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# USAID OFFICE OF FOOD FOR PEACE FOOD SECURITY DESK REVIEW FOR BURKINA FASO

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# CONTENTS

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<b>ACKNOWLEDGMENTS</b> .....	<b>i</b>
<b>ACRONYMS AND ABBREVIATIONS</b> .....	<b>v</b>
<b>EXECUTIVE SUMMARY</b> .....	<b>1</b>
<b>1. INTRODUCTION</b> .....	<b>8</b>
<b>2. Background</b> .....	<b>10</b>
2.1 Political Landscape.....	10
2.2 Socioeconomic Landscape .....	10
2.3 Population and Health .....	12
2.4 Land.....	13
2.5 Gender .....	14
2.6 Environment, Climate, and Natural Disasters .....	14
2.7 Resilience .....	15
2.8 Education.....	16
<b>3. Food Security Context</b> .....	<b>18</b>
3.1 Food Availability.....	18
3.1.1 Crop Production.....	18
3.1.2 Livestock.....	25
3.1.3 Gender and Land Access .....	26
3.2 Food ACCESSIBILITY .....	26
3.2.1 Food Consumption and Poverty.....	26
3.2.2 Livelihoods and Food Purchase .....	27
3.2.3 Gender, Income, and Asset Ownership.....	29
3.2.4 Shocks, Coping Capacity, and Resilience of Populations Vulnerable to Food Insecurity .....	31
3.2.5 Key Policies, Strategies, and Programs Related to Food Availability and Access.....	32
3.3 Food Utilization and Health .....	36
3.3.1 Child Health and Nutritional Status .....	36
3.3.2 Factors that Influence Child Health and Nutritional Status .....	39
3.3.3 Maternal Health and Nutrition Status .....	47
3.3.4 Water, Sanitation, and Hygiene .....	53
3.3.5 Health Care System and Access.....	55
3.3.6 Gender and Nutrition .....	56
3.3.7 HIV .....	59
3.3.8 Key Policies, Strategies, and Programs Related to Food Utilization and Health.....	59
<b>4. Lessons Learned</b> .....	<b>63</b>
4.1 Availability and Governance Lessons Learned.....	65
4.1.1 Farmer Training and Outreach.....	65
4.1.2 Conservation Agriculture.....	66
4.1.3 Improved Seeds.....	67

4.1.4	Land Tenure .....	68
4.1.5	Lowland Development .....	69
4.1.6	Livestock .....	70
4.1.7	Stock Warrantage .....	71
4.1.8	Community Savings and Loan Activities .....	72
4.1.9	Value Chain and Smallholder Marketing .....	73
4.1.10	Off-farm Enterprises .....	74
4.1.11	Village Development Councils .....	75
4.1.12	Parent-Teacher Associations .....	76
4.2	Maternal and Child Health and Nutrition and Water, Sanitation, and Hygiene Lessons Learned .....	77
4.2.1	Provision of Food Rations .....	77
4.2.2	Treatment of Malnutrition (Acute Malnutrition) .....	78
4.2.3	Strengthening Health Facilities .....	79
4.2.4	Strengthening Community Health Services .....	80
4.2.5	Social and Behavior Change Communication (SBCC) .....	80
4.2.6	Family Planning .....	81
4.2.7	WASH .....	82
4.3	Gender Lessons Learned .....	84
4.3.1	Programmatic Gender Integration .....	84
4.3.2	Gender in Agriculture and Livelihoods .....	85
4.3.3	Gender in Maternal and Child Health and Nutrition .....	87
	<b>References .....</b>	<b>88</b>
	<b>Appendix 1. Selected Economic and Poverty Indicators for Burkina Faso .....</b>	<b>94</b>
	<b>Appendix 2. Nutrition Content of Yonhanma .....</b>	<b>96</b>
	<b>Appendix 3. Possible Pathways of Infection Leading to Child Undernutrition and Mortality .....</b>	<b>97</b>
	<b>Appendix 4. The Essential Nutrition Actions .....</b>	<b>98</b>
 <b>BOXES</b>		
Box 1.	Key Definitions (USAID 1992, 2016) .....	iii
Box 2.	Male Involvement in Maternal and Child Nutrition .....	40
Box 3.	Adolescent Malnutrition .....	49
Box 4.	Priority Food Security and Nutrition Interventions in the Burkina Faso National Nutrition Policy (2016) .....	60
 <b>FIGURES</b>		
Figure 1:	USAID Food for Peace and REGIS (RISE) Intervention Zones in Burkina Faso .....	9
Figure 2.	Burkina Faso Sector Contribution to GDP .....	12
Figure 3.	Burkina Faso Crop Calendar .....	19
Figure 4.	Burkina Faso Livelihood Zones .....	19
Figure 5.	Staple Prices in Ouagadougou 2012–2017 .....	24

Figure 6. Primary Livelihoods among Burkinabé Households.....	27
Figure 7: Food Security Status Based on Livelihood Type .....	29
Figure 8: Stunting Prevalence by Region, 2003–2016.....	37
Figure 9. Nutritional Status by Age in Burkina Faso (2015).....	38
Figure 10: Percentage of Women 15–19 Years Who Have Begun Childbearing by Age 19 .....	<b>Error!</b>
	<b>Bookmark not defined.</b>
Figure 11. Water and Sanitation Indicators for Burkina Faso Urban and Rural Households (%) .....	54

## TABLES

Table 1. Key Economic Indicators.....	11
Table 2. Education Rates among Women and Men.....	17
Table 3. National Agricultural Production (MT) .....	21
Table 4. Dimensional Deprivation Rates .....	30
Table 5. Asset Ownership and Income in Burkina Faso, by Sex.....	31
Table 6. Summary of Key Policies, Strategies, and Programs Related to Food Availability .....	34
Table 7. Key Child Health and Nutrition Indicators.....	45
Table 8. Maternal Health and Nutrition .....	51
Table 9. Key WASH Indicators .....	55
Table 10. Key Gender Indicators .....	58
Table 11. Summary of Key Policies, Strategies, and Programs Related to Food Utilization .....	61

## ACRONYMS AND ABBREVIATIONS

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APFR	attestation de possession foncière rurale
AQIM	al Qaeda in the Islamic Maghreb
BCC	behavior change communication
BMI	body mass index
CBO	community-based organization
CDP	Congrès pour la démocratie et le progrès
CECI	Communautés d'Épargne et de Crédit Interne
CFW	cash for work
CHW	community health worker
CNSA	Conseil National de Sécurité Alimentaire
CNSFMR	Comité national de sécurisation foncière en milieu rural
COFENABVI	Confédération des Fédérations Nationales de la Filière Bétail Viande
CPSA	Première session du Comité de Prévision de la Situation Alimentaire
CSI	Coping Strategy Index
CVGT	<i>commissions villageoises de gestion des terroirs</i>
DADI	Direction des Aménagements et du Développement de l'Irrigation
DHS	Demographic and Health Survey
dL	deciliter
F2F	farmer-to-farmer
FAO	Food and Agriculture Organization of the United Nations
FASO	Families Achieving Sustainable Outcomes
FEWS NET	Famine Early Warning Systems Network
FFP	USAID Office of Food for Peace
FFS	farmer field school
FFW	food for work
FP	family planning
FY	fiscal year
g	gram(s)
GDP	Gross Domestic Product
GOBF	Government of Burkina Faso
HIV	human immunodeficiency virus
IDP	internally displaced person

INERA	Institut de l'Environnement et de Recherche Agricole
km	kilometer(s)
MAM	moderate acute malnutrition
MAAH	Ministère de l'Agriculture et des Aménagements Hydraulique*
MAHRH	Ministère de l'Agriculture, de l'Hydraulique et des Ressources Hallieutiques
MAST	Mobile Application to Secure Land Tenure
MCHN	maternal and child health and nutrition
MICS	Multiple Indicator Cluster Survey
MFI	microfinance institution
ML	mother leader
MPP	Mouvement du Peuple pour le Progrès
MT	metric tons
NERICA	New Rice for Africa
NGO	nongovernmental organization
ODF	open defecation free
PAFR	Plan d'actions pour la filière riz
PDQ	Partnership Defined Quality
PICS	Purdue Improved Crop Storage
PM2A	prevention of malnutrition in children under 2 approach
PNDES	Plan national de développement économique et social
PNSAN	Politique nationale de sécurité alimentaire et nutritionnelle
PRP	Projet Riz Pluvial
PRP-AGIR	les Priorités Résilience Pays- l'alliance globale pour la résilience
PSP	Private Service Provider
PTA	Parent-Teacher Association
RAF	Réorganisation agraire et foncière
REGIS-AG	Resilience and Economic Growth in the Sahel – Accelerated Growth
REGIS-ER	Resilience and Economic Growth in the Sahel – Enhanced Resilience
RISE	Resilience in the Sahel Enhanced
SAM	severe acute malnutrition

\* Note: The Ministry of Agriculture changed its name in 2016 from Ministère de l'Agriculture, de l'Hydraulique et des Ressources Hallieutiques (MAHRH) to Ministère de l'Agriculture et des Aménagements Hydraulique (MAAH). Most references from the ministry in this document use the former name – MAHRH).



SAREL	Sahel Resiliency Learning
SBCC	social and behavior change communication
SCADD	Stratégie de croissance accélérée et de développement durable
SD	standard deviation
SI	stock d'intervention
SLIC	savings and internal lending committee
SNS	stock national de sécurité alimentaire
SONAGESS	Société Nationale de Gestion du Stock de Sécurité Alimentaire
UN	United Nations
UNHCR	UN High Commission for Refugees
USAID	U.S. Agency for International Development
VCA	Value Chain Analysis
VDC	Village Development Councils
ViM	Victory Against Malnutrition
VVV	Volunteer Village Vaccinators
WASH	water, sanitation, and hygiene
WFP	World Food Programme
WUA	Water User Association

## EXECUTIVE SUMMARY

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This food security desk review for Burkina Faso was requested by the U.S. Agency for International Development Office of Food for Peace (USAID/FFP) to help guide both FFP and prospective FFP applicants design projects to address food security needs. The review draws from secondary resources to understand the history, politics, economy, food security situation for Burkina Faso, and Burkinabé government programs. The review team interviewed and collected documentation from current FFP implementers in Burkina Faso to compile lessons learned. Since 2011, CRS and ACDI/VOCA have implemented FFP project activities with interventions in agriculture, natural resource management, health and nutrition, and civil society strengthening in the Centre Nord and Est regions. USAID also supports a 5-year effort to build resilience to recurrent crisis in the region through its Resilience in the Sahel Enhanced (RISE) initiative that aims to increase the resilience of vulnerable populations through upgrading the competitiveness and inclusiveness of value chains the poor rely on. FFP implementers collaborate with RISE projects (REGIS AG and ER) in the same intervention zones. The review analyzes the food security situation in Burkina Faso through the lens of availability, accessibility, utilization, and resilience and presents current ground realities that could promote or constrain food security programming in the next few years.

Food security in Burkina Faso has improved dramatically since the devastating 2011–2012 drought, but favorable weather conditions appear to drive this positive trend rather than a fundamental improvement in food security and resilience to climate and other shocks. For the 2016–2017 agricultural season, the Ministry of Agriculture assessed that 151% and 172% of cereal and animal protein requirements, respectively, will be covered in the coming year, exceeding the 5-year average by 3.4% (Ministère de l'Agriculture et des Aménagements Hydraulique 2017). Prices for key cereals such as millet, maize, and sorghum have decreased steadily since 2012. The recent *Cadre Harmonisé*<sup>1</sup> suggests that food consumption may have improved over the past five years, with most households in Phase 1 (minimal risk of food insecurity) and only 21 provinces out of 45 with 2.5 million people projected to be in Phase 2 (under pressure) and few individuals in Phase 3 (crisis) during the lean season (Première session du Comité de Prévision de la Situation Alimentaire 2016). Rainfall data over a 30-year period show a decrease in total annual rainfall and an increase in the number of dry days (GOBF 2015). Low adoption rates of conservation agriculture techniques to combat dry Sahelian conditions, lack of improved seeds and other inputs, and post-harvest losses contribute to suboptimal yields among smallholder farmers.

The chronic malnutrition (stunting) situation in Burkina Faso is improving—stunting has declined dramatically from 43% in 2003 to 27% in 2016—although reductions in stunting prevalence have slowed in the past seven years, with 1% to 3% reductions since 2009 in most of the regions of the country.<sup>2</sup> More dramatic declines have been seen in the Centre Sud and Cascades regions between 2009–2016 (MOH et al. 2016; MOH et al. 2009; INSD and ORC Macro 2004). Stunting prevalence differs dramatically among regions, with the highest prevalence (35%) in the Est and the lowest (15%) in the Centre. Acute malnutrition (wasting) in children under 5 is still an issue in Burkina Faso. Despite a 3% reduction from 2015, and nearly an 8% reduction from 2010 (when the prevalence was 16%, according to the Demographic and Health Survey (DHS)), wasting is still of concern at 7.6% (MOH et al. 2016; MOH et

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<sup>1</sup> *Cadre Harmonisé* is a set of tools and procedures used in West Africa to classify the severity of current and projected food security crises through technical consensus. It fosters the compatibility of results to guide decision making over location and time.

<sup>2</sup> Note, the 2003 data are from the DHS and the 2016 data are from the National Nutrition Survey (SMART); differences in methodologies between the surveys may affect comparisons between surveys. The general decline in stunting appears to be consistent across numerous surveys over the past 13 years.

al. 2015; INSD and ICF International 2012). Wasting is slightly higher in the regions of Centre (9%) and Sud-Ouest (10%) than the national average (MOH et al. 2016). Children 6–23 months are at greatest risk of wasting. According to the 2015 SMART survey<sup>3</sup>, the prevalence among this group is about 18%, a level that is considered critically high (MOH et al. 2015).<sup>4</sup> The alarmingly high level of wasting among children 6–23 months indicates that poor practices related to complementary feeding (inadequate frequency, quantity, and quality of feeding/food); care (e.g., disease treatment); and water, sanitation, and hygiene are likely causes (MOH et al. 2015). Poor sanitation infrastructure and practices significantly contribute to poor infant, child, and maternal health and nutrition. Despite significant reductions in open defecation (a harmful sanitation practice) and improvement in access to improved latrines since 2010, open defecation is still widely practiced in rural areas (67%) and most rural households do not have access to an improved latrine (89%) (INSD et al. 2015). Lastly, while the 2006 obstetric subsidy policy has helped to reduce maternal mortality and improve health, 67% of women reported receiving assistance for their most recent birth from a medically trained provider (INSD and ICF International 2012); high fertility rates, the high prevalence of adolescent pregnancy, and poverty all continue to hinder maternal health and nutrition.

Rapid population growth, gender inequality, and low levels of educational attainment are also significant contributors to food insecurity and poverty. Burkina Faso's estimated population growth rate is 3.1% per year and seven out of 10 Burkinabé are younger than 30 (World Bank 2013). Women marry at a young age, have an average of 6 children, and lack control over their fertility, household decision making, and time. Women have less access to land, capital and farming inputs, which significantly limits their productive capacity and undermines their ability to achieve or adequately support household food security. Only 22.5% of women are literate, compared to 35.5% of men, and 52% of women in urban areas are literate compared to only 11% in rural areas (INSD and ICF International 2012). The government has taken an active role in increasing primary education enrollment for girls through the National Strategy for Promotion of Girl's Education and has invested in better infrastructure of preschools, primary, and secondary schools using donor funds (GOBF 2011 and UNICEF 2014). Higher literacy rates for younger women suggest that concerted efforts to promote girls' education have been fruitful (INSD and ICF International 2012). An innovative rural land tenure legislation passed in June 2009 promises to improve access to land for women and vulnerable groups but remains at a nascent stage (Elbow 2013).

The most significant change in Burkina Faso in recent years is the democratic election of a new president in 2015 and the ouster of President Blaise Compaore in 2014 after nearly 30 years in power. This significant political change was brought about by violent street protests and general dissatisfaction with the political and economic situation in Burkina Faso. Domestic political violence was short-lived but multiple terrorist attacks in 2016 by cross-border Islamic extremists pose a new threat to an otherwise secure country. The new government released several new policies related to economic growth (National Plan for Economic and Social Development–PNDES), resilience (PRP–AGIR) and food security (National Food and Nutrition Security Policy–PNSAN) in 2016. The new government is also trying to implement elements of the landmark Land Tenure Reform Act of 2009. Certainly, one of the greatest constraints to realizing the objectives of these policies and others is budgetary. The government's reliance on tax revenue from cotton and gold exports has been hampered by falling commodity prices since 2011.

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<sup>3</sup> Note 2016 data were not disaggregated by age group.

<sup>4</sup> WHO classifications for population prevalence of wasting:  $\geq 15\%$  is “critical;” 10-14% is “serious;” 5-9% is “poor;” and  $< 5\%$  is “acceptable” (WHO 2010).

FFP projects have been addressing some of the specific and underlying factors of food insecurity noted above. After a thorough review of project reports, baselines, evaluations, and other special studies, FANTA identified high level points among each of the strategic objectives, such as agricultural and natural resource management, livelihoods, maternal child health and nutrition, gender, and local governance, and prepared questions for each topic to have a better understanding of the activity and discern lessons learned. FANTA then interviewed members of the ACDI/VOCA and CRS teams who manage the ViM and FASO projects to discuss written responses. A brief synopsis of the key lessons learned are grouped by three intervention types undertaken by both FFP implementers without attribution.

### **Lessons Learned: Livelihoods and Improved Agricultural/Livestock Production**

**Farmer Training and Outreach:** Both implementers use the Farmer Field School methodology with a lead farmer who trains 25 farmers in improved practices on a demonstration plot.

*Lessons learned:* Training messages should be well tailored; using model farmers and exchange visits to demonstrate techniques are impactful; partnership with INERA (Agriculture and Environment Research Institute) has worked well; longer term access to improved seed varieties introduced by INERA remains problematic without a ready solution.

**Conservation Agriculture:** FFP implementers train farmers to improve soil quality, retain moisture, and reduce soil erosion such as Zaï, half-moon pit planting, contour stone bunds and others adapted to the Sahel's dry conditions.

*Lessons learned:* Distributed tools paired with a rental business promotes long-term sustainability, exchange visits and radio promotion programs worked well; adoption rates are higher if land is scarce with much degraded land.

**Improved Seeds:** FFP implementers hosted seed fairs to promote improved varieties and worked with INERA.

*Lessons learned:* Hosted seed fairs early in project implementation, roundtables with value chain actors, community seed multiplication on 3-5 ha, collaboration with INERA and linkage with VSLAs worked well.

**Land Tenure:** In FY'17, FFP implementers educated farmers about their rights under the new Land Tenure law.

*Lesson learned:* Collaboration with a parastatal l'Observatoire National sur le Foncier related to land tenure and capacity building of Village Development Councils worked well, but it is likely to take many years to bear fruit.

**Lowland Development:** To increase productivity of marginal lands, FFP project activities promoted a low-cost, simple-to-build water control mechanism on mild sloping lowlands to grow rice.

*Lessons learned:* Lowland infrastructure should be robust to withstand flooding, though some sites can be negatively affected by drought; well organized groups have been most successful in managing water control structures and increasing yields for rice that can be sold commercially; ideal lowland site should be 5-10 ha.

**Livestock:** FFP implementers introduced improved livestock techniques such as fodder conservation and rationing techniques, improved care and hygiene for poultry and ruminants, and animal vaccination by local paravets.

**Stock Warrantage:** Stock warrantage improves the supply of rural finance by using stock as collateral for a loan so a farmer can access funds when she needs it most and delay sale of stock post-harvest when prices are low.

*Lessons learned:* Stock warrantage has been successful when good warehouses are available, MFIs are willing to provide loans against stock, farmer groups are well organized and management committees are in place.

**Community Savings and Loan Activities:** FFP implementers helped groups, especially women, set up rotating savings schemes for locally accessible community-based saving and lending.

*Lessons learned:* Savings groups have improved social cohesion and access to financial resources for household needs, health care, education, and investment into income generating activities. Groups are most successful when trained in basic literacy and existing groups train others using the Private Service Provider (PSP) model.

**Value Chain and Smallholder Marketing:** FFP implementers helped farmers to access more lucrative markets.

*Lessons Learned:* Producer groups have benefited from working with commodity-specific unions, literacy training, receipt of equipment (scales, bags). Mobile tools that let farmers access market info have not worked due to farmer literacy, ability to pay for such services without project subsidy, language used for apps and ease of use.

**Off-farm activities:** One FFP Implementer has a competitive small grants program for early stage off-farm ventures.

*Lessons learned:* Demand for funding to start off-farm enterprises is very high; volatile commodity prices and high cost of equipment undermine profitability and business success, 74% of successful applicants are women, individual businesses perform better than collective ventures, illiteracy is a problem, so applicants have literate people in village prepare proposal, ventures are more successful if entrepreneurs are more educated, they take part in other training programs and undertake innovative value-added enterprises.

### **Lessons Learned: Local Governance**

**Village Development Councils:** VDCs have elected members who manage village community development.

*Lessons learned:* Interventions have strengthened relation between VDC and local government, preparation of development plans, ability of VDCs to access funds for small projects and enhance their role in new land tenure law.

**Parent Teacher Associations:** Capacity building for school PTAs was completed in tandem with school feeding program which was phased out in FY'15.

*Lessons learned:* PTAs have been instrumental in keeping school canteens operational despite the lack of external food aid, accessing new sources of financial assistance from community and beyond, improving hygiene in kitchens where food is prepared and among pupils, oversight of girls mentoring programs.

## Lessons Learned: MCHN/WASH

**Provision of Food Rations:** Both projects provided preventative food rations, targeting beneficiaries within the first 1,000 days (from pregnancy to age 2). One FFP project also promoted a locally made fortified flour (*Yonhama*) for consumption by women of childbearing age and children 6–23 months. Both projects promoted the use of locally-produced ready-made foods or home-made complementary foods to transition families off of food aid.

*Lessons learned:* Formative research has shown that locally-made fortified complementary foods are acceptable and that families are willing to pay for them, but require subsidies and may be unsustainable; initiating behavior change activities before food distribution may be necessary to prevent unintended negative consequences on family planning, but additional discussion and research on this issue is warranted.

**Treatment of Malnutrition:** FFP implementers used Mother Leaders (MLs) and community health workers (CHWs) to identify children with acute malnutrition.

*Lessons learned:* Using MLs to screen for acute malnutrition may be a sustainable alternative to using CHWs who require compensation; low or non-literacy training and reporting materials are recommended when using MLs; projects play a key role in strengthening the capacity of community-based networks to screen and refer children with acute malnutrition and link them to appropriate treatment; project support to identify, referral, and follow up on malnourished children can help fill existing gaps in the system.

**Strengthening of Health Facilities:** FFP implementers used the partnership defined quality (PDQ) approach to improve the quality and accessibility of health services

*Lessons learned:* The Partnership Defined Quality (PDQ) approach has worked in Burkina Faso and can continue to benefit the health system beyond project life cycle; greater awareness and training is needed to monitor and prevent chronic malnutrition

**Strengthening Community Health Services:** FFP implementers engaged with community health service providers—CHWs, community health agents (CHAs), community health volunteers, and MLs to support the provision of preventive and curative outreach services.

*Lessons learned:* Continued support to community health service providers is critical to ensuring necessary health services are provided due to the limited range and scope of health facilities in the country.

**Social and Behavior Change Communication (SBCC):** FFP implementers used the care group approach (interpersonal communication and peer learning lead by MLs), coupled with various methods of mass media (radio, community theater, scoreboards and videos) to create behavior change at both the individual and community level.

*Lessons learned:* Collaboration with government to ensure that ML training and supervision is part of the CHWs' job description and that they are compensated for supporting the groups is recommended; future projects can build on the structure of the care group and GASPA models to support adoption of optimal health and nutrition behaviors; SBCC is critical to project success and requires additional attention to be effective; a dedicated staff member should manage the mass communication activities and another staff member should oversee community mobilization; the use of video showings appeared to be particularly well-received.

**Family Planning:** Family planning (FP) activities were not an integral part of either FFP project, but implementers did include some activities to address knowledge and communication around FP.

*Lessons learned:* Given the extremely high fertility rate and high desired number of children, addressing FP is difficult but will have a tremendous impact on maternal and child health and nutrition. In particular, addressing

adolescent family planning needs separately is warranted with tailored interventions and communication; additional research is needed to understand effective ways to increase access, demand, and use of FP in Burkina Faso.

**WASH:** Both FFP implementers conducted several WASH activities including the drilling, repair, and maintenance of boreholes to improve access to safe water, the implementation of community-led total sanitation (CLTS), a behavior change approach, to achieve open-defecation free (ODF) communities, building latrines, and promotion of key hygiene and sanitation behaviors (and installation of handwashing stations).

*Lessons learned:* The inability to provide subsidies for latrine purchase and development are real obstacles to FFP project work to promote open defecation free (ODF) communities and hinders sustainability as families do not find sustainable ways to purchase and maintain their family's latrine; CLTS is an effective means of reducing diarrhea and attaining to ODF status but strong community support/leadership is needed for new initiatives to take hold and be sustainable.

## Lessons Learned: Gender

**Gender in Agriculture and Livelihoods:** FFP project activities assisted women through training in improved agricultural production, small grants for new and existing microenterprises, educated women on their rights under new Land Tenure Act, literacy training and several other interventions.

*Lessons learned:* Improving women's literacy contributes to building their leadership skills, participation in household decision-making, and self-confidence; activities to improve incomes and safety nets were successful, and women benefited from labor saving technologies; training women to build improved cooked stoves saved them time and reduced fuel required for cooking and time spent to collect wood.

**Gender in Maternal and Child Health and Nutrition:** MCHN activities predominantly engaged women, though some men were engaged in training as well.

*Lessons learned:* Men must be engaged in MCHN activities from the outset; using leader fathers to promote the adoption of family planning practices and improved health and nutrition practices can be impactful; men are motivated to reduce health-related costs through improved child health care; improved access to and maintenance of water points can reduce women's time to collect water; FFP interventions expanded access to family planning information, referrals, and services; finding ways to delay adolescent marriage and childbearing by targeting adolescent mothers is an important consideration when developing key messages along with other training subjects.

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**Gender in Maternal and Child Health and Nutrition:** MCHN activities predominantly engaged women, though some men were engaged in training as well.

*Lessons learned:* Men must be engaged in MCHN activities from the outset; using leader fathers to promote the adoption of family planning practices and improved health and nutrition practices can be impactful; men are

motivated to reduce health-related costs through improved child health care; improved access to and maintenance of water points can reduce women's time to collect water; FFP project activities expanded access to family planning information, referrals, and services; finding ways to delay adolescent marriage and childbearing by targeting adolescent mothers is an important consideration when developing key messages along with other training subjects.



# 1. INTRODUCTION

Recent years have witnessed major political upheaval in Burkina Faso. Following violent street protests in 2014, President Blaisé Compaoré was forced to step down after nearly three decades in power. A coup d'état launched against the interim government eventually led to the democratic election of Roch Marc Christian Kaboré of the *Mouvement du Peuple pour le Progrès* (MPP) (People's Movement for Progress) in late 2015. Several weeks into the new administration, an al Qaeda-linked terrorist group killed 29 people, targeting primarily foreigners at a hotel in Ouagadougou; in late 2016, a group of insurgents attacked a military base near the Malian border, killing a dozen soldiers.<sup>5</sup>

As the new government struggles to respond to the specter of terrorism, economic growth has sputtered. Since reaching a high of 8.6% gross domestic product (GDP) growth in 2010, the economy grew by only 5.2% in 2016 (World Bank 2017).<sup>6</sup> Burkina Faso's primary exports are cotton and gold, but lower global commodity prices have hampered growth and affect the government's revenue and ministerial budgets. Most of the population rely on livestock and agricultural production as their primary livelihoods, with millet, maize, and sorghum as the most widely grown and consumed crops in the country (FEWS NET 2016).

