capacity of health service providers, community leaders, community volunteers, traditional birth attendants, and lead mothers can have a positive impact on IYCF practices, use of health services, and timely treatment-seeking action for pregnant women with danger signs and for children with MAM, SAM, and childhood illnesses. Capacity strengthening of local partners, community volunteers, and service providers is a high priority for ensuring that the Title II program's food security objectives are achieved and maintained in Burundi.

Capacity strengthening also includes activities designed to improve communities' abilities to organize, plan, and represent their own interests. The Title II program should work through existing associations and cooperatives (women's groups, producer groups, CHW associations, local civil society) to provide technical assistance and financial support to smallholder farmers, while being responsive to requests for supporting new organizations. Tools developed by MINAGRIE and the MOH should be integrated into project work with communities and communes, and ministry staff should serve as technical resources and trainers. For example, commune-assigned agriculture agents should be linked with all agriculture and livestock interventions and work alongside farmer group members via training. But farmer group leaders rather than extension agents should be responsible for implementing group activities.

Specifically, PRONIANUT's continued training and monitoring of the CHW, HPT, and PHO-level nutritionist functions are necessary. Projects should:

- Support PRONIANUT training staff relevant to the Title II program
- Promote regular monitoring by PRONIANUT of project activities and its use of integrated methodologies, promoting its leadership and presentation of results at global fora
- Remain informed of and support UNICEF and MOH efforts to restructure the functions of the HPTs (moving them to PHOs to serve as province-level supervisors) and to task a nurse at each health center with directly liaising with communities and supervising CHWs. These changes could have a significant impact on health center staff's availability and skills and lead to increased cooperation and coordination among community-based health and nutrition activities.

SBCC. There is clearly a need for SBCC in the Burundi development food assistance program. Many less-than-optimal IYCF practices, diet diversity and quality issues, and under-utilization of health services can be addressed through a strong, integrated SBCC component. An effective SBCC strategy depends on good planning, solid formative research, and coverage of all target groups and others who can enable changes in behavior. For example, if a program wants to increase pregnant women's diet diversity, the women themselves must understand and accept the importance of making these changes, and their husbands, other household members, and the community must also buy into these new practices to make them feasible and sustainable.

Formative research. Formative research is the foundation of an effective SBCC strategy and is a critical first step in implementing a new Title II development program. By assessing various health and nutrition practices, formative research helps program design teams understand target group perspectives and the motivation and rationale for certain behaviors. Formative research can also help implementers select key audiences for behavior change, determine the most feasible and effective behaviors to promote, understand what influences those behaviors, and identify the best ways to deliver SBCC. In a Title II development program, formative research is necessary to better understand barriers, constraints, and

facilitators to adoption of improved agricultural technologies and practices, both production and post-harvest; increased market access and use; improved IYCF and care practices; and improved nutrition and health practices for pregnant and lactating women, including adolescent girls. Examples of where formative research will be essential in Burundi include: determination of potential barriers to adopting new IYCF practices and gender equality and female empowerment issues within households in different areas of the country. In addition to formative research, applicants are required to conduct a gender analysis and can undertake a vulnerability assessment to understand the current sociocultural context in which they will operate.

Operations research. Operations research enables programs to identify problems in service delivery and to test programmatic solutions to solve problems in program implementation, especially in countries with limited infrastructure and human resources, such as Burundi. It also provides program managers and policymakers with the information they need to improve existing services. There are five basic steps in the operations research process: 1) identify the problem in service delivery or implementation, 2) identify a solution or strategy to address the problem, 3) test the solution, 4) evaluate and modify the solution as needed, and 5) integrate the solution at scale in the program.

By incorporating well-designed operations research as a key part of program activities, programs can continuously examine the quality of their implementation and identify constraints to delivery, access, and utilization of program activities, adjusting the program as necessary. Operations research is an iterative process that may be conducted at the beginning of the project and repeated during the life of the activity to ensure continued quality in service delivery and program implementation. Done well, operations research can increase the likelihood that the project will attain its stated objectives.