The U.S. Agency for International Development (USAID) Office of Food for Peace (FFP) has supported interventions in Burkina Faso for the past six decades. Starting in 1960, Catholic Relief Services (CRS) managed school feeding programs (*cantine scolaire*) using FFP food commodities in schools throughout the country (Murphy 2007). Starting in 1997, CRS began its first multi-sectoral Title II food security program using proceeds from monetized rice (*ibid*). Since 2011, CRS and ACDI/VOCA have implemented FFP projects with interventions in agriculture and natural resource management, health and nutrition, and civil society strengthening. The programs focus on improving the nutritional status of the most vulnerable populations—including pregnant and lactating women and children under 2—agricultural production and productivity; livelihoods including market linkages; water and sanitation; and governance within communities. CRS's

## Box 1. Key Definitions (USAID 1992, 2016)

**Food security:** The ability of people, households, communities, countries, and systems to reduce, mitigate, adapt to, and recover from shocks and stresses to food security in a manner that reduces chronic vulnerability and facilitates inclusive growth.

**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 food for a nutritious diet, which depends on available income, distribution of income in the household, and food prices.

**Food utilization:** Proper biological use of food, requiring a diet with sufficient energy and essential nutrients, potable water, and adequate sanitation, as well as knowledge of food storage, processing, basic nutrition, and child care and illness management.

**Resilience to recurrent crisis:** 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.

**Layering:** Targeting the same populations, when appropriate, with different and complementary programming.

**Integrating:** Ensuring that resilience-building activities and vulnerable populations are included in humanitarian and development programs, and improving coordination between humanitarian and development assistance programs.

**Sequencing:** Examining areas where humanitarian assistance is no longer needed and mainstreaming resilience concerns from these same areas into follow-on development activities.

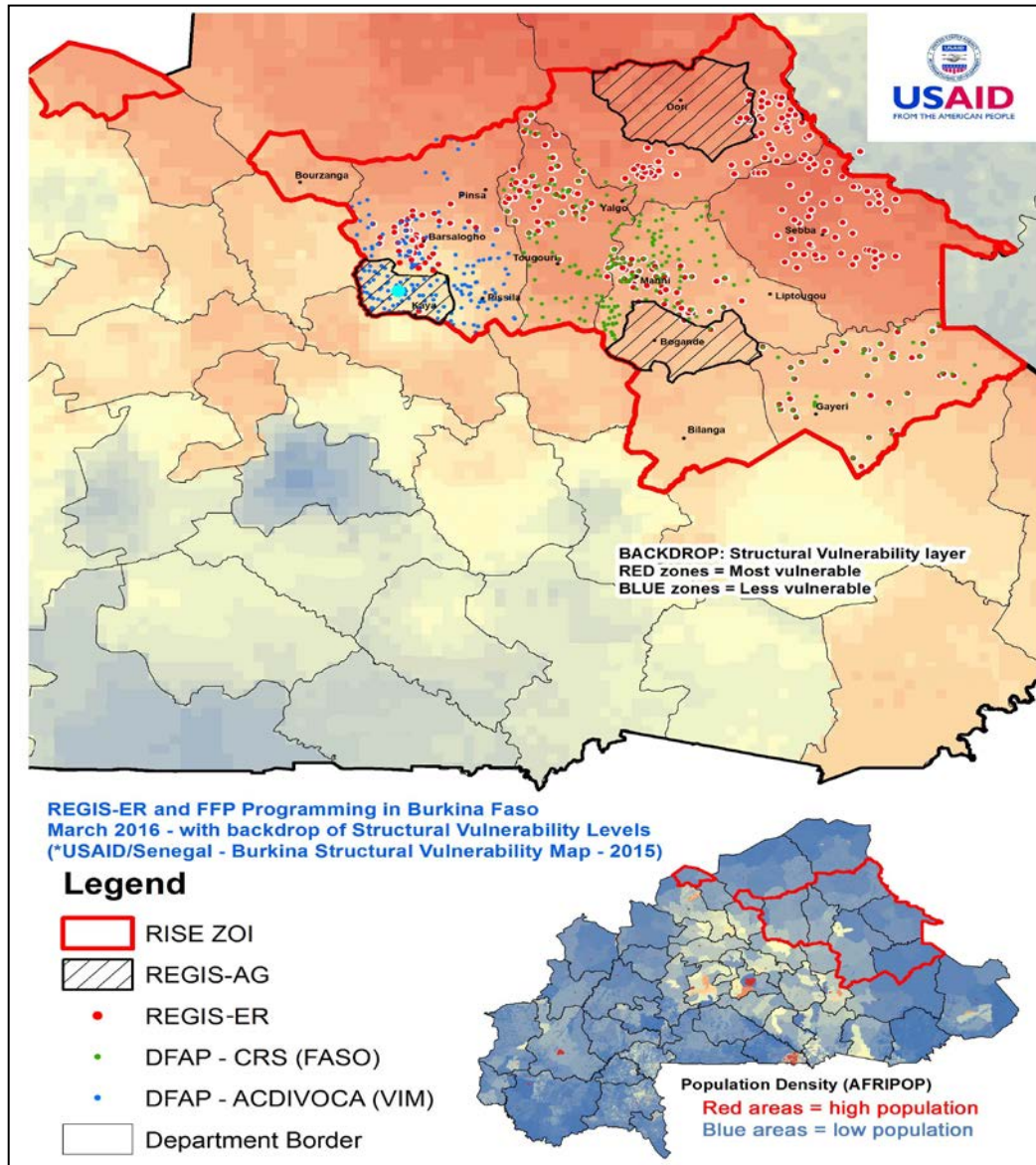
Source: USAID 1992

<sup>5</sup> <http://www.aljazeera.com/news/2016/12/deadly-attack-targets-army-base-burkina-faso-161216164208144.html>

<sup>6</sup> <http://www.worldbank.org/en/country/burkinafaso>

project, known as Families Achieving Sustainable Outcomes (FASO), works in Centre Nord (North Central) and Est (East) regions in the health districts of Tougouri, Manni, and Gayéri. ACDI/VOCA’s project, known as Centre Nord region in the communes of Kaya, Barsalogo, Pissila, and Namissiguima in Sanmatenga province.

**Figure 1: USAID Food for Peace and REGIS (RISE) Intervention Zones in Burkina Faso**



Source: USAID Food for Peace.

This food security desk review for Burkina Faso was drawn from secondary data and interviews with staff implementing the current FFP projects managed by ACDI/VOCA and CRS in Burkina Faso; RISE projects including REGIS-AG (CNFA), REGIS-ER (NCBA-CLUSA), and SAREL (The Mitchell Group); United States Geological Survey; the Famine Early Warning Systems Network (FEWS NET); and representatives from USAID/Washington, USAID/Burkina Faso, and USAID/Senegal. This document uses this definition of food security and the concepts of risk, vulnerability, and resilience as a framework to describe the context and determinants of food insecurity in Burkina Faso.

## 2. BACKGROUND

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### 2.1 POLITICAL LANDSCAPE

The country known today as Burkina Faso has been populated for millennia by more than 60 ethnic groups. The Mossi are the country's prominent ethnicity, making up nearly half of the population. Other ethnicities include but are not limited to the Gerunsi, Senufo, Lobi, Mande, and Fulani, who have collectively inhabited the region since roughly the 8<sup>th</sup> century. The Mossi, who are believed to have migrated from Lake Chad, created a large settlement in present-day Ouagadougou (de Villiers and Hirtle 2007). Several colonial powers fought for control of the region in the late 19<sup>th</sup> century until France established the colony as French Upper Volta in 1919.

Upper Volta gained independence from France in 1960, and Maurice Yameogo became the first president. Coups followed in 1966, 1980, 1982, 1983, and 1987. Disgruntled military officers—Thomas Sankara and Blaise Compaoré—led the most notable coup in 1983 with Sankara becoming one of Africa's most notable leaders, remembered for his revolutionary rhetoric and his desire to fight corruption and improve education, agriculture, and the status of women. He renamed the country “Burkina Faso” in 1984. Sankara's socialist experiment came to a tragic end in 1987 when his former comrade—Compaoré—organized a coup and assassinated Sankara and several of his ministers.

After two decades of oppressive rule, Compaoré and his military junta bowed to popular pressure and held democratic elections. His party, the Congrès pour la démocratie et le progrès (CDP), easily won presidential and parliamentary elections in 2005 and 2006. Violent street protests against Compaoré's regime in 2014 forced him to resign, paving the way for democratic elections in 2015 when Roch Marc Christian Kaboré of the *Mouvement du Peuple pour le Progrès* (MPP) (People's Movement for Progress) was elected president.

Despite the spate of coups since independence, Burkina Faso had not experienced insecurity until 2016. When al Qaeda in the Islamic Maghreb (AQIM) took over large parts of Mali in 2012–2013, Burkina Faso was not affected by this conflict apart from an influx of Malian refugees. AQIM's violent terrorist attack aimed at foreigners at Ouagadougou's Splendid Hotel in January 2016 signaled a new and troubling phase for Burkina Faso's security and the possibility of it being brought into the widening battlefield of Islamic extremism in the Sahel. The attack on an army barracks in Nassoumbou near the Malian border in December 2016 was yet another sign of the dangers and need for inter-regional and international cooperation to combat cross-border terrorism.

### 2.2 SOCIOECONOMIC LANDSCAPE

Economic growth has faltered in recent years due to a decrease in commodity prices, but the former and new administrations have undertaken policies to reduce budget deficits, increase tax collection, and develop new strategies to reduce poverty. As a landlocked, Sahelian country, it is costly for Burkina Faso to import goods, thus the country has aggressively pursued self-reliance on domestic agricultural production upon which 80% of the population derive their income (Appendix 1). Agriculture, including livestock, crop production, and agro-processing, accounts for 40% of GDP, but low productivity and value chain constraints remain barriers to increasing revenues for small producers and the government (World Bank 2013). While the economy grew an average of 5% between 2000 and 2010 based on cotton and gold exports, growth stalled in 2015 due to significant decreases in prices for both commodities (World Bank 2016). Since 2000, the government reduced its budget deficit from 3.8% to 2% of GDP in 2015 (Government of Burkina Faso [GOBFA] 2016). During this same period, it reduced its debt ratio from 58.2% to 32.4% of GDP (ibid).

In the early 2000s, the prior government improved its capacity to develop, manage, and account for its budget and collect taxes from companies and citizens under its Strategy to Strengthen Public Finances (World Bank 2011). This change contributed to lower deficits and debt. Cotton has been an important cash crop and foreign exchange earner for Burkina Faso for decades and accounts for 2 million jobs (World Bank 2013). Gold has only been mined commercially in Burkina Faso since 2002 but is quickly becoming a vital engine for growth. Following the start of gold production managed by concessions granted to Swiss and Canadian companies, Burkina Faso became the fourth largest gold producer in Africa in 2012. The so-called “Greenstone Belt” that runs north from Ghana and Côte d’Ivoire has excellent geological potential and has barely been exploited or explored.<sup>7</sup> The three largest gold mines are in Bissa and Kalsaka, north of Ouagadougou, and in Essakane, in the north near Dori. By 2009, government tax revenue from gold surpassed that of cotton (Winkler and Straumann 2016). Nonetheless, these new-found riches have negatively affected populations displaced by gold mines, and informal artisanal mines are causing environmental damage and dangerous working conditions for adults and children involved in mining (ibid).

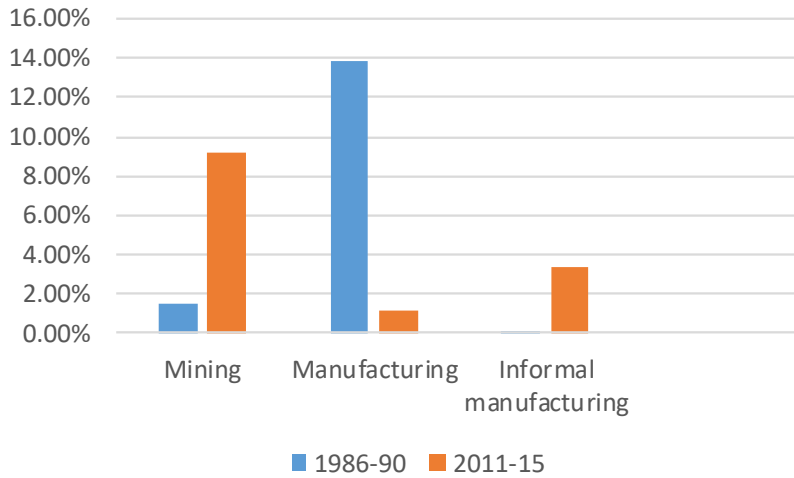
**Table 1. Key Economic Indicators**

Indicators	2011	2012	2013	2014	2015	2016
GDP growth	4.2%	8%	6.5%	6.1%	3.9%	5.2%
Inflation (consumer prices)	2.8%	3.8%	0.53%	-0.26%	0.95%	n/a
Cotton price (US\$/lb., year-end)	\$0.95	\$0.83	\$0.87	\$0.68	\$0.70	\$0.79
Gold price (US\$/oz. year-end)	\$1,426	\$1,668	\$1,229	\$1,231	\$1,104	\$1,143
Exchange rate (CFA francs per US\$)	471	510	494	494	591	610

Sources: <https://www.bullionvault.com/gold-price-chart.do>, <http://www.indexmundi.com/commodities/?commodity=cotton&months=60>, <http://data.worldbank.org/country/burkina-faso>.

<sup>7</sup> <http://www.roxgold.com/s/AboutBurkinaFaso.asp>

**Figure 2. Burkina Faso Sector Contribution to GDP**



Source: Instrument automatisé de prévision (IAP) (DGEP, April 2016).

Recognizing the numerous constraints to Burkina Faso’s growth, the new government outlined the core elements driving its poverty reduction strategy in the National Social and Economic Development Plan 2016–2020 (*Plan National de Développement Économique et Social* (PNDES) (GOBFa 2016). The government links the persistent problem of poverty in Burkina Faso since independence to the inability of successive governments to increase revenue by more than 2.1% per year, which would have been used to enhance economic opportunities, health care, education, and social assistance. As of 2014, 40.1% of the population were below the poverty line, defined as those earning less than 108,454 CFA francs (US\$177) a year (ibid). Lack of development had forced many to migrate to Côte d’Ivoire, Ghana, and France over the years, diminishing the country’s productive workforce. The expulsion of hundreds of thousands of Burkinabé from Côte d’Ivoire over 10 years ago due to conflict and anti-immigration policies signified a reversal in this migratory trend (Murphy 2007). The government has been unable to encourage private investors to develop a textile sector using locally produced cotton due to the high cost of electricity, shortage of skilled and unskilled labor, poor transport networks, and lack of financing. The government aims to reform and modernize government institutions, develop human capital, and create an enabling environment to promote the private sector and create jobs. (GOBFa 2016). Some of the primary commodities targeted for GDP growth include an increase in cereal and cash crop production as well as higher output of and exploration for gold, zinc, and manganese.

**2.3 POPULATION AND HEALTH**

Rapid population growth is a significant driver of food insecurity in Burkina Faso. The population is estimated at 19,034,397 and growing an average of 3.1% a year (GOBFa 2016, Appendix 1). Widow-headed households have the highest prevalence (44%) of severe food insecurity and make up approximately 2% of all households (WFP 2012 and INSD and ICF International 2012). Between the ages of 15–49, 75.6% of women are married, compared to 53.8% of men (INSD and ICF International 2012). This may be related to the fact that 58% of households are polygamous, one of the highest rates in the Sahel (Doka 2014). The national total fertility rate is six children per woman and the population is overwhelmingly young, with 50% of the population under 15 years of age (ibid). Population growth has

resulted in land being subdivided into small portions, contributing to increasing land scarcity and ultimately undermining household food security. Adolescent girls consistently begin childbearing by age 19 (58%), placing them and their children at increased risk of mortality and malnutrition (ibid). While maternal and child mortality rates have improved, access to and quality of health care remain a challenge, considering that few people completed secondary school, which weakens the capacity of health providers and the quality of care. As of 2015, 30% of children under 5 were stunted, with the highest prevalence of stunting in the Est (35%) and Sahel (33%) regions. Key drivers of stunting in Burkina Faso are a combination of poor infant and young child feeding (IYCF) practices, adolescent motherhood, inadequate access to water and sanitation facilities, and poor hygiene practices.

## 2.4 LAND

Land tenure in Burkina Faso has been evolving since the mid-1980s. For most of the country's existence, customary law governed the allocation of land for farming in rural areas. Traditionally, community land has been allocated by traditional chiefs, and for inherited land held by indigenous families, the oldest son is the custodian and determines land use rights (Mathys 2009). Women can only access land through their husbands or sons and are usually allocated the poorest quality land (ibid). Sankara's revolutionary regime changed this dynamic in 1984 through the Agrarian Land Reform Act (*Réorganisation agraire et foncière* [RAF]) that placed all land under government ownership (Thieba 2010). Under this new arrangement, land was managed using two formalities: government allocations for vulnerable households and village land management committees (*commissions villageoises de gestion des terroirs* [CVGTs]). These village-based committees were given the mandate to resolve land disputes and allocate land for farming or pasturage, responsibilities that once were the purview of traditional leaders. Communities were allowed to vote on the committees' membership, and traditional leaders were elected to these posts in many cases, especially in the predominantly Mossi areas.

Compaoré's government revised the land statute in 1991 to restore traditional leaders' oversight of land ownership. Another important change to the law included an article allowing purchases of land and issuance of titles (ibid). This was followed by an additional amendment in 1996 to formalize land transfers (*procès-verbal de palabra*). In practice, few Burkinabé had the means to procure such a title to use land as collateral. Additionally, the government lacked the means to set up a formal legal structure to issue and oversee land titles, especially in remote rural areas, so rural land management reverted to the informal CVGTs set up during Sankara's era. The introduction of new land articles encouraged some investors to develop larger parcels, but they lacked sufficient legal protection. More broadly, conflicts between pastoralists and farmers, mainly driven by a rapidly expanding population, were becoming more violent and frequent. In addition, the government recognized an urgent need to address longstanding issues related to women's access to land and the need to educate them about their rights.

By the late 1990s, it became evident that the existing structure for managing land in Burkina Faso was no longer working and that a coherent solution was needed. In 2002, the government established the National Committee for Secure Rural Land Tenure (CNSFMR) within the Ministry of Agriculture (Elbow 2013). Over seven years, the committee interviewed a wide variety of stakeholders to understand the problem and studied land reform in other countries to propose possible solutions. This effort led to the adoption of innovative rural land tenure legislation in June 2009 (ibid). The new legislation formalized land practices and rights managed by local government. It created three land classifications: state, local government, and private domain. The law includes measures to improve access to land for women and vulnerable groups and create a mechanism to solve land conflicts at the village level (ibid). The government created a Rural Land Certificate of Possession (APFR) process that requires rigorous vetting and approval by the relevant local community before an application can be submitted for full land title (ibid). Since passing the 2009 law, land reform has not been implemented broadly in rural areas due to the difficulty and cost of

implementing this nationally. Some donors have worked with the National Program for Land Management (*le Programme Nationale de Gestion des Terroirs*) to pilot elements of land reform measures in a handful of rural areas.

## 2.5 GENDER

Widespread gender inequality drives chronic food insecurity and malnutrition in Burkina Faso. Women marry at a young age, have many children, and have little control over their fertility and time. They also have much less access to resources than men and depend on men for access to land for farming. Women have less access to capital and farming inputs, which significantly limits their productive capacity and undermines their ability to achieve or adequately support household food security. Men are also the primary decision makers regarding women and children's health. Younger married women have less decision-making power and access to and control over resources than older women in more established marriages. Low literacy rates and limited participation in primary and secondary education further constrain women's capabilities throughout their lifetimes.

## 2.6 ENVIRONMENT, CLIMATE, AND NATURAL DISASTERS

Burkina Faso is part of the larger Sahelian zone and composed of primarily dry, tropical savanna. The country is 274,200 km<sup>2</sup> in size and relatively flat, with an average elevation of 400 meters. The northern and central parts of the country receive the least rainfall. As a result, the bulk of the population is concentrated in the southwestern part of the country as well as the capital, especially the Centre, Hauts Bassins, and Boucle de Mouhoun regions. This concentration has led to massive deforestation of indigenous forests in those areas over the past several decades due to an expanding population and rural-rural migratory patterns (Etongo Bau 2016). A study in southern Burkina Faso found that forests decreased from 69.7% in 1986 to 31.4% in 2002 (Ouedraogo et al. 2010). This study found that half of community-managed forests had been converted for farming between 1986 and 2002. The expansion of cropland to grow cash crops, such as cotton and cashews, and the growth of cattle ranches are major contributors to deforestation and increasing competition for land in an unprecedented way. In addition, lack of land tenure security for migrant households in the southwest, in particular, is a disincentive to plant trees that are seen as an investment in the land (Etongo Bau 2016). Nonetheless, there are indications that widespread efforts to plant and protect useful trees since 2002 as part of a broader "regreening of the Sahel" initiative to arrest desertification are having a positive effect. This has occurred in part due to various interventions by communities, governments, donors, and nongovernmental organizations (NGOs), but also as part of a continuum of a centuries-old practice to replant indigenous trees that regenerate naturally and provide economic and environmental importance to households (Bayala et al. 2011; Faye et al. 2010).

Burkinabé had long adapted to their dry, Sahelian environment, but climate variability in recent decades poses a major threat to agro-pastoralist livelihoods. Rainfall levels vary significantly within Burkina Faso's three zones, according to the Food and Agriculture Organization of the United Nations (FAO) (2015):

- Sahelian Zone (North), occupying 25% of the country, with annual rainfall of 300–600 mm and a 0–2-month rainy season
- Sudano Sahelian Zone (Central and Western), occupying 50% of the country, with annual rainfall 600–900 mm and a 3–4-month rainy season
- Sudano Zone (South/Southwestern), occupying 25% of the country, with annual rainfall 900–1200 mm and a 4–6-month rainy season

The dry season lasts from October to March and is characterized by the strong, southerly Harmattan winds characteristic in most West African countries (ibid). Cumulative rainfall data analyzed over the last

30 years shows a decrease in total annual rainfall and increase in the number of dry days (GOBF 2015). Another major change since 1990 is that in the Sahel overall there is inter-annual variability in cumulative variability in cumulative rainfall, a clear break from historical trends observed over the past two decades (ibid). Between 1930 and 2010, the government recorded a 100–150 km shift in rain pattern zones. Similarly, there has been an upward trend in the number of hot days and nights per year, except for the southwest. Between 1960–2011, the government recorded an 0.8° C increase in temperature (ibid). Climate projections using five different climate models forecast extreme variability in rainfall distribution with a more scattered and longer rainy season (ibid). However, a predicted warming trend will increase evapotranspiration, making rainfall less efficient for crop production.

Households reported that the most significant shocks they face include drought, flooding, and crop and livestock disease and pest infestations (FAO 2015). Burkina Faso was affected by 10 major droughts between 1972 and 2014 in various parts of the country. The most serious drought occurred in 2011–2012, affecting the entire country and 3.5 million people (ibid). The Sahel, Nord, and Centre regions are affected by drought more frequently than the Sud region. Between 1984 and 2014, there were 15 notable floods, but between 2000 and 2013 alone, there were 10 catastrophic floods, the most severe occurring in 2009. Over this time period, flooding collectively affected up to 150,000 people (ibid). As would be expected, the southern zone is more affected than the north by frequent flooding. In terms of pest disease, the Sahel and northern regions have been affected by locust swarms that destroy crops. Animal disease is also a major concern among pastoralists, especially in Centre-Sud, Boucle du Mouhoun, Nord, and Sahel. Insect infestations have also heavily affected the Sahel and Cascades regions in recent years.

## 2.7 RESILIENCE

Recurring shocks in Burkina Faso contribute to chronic food insecurity, particularly for vulnerable households. Following the devastating drought in Burkina Faso in 2011–2012, farming households were asked in 2013 what types of water and soil conservation measures they used that would make their yields resilient to drought (FAO 2015). On a national level, only 15% of farmers had used a water or soil conservation technique, and there were significant differences by region (ibid). The most common effort undertaken was the use of stone bunds, whereas the *Zai* and *half-moon* methods were scarcely used despite nearly three decades of promotion by government and NGO interventions. In terms of insect infestation, the use of insecticides and herbicides to control such outbreaks is also relatively low, though likely constrained by cost and access rather than an unwillingness to use these products.

Facing adversity from shocks, households use a range of coping mechanisms. The World Food Programme (WFP) found that 37% of households used an adaptation strategy when faced with a shock such as the 2011–2012 drought (WFP 2014). This figure was only 10% in urban areas. The most common coping strategies included emergency sales of animals, increased harvest of perennial crops such as cassava, and consumption of seed stocks. As expected, the poorest households have a greater tendency to use negative coping mechanisms.

To enhance resilience among the most vulnerable households, both the Burkina Faso government and USAID have launched initiatives. The government's resilience strategy, known as Country Resilience Priorities (PRP-AGIR), will reinforce resilience among 10,872,289 individuals, over half the population, by 2025 (GOBFc 2016). The government will put in place a resilience-oriented policy that includes enhancing the nutrition of poor households; improving agricultural production, incomes, and food access among vulnerable households; and reinforcing governance to support food security. Since the 2012 drought, the Burkina Faso government annually prepares the *Cadre Harmonisé* in a participatory fashion to identify potential risks and vulnerable populations. In the event that an emergency response is necessary, this becomes the reference document used to guide all humanitarian interventions. USAID's



regional 5-year initiative (2013–2018) known as the RISE Initiative supports more inclusive, accountable governance and stronger livelihoods to help vulnerable households in Burkina Faso and the broader Sahel region cope with future shocks, reduce chronic poverty, and achieve inclusive economic growth. These initiatives collaborate and layer with existing USAID FFP interventions in both Burkina Faso and Niger, specifically the REGIS-AG (value chain enhancement) and REGIS-ER (enhanced resilience) projects launched in 2014. REGIS interventions are present in the Centre Nord, Est and Sahel regions, thus cross over with two of the FFP projects' intervention zones. Further details about key policies and programs are addressed in Section 3.2.5, and lessons learned are addressed in Section 4.

## 2.8 EDUCATION

Burkina Faso's population is quite young, and many young people are unable to get a quality education because the country's school system has been neglected for decades. Out of a population of 19 million, 47% are under age 15 and only 20% are older than 35 (GOBFa 2016). Literacy rates are extremely low; only 22.5% of women are literate, compared to 35.5% for men (INSD and Macro International Inc. 2000; INSD and ICF International 2012). There are major differences in literacy between the rural and urban areas; 52% of women in urban areas are literate, compared to only 11% in rural areas (ibid). Regional differences are also striking. The Sahel region has the lowest literacy rates in the entire country by far. Despite these figures, there is evidence that the government's efforts to expand primary education is beginning to have an impact on literacy rates, thus creating some notable generational differences. From 2000 to 2015, the government increased the rates of primary education enrollment from 45.9% to 83.7% respectively (GOBF 2017). During this period, the government expanded infrastructure of preschools, primary and secondary schools, and universities by roughly 10% with the assistance of donors (GOBF 2011). People age 15–24 are more likely to be literate than people age 45–49 with the most notable gap among women (INSD and Macro International Inc. 2000; INSD and ICF International 2012, Appendix 1). In 2012 the GOBF implemented a National Strategy for Promotion of Girl's Education, which has led to adoption of the Child-Friendly School approach,<sup>8</sup> which focuses on a healthy and supportive school environment (UNICEF 2014). Higher literacy rates for younger women suggest that concerted efforts to promote girls' education have been fruitful.

Despite improvements to the education sector in Burkina Faso since 2000, there are many constraints to making substantive progress. Foremost, the quality and quantity of teachers, especially in the rural areas, are very low (World Bank 2011). Many classrooms in rural areas are overcrowded, while some newly built schools remain largely empty due to poor site selection and lack of teachers (ibid). Only 3.4% of women and 4.9% of men have completed primary school, and less than 1% of either sex have completed secondary school (INSD and Macro International Inc. 2000; INSD and ICF International 2012). The government's recent development plan—PNDES—highlights the disconnect between what is being taught and what the labor market needs to grow the economy (GOBFa 2016). A similar problem exists with vocational training wherein budgetary, staffing, and curricula/school material shortfalls hamper the country's ability to build a skilled workforce. Most vocational schools are based in Ouagadougou and Bobo-Dioulasso and offer limited training in building, public works, or other high growth sectors such as mining (World Bank 2011). In 2015, the government brought the management of primary and secondary schools under the same ministry to enhance planning and ideally increase enrollment in secondary schools nationally.

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<sup>8</sup> A Child-Friendly School “aims to be: (i) a school that integrates all children including those with disabilities, infected/affected by HIV/AIDS, displaced due to emergencies and those from marginalized minorities (orphans and vulnerable children); (ii) a healthy and friendly school that protects and assures a holistic development of children; (iii) a successful school, with long term benefits for children; (iv) a school that promotes equality and equity between girls and boys and; (v) a school where families, communities and children participate” (UNICEF 2014).

**Table 2. Education Rates among Women and Men**

	National	Centre	Boucle du Mouhoun	Cascades	Centre-Est	Centre-Nord	Centre-Ouest	Centre-Sud	Est	Hauts Bassins	Nord	Plateau Central	Sahel	Sud-Ouest
<b>Education</b>														
<i>Women 15–49 years</i>														
% who report no education	69.8	38.9	74.6	66.6	75.6	78.6	70.5	68.1	82.5	62.8	71.6	72.7	87.5	81.1
% who report completing secondary school	0.3	1.4	0.0	0.2	0.1	0.0	0.2	0.1	0.0	0.5	0.0	0.1	0.0	0.0
% net primary school completion rate	3.4	–	–	–	–	–	–	–	–	–	–	–	–	–
<i>Men 15-49 years</i>														
% who report no education	59.8	27.0	64.0	57.2	67.1	69.6	58.6	58.3	77.3	49.2	57.5	62.4	83.6	69.6
% who report completing secondary school	0.6	2.1	0.3	0.6	0.3	0.3	0.5	0.3	0.1	0.6	0.3	0.2	0.1	0.3
% net primary school completion rate	4.9	–	–	–	–	–	–	–	–	–	–	–	–	–

Source: INSD and ICF International 2012.

## 3. FOOD SECURITY CONTEXT

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### 3.1 FOOD AVAILABILITY

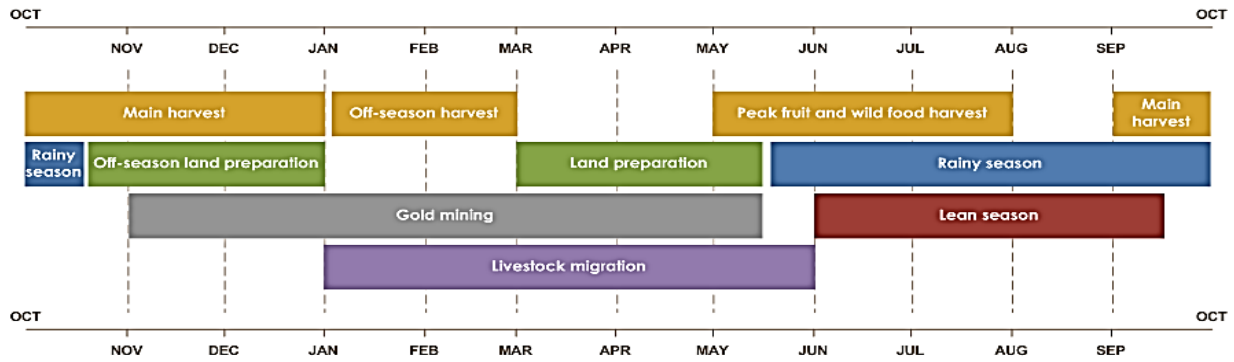
#### 3.1.1 Crop Production

**Land availability and access:** Climate change and rapid population growth are having a negative impact on land availability and access in Burkina Faso. There has been a migratory shift of farmers and pastoralists for the past several decades to the southwestern part of the country due to higher rainfall rates in the south and desertification in the Sahelian zone. Conflicts between farmers and pastoralists and competing agribusiness interests over sought-after parcels of land have driven government-led efforts to develop a more coherent land rights and tenure policy (Thieba 2010). Nationally, 40% of households cultivated less than 3 ha during the 2012–2013 agricultural season, and roughly half of this group farmed only 1–2 ha (WFP 2014). Though most households lack legal tenure of their land, 87% of households nationally consider themselves proprietors of their land while the balance rent land. In the Cascades and Hauts-Bassins regions, 33% and 24%, respectively, rent the property on which they farm (ibid). Hauts-Bassins is an important agricultural production zone in the southwest and has the second largest population outside of the Centre region, where Ouagadougou is located.

The groundbreaking 2009 rural land law has the potential to transform land ownership for a broad swath of society and serve as a model for other counties, if well executed. Most importantly, the law formalizes many customary practices and rights and devolves land management authority and resolution of conflicts to local governments (Elbow 2013). Once an APFR certificate has been obtained after community vetting, it would enable the holder to apply for legal land title, though it remains to be seen how this will evolve practically. Beyond individual titles, there is also a mechanism for communities to formalize access rights for common property and natural resources (ibid). Traditional chiefs had long been responsible for regulating access to these resources, but this system had broken down and was prone to abuse.

**Production systems levels and trends:** Agriculture and livestock are the most important livelihoods for most Burkinabé, contributing an average of 27.3% of GDP between 2010 and 2012 (WFP 2014). Key food crops are sorghum, millet, and maize, while fonio, cowpeas (niébé), groundnuts, sesame, sweet potatoes, yams, and soy are of secondary importance. In USAID/FFP’s intervention areas in the Est region, farmers deemed cowpeas and sorghum as their most important crops; FFP projects have also enhanced lowlands for rice production (ACDI/VOCA 2016). Between 2003 and 2013, national cereal production rose considerably, primarily due to significant yield increases for maize linked to a government-subsidized distribution of fertilizer and enhanced production of lowlands for rice cultivation (WFP 2014). During this period, production of cowpeas, Bambara beans (*voandzou*), yams, and sweet potatoes rose 31%.

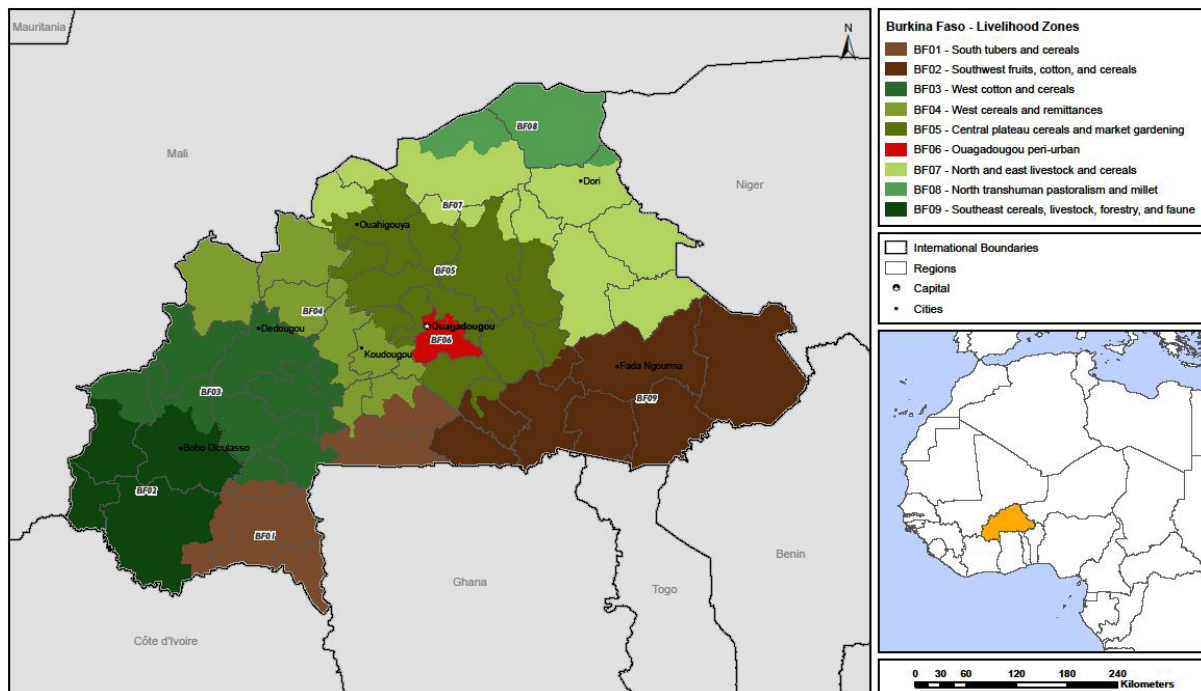
Figure 3. Burkina Faso Crop Calendar



Source: FEWS NET Burkina Faso.

Cash crops include cotton, cowpeas, groundnuts, shea butter, sesame, cashews, and sugar, and constitute 14% of all land cultivated (ibid). Cotton is the most important export crop, accounting for about 2 million jobs in the sector (World Bank 2013). Cotton production has grown substantially in recent years due to reforms that allow producer organizations to keep a larger share of the profits, recapitalization of cotton ginneries, planting of genetically modified cotton seed, and favorable weather conditions. Nonetheless, global cotton prices have declined by 20% since 2011.

Figure 4. Burkina Faso Livelihood Zones



Source: FEWS NET 2010.

Burkina Faso's diverse rainfall levels are major determinants of livelihoods and land use patterns. FEWS NET identified nine specific livelihood zones (locations and livelihoods are noted in parentheses):

- **Zone 1 (south--tubers and cereals):** This sparsely populated zone in Cascades region near the Ghanaian and Ivoirian borders receives 900–1,000 mm of rain per year. Yams are the most important crop, followed by groundnuts and rice (FEWS NET 2010). Livestock raised include pigs, sheep, goats, and poultry. SOFITEX, the country's state-run cotton ginnery, is a vital part of the economy and provides credit to farmers and buys their cotton harvests.
- **Zone 2 (southwest--fruits, cotton, and cereals):** Cotton is the primary crop in this moderately populated zone that receives 700-900 mm of rain per year and includes Burkina Faso's second largest city (Bobo-Dioulasso) and two regions (Cascades and Hauts-Bassins). Other crops grown include rice and tree crops such as cashews and mangoes. Returning migrants from Côte d'Ivoire settled in this zone and have placed additional pressure on land.
- **Zone 3 (west--cotton and cereals):** This is one of the more food secure zones, producing primarily cotton and some sesame and groundnuts. It includes Boucle du Mouhoun and parts of Hauts-Bassins, and it receives 700–900 mm of annual rainfall. Some households also raise cattle, goats, sheep, pigs, and poultry, though cotton is king.
- **Zone 4 (west--cereals and remittances):** This zone includes the northern parts of Boucle du Mouhoun and Centre-Ouest regions and is densely populated in some areas. There are many poor households here. Households rely on production of sorghum, millet, and cowpeas; livestock; and remittances from family members working on coffee and cocoa plantations in Côte d'Ivoire. The area receives 600–800 mm of annual rainfall and has poor soil quality. Several large farms have been set up in this region.
- **Zone 5 (central plateau--cereals and market gardening):** This is one of the most food insecure zones in the country and includes Nord, Centre, Centre-Nord, Plateau Central, Centre-Sud, and Centre-Ouest. It receives 600–700 mm rainfall per year. The most important crops grown here are sorghum, millet, cowpeas, limited amounts of rice, and some Bambara groundnuts. There are limited holdings of livestock, such as poultry and small ruminants, due to lack of pasture and high population density. There is also some small-scale artisanal gold mining.
- **Zone 6 (peri-urban area around Ouagadougou):** This is the country's smallest, yet most densely populated zone, with most households relying on non-farm livelihoods in the city. Market access is very good and households here are wealthier than other parts of the country.
- **Zone 7 (north and east--livestock and cereals):** This dry zone, which includes Sahel, Est, Centre-Nord, and Nord regions, receives 400–700 mm of annual rainfall. Livestock such as cattle, goats, and sheep are primary sources of income despite a shortage of water sources outside of the rainy season. Millet, sorghum, and cowpea production is also important for household consumption. Artisanal gold mining is also important.
- **Zone 8 (north--transhumant livestock rearing and millet):** This remote, extremely dry zone receives less than 400 mm of rainfall per year and occupies the northeastern Sahel region. Livestock such as cattle, goats, and sheep serve as primary livelihoods, though poor households have just a handful of animals and rely on gold mining and production of millet and sorghum, cowpeas, and on a more limited basis, sesame.
- **Zone 9 (southeast--cereals, livestock, forest, and wildlife):** This zone bordering four countries is food secure and produces livestock and crops such as cotton, sorghum, millet, maize, and cowpeas. Annual rainfall averages 800–900 mm in this zone, which includes the Est, Centre-Est, and Centre-

Sud regions. Despite the many positive aspects of the zone, including excellent market access and cross-border trade opportunities, it is sparsely populated.

**Table 3. National Agricultural Production (MT)**

Crop	2012	2013	2014	2015	2016	Average
Sorghum (white and red)	1,923,805	1,880,465	1,707,613	1,435,640	1,663,844	1,722,273
Maize	1,556,316	1,585,418	1,433,085	1,469,612	1,602,252	1,529,391
Millet	1,078,374	1,078,570	972,539	946,184	905,071	996,148
Cowpeas	598,524	569,386	573,048	n/a	228,816	580,319
Rice	319,390	305,382	347,501	325,138	384,690	336,420
Cotton (lint)	206,000	280,000	265,000	n/a	n/a	250,333
Yams	113,345	91,577	43,953	n/a	47,722	69,758

Source: Direction des Statistiques Sectorielles/DGESS/MAAH and FAOSTAT database, accessible at <http://www.fao.org/faostat/en/#data/QC>.

**Agricultural practices:** Despite the dominance of agriculture in the economy at 40% of GDP, farmer productivity is low due to poor agricultural practices and limited access to improved inputs. Baseline evaluations done by both ACDI/VOCA and CRS in their intervention zones in the Est and Nord regions revealed low usage of and access to improved seeds, tools, fertilizer, and improved post-harvest methods. Soil and water conservation methods were rarely implemented among farmers surveyed for the evaluation (Tango 2012 and CRS 2011). Traditional soil and water conservation methods such as the Zai<sup>9</sup> and half-moon<sup>10</sup> techniques promoted intensively in Burkina Faso and throughout the Sahel for the past 30 years were rarely observed in farmer fields. Though respondents said composting was widely practiced, farmers primarily used straw that was insufficiently decomposed (ibid). Traditional farming practices use minimal tools (hoes, plows, and picks), and use of animal traction (e.g., oxen and plows) is limited to better-off households. Practically no smallholder farmers had irrigated fields, though irrigation is used at larger agribusiness-owned farms. Generally, women and poor households were least likely to use improved agriculture and natural resource management practices (ibid). Water scarcity, poor soil quality, and lack of fertilizer and pesticides were widely cited as the primary reasons for crop failure and low yields (WFP 2014).

Few smallholder farmers use improved seed, fertilizer, pesticides, or tools due to both the cost and availability in remote rural areas where they farm. There was a marginal improvement in rural areas of farmers using improved seed between 2008 and 2012 (WFP 2014). This improvement is attributed to government and other interventions to bolster cereal production in specific regions. Although 90% of farmers in the Plateau Central, Centre-Ouest, and Centre-Nord regions relied on their own stock of seed for planting, half of farmers in Cascades and Hauts-Bassins bought improved seed or received it as a transfer from the government or via other intervention (WFP 2014). Nationally, it does not appear farmers view lack of improved seed as a major constraint to increasing yields, wherein only 16% cited this as a problem (ibid). In the baseline survey done by REGIS-AG in the Nord and Est regions in 2014 where the

<sup>9</sup> A Zai is a planting pit, with a diameter of 20–40 cm and a depth of 10–20 cm, that is dug in the dry season (October–March). Organic matter is added to the pit after the first rainfall and covered with a thin layer of soil. Seeds are placed in the middle of the pit. This approach both captures water and fertilizes the seeds.

<sup>10</sup> The half-moon technique is a means of collecting rainwater using earth bunds in the shape of a semi-circle by digging out holes along the contours of the land where planting will occur.

FFP projects also work, most input suppliers interviewed sold primarily imported vegetable seed while only 28% of those suppliers sold local varieties of cowpeas, millet, and sorghum (CNFA 2016a). The government has a seed certification system and inspectors who are expected to approve seed farm locations, monitor production, and certify quality at harvest. However, this program is not well oriented to smallholder farmers. The number of seed certifiers is limited and they are based at the regional level and lack transport to travel to remote communities where seed multipliers are located. Seed certifiers also lack sufficient equipment and budget to carry out their tasks effectively.

**Labor availability:** Farm labor in Burkina Faso is generally performed by entire families, while some better-off households hire additional labor during the planting season. Availability of farm laborers varies by region in Burkina Faso. In a 2012 WFP household survey, 17% cited lack of farm laborers as a limiting factor for farming greater tracts of land, which would enable households to increase yields at the household and national level (WFP 2014). Lack of labor was reported as a significant constraint in Cascades, Est, Sud-Ouest, and Centre-Ouest regions. For several decades, hundreds of thousands of young Burkinabé men migrated to neighboring countries to work as farm laborers on large farms, especially Côte d'Ivoire. Though the tide of migration has diminished after large numbers of Burkinabé were expelled from Côte d'Ivoire, only higher-income households can afford to hire agricultural labor. The labor shortage in some areas limits the potential for farmers to try new agricultural practices. The CRS midterm evaluation found that most households are extremely risk averse and reluctant to adopt new, unproven techniques, including lowland farming, which initially is more labor intensive (CRS 2013).

**Post-harvest treatment:** The government estimates that 30% of cereal production is lost post-harvest due to poor handling, treatment, and storage conditions. Post-harvest loss for rice is estimated at 45%. Losses can be much higher in the event of a locust infestation. Burkina Faso remains at risk if breeding conditions for the desert locust in the Sahel are ideal. A devastating locust infestation in the Sahel in 2004 wiped out crops across the region. In a normal year, farmers lose harvested grains to birds, caterpillars, fruit flies, grasshoppers, rodents, and other pests (GOBFC 2016). Poor threshing techniques for grains such as millet, sorghum, and rice contribute to loss as well. High moisture content in grains caused by improper storage using traditional methods also leads to losses and prevents many farmers from meeting international standards for grain export or bulk purchases by the Société Nationale de Gestion du Stock de Sécurité Alimentaire (SONAGESS), WFP, and large commercial traders. FFP-supported interventions have actively promoted improved post-harvest techniques to reduce pest infestation and reduce losses during storage. ACDI/VOCA has provided sieves and tarps to high-performing cowpea and sorghum producer groups to enhance post-harvest handling. Both ACDI/VOCA and CRS have promoted hermetically sealed, triple-lined PICS<sup>11</sup> bags, which enable farmers to reduce post-harvest losses, defer sales, and take advantage of rising market prices (CRS 2016). Initially, CRS FASO provided vouchers to project-supported farmers to buy PICS bags at a reduced price from agro-dealers in the intervention zone. Vouchers are no longer provided, but the effort has encouraged many to buy PICS bags without the subsidies. The REGIS-AG project works with FasoPlast, the only manufacturer of PICS bags in Burkina Faso, to establish linkages with agro-dealers and producer groups supported jointly by FFP and REGIS-AG projects (CNFA 2016b). FASO also supports women-led rice parboiler groups that teach ideal post-harvest practices, such as parboiling, drying, shelling, and packaging to produce clean rice and a value-added product (CRS 2016).

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<sup>11</sup> Purdue Improved Crop Storage (PICS) bags (formerly Purdue Improved Cowpea Storage bags) provide a simple, low-cost method of reducing post-harvest losses of cowpeas or other grains. A PICS bag consists of two layers of polyethylene liners and a third layer made from woven polypropylene. When each layer is tied and closed separately, it creates a hermetically sealed environment for storing harvested grain. This oxygen-deprived environment proves fatal for many insects.

**Financing:** Few agro-pastoralists have access to formal credit through either microfinance institutions (MFIs) or commercial banks. Given the high risk of agricultural lending and lack of collateral among rural borrowers to guarantee loans, financial institutions have a limited agricultural lending portfolio beyond large-scale agribusinesses. A World Bank study found that only 13% of the adults in Burkina Faso had an account at a formal financial institution and only 6% of the poorest households held accounts. (Demirguc-Kunt and Klapper 2012). Both baselines conducted by FFP implementers found that rural households were reluctant to save or use credit services offered by credit unions (*caisses populaires*) due to the inconvenience and bureaucracy involved with opening an account (TANGO 2012; CRS 2011). Moreover, such institutions are usually far from producers, who would need to walk for miles to use their services. In addition, producers interviewed felt that it would be better to invest scarce funds in a profitable livelihood than to leave the money in an account. Credit was not seen as useful in agriculture, not even for farmers growing relatively profitable crops such as tomatoes and onions (TANGO 2012). Even value chain projects such as REGIS-AG have faced this problem when trying to promote small ruminant and poultry value chains among well-organized producer groups (CNFA 2016b) To overcome the collateral barrier, both the FFP projects and REGIS-AG have actively promoted the *stock warrantage* program, in which producer groups' grains are stored and used as loan collateral while farmers wait for prices to rise.

Both ACDI/VOCA and CRS have actively promoted the creation of saving and internal lending committees (SILCs), especially among women's producer groups. Members have been able to generate a sizable number of funds and benefit from the ability to save money, access limited credit, and address short-term urgent needs. These groups have been linked to credit unions (*caisses populaires*) to create accounts for savings groups and potentially access formal credit to invest in producer group activities.

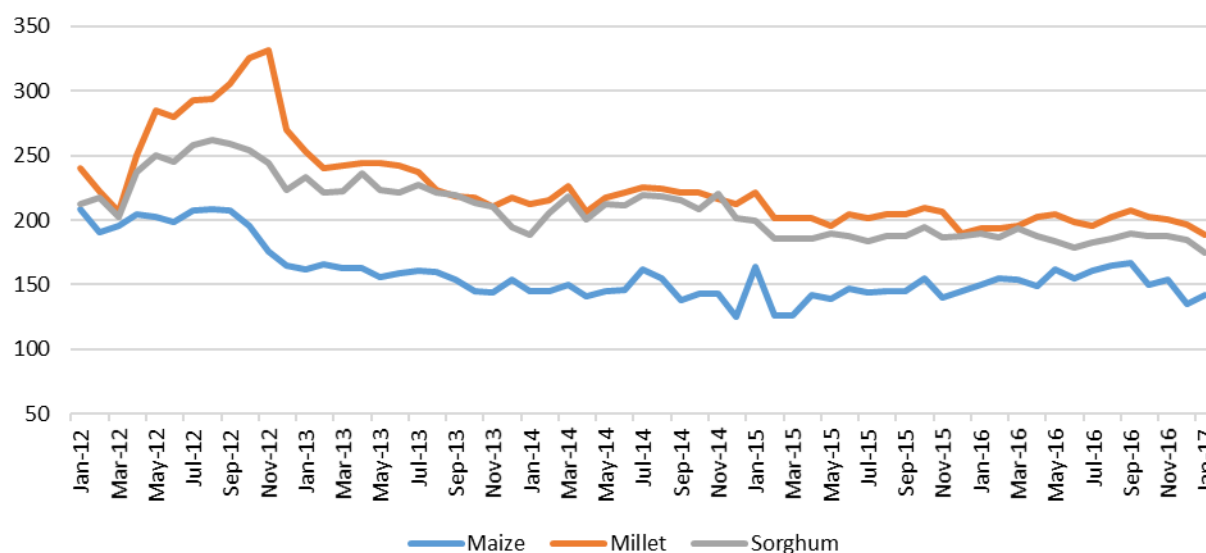
**Cereal availability, agricultural trade, national food stocks, and smallholder marketing:** Despite challenging weather conditions, Burkina Faso's cereal production increased over the past decade and the recently ended agricultural season again showed a significant surplus of cereal per capita. For the 2016–2017 season, the Ministry of Agriculture reported cereal production of 4,567,066 MT (MAHRH 2017). This figure exceeds the 2015–2016 season cereal production level by 9% and exceeds the 5-year average by 3.4% (ibid). Production of sorghum, rice, cowpeas, *voandzou*, and yams saw the biggest increases (ibid). Cotton, sesame, groundnuts, and soy production also rose. Favorable weather conditions since the catastrophic drought in 2011–2012 made these gains possible, but targeted efforts to increase production in agro-ecological zones with a competitive advantage in agricultural production have also been instrumental. Despite the rosy outlook for the coming year, the government notes that 18 provinces will have production deficits, especially in the Centre Nord, Nord, Est, Sahel, and Plateau Central, as well as some concentrated problems in six other regions (ibid). Three of these zones with projected production deficits (Nord, Sahel, and Est) include the FFP and REGIS intervention areas.

An active group of supply chain actors ensures the movement of goods from surplus to deficit regions within Burkina Faso. There are good road connections between the country's main cities that facilitate trade for a variety of supply chain actors such as grain aggregators, wholesale distributors, exporters/importers, and retailers (WFP 2014). Traditionally productive regions such as Hauts-Bassins and Boucle de Mouhoun supply regions that experience structural deficits, including Sahel, Centre Nord, and Nord (ibid). Trading has become an increasingly lucrative sector and attracts a growing number of actors who have built additional storage capacity, especially since the spike in commodity prices in 2009 (ibid). Though landlocked, Burkina Faso is strategically located in West Africa, giving the country a trade advantage for domestic cereals and livestock and goods traded regionally (CNFA 2016a). Domestic and international traders vie to purchase aggregated smallholder production, particularly sorghum and maize. While most cereals are traded domestically, cowpeas are primarily exported due to growing demand in



South Asia. Production and exports of tomatoes and onions for markets in Ghana and Côte d'Ivoire beyond domestic consumption are sizable.

**Figure 5. Staple Prices in Ouagadougou 2012–2017**



Source: SONAGESS and FEWS NET Burkina Faso.