Governance and conflict prevention. Given the slow-onset, “silent” nature of chronic malnutrition, it is often not recognized or is ignored by household members and communities, even when high prevalence has been demonstrated and discussed by health services. Chronic malnutrition touches a majority of households in rural Burundi, demonstrating a pervasive lack of knowledge of its causes and impacts and of the causes of food insecurity. It is not an easy message for leaders or service providers to address directly or for individuals to acknowledge. For these reasons—and because of the need for health center staff and CHWs to maximize the outreach, communication, and advocacy efforts of these leaders—it is important for the development food assistance program to engage the awareness, support, and leadership of commune and traditional leaders in a 4-year campaign to mobilize public opinion and understanding of the issue of chronic malnutrition and food insecurity.

It is also important for project implementation to anticipate conflicts related to ownership of land, communities’ access to public lands bordering fields, and returnees’ property rights—all of which require the attention of commune officials, who can greatly contribute to community outreach in these matters.

5.5 Strategic Partnerships

The Burundi development food assistance program should prioritize strategic partnerships. Partnerships in development can enhance sustainability, mobilize complementary areas of expertise and capacity to an activity, and extend the breadth and reach of programs. Applicants may engage a range of partners in different roles in their programs, based on their own assessments of capabilities required to maximize program impact and sustainability. Applicants should become familiar with the objectives and activities of USAID/Burundi’s IHP and EGP programs. Applicants should indicate how these programs will complement the development food assistance program and vice versa and should include an illustrative results framework that shows the linkages with these other programs.

Particularly important are partnerships with:

- SUN Coordination
- PRONIANUT and province-level team
- MINAGRIE and province-level team
- Communes
- Provincial Medical Offices, health districts and health centers
- USAID's IHP and EGP projects
- U.N. agencies such as UNICEF (nutrition, including fortification); WFP (nutrition, including fortification, emergency response, and early warning); FAO (training and extension services for smallholder producers); and IFAD (livestock);
- University of Ngozi, as a technical and training partner in agriculture and community health; the Bujumbura Agronomy Faculty; and Institut des Sciences Agronomique du Burundi

References

- African Development Bank, Organization for Economic Cooperation and Development, U.N. Development Programme, and U.N. Economic Cooperation for Africa. *Burundi, African Economic Outlook 2012*.
- Bambonanire, Serapion. President, National Land Commission. March 6, 2013. Personal communication.
- Beck, James; Citegetse, Geoffroy; Ko, Jason; Skye Sieber. 2010. *Burundi Environmental Threats and Opportunities Assessment*. Washington, DC: U.S. Agency for International Development
- Black, R.E.; Allen, L.H.; Bhutta, Z.A.; Caulfield, L.E.; de Onis, M.; Ezzati, M.; Mathers, C.; Rivera, J. for the Maternal and Child Undernutrition Study Group. 2008. "Maternal and Child Undernutrition: Global and Regional Exposures and Health Consequences." *The Lancet*. 371: 243-60.
- Black, R.E.; Victora, C.G.; Walker, S.P.; Bhutta, Z.A.; Christian, P.; de Onis, M.; Ezzati, M.; Grantham-McGregor, S.; Katz, J.; Martorell, R.; Uauy, R.; and the Maternal and Child Nutrition Study Group. 2013. "Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries." *The Lancet*. 382: 427-51.
- Braud, E.; Perschler, V.; *Burundi Sexual Violence Assessment*. Engender Health 2011.
- Bukuru, Pamphile. Head of Information, Education and Communication Service, Department of Health, Hygiene and Sanitation Promotion, Ministry of Health, Burundi, March 2013. Personal communication.
- Institut National de Santé Publique (INSP)/Ministère de la Santé Publique et de la Lutte contre le Sida, and ICF International, May 2012. *Burundi Demographic and Health Survey 2010 (DHS)*, Institut de Statistiques et d'Etudes Economiques du Burundi (ISTEEBU).
- Cadre Stratégique de Croissance et de Lutte contre la Pauvreté II 2011–2015. 2012. Government of Burundi.
- Central Intelligence Agency (CIA). 2013. CIA World Factbook. Washington, DC: CIA.
- CountrySTAT. Burundi web page. Accessed on April 8, 2013.
<http://www.countrystat.org/home.aspx?c=BDI>
- Fintrac. 2012. *Bellmon Estimation Studies for Title II (BEST) Analysis: Burundi*.
- FAOSTAT. 2013. *Food Consumption and Food Production of Burundi, Rwanda and Uganda in the Past 50 Years*. (Data compiled by Ton Dietz and Wijnand Klaver.) African Studies Centre: Leiden, Netherlands.
- Food and Nutrition Technical Assistance II Project (FANTA-2). 2010. *TRM-01: Preventing Malnutrition in Children Under 2 Approach (PM2A): A Food-Assisted Approach*. Revised November 2010. Washington, DC: FANTA-2, FHI 360.
- Government of Burundi. *Poverty Reduction Strategy Progress Report*. 2005.
- Grantham-McGregor, S.; Cheung, Y.B.; Cueto, S.; Glewwe, P.; Richter, L.; Strupp, B.; and the International Child Development Steering Group. 2007. "Developmental Potential for Children in the First 5 Years for Children in Developing Countries." *The Lancet*. 369: 60-70.
- Guyon, A.B.; Quinn, V.J. 2011. *Essential Nutrition Actions Framework: Booklet of Key Messages*. Washington, DC: The Core Group.
- Index Mundi. "Burundi Livestock Production Index." Accessed on April 20, 2013.
<http://www.indexmundi.com/facts/burundi/livestock-production-index>