Since the 2012 drought, prices of staple crops have steadily decreased, ostensibly due to strong production trends for most crops (Figure 5). In an average year, food prices peak in August, the end of the lean season which begins in March. Prices drop from September to December, after the harvest. Markets throughout Burkina Faso tend to be well integrated based on a comparison of price data of key commodities. Price variations are considered normal, even for the most remote markets near the Malian border. Larger markets in Bobo-Dioulasso, Pouytenga, and Ouagadougou play an important role in aggregating commodities before transit to smaller markets in their respective regions. There is also an important dynamic between cereals and livestock. Transporters moving large quantities of cereals to northern markets buy livestock for sale in markets elsewhere in Burkina Faso and in countries along the West African coast.

The government maintains strategic stocks of commodities to balance food prices and to help address any widespread crop failure or prolonged drought. SONAGESS was created in 1994 to manage a national food security stock (SNS) of up to 35,000 MT of millet, maize, and sorghum.<sup>12</sup> This effort has been funded historically by donors, and stock can only be used in the event of a national production deficit of 5%—a situation that has not occurred since its inception. This modality is currently under review by the government and international donors. In 2005, the government launched its own strategic stock, known as the intervention stock (SI), composed of 10,000 MT of sorghum, millet, rice, maize, and cowpeas. It is financed entirely by the state and can be used in the event of a price or climate shock, or a deficit in a production zone; stored commodities can be sold at discounted prices to vulnerable households that meet specific criteria. One of the major benefits of this stock is the flexibility it gives the government to provide assistance to regions facing production deficits on an annual as-needed basis. The government was very active in the domestic commodity market during the global commodity price shock in 2008—

<sup>12</sup> <http://www.inter-reseaux.org/publications/revue-grain-de-sel/54-56-les-cereales-au-coeur-de-la/article/la-sonageSS-au-burkina-faso-une?lang=fr>.

2009, actively promoting rice production by distributing seed and fertilizer and providing milling facilities post production. The government purchased the rice to bolster the strategic stock and smooth out price increases. This effort effectively doubled national rice production within one year and has since enabled the government to only buy locally produced rice for the strategic reserve. USAID FFP interventions have also contributed to increased rice production through the rehabilitation of 700 ha of lowlands in the Centre Nord and Est regions.

While Burkinabé traders are sufficiently organized and financed to take advantage of trade opportunities, producer groups are plentiful yet disorganized. FFP implementers that have worked closely with the groups to strengthen capacity have found that most suffer from poor governance, weak business capacity, and lack of accountability among group members (ACDI/VOCA 2016). The poor roads in remote areas, many of which are cut off during the rainy season, also confound efforts to access more lucrative markets for smallholder bulk commodities. Additionally, low literacy among many producer group members constrains growth since effective management and market access requires basic bookkeeping, preparation of bylaws, ability to access credit, and numeracy.

### 3.1.2 Livestock

Livestock ownership is ubiquitous in rural Burkina Faso and is a means of saving and generating additional revenue for most households, especially in the Nord. About 82% of Burkinabé households have livestock, accounting for 39% of the annual revenues of rural households (CNFA 2016a). As in many other African countries, livestock also serve an important sociocultural component in their role as a dowry for brides. Burkinabé women traditionally raise small ruminants and poultry (USAID 2015). Households tend to buy more animals after a good harvest or sell animals when facing a crisis, such as a sudden death in the family or crop failure. Livestock depend on pasturage, which is increasingly under threat due to the competition of land for agricultural production and climate change. Water scarcity is also broadly cited as a problem in Burkina Faso, in addition to limited availability of forage and costly animal feed (TANGO 2012). There is limited knowledge about the importance of good nutrition for animals. Though the Department of Livestock provides some animal health services, such as vaccinations, they are mostly undertaken in response to a disease outbreak rather than as a preventive measure. In light of some of the problems mentioned above and the prolonged drought of 2011–2012, households have fewer livestock holdings now, with an average of 4.7 tropical livestock units (TLU) in 2012 compared to 5.3 in 2008.

Poultry farming is practiced by more than 90% of rural households in Burkina Faso and is a pro-poor value chain that contributes to household income and diets (CNFA 2016b). Women are responsible for poultry farming and this income source is an important form of resilience in case of emergencies. There is a significant demand for eggs, chicken, and guinea fowl in urban areas, especially during religious and national holidays, and other important family events such as weddings and funerals. Established poultry traders buy from producer markets and sell in larger towns and cities. Poor hygiene, handling, and exposure to animal disease contributes to high mortality and low profit margins. Traditional poultry breeders lose 80–90% of their chickens to animal diseases such as Newcastle (ibid). Producers and traders lack credit, access to animal vaccines, and veterinary services, and value chain actors are poorly organized. Both the FFP and REGIS projects have poultry interventions to strengthen poultry associations, linkages among value chain actors, improved animal health using village volunteer vaccinators (VTV), access to vaccines (especially against Newcastle), construction of improved poultry-rearing units, and training in improved production and breeding techniques.

By contrast, the livestock value chain for goats, sheep, and cows is relatively more organized in Burkina Faso. Various value chain actors participate in representative associations, which are linked to a national body. Organized producer groups can have more impact through these bodies compared to individual

sellers who lack a voice or market power. The primary end market for most small ruminants is Ouagadougou and Bobo-Dioulasso, and roughly 200,000–400,000 head are sold each year to Côte d’Ivoire, Ghana, Senegal, and Togo (CNFA 2016a). The market is particularly active at the end of Eid for the celebration of Tabaski, when livestock prices reach their peak. Much of the regional livestock trade is managed by the regional body COFENABVI (ibid). It was created in 2002 following the height of the conflict in Côte d’Ivoire, resulting in a temporary halting of livestock imports from Burkina Faso, Niger, and Mali. The import ban had a significant impact on value chain actors and households dependent on this vital income source.

### 3.1.3 Gender and Land Access

Burkinabé women cannot inherit land or bequeath it to their children. They generally have access to land through their husbands. Customary land rights vary within Burkina Faso and among sociocultural groups. From an early age, girls are involved in farming. When they marry—which occurs as early as 15—they farm on their husband’s family field. A woman’s field is called *koswalga* by the Gourma, *kourga* by the Fulani, and *beologo* or *puugo* among the Mossi peoples (Jones-Casey 2011). Women typically grow millet, sorghum, groundnuts, beans, and other legumes (ibid). The size and quality of the field vary among different groups and older women and women with children are more likely to have larger and better quality plots. In most cases, women lose the ability to farm on this land if they separate, divorce, or become widows (ibid). Although studies indicate that women are rarely landless and can access land through their husbands, their land tenure is more tenuous in the event of land conflict, separation, or widowhood; for migrant women farming with their families on borrowed land, tenure is even less secure. In addition, women have less ability to make planting decisions (ibid). For example, men usually determine where and what crops can be planted each year. This arrangement acts as a disincentive for women to adopt conservation agriculture practices on their fields, such as the Zaï or half-moon techniques, or agro-forestry. FFP project baseline studies show much lower adoption rates of improved agricultural practices among women.

Women face constraints against selling animals and crops and have little power to make decisions about buying inputs (CNFA 2016a). Primarily for cultural reasons, women do not interact with traders to sell crops or animals as it would be deemed disrespectful to their husbands (Jones-Casey 2011). They are also constrained by their own perception of being poor negotiators and the fear of being taken advantage of. In areas affected by banditry, such as Gayeri District in the Est region, it is not considered safe for women to travel alone or in groups to negotiate crop or animal sales; this situation may worsen with the increasing presence of jihadists, though this problem also affects men.

## 3.2 FOOD ACCESSIBILITY

### 3.2.1 Food Consumption and Poverty

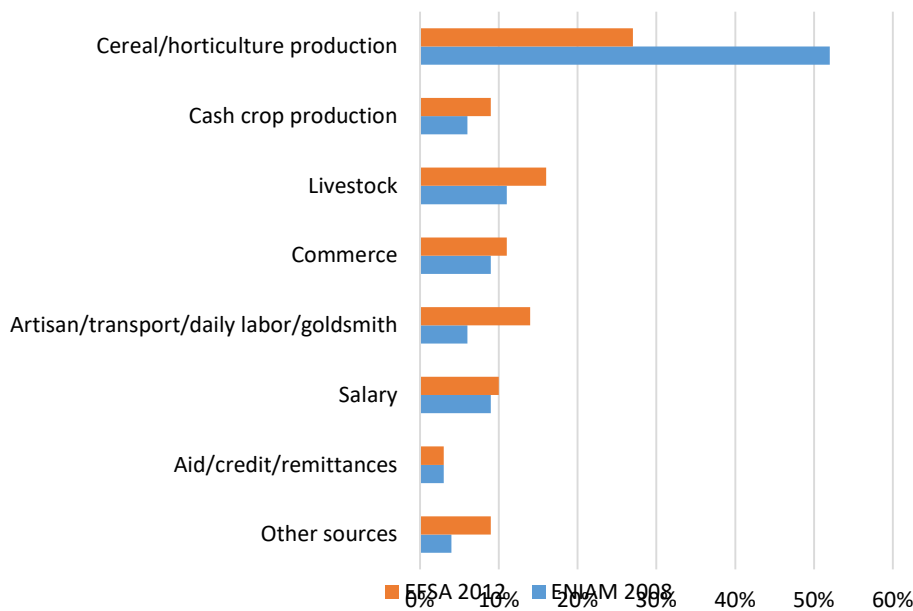
The last comprehensive national assessment of household food consumption trends occurred in 2012 at the tail end of the drought that affected much of Burkina Faso. That analysis indicated that the proportion of households with poor or limited food consumption worsened nationally from 26% in 2008 to 32% in 2012 (WFP 2014).<sup>13</sup> Food consumption quality dropped significantly among urban households, with 30% exhibiting poor or limited food consumption compared to only 12% in 2008 (ibid). It is unlikely that this situation persists at present based on the results of the *Cadre Harmonisé* in 2016 that analyzed newer data from HEA studies, SMART surveys, field missions, cereal production estimates, and other studies (CPSA 2016). Information from this analysis suggests a remarkably improved situation, with most households

<sup>13</sup> The *Food Consumption Score* measures the diversity and frequency of food consumed and its relative importance to other food groups.

nationally in Phase 1 (at minimal risk of food insecurity), only 21 provinces with 2.5 million people projected to be in Phase 2 (under pressure), and 212,930 people in Phase 3 (crisis) during the lean season (June–September 2017) (ibid). The heaviest concentration of food insecure households is in zones that historically face food deficit regions such as Nord, Sahel, Centre-Nord, Est, and Centre-Ouest. Food security experts note that livestock numbers continue to dwindle since the 2012 drought due to migration of pastoralists to other countries with their herds and vulnerable households who sold their livestock due to the drought and have been unable to replace their herds. Generally, poor Burkinabé households tend to have a diet high in starchy staples and rarely consume animal protein, fruits, or milk.

Divorce, separation, or widowhood have a severe impact on women’s ability to access land, earn a living, and access a sufficient quantity of food through their own production or purchase (Jones-Casey 2011). If a woman leaves a man for any reason, including domestic abuse, she must leave all her valuables, animals, and farmed land to her husband and children. Many women have mitigated this problem by leaving their possessions with their families in their native village, particularly if they are uncertain about the marriage or suffering from abuse. Migrant women are also extremely vulnerable and often impoverished because they must borrow land, and only their husbands can negotiate with landowners. A fundamental problem for women in Burkina Faso is that they lack control over their production, property, and decision to sell goods, making them extremely vulnerable in the case of separation or the untimely death of their spouse.

**Figure 6. Primary Livelihoods among Burkinabé Households**



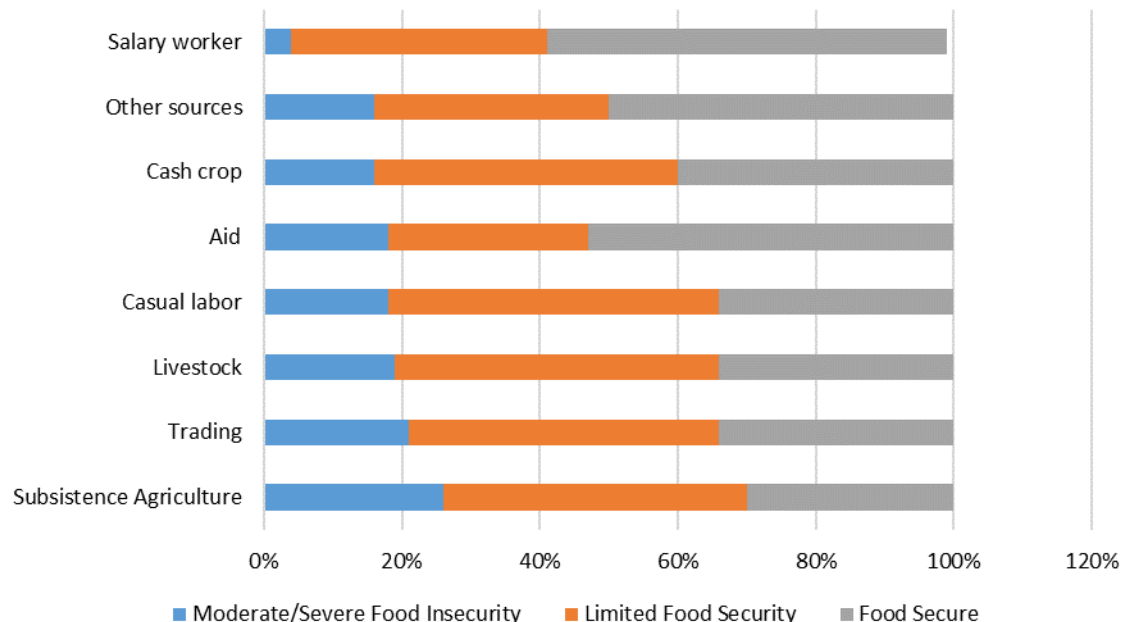
Source: WFP CFSVA 2014.

**3.2.2 Livelihoods and Food Purchase**

The last substantive, nationwide analysis of household food purchase and market dependency was undertaken by WFP in conjunction with the government in 2012. The study showed that agro-pastoralists who grow subsistence/cash crops or raise animals are less dependent on the market for food than those with other livelihoods, but a majority of their food (roughly 60%) is still purchased from markets (WFP

2014). Furthermore, households that cultivate less than 1 ha (41%) are moderately or severely food insecure (ibid). For the poorest households, goats and sheep are an important source of income and protein; households with smaller herds are more food insecure (ibid; CNFA 2016a). Those engaged in commerce, handicrafts, or skilled or unskilled labor, or are wage employed obtain 75% or more of their food from the market (WFP 2014). Market dependency varies dramatically among the regions and rural/urban areas. Households in the Centre-Nord, Sud-Ouest, Centre-Est, and Boucle de Mouhoun regions are the least dependent on the market for food—a situation that improved in all areas between 2008 and 2012 except Sud-Ouest. Crop production data for the 2016-2017 season collected by the Ministry of Agriculture suggests that farming households nationally may be less dependent on the market since 2012, when the data were collected, given favorable weather conditions and improved crop yields since this period (MAAH 2017). Nonetheless, cereal deficits were reported in most of the provinces of Centre Nord, Est, Sahel, and Plateau Central with some isolated problems in Cascades, Centre, Centre Ouest, and Centre Est (ibid). This suggests that market dependency and percentage of budget spent on food are higher for households in these regions, though precise figures are unknown without further study.

Households dependent on food crop production as their primary income source spend the highest portion of their budgets on food purchases compared to households whose main income source derives from other livelihood activities. The percentage of income spent on food varied for households: Centre-Sud (48%), Centre-Nord (44%), Sahel (42%), Centre Ouest (40%), and Centre (39%) (ibid). Livelihood type is a potential indicator of poverty, considering that those who depend on earnings from staple crop production spend the highest proportion of their monthly expenditures on food (75%) compared to those with other primary livelihoods (Figure 7). Households dependent primarily on cash crops such as cotton spend the least on food compared to others who rely on different sources of income (WFP 2014). This dynamic may have shifted in recent years due to the significant drop in global cotton prices. One notable change between 2008 and 2012 was a tendency to either diversify income source or switch to another primary livelihood. During this period, the number of households that depend primarily on staple crop production dropped from half of the population to a quarter, while there were subsequent increases in livestock, handicrafts, cash crops, and other income sources. Economic and climatic forces appear to be driving this fundamental shift in livelihoods.

**Figure 7: Food Security Status Based on Livelihood Type**

Source: WFP 2012.

The nascent gold mining sector provides mostly informal employment to individuals who lack official authority to mine for gold. The formal gold mining sector employs only 6,821 people, while about 600,000 people are involved in informal gold mining (Winkler and Straumann 2016). Only 3% of this larger group have permits from the state to mine (*ibid*). The government instituted a mining code in 2015, but due to the large number of illegal operators, many miners—including young children—are exposed to significant danger from the collapse of hand-dug underground caverns, exposure to toxic chemicals used in the mining process, and the detrimental impact to the environment and surrounding communities. UNICEF estimated in 2011 that 30–50% of miners were children (*ibid*). The percentage of those who identified informal employment as an artisan, gold miner, or daily laborer as a primary livelihood nearly doubled between 2008 and 2012, suggesting that livelihoods such as gold mining are increasing in importance in Burkina Faso (Figure 6). However, this is the second poorest group of earners: 31% of this group spends 65% or more of their expenditures on food, and the group relies heavily on the market to meet their food needs (WFP 2014).

### 3.2.3 Gender, Income, and Asset Ownership

Burkinabé women are among the most vulnerable groups due to their low social status and lack of access to and control over resources, thus food insecurity has a distinct gender dimension. As noted, cultural barriers exclude women from owning or inheriting land directly and participating in trade (apart from petty commerce), and they have limited decision making power in the household. The high prevalence of polygamy among Muslims in Burkina Faso, estimated at 58%, weakens women's position in the household (Doka 2014). Polygamous households are more vulnerable to food insecurity because these households tend to be larger than monogamous households and because having different sets of wives and children may discourage cooperation over food. Though polygamy was traditionally a vehicle to employ a large family workforce, farms have become much smaller due to competition for land and less adaptable

to climate change, environmental degradation, and low yields, making them less able to feed larger families.

Women have few assets, and those assets tend to be more “mobile” in nature (such as kitchen utensils and small ruminants) (Doka 2014). As shown in Table 4 below, relative to men, women are much less likely to have employment. Women also earn much less than men, but if they do earn any income they are able to decide how to use it. Women have far less access to cash through formal employment in both urban and rural areas or even through the sale of livestock or crops, which they ostensibly manage. Few women have bank accounts or access to formal credit. Though women harvest fruit, nuts, or shea nuts/butter from trees on community or family land, their inability to own land makes access to such natural resources tenuous and serves as a disincentive to plant trees or improve land. One study found that women prefer to keep their farms in a state of average productivity to ensure continued use of the borrowed lands and possibly transfer this mode of access to their children as a social inheritance (ibid). Though the 2009 Land Reform Law provides safeguards for women to secure and access land, it formalizes customary land rights, which do not allow women to own or inherit land for cultural reasons (Elbow 2013). In this regard, it is unclear how the new law will be interpreted and what its impact on separated, divorced, or widowed women will be. This is problematic given that the percentage of female-headed households is estimated to be 29% of the population (21% widows and 8% divorcées) (Doka 2014).

**Table 4. Dimensional Deprivation Rates**

<b>Dimension</b>	<b>Male</b>	<b>Female</b>
Access to credit	50.2%	54.6%
Employment	31.9%	64.2%
Education	63.4%	78.4%
Assets	68.5%	70.3%
Basic Utilities	52.5%	55.4%

Source: World Bank 2013.

**Table 5. Asset Ownership and Income in Burkina Faso, by Sex**

	National	Centre	Boucle du Mouhoun	Cascades	Centre-Est	Centre-Nord	Centre-Ouest	Centre-Sud	Est	Hauts-Bassins	Nord	Plateau Central	Sahel	Sud-Ouest
<b>Asset ownership</b>														
<i>Women 15–49 years</i>														
% who report they do not own a house	68.9	78.5	43.3	60.2	89.3	68.4	91.5	65.2	61.0	61.2	76.4	47.5	87.3	48.4
% who report they do not own land	68.4	88.6	44.4	65.6	85.8	69.7	88.5	78.0	27.1	66.4	73.0	53.4	80.7	55.5
<i>Men 15–49 years</i>														
% who report they do not own a house	34.7	61.1	33.4	16.1	33.1	23.6	37.2	46.8	19.1	21.7	31.0	34.3	25.2	39.1
% who report they do not own land	49.3	81.4	35.8	44.5	60.2	49.1	51.7	68.0	21.2	50.9	43.6	49.6	17.1	38.2
<b>Income</b>														
Who decides on the use of women's income, as reported by women 15–49 years														
Woman	87.6	84.2	89.9	91.2	72.6	88.5	91.1	82.6	92.0	95.9	76.7	80.8	88.6	89.3
Woman and spouse	5.1	12.2	3.9	5.0	4.2	0.5	5.1	3.8	2.2	2.0	5.6	2.0	4.6	5.0
Spouse	6.6	3.0	4.7	3.3	21.4	10.8	3.6	13.3	4.9	2.0	15.3	16.3	6.8	5.7
% of women 15–49 years who report their income is less than their spouse's	90.5	81.1	95.0	93.8	79.0	93.6	87.1	87.5	94.8	93.6	94.2	92.8	99.0	90.1

Source: INSD and ICF International 2012.

### 3.2.4 Shocks, Coping Capacity, and Resilience of Populations Vulnerable to Food Insecurity

Most Burkinabé households experience shocks from year to year. The most serious shocks reported in 2012 included illness, injury, or death of a family member (33%); late rains or drought (13%); and an increase in food prices (12%) (WFP 2012).

Roughly 21% of households coped with a crisis by reducing spending, while 8% used savings (WFP 2014). Households avoided purchasing on credit or borrowing from financial institutions, family, or friends to cope with such crises. A study conducted in the Nord region found that the preferred coping mechanisms during the 2011-2012 drought were different from those used in other crises: selling small livestock ranked as first, followed by borrowing from a savings group, reducing food consumption, using savings, borrowing from family and friends, and selling grain (Gash and Gray 2016). Households chose coping mechanisms based on their availability and how quickly they could be accessed. In response to the drought, 20% of households sold livestock, while 18% harvested earlier than usual (WFP 2014). The poorest households are forced to adopt more extreme measures to cope with such occurrences, which weakens their ability to respond to shocks over time and exposes them to food insecurity.

Households are also coping with climate change by migrating and shifting livelihoods. The central and northern regions are prone to drought and desertification—factors that have been worsening in recent years. This is compounded by limited adoption of climate smart agriculture techniques and generally low yields due to poor agricultural techniques. For the past 30 years Burkinabé have migrated to the southwestern regions where there are better opportunities for rain-fed agriculture, though land is becoming increasingly scarce (Etongo Bau 2016). Despite the global trend of increasing urbanization, a



rural-rural migration tendency prevails in Burkina Faso, given the reliance on farming and livestock as primary livelihoods, especially among the Fulani and Mossi ethnic groups from the north and central regions (Henry et al. 2004 and Sawadogo 2006). Notably, the northern zone is also the targeted areas of the RISE and FFP project activities. Small-scale gold mining is also becoming an increasingly important livelihood for many households in Burkina Faso’s “gold belt” that runs from the southwest to the northeast and concentrated in provinces such as Kalsaka, Bissa, and Essakane (Winkler and Straumann 2016). The government estimates that over half a million people are engaged in gold mining and this figure appears to be growing and contributing to internal migration to mining areas. Nonetheless, this sector has not proven to be profitable for those who work informally in the mines, and detrimental to the future of children who are working in this sector.

Despite an apparent reluctance to borrow, a national survey found that 22% of Burkinabé households are in debt (WFP 2012). Many borrowed to buy food, cover health expenses, feed livestock, and pay school fees (ibid). Sahel, Centre-Ouest, Nord, and Boucle de Mouhoun regions had the highest percentage of indebted households, and it took them 4–6 months to repay the debt (ibid). The prevalence of food insecurity was highest among households that borrowed to buy food (58%) or feed livestock (53%) (ibid). A survey conducted in Burkina Faso and Niger by the SAREL project on behalf of the RISE initiative found that 46.4% of households had not recovered from shocks they experienced between May 2014 and April 2015; 30.3% had recovered somewhat but were still worse off than before the shock (MSI 2015).

### **3.2.5 Key Policies, Strategies, and Programs Related to Food Availability and Access**

Events such as the 2011–2012 drought and likelihood of increasing erratic weather patterns have driven broad efforts by governments throughout the Sahel and donors to enhance household resilience to shocks. In late 2016, the new government released three major policies related to resilience, food security, and economic growth. The resilience policy (PRP-AGIR) originally arose from the former government’s involvement in a region-wide initiative to enhance resilience among populations affected by climate change and desertification. The new policy aims to reduce poverty and vulnerability of primary livelihoods, such as farming, by half and to enhance food security by 2035 through pro-resilience strategies (GOBFc 2016). The policy has four pillars: enhance livelihoods and social protection of the most vulnerable households, reinforce nutrition of most vulnerable households, increase food production and revenue for vulnerable households, and reinforce governance related to food security. The National Food Security Council (CNSA) will oversee this effort, and its US\$1 billion price tag will be financed by the state and donors. In late 2016, the government released its National Food and Nutrition Security Policy (PNSAN) that delineates a single framework for actions to promote food and nutrition security by using better food security analytical tools, assigning roles and responsibilities, and ensuring these issues receive the utmost attention from the government (GOBFb 2016). The government also prepared a three-year action plan (2017-2020) that delineates actions to carry out the objectives of the PNSAN. CNSA will direct this effort involving multiple ministries, the private sector, international partners, local civil society, and NGOs. The government also launched the National Plan for Economic and Social Development (PNDES), its economic framework to grow per capita income, reduce poverty, strengthen capacity, and provide basic needs for its citizens in a sustainable and equitable manner between 2016–2020 (GOBFa 2016).

Although USAID does not have a mission in Burkina Faso, the agency has been active in the country through its FFP project activities as well as a 5-year effort to build resilience to recurrent crisis in the region through its Resilience in the Sahel Enhanced (RISE) initiative. USAID also supports the *Observatoire National du Foncier* (ONF), a division under the Ministry of Agriculture founded in 2013 with the support of the Millennium Challenge Account, to operationalize the objectives of the 2009 land reform law. ONF collaborates with REGIS-ER to help farmers and pastoralists access land rights, train

village committees to understand their roles related to the new land tenure policy, and launch a pilot mobile tool called MAST (Mobile Application to Secure Land Tenure) that enables farmers to register land in the formal cadaster land registry managed by the government. RISE brings together humanitarian and development assistance to address the root causes of persistent vulnerability using joint analysis and planning. It includes three programs: SAREL, a Sahel learning agenda; REGIS-ER, a multi-sector resilience program managed by CLUSA-NCBA; and REGIS-AG, a focused value chain program managed by CNFA (Table 6). The REGIS activities aim to increase the resilience of vulnerable populations through upgrading the competitiveness and inclusiveness of value chains that mainly involve the poor (cowpeas, poultry, and small ruminants). As part of USAID's global efforts to encourage coordination across activities to identify opportunities for increased impact by layering, sequencing, and integrating efforts, the RISE-funded initiatives have worked closely with the FFP projects for synergies related to value chains and nutrition in the Nord and Est regions where all projects operate.

**Table 6. Summary of Key Policies, Strategies, and Programs Related to Food Availability**

<b>Government of Burkina Faso</b>	
Policies	<b>Resilience Policy (PRP-AGIR), 2016–2035:</b> Framework to enhance resilience via improved livelihoods and nutrition, increased food production and revenue for vulnerable households, and reinforced governance related to food security.
	<b>National Food and Nutrition Security Policy (PNSAN), 2016–2020:</b> Framework to guide actions that promote food and nutrition security through food security analytical tools, assigning roles and responsibilities.
	<b>National Plan for Economic and Social Development (PNDES), 2016–2020:</b> Broad roadmap for building the economy to reduce poverty.
Programs	<b>Programme régional de la résilience à l’insécurité alimentaire et nutritionnelle récurrente au Sahel (P2RS), 2015–2019 (Regional Program for Resilience to Recurring Food and Nutrition Security in the Sahel):</b> Food security project to be implemented by government in the Sahel, Plateau Central, Centre, Centre-Ouest, Centre-Sud, Boucle de Mouhoun; €177 million loan from African Development Bank.
	<b>PGFC/REDD+, 2014–2018:</b> Project to support government management and governance of protected forests in Centre-Ouest, Sud-Ouest, Est, and Boucle de Mouhoun; €8.4 million.
<b>U.S. Government</b>	
Strategy	<b>Food Security Country Framework, 2010–2014</b>
Food for Peace Projects	<b>Victory Against Malnutrition (ViM) (ACDI/VOCA), 2011–2017:</b> See Lessons Learned section.
	<b>Families Achieving Sustainable Outcomes (FASO) (CRS), 2011–2017:</b> See Lessons Learned section.
RISE Projects	<b>REGIS-AG, 2014–2018:</b> Increase the incomes of vulnerable households in Burkina Faso and Niger through the transformation of selected high-potential value chains (poultry, small ruminants, and cowpeas); US\$35 million.
	<b>REGIS-ER, 2014–2018:</b> Limit the need for repeated humanitarian assistance due to climate and other catastrophic events by building resilience and reducing vulnerability among vulnerable households in Burkina Faso and Niger.
	<b>SAREL, 2014–2018:</b> Provide M&E support to programming for the RISE Initiative to support resilience, especially REGIS-AG and REGIS-ER, and 30 partners—20 in Niger and 10 in Burkina Faso.
General	<b>FEWS NET, 2011–2017:</b> Prepares regular food security outlooks, tracks market prices, and conducts trader surveys and other research and has representation in Burkina Faso.
<b>Other</b>	
FAO	<b>Resilience against Climate Change, 2015–2019:</b> Integrating climate resilience into agricultural and pastoral production for food security in vulnerable rural areas through the Farmers Field School approach in Sahel, Est, Centre-Nord, and Centre-Ouest; US\$3.8 million.
	<b>Aquaculture Promotion, 2014–2017:</b> Promote income generating opportunities for young people in Boucle du Mouhoun, Centre, Centre Est, and Sahel in fish farming; US\$448,325.
	<b>Action against Desertification, 2014–2019:</b> Combat desertification through replanting of indigenous tree varieties in the Sahel region; US\$1 million.
	Several small grants (under US\$1 million) throughout Burkina Faso in the agriculture, environment, and livestock sectors.
WFP	<b>Extended Relief and Recovery Operation, July 2015–June 2017:</b> Works to reduce malnutrition and improve food security by strengthening resilience of households in the Centre-Est, Nord-Centre, Ouest-Central, Est, Nord, and Sahel regions. The project is aligned with the <i>Cadre Harmonisé</i> and annual support plan for vulnerable populations.
	<b>Primary School Feeding:</b> Provides daily school meals to children in primary schools in the Sahel region (Soum and Seno). A second initiative promotes homegrown school feeding for 5,000 schoolchildren, income generating activities for women, and development of local dairies. School feeding program’s scale was reduced drastically since 2016 due to funding and project evaluation by Ministry of Education.
	<b>Purchase for Progress (P4P):</b> Strengthens production capacity of 30,000 smallholder farmers and processors, reduces post-harvest losses, and improves quality of products sold to institutional stakeholders like WFP.
International	<b>Neer-Tamba, 2014–2022:</b> Training in soil and water conservation techniques, preparation of lowlands, and

Fund for Agricultural Development	agroforestry in Nord, Centre-Nord, and Est; €84 million.
World Bank	<b>Agricultural Diversification &amp; Market Development Project (PAFASP) 2006–2018:</b> Supports value chains and small-scale irrigation throughout country; US\$90 million.
	<b>Regional Pastoralism Livelihoods Resilience Project, 2015–2020:</b> Regional effort in Burkina Faso, Niger, Senegal, Chad, Mauritania, and Mali to support livestock, food security, and infrastructure; US\$180 million.
	<b>PNGT III, 2013–18:</b> Project supports decentralization, rural land tenure, natural resources, and infrastructure in 302 communes; US\$51 million.
European Union	<b>Programme d'appui à la sécurité alimentaire et nutritionnelle, à l'agriculture durable et à la résilience au Burkina Faso (PASANAD) (Program to Support Food Security, Nutrition, Sustainable Agriculture and Resilience in Burkina Faso), 2017–2021:</b> Program to advance the goals in the government's food security strategy (PNSAN); €118 million.
	<b>GO-IN, 2017–2021:</b> Support for local NGO Groupe de Recherche et d'Echange Technologiques to improve cowpea, milk, and forestry product value chains; €5.8 million.
	<b>LRRD, 2017–2019:</b> Program to improve resilience of communities in Est, Sahel, Nord, and Boucle du Mouhoun; €30 million.
Denmark	<b>Forest and Woodland Decentralized Management Trust Fund, 2014–2018:</b> Promote a sustainable local development path consisting of poverty alleviation, increased resilience to climate change, and lower greenhouse gas emissions from deforestation and woodland degradation in Centre Sud, Centre-Ouest, Sud, Est, Boucle du Mouhoun; €7.8 million.
	<b>Programme de croissance économique dans le secteur agricole (PCESA) (Agriculture Sector Economic Growth Program), 2013–2018:</b> Support to private sector value chain actors, focusing on the livestock, shea, cowpea, maize, and gum Arabic sectors in Nord, Sahel, Est, Centre-Est, Centre-Ouest; €51 million
France (AFD)	<b>PACOF-GRN, 2014–2018:</b> Support to government's new land tenure policy in 15 communes in Boucle du Mouhoun (Balé, Banwa, Mouhoun) and Hauts-Bassins (Houet, Tuy); €8 million.
	<b>PSAE, 2015–2019:</b> Food security program that also promotes improved land tenure in Est, Sahel, Centre-Nord, Centre-Est; €38 million.
Germany (GIZ)	<b>Programme Développement de l'Agriculture (PDA) (Agricultural Development Program), 2016–2019:</b> Promotes sesame, cassava, and rice value chains and actors within value chains in Sud-Ouest and Est; €7 million.
	<b>Projet Réhabilitation et protection de sols dégradés et renforcement des instances foncières locales dans les zones rurales du Burkina Faso (ProSol) (Rehabilitation and Protection of Degraded Soils and Support for Local Land Tenure in Rural Burkina Faso), 2015–2017:</b> Training in soil conservation methods in Tuy and Houet provinces; €5.8 million.
	<b>Petite irrigation/aménagements de bas-fonds dans le Grand Ouest (Small-Scale Irrigation and Rehabilitation of Lowlands in the Great West), 2015–2019:</b> Preparation of lowlands for rice production and small-scale irrigation for horticultural products in Sud-Ouest; €11 million.
	<b>Projet Lutte contre l'érosion, récupération et mise en valeur des terres dégradées; adaptation aux changements climatiques (EKF) (Project to Combat Erosion and Revitalize Degraded Land; Climate Adaptation), 2013–2019:</b> Support for climate change adaptation in the Sud-Ouest; €6 million
Japan	<b>Project to Promote Sesame, 2014–2019:</b> Supports production and value chain actors involved in sesame production and marketing in Boucle de Mouhoun, Hauts-Bassins, Centre, and terminal markets in Ouagadougou and Bobo-Dioulasso; €4.8 million.
Sweden	<b>Programme to Support the Forestry Sector (PASF), 2012–2017:</b> Supports the government in the management of national forests; €11 million.
Switzerland	<b>Programme de Valorisation du potentiel agropastoral de la région de l'Est (VALPAPE) (Program to Promote the Potential of Agro-Pastoralism in the East), 2015–2024:</b> Prepares lowlands for rice production and constructs livestock markets and processing centers in the Est region; CHF 6.5 million.
	<b>Programme d'appui à la modernisation des exploitations familiales (PAMEFA) (Program to Modernize Family Farms), 2015–2017:</b> Promotes drip irrigation, improved post-harvest, support to agro-dealers, and rehabilitation of lowland rice production sites in Sahel, Plateau Central, and Centre; CHF 10 million.

### 3.3 FOOD UTILIZATION AND HEALTH

#### 3.3.1 Child Health and Nutritional Status

**Trends in child health and nutritional status.** The National Nutrition Policy lists malaria, neonatal conditions, acute respiratory infections (ARIs), and diarrhea as major causes of infant and neonatal mortality (24%, 22%, 13%, and 12%, respectively) but also asserts that malnutrition is the underlying cause of 35% of infant and child deaths (Ministère de la Santé (MOH) 2016).

Under-5 (U5), infant, and neonatal mortality have seen large reductions between 2003 and 2010—from 184 deaths to 129, 81 deaths to 65, and 33 deaths to 28, respectively, per 1,000 live births (Institut National de la Statistique et de la Démographie [INSD] and ICF International 2012). The 2006 introduction of a subsidized obstetric care policy, followed by a free health care initiative (health care for children under 5 and pregnant women, normal deliveries and caesareans, and breast and uterine cancer screening will be free) that began in April 2016, may continue to help reduce mortality across the country. As a recent evaluation of Burkina Faso’s 2006 subsidized obstetric care initiative found, while the initiative is increasing facility-based deliveries (rising 4% annually since 2007) and should continue, additional efforts to reduce costs for the poorest women, who still often cannot afford the services, are necessary (Ganaba 2016).

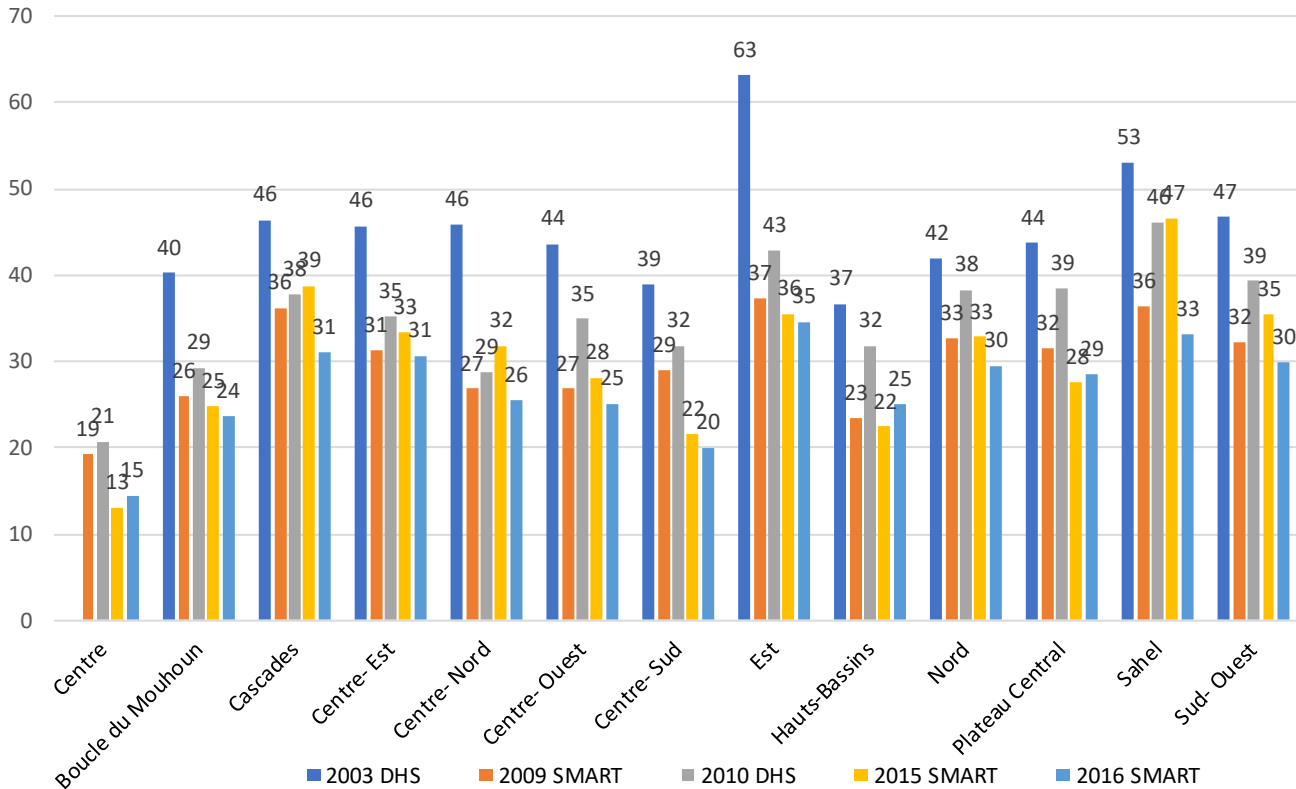
Malnutrition has significant negative consequences for Burkina Faso, particularly in terms of poor human health, lost human capital, and decreased economic productivity. Not only are children more likely to die from common childhood illnesses (e.g., diarrhea, pneumonia, and measles) if they are malnourished (Black et al. 2013), but malnutrition also has a negative impact on their ability to develop to their fullest potential. Malnourished children are at risk of poorer cognitive and motor development and lower school achievement than their well-nourished peers (Grantham-McGregor et al. 2007; Hoddinott et al. 2008), which taken together can, in the long term, significantly impede national development and erode national goals to have a highly skilled workforce. Given the low levels of education and literacy in the country, programming during the first 1,000 days (pregnancy through a child’s second birthday) that reduces malnutrition and integrates aspects of early childhood development could improve not only nutritional status but developmental outcomes as well. Recent evidence suggests that integrated nutrition and early childhood development programming is synergistic, improving both child development and nutrition outcomes and helping to lay the best foundation for children to excel in school and achieve their full potential (Maalouf-Manasseh, Z; Oot, L; Sethuraman, K. 2015).

Stunting is a manifestation of chronic malnutrition that often begins in utero due to poor maternal nutrition and continues during the first 2 years of life due, in part, to inadequate water, sanitation, and hygiene (WASH) and IYCF practices. According to the 2016 National Nutrition Survey, 27% of children under 5 are stunted, indicating stunting is at a medium concern level according to WHO classifications<sup>14</sup> (MOH et al. 2016; WHO 2010). Stunting prevalence has dramatically lowered since 2003 when the prevalence nationwide was 43% (INSD and ORC Macro 2004) (see Figure 8). Stunting prevalence differs dramatically among regions, with the highest prevalence (35%) in the Est and the lowest (15%) in Centre. While many regions in Burkina Faso have reduced their stunting prevalence in the past seven years, the dramatic reductions seen in previous years have slowed; however, most regions still displayed at least a 2 percent decrease in the past seven years. Based on SMART survey data, stunting prevalence in the current FFP project regions (Centre Nord and Est) has mostly remained stagnant with a 1% and 2% reduction, respectively, since 2009 (see Figure 8) (MOH et al. 2009). Note that the Demographic and Health Survey

<sup>14</sup> WHO classifications for population prevalence of stunting:  $\geq 40\%$  is “very high;” 30–39% is “high;” 20–29% is “medium;” and  $< 20\%$  is “low” (WHO 2010).

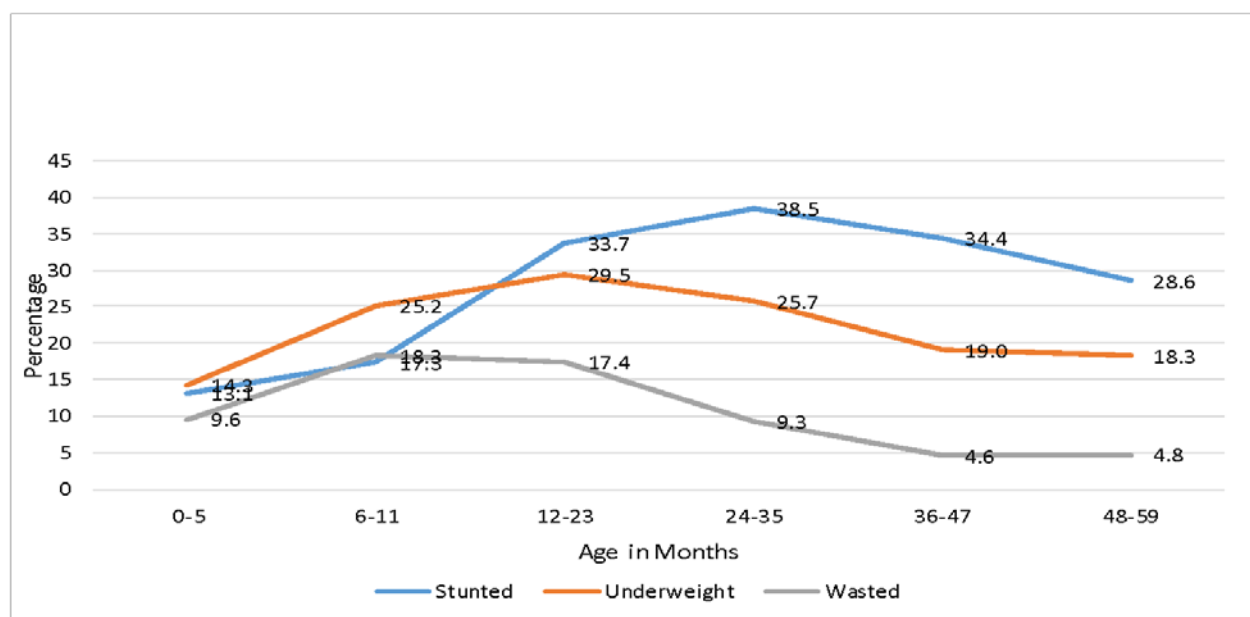
(DHS) and SMART surveys have some differences in survey design, data analysis, and interpretation approaches (e.g., data inclusion cut-offs differ as the SMART survey uses narrower standard deviation (SD) cut-off criteria) and therefore comparison of these data may be influenced by such differences. As shown in Figure 8, there are significant differences in stunting prevalence between the 2009 SMART and 2010 DHS, which may in part be due to these differing methodologies.

**Figure 8: Stunting Prevalence by Region, 2003–2016**



Source: MOH et al. 2016; MOH et al. 2015; INSD and ICF International 2012; MOH et al. 2009; INSD and ORC Macro 2004.

As shown in Figure 9, stunting begins early in life, with 34% of infants stunted before they reach 2 years (MOH et al. 2015). Therefore, significant efforts to prevent and reduce chronic malnutrition is best focused during the first 1,000 days. This should include a focus on improving maternal nutrition and IYCF practices, with a specific focus on increasing exclusive breastfeeding and improving complementary feeding practices. A likely underlying driver of stunting in Burkina Faso is the high prevalence of adolescent pregnancy. This not only impairs the nutritional status of the young mother and child, but adolescent mothers are less able to provide optimum care and nutrition to their children because of their age and limited ability to access and control resources.

**Figure 9. Nutritional Status by Age in Burkina Faso (2015)**

Source: MOH et al. 2015.

Wasting refers to acute malnutrition, which is usually a result of recent acute infection and/or inadequate diet. Despite a significant reduction from 2010 (DHS data), when wasting levels were 16% in children under 5 (2009 SMART data indicate wasting prevalence was 10.7%), the current prevalence (2016) of 7.6% is still high. However, the wasting prevalence has been reduced by around 3% since the 2015 SMART survey where it was 10.4% (MOH et al. 2015). Wasting is slightly higher in the Centre (9%) and Sud-Ouest (10%) than the national average (INSD and ICF International 2012; MOH et al. 2016). Based on SMART survey data, wasting prevalence in the current FFP project regions (Centre Nord and Est) has decreased between 2016 and 2009, from 10.5% to 6.3% in the Centre Nord and 10.7% to 8.6% in the Est.

Children 6–23 months are at greatest risk of wasting. According to the 2015 SMART survey<sup>15</sup>, the prevalence among this group is about 18%, a level that is considered critically high (MOH et al. 2015).<sup>16</sup> Poor practices related to complementary feeding (inadequate frequency, quantity, and quality of feeding/food); care (e.g., disease treatment); and WASH most likely play a significant role in the high prevalence of wasting among children under 2.

Nationally, 1.4% of children had severe wasting (severe acute malnutrition, or SAM), a dangerous condition with high risk of death that requires urgent treatment with medical care and specialized nutritional products (MOH et al. 2016). Currently, UNICEF and WFP are working with the government to address SAM and moderate acute malnutrition (MAM). In 2013 the national coverage for SAM cases went from 48% in 2013 to 60% in 2014 (UNICEF 2014). Poor IYCF practices contributed significantly to SAM and MAM in Burkina Faso and prompted UNICEF to work with health service providers, community health workers (CHWs), community-based organizations (CBOs), and NGOs on an integrated IYCF package to address malnutrition. Although the 2015 National Nutrition Survey did not have information on MAM prevalence, in 2013 the prevalence was 3.7% nationally (MOH 2013). Because the

<sup>15</sup> Note 2016 data were not disaggregated by age group.

<sup>16</sup> WHO classifications for population prevalence of wasting:  $\geq 15\%$  is “critical;” 10-14% is “serious;” 5-9% is poor;” and  $< 5\%$  is “acceptable” (WHO 2010).

prevalence of MAM and SAM is sensitive to acute local food shortages and infections, continued efforts by USAID/FFP projects are needed to identify and refer children early to reduce the risk of mortality and long-term consequences, including stunting.

### 3.3.2 Factors that Influence Child Health and Nutritional Status

**Low birth weight and mother’s nutritional status.** The high level of stunting in children under 5 is partly a result of low birth weight, which affects 14% of all births and 18% of births among mothers under 20. Low birth weight is a consequence of poor maternal nutrition status during pregnancy, especially during adolescence when girls are malnourished—often even more so than their older peers. Pregnancy during adolescence prevents further height gain, leading to shorter mothers—which increases the risk of pregnancy complications related to short stature and an intergenerational cycle of malnutrition (Rah et al. 2008).

**Fertility and birth spacing.** Frequent and closely spaced births, as well as early childbearing, are important contributors to poor child health and nutrition in the country. Inadequate birth spacing and frequent births are clear risk factors for chronic malnutrition in Burkina Faso. The high total fertility rate of 6 births per woman of childbearing age and closely spaced births likely reduce the time mothers have to provide optimum care to each young child and for them to recuperate from the previous birth. Given that rural women have an even higher total fertility rate of 6.7, their children are at greater risk of poor nutritional status. In addition, early childbearing results in women having higher lifetime fertility; both early childbearing and high parity compound the risk of stunting in their children and increase the chances of maternal complications and mortality (INSD and ICF International 2012).

**Breastfeeding.** Age appropriate and adequate feeding practices during infancy are critical to ensure optimal nutritional status during the first 2 years of life and are essential to prevent stunting and its long-term impacts. Breastfeeding in particular provides nutritional, immunological, and cognitive benefits. Globally, there is consistent and substantial evidence that early, exclusive, and continued breastfeeding through 23 months significantly reduces neonatal and child mortality, as it protects against illness (due to reduced risk of infection) and supports the recovery of a sick child (Black et al. 2008; Lamberti et al. 2011; and Debes et al. 2013). Exclusively breastfed infants are 11 times less likely to die from diarrhea and 15 times less likely to die from pneumonia, two of the major contributors to infant and child mortality in Burkina Faso (Begum et al. 2010; Barros et al. 2012). Promotion of optimal breastfeeding practices is one of the most effective interventions to prevent under 5 child deaths worldwide (Bhutta et al. 2013). Breastfeeding is also associated with human capital benefits, as it is associated with improved cognition (Anderson et al. 1999), increased years of schooling (Victora et al. 2005), and higher performance on intelligence tests (Horta and Victora 2013). Optimal practices include early initiation of breastfeeding within one hour of birth, exclusive breastfeeding throughout the child’s first 6 months of life, and continued breastfeeding through 23 months, along with nutritious complementary feeding beginning at 6 months. The steady increase until age 4, in the percentage of children who are stunted, suggests that poor IYCF practices, as well as repeated infections and illness, are most likely significant drivers of the high prevalence of stunting in the country as well as the high neonatal, child, and under 5 mortality rates (CRS 2010).

Although breastfeeding is nearly universal in Burkina Faso, support is needed to achieve adoption of a range of optimal breastfeeding practices (e.g., early and exclusive breastfeeding). According to the 2015 SMART Survey, 47% of infants are put to the breast within the first hour of life, and 47% of children are exclusively breastfed for six months (as reflected in Table 7). While the prevalence of exclusive breastfeeding has improved substantially from 25% in the 2010 DHS, continued support and action to improve breastfeeding practices in Burkina Faso is critical to reduce both chronic and acute malnutrition.



The 2015 SMART Survey did not provide information on exclusive breastfeeding practice by age of the child. However, the 2010 DHS does provide that information, which showed a sharp decline in exclusive breastfeeding between 0–1 months (41%) versus 4–5 months (13%) of life (INSD and ICF International 2012). This trend most likely persists in 2015, and therefore exclusive breastfeeding is most likely much lower at 4-5 months of age. In addition, exclusive breastfeeding prevalence greatly varies by region with 75% of women reportedly exclusively breastfeeding for 6 months in the Centre Est region versus 23% in the Centre region. In the current FFP project regions (Centre Nord and Est) exclusive breastfeeding for the first six months of life is 66.3% and 37.2% respectively, with the Centre Nord having the second highest prevalence of exclusive breastfeeding in the country (MOH et al. 2015).

A formative research study on IYCF practices in 2014–2015 in four regions (Boucle du Mouhoun, Centre-Ouest, Est, and Sahel) found that overall, mothers reported knowing that breastfeeding is important for the health of their baby and that colostrum protects the baby in the initial days after birth. However, the practice of giving water is widespread and is supported by mothers, their immediate family, and the community (Alive & Thrive 2015). This research also highlights that barriers to optimal breastfeeding practices include mother’s perception that they do not make enough milk to feed their baby, limited time to breastfeed, maternal illness, difficulty breaking away from community norms (e.g., provision of water or tea to newborns) due to family/societal pressure (especially from mothers-in-laws), trouble finding recommended complementary foods, and financial barriers that limit the ability to buy nutritious foods for lactating mothers (ibid). Previous formative research in Burkina Faso has also found that barriers to exclusive breastfeeding include the belief that colostrum is dirty, babies need water or tea (tisanes) in addition to breastmilk due to the hot climate, and that consumption of tisanes and water mixtures (with ash, sugar, or plants) are necessary to cleanse newborns from spirits or impurities and protect against diseases (CRS 2010). However, barriers to optimal breastfeeding practices do differ according to region and formative research to identify the specific barriers by region is likely necessary (Alive & Thrive 2015).