Institute of Development Studies. 2013. *The Hunger and Nutrition Commitment Index 2012*. (Not paginated.)

International Monetary Fund. 2012. *Burundi: Poverty Reduction Strategy Paper II*. IMF Country Report No. 12/224. Washington, DC.

Ministry of Agriculture and Livestock (MINAGRIE). 2011. *National Agricultural Investment Plan 2012–2017*. Government of Burundi.

MINAGRIE. *Evaluation des Récoltes, des Approvisionnements Alimentaires, et de la Situation Nutritionnelle, Saison 2010 A*. Bujumbura, Burundi: Republic of Burundi.

MINAGRIE. 2012. *Enquete Nationale Agriocole Du Burundi 2011–12. Resultats de la saison A*. Government of Burundi.

Ministry of Health and the Fight against AIDS (MOH). 2011. 2009 Annual Health Statistics. Government of Burundi.

MOH. 2012. National Nutrition Policy. Government of Burundi.

MOH. 2013. Strategic Multi-Sectoral Plan to Fight against Malnutrition (draft). Government of Burundi.

Ministry of Interior, Central Information Office. 2009. *General Population and Habitat Census*. Government of Burundi.

Mitcham, Elizabeth. Director of the Horticulture Collaborative Research Support Program and the Postharvest Technology Center at the University of California, Davis. November 14, 2012. Personal communication.

Ndabemeye, Gerard. Director General of Agriculture and Livestock Planning. March 4, 2013. Personal communication.

Ndayiragije, Remy. Burundi CARE representative. March 23, 2013. Personal communication.

Niyongabo, Jean-Claude. USAID Democracy and Governance Team Leader. March 5 2013. Personal communication.

Oxfam. 2011. *Invest in Agriculture in Burundi*. Oxfam GB for Oxfam International. Oxford, UK.

Pelletier, D. L. “The Potentiating Effects of Malnutrition on Child Mortality: Epidemiologic Evidence and Policy Implications.” 1994. *Nutrition Reviews*. 52 (12): 409-15.

Purdue University. “Purdue Improved Crop Storage.” Accessed on April 15, 2013. <http://www.entm.purdue.edu/PICS2>.