The decision to exclusively breastfeed and to continue breastfeeding in Burkina Faso is often not up to the mother (Alive & Thrive 2015). Although women may know the benefits of exclusive and continued breastfeeding, their lack of decision-making abilities within their household severely limits their ability to act on that knowledge. Women’s lack of control over their time is another barrier to optimal breastfeeding practices, as women have numerous chores and responsibilities that often take precedent over the care of an infant. This is particularly true for younger mothers, who often have less autonomy (CRS 2010). Formative research conducted in four regions (Boucle du Mouhoun, Central-Ouest, Est, and Sahel) found that elderly women/mothers-in-law are the first source of advice on feeding for babies, and since fathers are key decision makers in the household, involving both groups is critical to addressing these barriers. The study also found that health workers (including midwives) were trusted resources and could provide support to promote optimal practices (Alive & Thrive 2015) (see Box 2).

### **Box 2. Male Involvement in Maternal and Child Nutrition**

Research from Bangladesh, Vietnam, and Ethiopia suggests that male involvement in maternal and child nutrition should:

- be mainstreamed through training and relevant materials,
- grab men’s attention with emotional concepts,
- explain why men should care about their wife and child’s nutrition, work to modify stereotypes,
- find males where they are (bring the messages to them),
- provide explicit actions for fathers, and allow fathers to practice what they have learned.

Source: Alive & Thrive 2014.

In addition, 58% of married women in Burkina Faso are in polygamous unions (Doka 2014). A 2014 report on gender and food security in four African nations (including Burkina Faso), indicates that in polygamous households, the burden of providing for the family is increasingly shared with the wives as the head of the household alone can no longer support all the members of the household (Doka 2014). Therefore, more information on how that dynamic has an impact on maternal and IYCF practices is warranted, as additional wives within a household can influence feeding practices.

In Burkina Faso, poor IYCF practices are likely in part a result of women's lack of time (with poor access to water being a specific barrier), competing priorities in terms of household chores, low social status and decision-making ability, especially among younger mothers. The 2016 *Lancet* Breastfeeding Series highlights how involving husbands, mothers-in-law, fathers-in-law, and other influencers in the community is critical to provide women with the support they need to improve the quality and duration of breastfeeding (Rollins et al. 2016). The *Lancet* series also asserts that to effectively improve breastfeeding practices, mothers need support during pregnancy and beyond at multiple levels (family, community, and societal). This means the promotion of optimal breastfeeding practices is a community-wide issue, improving both facility and community-based strategies to support exclusive breastfeeding, and promoting an enabling policy environment (ibid). In addition, supporting communities during the lean seasons in particular and involving mothers in livelihood activities within or around their homes may also help to alleviate some of the need for mothers to quickly return to work outside the home and therefore stop exclusively breastfeeding. These are factors to consider when designing off-farm activities for women.

Recent evidence from Burkina Faso, has shown that improving maternal knowledge and IYCF practices can have significant benefits on multiple aspects of child health and nutrition. A two-year, integrated agriculture (homestead food production) and nutrition behavior change communication project in Burkina Faso effectively reduced anemia, wasting, diarrhea, and improved hemoglobin, which they attributed to women's improved IYCF knowledge practices<sup>17</sup>, and increased agricultural production<sup>18</sup> (Olney et al. 2015).

**Complementary Feeding.** Appropriate feeding of infants continues with the introduction of solid and semi-solid foods at 6 months, along with continued breastfeeding and sound complementary feeding practices thereafter. There are extreme difficulties with complementary feeding in Burkina Faso, including both early and late introduction of complementary food, poor dietary diversity, and poor feeding frequency. Only 65% of children 6–8 months are breastfed and consume solid or semi-solid food, as recommended, with only 25% of children in the Cascades region fed age-appropriately (MOH et al. 2015). As shown in Table 7 below, detailed data on complementary feeding practices from the 2015 SMART Survey create an alarming picture of low dietary diversity, meal frequency, and minimum acceptable diet, which was the case across all regions. In the current FFP project regions (Centre Nord and Est) only 9% and 19% respectively were fed adequately diverse diets and around 6% and 20% respectively consumed a minimally acceptable diet (ibid). Therefore, it appears that in the FFP project regions, while babies in the Centre Nord are more likely to be exclusively breastfed, they are less likely to receive appropriate and adequate complementary feeding.

In Burkina Faso, several locally made complementary feeding products (fortified flours) are available. GRET, a local NGO, produces the complementary food *Yonhama*, a fortified flour designed to prevent

<sup>17</sup> Women received home visits twice a month from either an older woman leader (OWL) or a health committee (HC) member during which they learned about the optimal health and nutrition practices (essential nutrition actions) and discussed successes and challenges related to adoption of these practices.

<sup>18</sup> The agriculture production activities included input distribution (e.g., seeds, saplings, chicks, and small gardening tools) and agriculture training provided by 4 female village farm leaders at demonstration farms.

malnutrition in children 6–24 months and pregnant and lactating women, while *Misola* (a type of complementary flour designed to both prevent and treat malnutrition in infant and young children) is also available for purchase in local markets. *Yonhama* is 369 kcal per serving, containing 25 different micronutrients (see Appendix 2 for complete nutrition content). Innofaso, another local NGO, developed *Plumpy'Doz* to prevent malnutrition in children 6–36 months. In 2013, GRET conducted an acceptability study on production of fortified flour for complementary foods, which found that the product had high acceptability and that families were willing to pay for it.<sup>19</sup> Fathers also reported recognizing that using *Misola* would save their wives time when preparing food for their children. However, a report by one of the current FFP implementers indicated that demand for *Yonhama* was low and required subsidies from the implementing partner to continue the activity. Therefore, the FFP implementer opted to prioritize the production of enriched home-made supplemental foods instead as they transitioned away from the provision of food aid<sup>20</sup>.

**Childhood illnesses.** Infectious disease is common in Burkina Faso, as the country lies in the meningitis belt of the sub-Saharan strip, and experiences measles epidemics and cholera outbreaks (MOH 2016; UNICEF 2017). The high prevalence in infectious disease and childhood illness is a significant contributor to mortality and malnutrition in Burkina Faso because malnourished children are more likely to die of infectious diseases such as diarrhea, pneumonia, and measles (Black et al. 2013).

Malnutrition in Burkina Faso is not only a result of poor IYCF practices but is a consequence of repeated illnesses such as diarrhea, malaria, and ARIs that particularly affect the youngest children. Among children under 5, 15% experienced diarrhea in the two weeks before the 2010 DHS survey. Diarrhea significantly increases to 25% among children 12–23 months, suggesting that lack of hygiene practices, particularly around food preparation for infants and young children and children's exposure to feces through exploration of their environment (e.g., playing/crawling in areas with feces on the ground), may contribute to its high prevalence. When children under 5 have diarrhea, less than half (48%) of caretakers reported seeking advice or treatment from a health facility or provider, and only 42% reported giving the children the recommended rehydration fluid, such as an oral rehydration solution (ORS) or a similar pre-packaged liquid (ibid). A 2012 study found that children were twice as likely to receive care for diarrhea if they lived in the same village as the health center than those living more than 10 km from the health center (Wilson et al. 2012).

Despite Burkina Faso's adoption of WHO/UNICEF's recommendation to include zinc supplements in the treatment of diarrhea, provision of zinc for diarrhea was extremely low at less than 1% (INSD and ICF International 2012). However, UNICEF's 2014 annual report mentions that over 670,000 ORS and zinc kits to treat diarrhea were distributed nationwide to health facilities and therefore now may be more available throughout the country (UNICEF 2014). A 2012 study found that caregivers frequently fail to recognize when their child has diarrhea, particularly when it is not severe, indicating that caregivers need additional support in recognizing when their child is ill and how to adequately care for them (Wilson et al. 2012). In addition, younger mothers, with less autonomy in the household than older and more experienced mothers, may be less able and likely to provide adequate care for their babies.

Around 40% of children under 5 had a fever in the two weeks before preceding the 2014 Malaria Indicator Survey (EIPBF (INSD et al. 2015). Among those children, 61% of their caretakers sought advice or treatment from a health facility or provider (INSD and ICF International 2012). Around 2% of

<sup>19</sup> GRET estimates that 30% of mothers of children 6–24 months buy the *Yonhama* at least once a month, indicating the willingness to buy the product. If purchased once every week as recommended, the flour costs 1,000 CFA francs, or US\$2.50, a month (CRS 2010).

<sup>20</sup> Information gleaned from an internal FASO project document.

children had symptoms of acute respiratory infection in the two weeks before the 2010 DHS, and around 56% of caretakers sought advice or treatment from a health facility or provider (ibid).

Malaria is highly prevalent in Burkina Faso. According to the 2014 EIPBF, 46% of children under 5 had malaria. Malaria contributes significantly to morbidity and mortality in the country; according to the Ministry of Health scorecard, malaria was the main reason for consultations (54%) and hospitalizations (63%), and caused 50% of deaths in health facilities (INSD et al. 2015). Almost 90% of Burkinabé households own at least one insecticide-treated mosquito net (ITN), and 75% of children under 5 and 77% of pregnant women (age 15–49) reportedly slept under an ITN the night before the interview (ibid). However, despite high access to ITNs, the continuing high prevalence of malaria may be due in part to a lack of understanding of how malaria is spread and the importance of continuously using the ITN. A 2012 study found that mosquitos were considered only one of several causes of malaria, which translates to inconsistent use of ITNs to keep mosquitos away. The study also found that the inconvenience of using ITNs was a major reason for their inconsistent use (Toe et al. 2009).

**Micronutrient status.** Iron deficiency anemia, which influences a child’s brain development and school performance, is almost universal in Burkina Faso, affecting 83% of children 6–59 months and 68% of school-age children (MOH 2016). While the 2014 National Iodine Status and Anemia Survey did not assess the causes of anemia in Burkina Faso, given recent research indicating that iron deficiency may contribute less to anemia prevalence than previously thought, iron deficiency is likely only one of the factors contributing to the high levels of anemia in Burkina Faso (Petry et al. 2016). Anemia among children under 5 is most likely due to low consumption of iron-rich foods; deficiencies in other key micronutrients (vitamin A, B12, folate, etc.); chronic infections and inflammation from environmental enteric dysfunction, malaria, and helminths; suboptimal breastfeeding practices; poor maternal nutrition; and low consumption of iron and folic acid tablets during pregnancy (INSD and ICF International 2012; Olney et al. 2015; Karakochuk 2016). Periodic deworming can lead to better nutritional status, including lower prevalence of anemia, by reducing the number of helminths, which cause blood loss and poor absorption of nutrients. Provision of deworming medication to children 6–59 months has dramatically increased from 13% in 2010 to 73% in 2013 (INSD and ICF International 2012; MOH 2013). In the current FFP project regions (Centre Nord and Est), anemia in children under 5 is similar to the national average, at 85% and 84% respectively (MOH 2014).

Consumption of iron-rich and vitamin A-rich foods among children 6–23 months in the past 24 hours is low at 23% and 35%, respectively. Consumption of both iron- and vitamin A-rich foods varies by region but is particularly low in the Sahel region, with only 4% of children 6–23 months consuming iron-rich foods and only 9% consuming vitamin A-rich foods (INSD and ICF International 2012). Formative research in the Sanmatenga province confirmed DHS findings, as very few children 6–23 months consumed vitamin A-rich foods (Save the Children 2012).

An adequate level of vitamin A is required for proper functioning of the immune system and the body’s epithelial tissue. While the current prevalence of vitamin A deficiency is unknown, the WHO’s Global Database on Vitamin A Deficiency for 1995–2005 estimates that over half of preschool-age children and 17% of pregnant women were deficient (WHO 2009). More recently, vitamin A deficiency has most likely decreased among children under 5 due to an improvement in the biannual vitamin A supplementation. The 2013 National Nutrition Survey indicates that vitamin A supplementation for children under 5 is high at 87%, up from 63% in 2010 (MOH 2013; INSD and ICF International 2012). However, vitamin A deficiency may still be an issue among young children in Burkina Faso, particularly among children 6–23 months, whose consumption of vitamin A-rich foods is only 35%. Lastly, although cooking oil is fortified with vitamin A in Burkina Faso, household consumption is quite variable and the oil is most likely consumed by women and not young children (Wuehler and Ouedraogo 2011).

Iodine deficiency during pregnancy is the main cause of preventable brain damage worldwide. It can lead to irreversible brain damage of various degrees in the infant, with intelligence quotient (IQ) losses averaging up to 13.5 points (WHO, UNICEF, and International Council for the Control of Iodine Deficiency Disorders 2007; Bleichrodt and Born 1994). Therefore, the continued existence of iodine deficiency in Burkina Faso is of great concern. While the 2010 DHS found that around 96% of households in Burkina Faso had iodized salt, they did not measure whether the amount of iodine in the salt was adequate (INSD and ICF International 2012). The 2014 National Iodine Status and Anemia Survey found that both pregnant women and school-age children were deficient, and only 23% of households in Burkina Faso had adequately iodized salt<sup>21</sup> (MOH 2014). That same survey found that the adequacy of salt iodization varied widely across the country, with a high of 57% in the Cascade region, and a low of 4% in the Plateau Central and Sahel regions. Salt iodization in the current FFP development project areas (Centre Nord and Est) is very low at 13% and 11% respectively (ibid). Despite having a policy for the past 15 years requiring the iodization of salt, a proven intervention to reduce iodine deficiency, progress on adequate salt iodization country-wide has been elusive. In 2013, the government, with support from UNICEF and the Micronutrient Initiative, launched a program to expand salt iodization. It is hoped that through stronger coordination and control of markets, improvements will be seen. One issue with salt iodization is that salt is imported from Ghana and Senegal and is difficult to monitor as it enters the country in multiple locations, leading to variations in iodized salt coverage across the country (MOH 2014).

**Water, Sanitation, and Hygiene (WASH).** Addressing the high levels of stunting in Burkina Faso, may require more than nutrition-specific interventions. As recent evidence has suggested, improving the diet of children can only reduce stunting by one-third; other interventions that address water and sanitation issues—including providing children with a hygienic environment to live and play in—may be critical to reduce stunting further (Dewey and Adu-Afarwuah 2008). An article that provides a strong linkage between poor sanitation and stunting examined open defecation and stunting in India and found that open defecation, especially in densely populated areas, is a significant contributor to the high levels of stunting (Spears et al. 2013). Unhygienic conditions in which children live, open defecation (which is particularly harmful in densely populated areas), and living in close proximity to animals, can lead to environmental enteropathy (a subclinical disorder of the small intestine that creates inflammation in the gut and reduces absorption of nutrients), which is caused by the ingestion of large quantities of fecal bacteria (Humphrey 2009; Spears et al. 2013). An evaluation of a sanitation, hygiene education, and water supply program (Sanitation Hygiene Education & Water Supply Program) in Bangladesh found that rural Bangladeshi children who had cleaner water, better toilets, and better equipped handwashing stations had less environmental enteropathy and better growth (height-for-age) (Lin et al. 2013). Given the very high levels of open defecation and low access to improved sanitation in Burkina Faso (see section 3.3.5 for more information on the WASH situation in the country), as well as the common exposure to animal feces from animals living around households, continued efforts to address the poor WASH situation in the country are warranted.

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<sup>21</sup> Median urinary iodine concentration was 99.1 (µg/L) for pregnant women (adequate levels are 150–249 (µg/L)) and 73.8 (µg/L) for school-age children (adequate levels are 100–199 (µg/L)) (MOH 2014; WHO 2013)

Table 7. Key Child Health and Nutrition Indicators

	Nat'l	Centre	Boucle du Mouhoun	Cascades	Centre-Est	Centre-Nord	Centre-Ouest	Centre-Sud	Est	Hauts-Bassins	Nord	Plateau Central	Sahel	Sud-Ouest
<b>Prevalence of Malnutrition</b>														
% of children under 5 stunted (< -2 standard deviations [SD])	27.3	14.5	23.6	31.1	30.7	25.5	25.1	20.0	34.6	25.0	29.5	28.5	33.1	29.9
% of children under 5 underweight (< -2 SD)	19.2	14.1	17.3	17.8	19.8	17.9	19.0	14.2	25.7	15.3	20.8	17.3	22.3	23.1
% of children under 5 wasted (< -2 SD)	7.6	9.0	8.8	6.3	5.9	6.3	8.8	4.6	8.6	6.0	8.2	6.4	7.9	10.2
<b>Anemia and Micronutrient Nutrition</b>														
Anemia (Hb < 11 g/dL) (6–59 months)	83.4	70.6	89.3	94.6	85.5	84.7	81.7	86.2	83.8	81.9	80.4	74.8	90.6	89.6
Received deworming treatment in the past 6 months (6–59 months)	73.4	77.8	86.7	25.8	75.4	74.3	79.1	78.4	75.0	80.5	79.6	87.2	67.3	73.9
Received vitamin A supplement in the past 6 months (6–59 months)	87.0	83.1	93.8	76.9	89.9	85.4	91.7	85.1	83.1	92.6	87.1	91.8	79.1	87.2
Households with adequately iodized salt (≥ 15-59.9 ppm)	23.0	18.8	39.2	56.5	14.4	12.6	17.5	5.8	10.6	45.7	27.4	3.8	4.0	37.0
<b>Nutrient-Rich Food Consumption (6–23 months)</b>														
% of children consuming iron-rich foods (6–23 months) in the past 24 hours	22.6	43.1	28.1	23.3	11.5	11.8	20.2	34.7	19.3	35.5	16.6	15.9	4.3	23.4
% of children consuming vitamin A-rich foods in the past 24 hours (6–23 months)	34.6	55.2	40.8	34.5	20.0	22.0	26.5	45.6	34.8	51.3	27.3	35.4	8.6	47.0
<b>Breastfeeding Practices</b>														
“% of children < 6 months of age exclusively breastfed	46.7	22.5	47.2	61.2	74.5	66.3	42.1	44.6	37.2	36.5	41.5	34.2	44.1	54.3
% who were put to the breast within 1 hour of birth	47.1	58.9	36.8	47.2	39.2	40.8	36.8	44.6	61.4	48.5	50.6	62.8	53.6	33.9
Among children born in the 2 years preceding the survey who were breastfed, % who received prelacteal feeds	35.9	37.8	35.6	24.4	14.3	16.8	64.1	31.1	25.8	24.8	32.9	24.1	72.4	64.3
<b>Complementary Feeding Practices among Breastfed Children 6–23 Months</b>														
% with minimum diet diversity	17.4	50.4	9.5	22.7	18.5	9.2	21.3	20.4	19.0	14.8	13.5	8.5	13.8	32.4
% with minimum feeding frequency	60.7	63.2	53.1	63.6	64.1	47.4	60.2	67.0	78.1	52.6	61.1	66.5	60.2	69.6

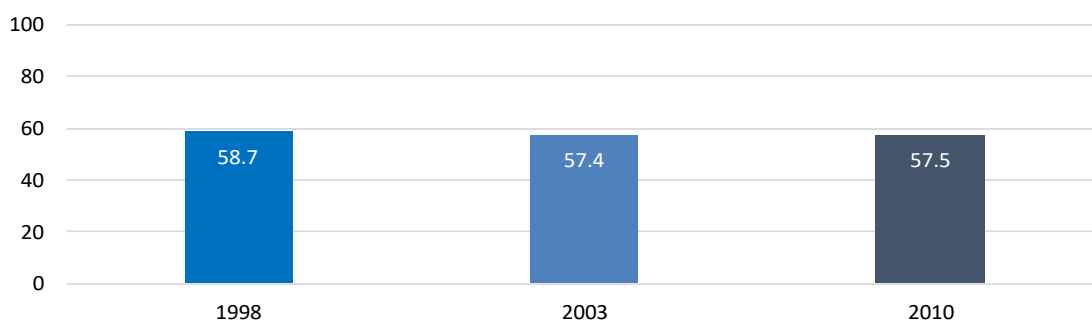
% with minimum acceptable diet	14.1	41.6	8.1	18.4	20.5	5.6	14.3	11.3	19.5	10.0	11.2	6.1	10.1	30.0
<b>Illness Prevalence and Prevention</b>														
% of children 12–23 months who received immunizations	81.3	80.5	86.3	66.3	93.0	93.8	82.4	92.8	68.5	80.4	86.8	85.9	65.6	80.1
% of children under 5 who had diarrhea in the 2 weeks preceding the survey	14.7	17.2	14.3	12.7	14.0	11.8	18.6	21.6	7.9	17.8	14.0	14.5	14.3	17.6
% of children under 5 with diarrhea for whom advice or treatment was sought from a health facility or provider	47.6	50.5	41.4	35.5	62.3	49.2	43.9	51.4	49.3	49.3	58.7	53.6	30.4	44.4
% of children under 5 who had a fever in the 2 weeks preceding the survey	40.4	31.0	38.1	37.1	39.2	38.6	35.2	31.8	46.0	40.2	43.7	47.1	52.7	40.4
% of children under 5 with fever for whom advice or treatment was sought from a health facility or provider	61.4	69.6	58.2	65.8	75.3	60.4	73.3	71.1	58.1	48.8	69.1	67.19	52.7	45.6
% of children under 5 who had an acute respiratory infection in the 2 weeks preceding the survey	1.9	3.4	0.8	1.7	1.3	2.0	2.2	4.1	2.1	2.9	2.5	0.8	0.3	1.0
% of children under 5 with acute respiratory infection for whom advice or treatment was sought from a health facility or provider	56.0	*	*	*	*	*	*	58.8	40.3	58.4	73.6	*	*	*
% of children under 5 who slept under a long-lasting insecticidal net the previous night before the interview	53.1	36.7	55.4	64.3	41.8	37.4	52.9	44.9	64.2	42.4	76.2	82.3	53.0	58.6
<b>Infant and Child Mortality (per 1,000 live births)</b>														
Under-5 child mortality	129	93	135	170	80	116	142	127	186	141	153	138	235	195
Child mortality (13–59 months)	68	39	72	81	35	55	61	61	98	80	88	83	132	98
Infant mortality (under 12 months)	65	56	69	96	47	64	87	70	98	67	72	59	119	107
Neonatal mortality (within the first 28 days)	28	27	33	44	21	23	35	34	52	29	28	35	42	44

Source: Anthropometry (stunting, wasting, and underweight), breastfeeding, and complementary feeding data: MOH et al. 2016; anemia and iodized salt data: MOH 2014; fever and fever treatment: INSD et al. 2015; all other indicators: INSD and ICF International 2012.

### 3.3.3 Maternal Health and Nutrition Status

**Trends in maternal health and women’s nutritional status.** Poor maternal nutrition is highly prevalent in Burkina Faso, especially among adolescent girls, and contributes to an intergenerational cycle of malnutrition and poverty in the country. While few women in Burkina Faso have short stature (less than 1%), around 16% of women 15–49 years are underweight (BMI < 18.5), indicating thinness. In the current FFP project areas (Centre Nord and Est), thinness is close to the national average at 15% in the Centre Nord region, but is extremely high in the Est region at 31%, which is the highest prevalence in the country (INSD and ICF International 2012). Among girls 15–19 years, 23% are underweight, indicating that adolescent girls are more likely to be malnourished than older women. The percentage of adolescent girls who have begun childbearing by 19 has remained consistently high, as 58% of girls 15–19 years have begun childbearing by 19 (see Figure 10) (ibid). The high prevalence of adolescent underweight combined with the persistently high occurrence of adolescent pregnancy is a disturbing trend. Adolescent pregnancy is associated with a 50% increased risk of stillbirths and neonatal deaths, and an increased risk of low birth weight, premature birth, asphyxia, and maternal mortality (Bhutta et al. 2013; WHO 2007).<sup>22</sup> In addition, an analysis of DHS data for more than 100 countries on the impact of early childbearing on child nutrition found that the risk of stunting was 33% higher among firstborn children of adolescent mothers than firstborn children of adult women in Sub-Saharan Africa (Fink et al. 2014). Reducing the adolescent fertility rate and delaying first pregnancies beyond adolescence will reduce the risk of low birth weight and stunting and will allow adolescent girls to grow to their full potential, protecting their nutritional status and that of their children over the long term. The graph in Box 3 shows that the prevalence of stunting among children of adolescent mothers is 44% compared to 26% among children of mothers 23 or older (INSD and ICF International 2012). Table 8 provides a composite snapshot of women’s health and nutrition status nationally and at the regional level.

**Figure 8: Percentage of Women 15–19 Years Who Have Begun Childbearing by Age 19**



Source: INSD and Macron International INC. 2000; INSD and ORC Macro 2004; INSD and ICF International 2012.

**Adequacy of women’s diets and micronutrients.** Many women in Burkina Faso do not have adequate diets, which contributes to micronutrient deficiency. This situation is most dire during the lean season (June–October), when food stocks are at their lowest levels. Although neither the DHS nor National Nutrition Survey included information on women’s dietary diversity, formative research in the Sanmatenga province found that only 14% of women consumed more than four food groups (Save the Children 2012), indicating that dietary diversity may be low across much of Burkina Faso.

<sup>22</sup> The risk of dying from pregnancy-related causes is twice as high for adolescent girls (age 15–19) compared to women in their early twenties and is five times greater for girls 10–14 years (WHO 2007).



In Burkina Faso, there are food taboos around consuming meat and eggs, and other nutritious foods are thought to contribute to poor maternal and child diets<sup>23</sup> (Keith and ViM Team 2012). While there is evidence that these practices influence dietary quality and diversity, food taboos are likely local and dynamic, varying from community to community. Formative research to determine the impact of these beliefs and how they change is needed to address their impact on maternal and child diets. A review of past FFP projects found that it is essential to understand specific local constraints and opportunities regarding key complementary feeding issues, such as diet diversity, quantity, and quality, including nutrient density, which is often overlooked (Van Haeften et al. 2013).

Improved maternal dietary diversity in Burkina Faso is possible, as a recent two-year, integrated agriculture (homestead food production) and nutrition behavior change communication project in Burkina Faso, found. The project was able to substantially improve maternal nutrition (improved fruit and meat/poultry intake and a reduction in underweight) as well as empowerment outcomes through targeted agriculture and nutrition behavior change communication activities for mothers of children age 3–12 months<sup>24</sup> (Olney et al. 2016).

Anemia during pregnancy significantly increases the risk of preterm delivery, low birth weight, and both maternal and perinatal mortality (Black et al. 2013). Anemia among women 15–49 years in Burkina Faso is a severe public health problem as classified by WHO (2010b), affecting 73% of pregnant women and 62% of non-pregnant/non-lactating women. Anemia prevalence among all women (15–49 years of age) in the current FFP project areas (Centre Nord and Est regions) are similar to the national average (62%) at 64% and 61% respectively (MOH 2014). Similar to anemia among children 6–59 months, although iron deficiency definitely plays a role in the high levels of maternal anemia, other factors—including other micronutrient deficiencies, malaria, helminth infection, chronic inflammation, and genetic diseases such as sickle cell anemia—may be contribute as well; additional research into the specific causes of the high rates of anemia among all populations in Burkina Faso is warranted.

As mentioned in reference to children under 5, it is unclear if vitamin A deficiency is still an issue in Burkina Faso, as there is no recent information on the condition among women or children. However, according to the 2003 DHS, 13% of women suffered from night blindness during their last pregnancy, an indicator of vitamin A deficiency, and in 2010 around 56% of women received postpartum vitamin A (INSD and Macro ORC 2004; INSD and ICF International 2012). Iodine deficiency among both non-pregnant and -lactating women and pregnant women is a significant issue in Burkina Faso as both subgroups had an inadequate median urinary iodine concentration (UIC), according to the 2014 National Iodine and Anemia Survey. Pregnant women had a median UIC of 99.1 (µg/L) (adequate levels are 150–249 (µg/L)); non-pregnant and lactating women had a median UIC of 69.6 (µg/L) (adequate levels are ≥ 100 (µg/L)). Non-pregnant, non-lactating women had sufficient UIC. Iodine deficiency during pregnancy is of particular concern since it is the main cause of preventable brain damage worldwide and can lead to irreversible brain damage of various degrees in the infant (WHO et al. 2007). As mentioned, adequately iodized salt remains rare across Burkina Faso: 77% of households did not have adequately iodized salt (MOH 2014).

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<sup>23</sup> Formative research in the Sanmatenga province found that pregnant women were not allowed to eat guinea fowl meat or chicken eggs (Keith and ViM Team 2012).

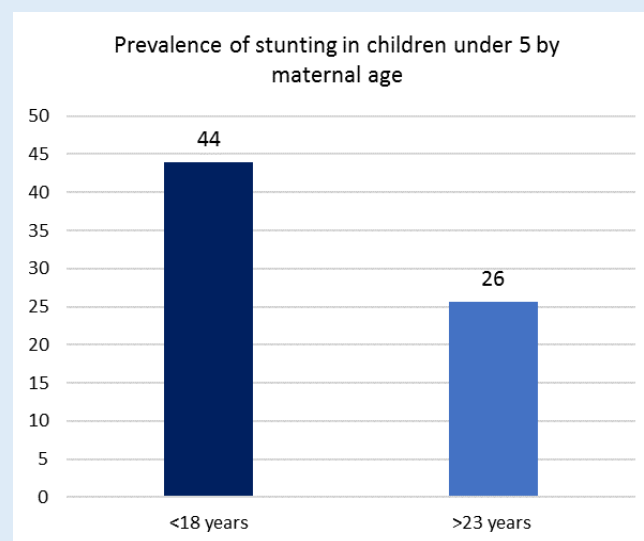
<sup>24</sup> See footnotes 19 and 20 for more information on project activities.

**Family planning (FP).** As noted, Burkina Faso’s fertility rate is high at 6.0 birth per woman, with significant differences between rural and urban areas (averages of 6.7 and 3.9, respectively). The current FFP project regions (Centre Nord and Est) have higher than average fertility rates at 6.7 and 7.5 respectively. The total fertility rate in the Est region is the highest the country (tied with the Sahel region) (INSD and ICF International 2012). This extremely high fertility rate has numerous consequences at multiple levels including increasing the risk of infant, child, and maternal mortality and malnutrition in children and women. At the same time, each added child reduces the amount of time and resources a mother can dedicate to care for each child. The high fertility rate also drives rapid population growth, which results in households with high dependency ratios and land scarcity, which leads to greater food insecurity. It is important to note that the ideal number of children that women want in Burkina Faso (5.5 children) mirrors the current total fertility rate, suggesting that women perceive they are valued for having many children. The ideal number of children is higher in the current FFP project areas at 5.7 in the Centre Nord and 6.7 in the Est than the national average. In both regions, the actual fertility rate exceeds the desired number of children, indicating there is a need for family planning services. Improved access to and use of FP services are crucial to improving maternal health, especially for younger couples. However, the 2010 DHS found that modern contraceptive use is only 15% among currently married women of childbearing age, up from 9% reported in the 2003 DHS. Modern contraceptive use among married women is extremely low in the Sahel region at 7%, and is below the national average in the current FFP project areas (Centre Nord and Est), at 9% and 11% respectively (INSD and ICF International 2012). Notably, contraception use is much lower (7%) among married adolescents 15–19 years than older married women, despite the increased risks they face from birth because their bodies are still maturing (ibid). Given Burkina Faso’s high fertility rate, its impact on maternal health and young child nutrition, and reported shortages of FP products, the government requires continued support from

### Box 3. Adolescent Malnutrition

Addressing adolescent malnutrition in Burkina Faso is critical to breaking the intergenerational cycle of malnutrition.

- 23% of adolescent girls are malnourished, the highest of any age group.
- 58% of adolescent girls have begun childbearing by 19 years, a percentage that has remained constant for more than 10 years.
- Adolescent pregnancy is associated with increased risk of poor maternal, birth, and neonatal outcomes and is a significant driver of low birth weight and stunting in their children.
- In sub-Saharan Africa, firstborn children of adolescent mothers are 33% more likely to be stunted than firstborn children of older mothers.
- Reducing young child malnutrition in Burkina Faso now depends on an urgent focus on preventing adolescent pregnancy through strategies that promote access to and adoption of family planning, delayed marriage, and/or delayed first pregnancy.



Source: Burkina Faso DHS 2010; Fink et al. 2014; Bhutta et al. 2013.

partners to strengthen access to FP services in areas where they are implementing programming. Effective referral systems are essential so that women can access FP services through the government health system or other community-based distributors of FP products. Increasing access to and knowledge and use of contraceptive methods can be emphasized through a multilayered social and behavior change approach that targets audiences at multiple levels to provide men and women with information on FP methods and improve linkages to services.

In addition, social and behavior change approaches should be used to specifically target adolescents, with the understanding that they are often overlooked by FP campaigns and face different issues regarding sexual reproductive health and access to FP than older women. Given the prevalence of early pregnancy in Burkina Faso, continued action from both the government and implementing partners is needed to meet the health needs of adolescent girls and prevent malnutrition in their children. More specifically, a focus is needed on promoting adequate preconception nutrition, delaying the first pregnancy until the adolescent's body is ready for childbearing, and supporting an enabling environment in which the prevention of adolescent pregnancy is more widely accepted at the community and societal levels. Well-designed formative research is also needed to provide an understanding of widespread adolescent pregnancy, including on topics such as the specific barriers that adolescents face in sexual relationships (e.g., consensual sex, transactional sex, and rape), barriers related to accessing FP and sexual and reproductive health services, and how to overcome these barriers. Such research can help better design program activities to enable adolescents to acquire the knowledge and skills they need to adopt healthier sexual behaviors.

**Maternal mortality and antenatal/birth care.** While maternal mortality has been greatly reduced in Burkina Faso—from 440 deaths per 100,000 live births in 1998–1999 to 341 in 2010, thanks in part to subsidized obstetric and neonatal emergency care—the lifetime maternal risk of death is still 1 in 44 (INSD and ICF International 2012; Save the Children 2015). Nationally, 67% of women reported receiving assistance for their most recent birth from a medically trained provider, up from 56% in 2003 (INSD and Macro International Inc. 2000; INSD and ORC Macro 2004; INSD and ICF International 2012). In the current FFP project areas, women were much more likely to receive medical assistance for their most recent birth in the Centre Nord region (70%) as compared to women in the Est region (54%). According to the 2010 DHS, while 95% of women received any antenatal care from a medically trained provider, up significantly from 73% in 2003, only 34% of women had the recommended number of antenatal care visits (four or more) (INSD and ICF International 2012). Despite subsidized antenatal care services, uptake of those services is quite low, as 50% of women took the recommended 90+ days of iron tablets/syrup) and only 24% took deworming medication; however, 71% of women reported having two or more tetanus toxoid injections (ibid).

**Table 8. Maternal Health and Nutrition**

	National	Centre	Boucle du Mouhoun	Cascades	Centre-Est	Centre-Nord	Centre-Ouest	Centre-Sud	Est	Hauts-Bassins	Nord	Plateau Central	Sahel	Sud-Ouest
Maternal mortality ratio (per 100,000 live births)	341	--	--	--	--	--	--	--	--	--	--	--	--	--
Total fertility rate (children per women)	6.0	3.7	6.8	6.0	6.3	6.7	6.4	5.6	7.5	5.2	6.2	5.8	7.5	6.4
Number of ideal children as reported by women age 15–49 years	5.5	4.2	5.5	5.4	5.5	5.7	5.5	5.8	6.7	4.8	5.9	5.4	7.2	6.0
Median age at first union (of women 25–49 years)	17.8	19.4	17.6	17.6	18.1	17.9	17.9	17.8	17.2	18.2	17.7	18.3	16.1	17.7
Median age at first birth (of women 25–49 years)	19.5	21.1	19.2	19.3	19.8	19.7	19.7	19.4	18.4	19.7	19.5	19.5	18.7	19.0
% of women 15–19 years who have begun childbearing by 19	57.5	--	--	--	--	--	--	--	--	--	--	--	--	--
% of women 15–19 years who have begun childbearing	23.6	8.4	32.0	28.3	19.3	28.6	20.3	24.2	37.3	21.3	25.7	11.1	39.3	33.7
% of women 15–49 years who are undernourished (BMI < 18.5)	15.7	7.7	13.0	8.9	17.1	14.9	17.8	19.5	31.1	11.7	19.6	12.5	23.0	15.2
% of women 15–49 who are anemic (non-pregnant < 12.0 g/dL; pregnant <11.0 g/dL)	61.9	51.2	63.1	57.7	69.9	63.7	52.9	65.5	60.5	64.2	66.7	58.9	70.9	62.1
% of women 15–49 years reporting having taken iron supplements for more than 90 days during their last pregnancy	50.2	55.5	52.5	73.8	64.9	60.0	22.0	44.8	9.3	71.2	43.9	68.5	58.5	44.5
% of women 15–49 years reporting having taken deworming tablets during their last pregnancy	24.3	20.8	15.4	15.2	22.4	31.9	16.4	37.5	14.0	33.5	37.1	29.8	28.3	18.9
% of pregnant women 15–49 years who slept under a long-lasting insecticidal net the previous night	82.6	89.7	75.2	95.5	98.8	98.6	94.0	67.2	92.1	62.2	79.2	93.4	66.1	68.7

	National	Centre	Boucle du Mouhoun	Cascades	Centre-Est	Centre-Nord	Centre-Ouest	Centre-Sud	Est	Hauts-Bassins	Nord	Plateau Central	Sahel	Sud-Ouest
% of women 15–49 years who gave birth in the preceding 2 years who reported receiving 2 doses of intermittent preventive treatment of malaria	38.5	31.0	36.6	42.9	52.2	45.9	46.4	52.9	31.3	30.3	39.6	49.6	19.1	56.3
Median number of months since preceding births (of women 15–49 years)	35.9	42.5	34.7	36.0	38.0	37.9	36.2	39.5	33.1	37.0	35.7	39.2	31.6	33.0
% of women 15–49 using any modern method of birth control (all women)	14.3	31.2	11.4	18.0	9.0	9.3	9.6	16.3	10.8	26.8	10.4	14.2	6.9	10.0
% of women in union reporting wanting to limit births	23.7	24.6	28.7	24.0	19.9	22.5	22.9	27.2	19.8	30.3	23.8	29.1	14.1	19.7
% of women 15–49 receiving antenatal care from a medically trained provider	94.9	98.6	93.6	94.1	99.6	96.0	95.0	99.0	92.3	96.4	94.9	98.8	86.3	90.8
% of births delivered by a medically trained provider	67.1	96.6	65.2	76.4	84.6	69.8	60.2	87.7	53.6	74.9	62.7	81.2	35.9	42.7
% of women 15-49 receiving post-natal care check up in the first two days of birth	71.9	83.0	73.9	80.5	77.0	78.6	63.2	90.7	62.6	68.7	71.2	87.0	63.3	47.5
% of women 15-49 who experience at least one problem accessing health care	78.5	69.8	83.3	64.5	85.9	84.5	56.6	98.1	89.8	61.5	83.5	88.5	89.7	91.0
% women circumcised (FGC)	75.8	*	*	*	*	*	*	*	*	*	*	*	*	*

Source: Anemia: MOH 2014; all other indicators: INSD and ICF International 2012.

### 3.3.4 Water, Sanitation, and Hygiene

In 2014, the Government of Burkina Faso (GOBF) adopted the Community-Led Total Sanitation (CLTS) strategy to address poor water and sanitation conditions and practices in the country, with the goal of ending open defecation by 2030. This is a lofty goal; as of 2014, open defecation is still very high (67%) in rural households, only 11% of which had improved toilets (INSD et al. 2015). The 2014 National Iodine Status and Anemia Survey indicate that there are wide regional differences in access to improved toilets, with access being highest in the Centre region (48%) and lowest in the Boucle du Mouhoun and Sahel regions at 9%. According to the survey, access to improved toilets is much higher in the Centre Nord region at 37% as compared to the national average (24%) and the Est region (18%) (MOH 2014).<sup>25</sup> Since 2010, both open defecation and access to improved toilets in rural areas have improved, when 80% of rural households practiced open defecation and only 6% of them had improved toilets (INSD and ICF International 2012). See Figure 11 for a summary of WASH indicators in Burkina Faso. Reported challenges to latrine use in Burkina Faso include sustainability of latrines built using local materials (one program reported that 4 of 10 wooden latrines built in a village collapsed after the rainy season). Use of stone slab latrines may help with stability issues, but they are costlier. Determinants of latrine use include access/perceived access to resources to build latrines and smell/cleanliness. The 2014 UNICEF annual report mentioned that lack of water, dirty latrines, and broken handwashing systems were common at schools and health posts, rendering them unusable, with individuals reverting to open defecation and the use of unclean/untreated water. These observations illustrate the importance of encouraging and supporting community maintenance and care for existing infrastructure. It is important to ensure that these tasks do not only fall to women who are already overburdened with work, particularly maintenance and cleaning of latrines.

Most households in Burkina Faso lack soap, water, and a place for handwashing, with availability lower in rural areas. FFP project baseline studies have found that handwashing knowledge and practices are generally low in Burkina Faso; one study found that in 2014, only 12.7% of people were familiar with the main stages of handwashing (Initiatives Conseil International 2015). Lack of access to water and soap appear to be barriers to handwashing, but additional research to determine context-specific barriers may be warranted. Lack of water (not enough boreholes, broken boreholes, distance to boreholes, low water levels at pumps) contributes to low adoption of hygiene practices, with indications that people go as long as two days without access to any water during the dry season (ibid). Lack of access to soap is another constraint. While 75% of households reported having handwashing stations, only 13.5% of those households have both water and soap (INSD and ICF International 2012). Formative research in the Sanmatenga province confirms findings in the DHS, indicating that lack of soap and the fact that handwashing was not a traditional practice (aside from handwashing done around prayers) were the main reasons household members did not wash their hands (Save the Children 2012).

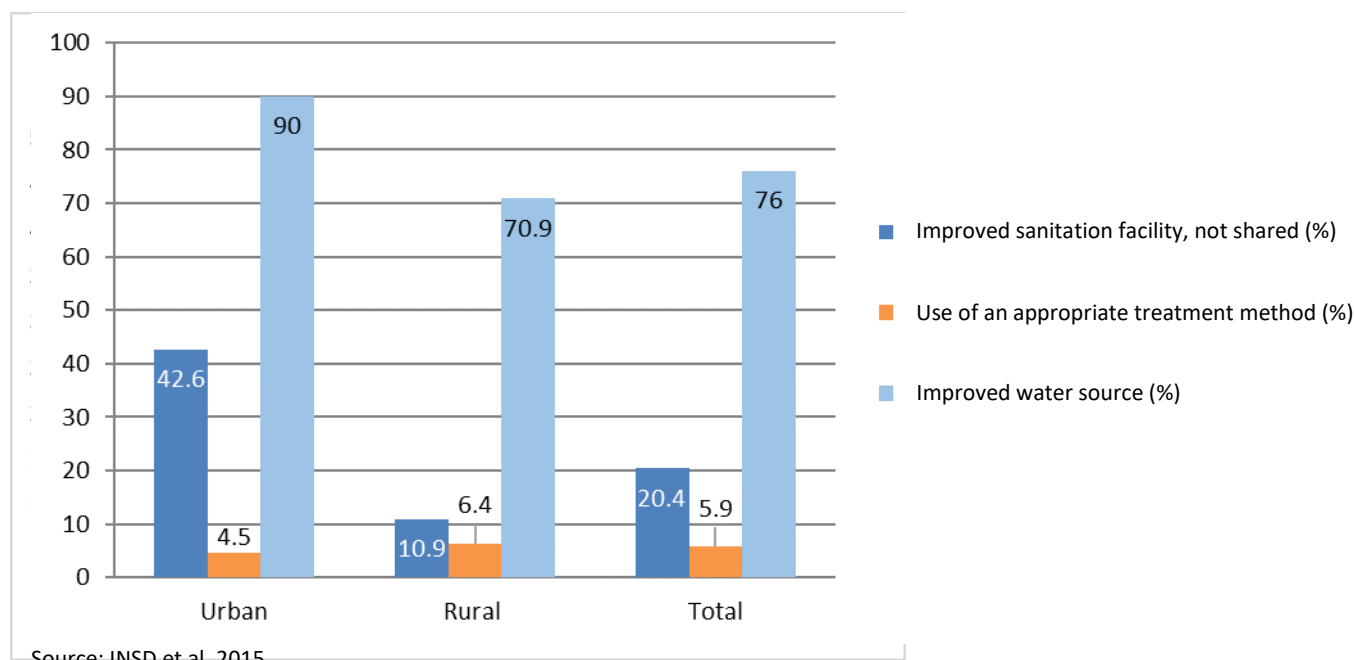
In 2014, 77% of households had access to safe water<sup>26</sup>, which has remained constant since 2010 (INSD et al. 2015; INSD and ICF International 2012). The 2014 National Iodine Status and Anemia Survey indicate that there are wide regional differences in access to improved water sources, with access being highest in the Centre region (100%) and lowest in the Nord (56%) and Centre Ouest (64%) regions. According to the survey, access to improved water sources is high in both the Centre Nord and Est regions at 92% and 95% respectively (MOH 2014). However, pumps break down frequently due to inadequate preventive maintenance and the unavailability of locally qualified technicians, requiring

<sup>25</sup> Note the sample size in the 2014 National Iodine Status and Anemia Survey is smaller than the Enquête sur les Indicateurs du Paludisme (EIPBF) 2014 and therefore may account for some of the differences in data provided.

<sup>26</sup> The 2014 National Iodine Status and Anemia Survey found that access to safe water was 84%, however different sampling methods and sampling sizes may account for some of the differences indicated between the survey and the EIPBF 2014.

people to use unsafe water sources like rivers or ponds; since less than 7% of households treat their water, there is an increased risk of poor health and nutrition outcomes (INSD and ICF International 2012). Time needed to access water is still an issue for many households; as 42% of rural households reported that it took more than 30 minutes to collect water (INSD et al. 2015). This lack of access to water places a significant burden on women and children to collect and transport water, and takes them away from other activities, adding to the already heavy workloads for women/mothers.

**Figure 11. Water and Sanitation Indicators for Burkina Faso (%)**



Effectively preventing malnutrition in children under 2 years in Burkina Faso will depend on continued efforts to work with communities to ensure access to safe drinking water, hygienic sanitation facilities, and hygienic environments for children to play in. However, improving access to WASH facilities alone will not be sufficient as behavior change is also needed to improve handwashing and food hygiene behaviors, as well as the household environment.

**WASH and disease risk.** Globally, 94% of the diarrheal disease burden is attributable to the environment, including lack of safe drinking water, improved sanitation, and hygiene practices (Prüss-Üstün and Corvalán 2006). Repeated diarrheal infections in young children due to lack of access to water and sanitation and poor hygiene practices in Burkina Faso are an important direct and indirect determinant (mediated through undernutrition) of child mortality. This is a complex issue with several critical points at which interventions must occur to break the cycle (see Appendix 3). A meta-analysis conducted in 2008 found that the risk of diarrhea was reduced by 48% from handwashing with soap, by 17% from improved water quality, and by 36% from safe feces disposal (effects are not additive as each overlaps with the other) (Cairncross et al. 2010).

During public health emergencies, such as the Ebola outbreak in 2014 that ravaged the health systems of neighboring West African nations Sierra Leone, Liberia, and Guinea, WASH access and optimal hygiene practices are critical to minimize disease transmission. The Ebola outbreak spread quickly within Sierra Leone due in part to the poor water and sanitation infrastructure in the country. The outbreak restricted movement across the country, reducing maintenance of existing infrastructure in some areas and forcing people to look for alternative and often unsafe sources of water (ACAPS 2015). UNICEF, the European Union (EU), USAID, WHO, and other NGO partners have been working with the GOBF to develop an operational preparedness and response plan in case of a similar outbreak, with the hope of more quickly and effectively dealing with such outbreaks and helping mitigate the impacts on the nation's health and food security (UNICEF 2014). Future FFP projects can learn from the social and behavior change successes organized during the Ebola outbreak in Sierra Leone, particularly through their focus on community engagement, to promote not only improved WASH but other practices that need community support to improve, such as infant and young child feeding.

**Table 9. Key WASH Indicators**

	National	Centre	Boucle du Mouhoun	Cascades	Centre - Est	Centre-Nord	Centre-Quest	Centre - Sud	Est	Hauts - Bassins	Nord	Plateau Central	Sahel	Sud - Quest
% of households with access to improved water sources*	83.8**	100.0	52.7	81.6	87.6	91.9	64.0	94.3	95.2	85.4	56.4	98.5	94.6	*
% of households with improved toilets (non-shared) *	24.0**	47.6	9.8	19.5	19.9	36.6	17.7	13.7	18.2	20.3	30.5	18.9	8.8	10.5
% of households with hand-washing stations	75.0	84.3	91.4	99.5	75.3	79.9	44.5	47.4	67.5	96.5	52.2	76.5	47.2	99.8
Of those with a handwashing station, % of households with soap and water	13.5	35.4	5.1	9.8	3.5	2.6	11.7	13.4	2.7	8.8	11.8	22.5	24.5	24.2
% of households with open defecation	48.9	*	*	*	*	*	*	*	*	*	*	*	*	*

\*Data are from the 2014 National Iodine Status and Anemia Survey.

\*\* The 2014 EIPBF indicate 76.6% of households nationally have access to improved water sources and 20.4% have access to improved toilets (INSD et al. 2015). These are the data that have been used in the body of the report due to the larger sample size of the EIPBF.

### 3.3.5 Health Care System and Access

According to the 2010 DHS, 79% of women reported at least one problem in accessing health care, with 72% of women reporting lack of money to pay for services as a barrier followed by 44% citing distance to the health center as a deterrent (INSD and ICF International 2012). Access to health facilities is even further restricted during the rainy season, when transportation becomes exceedingly difficult due to poor road conditions. Burkina Faso also suffers from understaffed and otherwise under-resourced health centers and limited capacity of village health teams at the community level, exacerbated by low levels of education. This reduces access to quality health care and increases the risks of poor health outcomes in the sub-region.



### 3.3.6 Gender and Nutrition

Gender inequality is pervasive in Burkina Faso and a significant underlying factor that exacerbates food insecurity and malnutrition and therefore critical to address. The combination of early childbearing, high fertility levels, and women's lack of control over resources and limited decision making weaken the food security and nutrition of Burkinabé women and their children. The high prevalence of early marriage and adolescent pregnancy reflects prevailing gender norms that discriminate against women and girls and contributes significantly to the high prevalence of chronic undernutrition in their children.

In Burkina Faso, a majority of teen-age girls (married and unmarried) are sexually active; median age of first sexual intercourse for girls is 17.7 versus 17.8 for boys (INSD and ICF International 2012). However, among adolescents who had sex before age 20, the average age at first sexual intercourse is 16.4 for girls and 17.3 for boys (WHO 2016). Analysis of 2010 DHS data by WHO found that among adolescent girls who are sexually active, 55% of girls not in a union and 93% of girls in a union are not using any form of birth control, with male condoms being the most likely form of contraception used if any is used (ibid). Unmarried adolescent girls were most likely to obtain modern contraception from a shop, while adolescent girls in a union were most likely to get it from a government facility (WHO 2016). Despite the low utilization of contraception by adolescent girls, particularly among those in a union, more than 50% (58% not in a union and 51% in a union) reported not wanting a child in the next two years—indicating an unmet need for family planning.

As noted, adolescent mothers and their infants are at greater risk of poor nutrition outcomes, and due to their age and life stage, these mothers typically fall at the lowest end of the social hierarchy. At their time of greatest need in terms of young child nutrition and care, they often have the least decision-making power and the least access to resources to ensure optimal health, nutrition, and growth in their children. Adolescents may benefit from extra nutrition counseling during pregnancy and assistance with exclusive breastfeeding and complementary feeding. They may also benefit from assistance with communication skills for healthy relationships, parenting and child care skills, and involvement in savings groups and other livelihood activities to improve their food security, all of which relate to their nutritional status and that of their child. In addition, efforts to delay marriage and first pregnancy improve access to secondary education for girls and boys; promoting secondary school completion will go a long way toward sustainably reducing the overall prevalence of undernutrition in Burkina Faso.

Gender inequality is also reflected in several other key indicators. For example, women are not as likely to be employed as men; 75% of women of childbearing age reported being employed versus 93% of men (INSD and ICF International 2012). While 88% of currently married women reported being able to decide on their own how to use income they earned, only 12% of women (15–49 years) reported participating in all three decisions that reflect women's decision-making capacity (woman's own health, major household purchases, and visiting her relatives), with adolescent girls being least likely to make these decisions (10%) (ibid). These data are not surprising. As noted, most women in Burkina Faso have limited say on how their young children are fed, which is further constrained by their lack of ability to spend money they earn (or are given) to support the health and well-being of their children and themselves. In this context, promoting shared responsibility for the nutritional status of women and children among husbands, other wives (when in a polygamous relationship), and parents-in-law, in addition to working with mothers, is essential; improving maternal decision-making capacity can significantly improve her and her children's health and nutrition. The implication is that while Burkinabé women are the main meal preparers and caregivers for their children and are primarily responsible for acquiring and/or producing food, their lack of access to income and decision-making ability limits them from being able to meet their and their children's nutritional needs. In other countries, in-depth studies of DHS data suggest that women's greater

control over household decisions, including use of resources, is associated with better nutritional status for women and their children (Kishor 2005).

Despite a law passed in 1996 that bans the practice of female genital cutting (FGC) (also called female genital mutilation), FGC is extremely common in Burkina Faso with 76% of women undergoing FGC. This practice has significant negative short- and long-term consequences for maternal health—including hemorrhage, shock, infections, chronic urinary problems, obstetric complications, and psychological problems—and severely restricts women’s rights (United Nations Population Fund 2015). The high prevalence of female genital cutting is yet another indicator of the rampant gender inequality in Burkina Faso.

Domestic violence undermines women’s empowerment and reinforces their lack of control over resources and decision making. According to the 2010 DHS, 20% of women in Burkina Faso reported experiencing violence and 15% of ever-married women reported having experienced physical, sexual, or emotional abuse by their husbands/partners. Among women who experienced physical violence, only 38% sought help to stop the violence (INSD and ICF International 2012). The prevalence of domestic violence varies among regions, with the Sud-Ouest region having the highest prevalence at 43% and lowest in the Centre Nord region (6%) (ibid). Exposure to domestic violence increases the risk of childhood stunting. Two analyses of DHS data from Bangladesh and Liberia found that women were more likely to have a stunted child if they had experienced physical or sexual violence by their partners (Ziaei et al. 2012; Sobkoviak et al. 2012).