Rogers and Macías. 2004. *Program Graduation and Exit Strategies: A Focus on Title II Development Food Aid Programs*. Food and Nutrition Technical Assistance Project (FANTA).

Ruel, M.T.; Menon, P.; Habicht, J.P.; Loechl, C.; Bergeron, G.; Pelto, G.; Arimond, M.; Maluccio, J.; Michaud, L.; Hankebo, B. 2008. “Age-Based Preventive Targeting of Food Assistance and Behavior Change and Communication for Reduction of Childhood Undernutrition in Haiti: A Cluster-Randomized Trial. *The Lancet*. 371:588-95.

Savory Institute. 2013. What is Holistic Management? Accessed on June 11, 2013. <http://www.savoryinstitute.com/holistic-management>.

Second Vice Presidency of the Republic of Burundi. 2012. *Growth and Poverty Reduction Strategic Framework Summary Report (SFPRII)*. Government of Burundi.

Smith, L.C.; Ramakrishnan, U.; Ndiaye, A.; Haddad, L.; and Martorell, R. 2003. *The Importance of Women's Status for Child Nutrition in Developing Countries*. Research Report 131. International Food Policy Research Institute.

UNICEF. "Burundi Statistics." Accessed on April 26, 2013.
http://www.unicef.org/infobycountry/burundi_statistics.html

U.S. Agency for International Development (USAID). 2013. Washington, DC: USAID.

USAID Global Health Office. 2013. Washington, DC: USAID.

WASHplus. 2013. *Integrating Water, Sanitation and Hygiene into Nutrition*. FHI 360.

World Bank. Burundi web page. Accessed on April 18, 2013. <http://data.worldbank.org/country/burundi>

World Food Programme (WFP). 2008. *Comprehensive Food Security & Vulnerability Analysis: Burundi*. Rome: WFP.

WFP. 2009. *Rwanda Comprehensive Food Security and Vulnerability Analysis and Nutrition Survey*. Rome: WFP.

WFP. 2012. *Analysis of Secondary Data on Food Security, Vulnerability, and Nutrition in Burundi*. Rome: WFP.

World Health Organization (WHO), USAID. 2010. *How to Integrate Water, Sanitation, and Hygiene into HIV Programmes*. WHO, USAID.

Annex 1. WFP Survey Results on Employment

According to the WFP survey:

- 33.9% of respondents were agriculturalists, households with the highest dependency on agricultural production for their livelihoods
- 17.6% were agro-sellers, households dependent on agriculture production with cash crop contribution
- 20.8% were agro-laborers, whose main livelihood activity is agriculture but with contribution from manual labor
- 14.7% were laborers, whose main livelihood is not agriculture and are more dependent on income from labor such as construction or road repair
- 4.6% were agro-traders, with income from petty/small trade such as aggregating small purchases from farmers for sales to traders)
- 2.5% were brewers
- 1.2% were agro-exploiters working in fishing, mining, or wood sales
- 2.3% have businesses on the side (types of businesses not described) or work for a business, with farming accounting for 22% of their livelihoods
- 1.2% were pensioners
- 1.2% were classified under “other”

Annex 2. Other Programs and Projects

United Nations System

U.N. agencies are the principal direct supporters of the MOH/PRONIANUT in all nutrition-related activities. UNICEF supports treatment of severe acute malnutrition through studies, supplies, and training; WFP similarly supports treatment of moderate acute malnutrition. UNICEF also provides some leadership training for PRONIANUT managers, and WFP has provided operational support for PRONIANUT field supervisions.

The International Fund for Agriculture and Development (IFAD) is implementing the following projects:

- Post-Conflict Reconstruction Transitional Program in Bujumbura Rural, Ruyigi, and Bururi provinces, which helps poor small-scale farmers strengthen capacity to protect productive assets, increase productivity, improve nutrition, raise incomes, and improve market access for producer organizations (2009–2017)
- Livestock Sector Reconstruction Project in Bururi, Bujumbura Rural, Cibitoke, Karusi, Kayanza, and Ruyigi provinces, which raises the productivity of small-scale livestock farmers (2008–2014)
- Agriculture Intensification and Value Chain Enhancement in Gitega, Karusi, Cibitoke, and Kayanza provinces, which develops sustainable, profitable, commercial agriculture for smallholders and will expand to Muramvya and Bubanza provinces in 2014 (2009–2017)
- Value Chain Development Program in Cibitoke, Karusi, Kayanza, Ngozi, Bubanza, Muramvya, and Gitega provinces, which seeks to reduce poverty and food insecurity in rural areas by developing agricultural value chains including rice and milk (2010–2019)

The Food and Agriculture Organization (FAO) is implementing a European Union-funded project—called “Contribution to Alleviate the Increase in Food Prices by Strengthening the Production Capacity of Associations by Exploiting the Irrigated Perimeter of Imbo”—that seeks to reduce the negative impact of rising food prices and the effects of climate change on the food security of vulnerable households.

World Bank

The World Bank initiated and has funded performance-based financing for Burundi’s health sector since 2010. This is designed to motivate PHO, health district, and health center staff to ensure that quality services are offered throughout the catchment area and that “rewards” for achieving specific indicators result in health-related investments at the discretion of the health center staff. In March 2013, nutrition and community-level health indicators were being considered and a pilot rollout planned; adoption and application of these specific indicators are not anticipated before the end of 2014. A World Bank-funded study currently is exploring the possibility of including PBF (performance-based financing) on nutrition indicators, which informally is expected to start in health facilities at the beginning of 2014.

Another World Bank program is the Agro-Pastoral Productivity and Markets Development Project (2010–2014). Operating in 10 provinces, the project supports agricultural technology transfer in targeted value chains, rehabilitation of irrigation infrastructure to increase productivity, and strengthened market linkages.

European Union

The European Union funds and supports a range of activities, mostly focused on promoting food security and achieving the MDGs:

- A consortium of NGOs are implementing a project in Ngozi, Kayanza, Ruyigi, Rutana, Karusi, Gitega, Bujumbura Rural, and Bubanza focused on providing a rapid response to soaring food prices in rural areas by strengthening agricultural productive capacity and support to farmer associations. (The project is called “Rapid Response to Food Prices Increases in Eight Provinces of Burundi by Reinforcing the Agricultural Production Capacity and Supporting the Village Cooperatives to Re-Launch the Primary Sector and Commercialization.”)
- Acceleration to Attain MDGs Project (PROPA-O), an initiative to reduce food insecurity and improve nutrition in Imbo and Moso regions by irrigating marshland, developing value chains, educating households on nutrition, and strengthening local health structures
- A finance scheme to remedy the harmful effects of unstable tea export revenue through a project called “Renewing the Equipment of Different Tea Estates of the Office of Tea in Burundi.”

Others

Dutch Embassy:

- National Fertilizer Subsidy Program, which provides fertilizer technical support for integrated fertility management (2013–2014)
- Improve Food Security & Nutrition Project in Bubanza, Cibitoke, and Bujumbura, which promotes crop production intensification (2012–2016)

International research consortium (International Institute of Tropical Agriculture, International Center for Tropical Agriculture, and Bioversity):

- Consortium to Improve Agricultural-Based Livelihoods in Central Africa, which conducts research on bananas and legumes in conjunction with ISABU and Ngozi University to develop new varieties, pest management practices, and improved soil management (2006–2013)

German Society for International Cooperation:

- Food Security and Social Cohesion, a project in three communes in Bujumbura Rural that supports seed multiplication by providing improved inputs to farmers and vouchers for vulnerable households to purchase small farm assets (2012–2015)

Belgian Cooperation:

- Institutional and Operational Support to the Agriculture Sector Project, which provides support for MINAGRIE (2012–2017)

Swiss Agency for Development and Cooperation:

- A multisector program in Ngozi province, including a focus on nutrition

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