Table 10. Key Gender Indicators

	National	Centre	Boucle du Mouhoun	Cascades	Centre-Est	Centre-Nord	Centre-Ouest	Centre-Sud	Est	Hauts-Bassins	Nord	Plateau Central	Sahel	Sud-Ouest
<b>Decision making</b>														
% of women 15–49 years who report on all 3 decisions (woman's health, household purchases, visiting relatives)	12.0	21.4	26.8	11.1	6.1	15.4	8.5	6.2	13.2	7.8	3.9	7.6	2.9	9.2
<b>Domestic violence</b>														
% of women 15–49 years who report use of violence against women is acceptable	43.5	34.7	55.9	42.7	38.7	36.1	61.6	21.5	33.4	37.2	60.9	37.9	54.5	51.4
% of men 15–49 years who report use of violence against women is acceptable	34.1	23.5	63.1	27.2	67.4	30.6	27.8	22.1	54.8	6.2	34.5	19.6	36.2	29.4
% of women 15–49 years who report their partner/spouse exhibits at least 3 controlling behaviors	10.6	25.5	13.4	12.0	4.4	1.2	8.6	15.5	11.5	10.5	5.0	4.5	6.4	16.4
% of women 15–49 years who report having experienced acts of physical violence against them from the age of 15	19.8	32.1	26.9	25.9	19.9	5.6	16.4	18.8	12.9	19.3	10.3	15.4	11.4	37.3
% of women 15–49 years who report having experienced physical violence against them in the past 12 months	9.4	12.7	17.2	13.3	3.8	2.0	7.7	9.6	7.4	10.2	3.6	7.7	5.9	19.3
% of women 15–49 years who report experiencing sexual violence in the past 12 months	1.5	2.8	1.5	1.9	1.0	0.3	1.2	0.2	1.7	2.2	0.2	1.0	0.5	4.6
% of women 15–49 years who report experiencing any form of violence (physical, sexual, emotional)	15.4	21.8	19.5	23.0	6.6	5.7	10.3	13.0	10.9	19.8	8.2	17.0	8.8	43.1

Source: INSD and ICF International 2012.

### 3.3.7 HIV

HIV is not a widespread problem in Burkina Faso. Around 1% of men and women (15–49 years) tested positive (INSD and ICF International 2012). It is slightly more prevalent in women (1.2%) than men (0.8%), down from 1.8% and 1.9%, respectively, in 2003 (INSD and Macro International 2004).

### 3.3.8 Key Policies, Strategies, and Programs Related to Food Utilization and Health

Since the transition of the government in 2014, the new government of Burkina Faso, with support from USAID and other key donors in country, has been making concerted efforts to improve the health and nutrition of women and children, not only through current IYCF, nutrition, and food security policies, among others, but also through the free health care initiative that began April 2016 and builds upon a 2006 national obstetric subsidy policy to provide free health care for children under 5 and pregnant women (Save the Children 2016). (See Table 11 below for more information on the policies and strategies that impact nutrition and food security in Burkina Faso.)

The government's priority nutrition interventions are identified in its National Nutrition Policy (2016) (Box 4). Recognizing the impact that nutrition has not only on the nation's health but on its economic development and growth, the government established a multi-sectoral platform to address the direct and underlying causes of malnutrition in the country. The policy takes into account the objectives of the Sustainable Development Goals, the African Union Strategy 2013–2025, the Rome Declaration on Nutrition and its Framework for Action from the Second International Nutrition Conference in 2014, the Scaling Up Nutrition Movement 2016–2020, and the REACH initiative. In addition to the key nutrition-specific interventions, there is recognition of the need to address water and sanitation issues, gender inequality, and low levels of education as key nutrition-sensitive components.

## Box 4. Priority Food Security and Nutrition Interventions in the Burkina Faso National Nutrition Policy (2016)

### 1. Reduce undernutrition

- Optimal IYCF practices (BCC for IYCF, compliance with the International Code of Marketing of Breast-Milk Substitutes)
- WASH (CLTS), handwashing with water and soap, access to sanitation equipment, water treatment
- Nutrition-sensitive food security and nutrition interventions (biofortified seeds, micronutrient-rich-vegetable gardens, breeding of small livestock, income generating activities for women)
- Nutrition and social protection interventions (cash transfer/social safety nets; non-conditional cash and food transfer; advocacy for free health care for children under 5 and pregnant/nursing women; universal health insurance)
- Education (literacy for women and girls, pre-service training on nutrition, endogenous school canteens, school gardens)
- Health interventions:
  - Maternal and newborn health (assisted delivery, iron/folic acid supplementation for pregnant women, quality ANC services, FP, malaria intermittent preventive treatment for pregnant women)
  - Integrated Management of Childhood Illness (treatment of diarrhea by ORS with zinc, treatment of pneumonia and malaria)
  - Prevention (ITNs, seasonal distribution of malaria medication for children 3–59 months, expanded program on immunization for infants and pregnant women, prevention of mother-to-child transmission (PMTCT))
- Treatment of SAM and MAM

### 2. Strengthen interventions to fight overnutrition and diet/nutrition-related chronic noncommunicable diseases

- Prevent overweight and obesity in children
- Promote nutrition best practices
- Promote positive living
- Promote locally grown food and nutrition education

### 3. Improve governance for nutrition programming

- Institutional governance
  - Systems and coordination mechanisms
  - Multi-sectoral approach to nutrition programming
  - International nutrition forums
  - Advocacy for nutrition
- M&E for nutrition
  - Surveillance
  - Follow-up on results framework and implementation plans
  - Improve accountability
- Funding for nutrition
  - Advocacy for increased nutrition budget
  - Resource mobilization
  - Investments in nutrition programs
- Strengthen research in nutrition
  - Leverage research results/evidence
  - Improve collaboration between researchers and implementers
  - Consider nutrition policies when setting research priorities
- Capacity strengthening (training)
  - Multi-sectoral nutrition competency
  - Competency in nutrition emergency situations
  - Training
- Food security
  - Coordination mechanisms
  - Innovative technologies for food preservation
  - Development of sustainable agro-food industries
- Communication
  - Integrated communication plan
- Women empowerment
  - Income generating activities for women
  - Gender/women-friendly policies
  - Decision-making capacity strengthening for women

Table 11. Summary of Key Policies, Strategies, and Programs Related to Food Utilization

Government of Burkina Faso	
<b>Policies</b>	<p><b>(Politique Nationale De Nutrition) National Nutrition Policy 2016:</b> Reflecting the GOBF's recognition that malnutrition is a cross-cutting issue that requires multi-sectoral action, this policy seeks to enhance the accountability of nutrition-sensitive and nutrition-specific sectors and provide up-to-date guidance to all actors and partners to achieve better results in reducing malnutrition.</p> <p>The policy includes the following specific interventions: integrated management of acute malnutrition, promotional interventions for IYCF, and a micronutrient deficiency response. It further analyzes nutrition-specific interventions by sector.</p> <p>This policy considers regional and international objectives: Sustainable Development Goals beyond 2015, the African Union Strategy 2013–2025, the Rome Declaration on Nutrition and Its Framework for Action from the second International Nutrition Conference in 2014, the Scaling Up Nutrition movement 2016–2020, and the REACH initiative.</p> <hr/> <p><b>(Plan D'actions Triennal 2014–2016 de la Politique Nationale De Securite Alimentaire Et Nutritionnelle) The National Food and Nutrition Security Policy Triennial Action Plan 2014–2016:</b> This policy aims to ensure that all populations have equitable access to a balanced, sufficient, and healthy diet to help reduce poverty, consolidate social peace, and achieve sustainable development. The policy's specific objectives are to 1) sustainably increase food supplies, 2) strengthen capacity for preventing and responding to shocks, 3) improve the physical and financial accessibility of food, 4) improve the population's nutritional status, and 5) strengthen governance in food and nutrition security.</p> <hr/> <p><b>(Plan de soutien aux populations vulnérables à l'insécurité alimentaire et à la malnutrition) Population Support Plan Vulnerable to Food Insecurity and Malnutrition 2016:</b> The plan's overall objective is to contribute to the food and nutritional security of vulnerable populations. The plan's specific objectives are to facilitate access to food and drinking water for target populations, strengthen the prevention and care of malnutrition in children, and protect the livelihoods of populations exposed to food crises or natural disasters.</p> <hr/> <p><b>(Politique Nationale de Securite Alimentaire et Nutritionnelle) The National Policy on Food and Nutrition Security:</b> This policy is a reference and guidance framework for all actors addressing poverty, malnutrition, and food security in Burkina Faso. The policy's aim is to contribute to the harmonious development of the people of Burkina Faso by eliminating hunger. The overall objectives are to ensure sustainable food and nutrition security by 2025. The specific objectives are: 1) sustainably increase food availability, 2) strengthen capacity for preventing and responding to shocks, 3) improve physical and financial accessibility to food, 4) improve the population's nutritional status, and strengthen governance in food and nutrition security.</p> <hr/> <p><b>(Priorites Resilience Pays 2016–2020) Country Resilience Priorities (PRP-AGIR-BURKINA) 2016-2020:</b> This plan aims to increase the resilience of vulnerable households and populations by 2025. Specifically, it aims to 1) restore and strengthen the livelihoods and social protection of vulnerable populations, 2) strengthen the nutrition of vulnerable households, 3) sustainably improve access to food and improve food production of vulnerable households, and 4) strengthen governance in food and nutrition security.</p>
<b>Strategy</b>	<p><b>CLTS:</b> This national community-led sanitation strategy, developed in partnership with NGOs, was adopted in 2014 as an integrated social and behavior change approach to reduce open defecation and improve the health and well-being of families in Burkina Faso.</p>
U.S. Government	
<b>Food for Peace Projects</b>	<p>Victory Against Malnutrition (ViM) (ACDI/VOCA), 2011–2017: See section 4: Lessons Learned.</p> <p>Families Achieving Sustainable Outcomes (FASO) (CRS), 2011-2017: See section 4: Lessons Learned.</p>

<b>Other</b>	
<b>ACF</b>	ACF supports case management of acute malnutrition (MAM) and promotes improved breastfeeding and complementary feeding through its food security programs.
<b>Helen Keller International</b>	HKI supports national and regional nutrition activities in Burkina Faso, including strengthening capacity of national program and health clinic staff, strengthening integration of vitamin A into routine health services and community child health days, and supporting efforts to fortify staple foods. HKI also implements food security and nutrition programs, including the Enhanced Homestead Food Production (EHFP) project in Fada Ngourma (which has ended) and the Creating Homestead Agriculture for Nutrition and Gender Equity (CHANGE) project, funded by the Canadian International Development Agency (CIDA), which builds on the EHFP project and works to improve the nutritional status of infants and young children and their mothers through homestead food production and nutrition behavior change using the Essential Nutrition Actions framework.
<b>GRET</b>	This FFP implementing partner (through the FASO project) has received funding from USAID/FFP, the EU, and others to conduct food security and nutrition activities in the Eastern Region using several SBCC approaches, including print materials, community discussions, cooking demonstrations, radio, and video to promote maternal, infant, and young child nutrition. GRET also produces a local fortified complementary food for pregnant women and children 6–24 months.
<b>Innofaso</b>	Innofaso produces the <i>Plumpy'Nut</i> brand ready-to-use therapeutic food (RUTF) in 500 kcal packets (92g) and produces <i>Plumpy'Doz</i> , using local materials, for prevention of malnutrition. It plans to produce <i>Plumpy'Sup</i> for treating moderate malnutrition.
<b>World Bank</b>	World Bank funds the Adaptive Social Protection project that runs from 2014-2020. The project includes quarterly cash transfers and maternal child health and nutrition training for 92,000 vulnerable households in Nord, Est, Centre Est, Centre Ouest and Sahel regions to bolster resilience and improved nutrition.
<b>World Food Programme</b>	WFP supports the GOBF by providing treatment for MAM and distributing rations to help prevent malnutrition during the lean season. WFP is also working to combat high stunting among children under 2 and providing food and nutrition assistance to other vulnerable groups such as orphans and HIV patients.
<b>UNICEF</b>	UNICEF supports the government rollout of mother-to-mother support groups called <i>Groupes d'Apprentissage et de Suivi des Pratiques d'ANJE</i> (GASPA). UNICEF also supports the government's programs to manage MAM and SAM, as well as activities to improve health and reduce child mortality through distribution of ORS and zinc to treat diarrhea and support for the government's vitamin A supplementation and routine vaccination campaigns. UNICEF also works to prevent malnutrition through an integrated training on optimal IYCF.
<b>Alive &amp; Thrive</b>	Alive & Thrive is an IYCF project funded by the Bill & Melinda Gates Foundation and implemented by FHI 360 from 2014–2017. The project seeks to increase exclusive breastfeeding to a least 50% in the project areas over the life of the project. Interventions will address barriers to improved feeding practices, working at the household level all the way up to the national/policy level where activities address the need for enabling environment to support optimal IYCF practices. The project uses a multi-pronged, data-driven approach that will involve the health system, the community, and mass media in line with A&T's framework for implementing IYCF programs at scale.

## 4. LESSONS LEARNED

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FFP supports two development projects in Burkina Faso managed by ACDI/VOCA and CRS with food security interventions in the Centre Nord and Est regions. Interventions began in fiscal year 2011 and will end in September 2017.

**ACDI/VOCA's ViM project** is a partnership with Save the Children International and the Netherlands Development Organization (SNV) designed to “reduce food insecurity among vulnerable rural populations in the province of Sanmatenga.” The project works in four communities in Sanmatenga province in the Centre-Nord region (communes of Kaya, Barsalogo, Pissila, and Namissiguima). By the end of fiscal year 2016, the project reached 20,057 rural households, benefiting 111,252 individuals. The project has three complementary strategic objectives (SO) and cross-cutting activities related to gender equity and sustainable development:

- **SO1:** Increased and diversified agricultural production
- **SO2:** Improved household income
- **SO3:** Reduced chronic malnutrition among children under 5 and pregnant and lactating women

ACDI/VOCA oversees the general management and financial coordination of the project, and manages SO1 and SO2 in the field with three local implementing partners and ACDI/VOCA's team based in Kaya. Save the Children's team in Kaya implements SO3. The project aims to integrate the three SOs and prioritizes SO3 beneficiaries in selecting SO1 and SO2 beneficiaries, and through small grants.

SO1 and SO2 target six priority value chains: cowpeas, sorghum, small ruminants, poultry, tomatoes, and onions. Producer groups with vulnerable populations are selected and receive technical training from local trainers through field schools, guided visits, and organizational strengthening. A value chain approach links various actors in the sector, such as partnerships with agro-dealers (through seed/input fairs), technical support from government officers (vaccination campaigns, supervision and support of field school activities, and guided visits), and joint commercialization operations. Strengthening local implementing partner teams and creating linkages among local value chain actors and local MFIs contribute to sustainability beyond the project life cycle.

To achieve SO3, ViM uses the “1,000 days” approach, addressing malnutrition from pregnancy through the child's second birthday, through the following activities: prevention of malnutrition among children under 2 approach (PM2A), a blanket feeding approach for pregnant and lactating women and children 6–23 months; strengthening knowledge on health and nutrition and promoting improved practices through peer education (i.e., care groups) and mass media; providing institutional support to improve health services through capacity strengthening, logistical support, and the Partnership Defined Quality (PDQ)<sup>27</sup> strategy in select health centers; implementation of the CLTS<sup>28</sup> behavior change approach to improve WASH practices with an emphasis on stopping open defecation, promoting handwashing, and supporting the construction and/or rehabilitation of community water and sanitation infrastructures.

**CRS's FASO project** is a consortium led by CRS with Helen Keller International and local NGOs such as Groupe de Recherche et d'Echange Technologiques (GRET), Organisation Catholique pour le

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<sup>27</sup> PDQ “is a methodology to improve the quality and accessibility of services with community involvement in defining, implementing, and monitoring the quality improvement process. [PDQ] links quality assessment and improvement with community mobilization” (Save the Children 2005).

<sup>28</sup> CLTS “is a community-wide behavior change approach that mobilizes communities to undertake their own appraisal and analysis of sanitation issues and take their own actions to become open defecation free (ODF)” (UNICEF 2013).



Développement et la Solidarité (OCADES), and Association Tin Tua. Major government partners include the Provincial Directorate of Agriculture, Water, and Fisheries; the District Health Directorates in the three targeted districts; and the Provincial Directorate of Basic Education and Literacy. FASO’s goal is “vulnerability to food insecurity is sustainably reduced in the Health Districts of Boulsa-North, Manni and Gayéri (North-Central and Eastern Burkina Faso).” The program has three SOs:

- **SO1 (agriculture and natural resource management):** 56,126 households have improved access to food of sufficient quantity and quality throughout the year.
- **SO2 (maternal and child health and nutrition [MCHN]):** 51,426 mother/child units have improved health and nutrition status.
- **SO3 (local governance):** 800 community structures have improved local governance practice.

SO1 seeks to improve access to food through increasing agricultural production and revenues. FASO targets seven crops, including four staples for consumption and sale (rice, cowpeas, sesame, and sweet potatoes) and three staple cereals (sorghum, millet, and maize). The project promotes production through improved access to inputs, primarily seed and fertilizer; use of improved technologies and techniques through demonstrations and participatory variety selection; and enhanced quality of land resources through lowland water control infrastructure development and conservation agriculture techniques such as the Zaï method. The project aims to increase farmer revenue via improved storage and processing practices, expanded marketing capacities, and access to capital through SILCs and MFI loans.

The goal of SO2 is to improve MCHN status using two approaches. The first is PM2A (including a household ration during the June–October lean season) to integrate food assistance with the promotion of improved nutrition, hygiene, and care practices for children under 5 (with a focus on children under 2), and pregnant and lactating women. Activities include food assistance and BCC that focuses on Essential Nutrition Actions (see Appendix 4 for more information) Essential Hygiene Actions,<sup>29</sup> screening children for malnutrition, and prevention of key maternal and childhood illnesses. Primary activities include care groups, a community-based communication strategy, screening and referral for malnutrition, and active supervision at health centers. For the second approach, CRS’s partner GRET produces and promotes a local fortified flour (in lieu of imported food aid) for consumption by children 6–24 months and fortified water for pregnant and lactating women. Village nutrition volunteers oversee BCC activities, malnutrition screening, and activities to support capacity building of health centers. Both approaches include WASH activities through the CLTS behavior change approach and provision of refurbished or new boreholes.

SO3 seeks to strengthen the capacity of community structures to ensure good governance practices in planning, mitigating, and responding to food insecurity risks. Targeted interventions strengthen internal governance and improve capacity to mobilize resources and coordinate activities for 100 village development councils (VDCs), 81 rice producer groups, 28 management committees for market gardening sites, and 18 groups of rice parboilers. The project also supports 160 water user associations (WUAs) related to borehole management as well as parent-teacher associations (PTAs) and mothers’ associations to manage school canteens.

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<sup>29</sup> Key hygiene behaviors to promote include handwashing before cooking a meal or eating, after going to the bathroom, after disposing of the stool of young children, and before feeding young children; basic household cleanliness; household protection of water and food; consumption of potable water; and use and maintenance of latrines.

## 4.1 AVAILABILITY AND GOVERNANCE LESSONS LEARNED

### 4.1.1 Farmer Training and Outreach

FFP-project activities in Burkina Faso use the Farmer Field School approach to train farmers in new agricultural production methods in groups of 20–25 people. Agricultural extension agents with the lead FFP implementer or local NGO partners identify lead farmers (*formateur indogene*), who can provide land, labor, and other inputs and are willing to manage a demonstration garden. The project extension teams use training curriculum and posters related to improved production techniques. When project extension agents begin working with a new farmer group, they observe the farmers' practices so they can tailor the training sessions. Demonstration plots are established to compare the techniques chosen by the group (method of fertilization, seeds, composting).

One organization uses the Participatory Variety Selection (PVS) methodology, which allows farmers to test different varieties of planting material provided by the government's agricultural research body, INERA (National Institute for Environmental and Agriculture Research), which in turn can use the results in its research. Farmers identify desired crop attributes then obtain planting material to test different varieties in farmers' fields with well-structured trials. The main difference between PVS and traditional demonstration plots is that the varieties tested by farmers are still under development and have not been officially released to the public. Similar to demonstration plots, farmers can learn from the results and determine which varieties and practices are best for their specific agro-ecological zone and conditions.

Learning sessions with farmer groups and exchange visits to demonstration plots to generate discussion and analysis of results have worked very well. Project extension agents accompany farmers to other areas where improved planting practices has tangibly improved crop yield. Such visits also are an opportunity for MAHRH extension agents to observe and disseminate good practices to other farmers in the area.

#### **Lessons Learned: Farmer Training and Outreach**

- Interventions targeting farmers who wish to adopt improved production techniques are more likely to be adopted when messages are tailored to their environment and actual needs.
- Project-supported agricultural extension agents are helpful upfront to train model farmers. One of the most impactful elements of this intervention has been to encourage successful farmers who have adopted improved techniques to demonstrate them to neighboring farmers.
- Model farmers who have adopted improved techniques can be drivers of innovation and have the highest potential to influence neighboring farmers to adopt proven improvements.
- Exchange visits with successful farmers in different areas worked well.

#### **PVS lessons learned:**

- The collaboration with INERA to use the PVS approach to plant short-cycle, drought-resistant, and/or micronutrient-rich varieties and to glean farmer interest is a good approach and a way to engage the government.
- The value chain for farmers to access the seeds they chose after the trial has been unsuccessful. There is insufficient availability of these improved seeds, so this issue needs further consideration and focus on the value chain.

### 4.1.2 Conservation Agriculture

To bolster smallholder resilience to periodic drought and other challenges caused by climate change, FFP implementers promote conservation agriculture and other techniques on degraded lands among target farmers. These new techniques—intended to improve soil quality, retain moisture, and reduce soil erosion—include Zaï, half-moon pit planting, contour stone bunds, mulching with crop residues, use of organic compost, and agroforestry with an emphasis on moringa, acacia, and baobab tree species that are well adapted to the Sahel’s dry conditions. Based on data from the fiscal year 2016 results report, both FFP implementers trained predominantly women in improved techniques (>65% of all participants) who were subsequently formed into groups. Both projects collaborated with REGIS-ER in conservation agriculture training in fiscal year 2016. Many of these new techniques require more time and effort as well as tools to implement properly. To address this issue, one implementer used food for work (FFW) and provided tools to female farmer groups in the program’s first year as an incentive to undertake the labor-intensive Zaï technique and to fill food gaps. They also provided tools paired with a training program to create a tool rental business managed by a committee—a best practice encouraged by the Burkina Faso government. This enables other community members to adopt conservation methods even if they lack the appropriate tools.

Despite a 30-year effort to promote soil and water conservation methods, adoption rates have been less than remarkable. As previously noted, many women are reluctant to adopt these methods due to lack of land tenure and fear that they could lose access to land once it becomes more productive. Farmers who rent land, such as migrants, also confront the same conundrum. Others have cited constraints such as a lack of money to buy appropriate tools, and the labor and time the methods require, though the results are widely acknowledged to increase yield, especially on degraded lands in drought-vulnerable regions. For these reasons, many interventions, including those implemented by ACDI/VOCA and CRS, initially included FFW/CFW (cash for work) and tools. Though FFP projects phased out FFW/CFW after year 1, many communities expect to continue to get food, which has been problematic. However, targeting vulnerable and female-headed households requires an initial push to encourage adoption and consideration of land tenure issues (Section 4.1.4).

### Lessons Learned: Conservation Agriculture

- Pairing soil and water conservation methods such as Zaï with tools and training to manage a tool rental business is sustainable. The business could be profitable and generate income to replace tools. Such an effort must include literacy and management training to guarantee long-term success.
- Women are hesitant to adopt soil and water conservation methods due to lack of land tenure and likelihood that they will lose access to land they have improved using conservation techniques. Broader implementation of land reform may improve the situation, but it remains unclear and there are many cultural barriers to overcome.
- Adoption of conservation methods such as Zaï is likely to be higher if good land is scarce and degraded land is abundant. Zaï and other techniques are less appealing if there is no need to farm on marginal land.
- Using FFW/CFW in the first year only to encourage adoption of Zaï and other water and soil conservation methods allows women to better manage their time and resources to improve the productivity of degraded lands they farm. FFP implementers communicated with recipients from an early stage that cash and food incentives would be phased out.
- A lack of compost often hampers conservation agriculture methods. Farmers must be trained in proper compost production methods, which must be implemented immediately after the harvest to take advantage of rainwater and availability of straw.
- Radio campaigns by FFP implementers and REGIS-ER have been useful for widely broadcasting information about conservation farming techniques and benefits.
- Exchange visits of farmers to see conservation methods successfully implemented have been useful.

#### 4.1.3 Improved Seeds

FFP baseline studies showed that few farmers use improved seed in proposed intervention zones, and so FFP implementers used various strategies to introduce improved seeds, promote local seed multiplication, and foster adoption of promoted seed varieties. The GOBF regulates the sector to verify that input suppliers have obtained quality seed and maintain storage that meets industry standards. The lack of input supply shops in the targeted zone is a fundamental problem. Larger wholesalers interviewed for the REGIS-AG baseline noted that these remote areas were unprofitable markets for them. In the initial years of implementation, programs bought high quality seed and gave participants coupons to buy discounted seed packs from designated regional suppliers. Programs also hosted seed fairs in FFP-targeted areas to establish linkages between input suppliers and farmers supported by FFP projects. They collaborated with a national agro-dealer network called AGRODIA to implement the seed fairs. Beyond the challenge of selling seeds in a remote market to a population with limited cash flow, the input supply business is thwarted by free distribution of inputs by NGOs and the government. When one implementer encouraged target communities to buy non-subsidized quality seeds, there was no interest due to the perceived high cost.

There has also been a concerted effort to train farmer groups, especially women, to multiply seeds for individual use and local market demand. Both FFP implementers have worked with the government's research body, INERA, to train farmer groups in seed production techniques. FFP implementers provide seed multiplication groups foundation seed for cowpeas and sorghum in the first year of the program and further training in seed multiplication in collaboration with INERA. In addition to linking these multiplication groups to the government, FFP implementers also promote the formation of rotating

savings groups (SILCs) which can facilitate the bulk purchase of inputs and link these farmer groups to MFIs for credit and agro-dealers for marketing their seed and for input purchases.

### Lessons Learned: Seeds

- Input stores in rural areas are rarely profitable due to the remoteness of some zones, weak demand, and the ubiquity of seed giveaways. Subsidizing seed through local input stores can be a good approach to introduce new varieties but the price must be commensurate with quality seed and fertilizers.
- Project-sponsored seed fairs during a project's early stage promotes product and price discovery among farmers and creates an opportunity for suppliers and farmers to meet and arrange for seed orders.
- Holding roundtables with all players in the value chain has been instrumental in introducing the different stakeholders and finding solutions to supply chain problems.
- It is important to pair seed multiplication programs with rotating savings or access to credit to ensure future access to foundation seed and other inputs necessary to manage multiplication.
- Nascent input supply stores and seed multiplication groups can benefit from business skills training.
- Community seed multiplication involving at least 3–5 ha can be a cost-effective way of addressing supply constraints if the groups can produce good quality seeds. Collaboration with regional seed inspectors is also necessary.
- Collaboration with INERA's regional research stations to access and test new varieties has worked.
- Local seed multiplication has proven to be an effective way for farmers to access improved varieties and observe how new varieties perform in the fields where they will be planted (e.g., agro-ecological zones).

#### 4.1.4 Land Tenure

According to key informants, there is little tangible evidence that the 2009 Land Reform Law is being implemented in the rural areas where FFP implementers work. The Millennium Challenge Account has supported the government to enact some elements of the law in 62 of 351 total communes within three regions. Some pilot projects funded by donors are testing the operability of certain elements of the law. In many respects, the cultural norms that dictate access to land for indigenous people, migrants, and women remain largely intact. Implementers note that women are able to access land for farming in the areas they work, but they are often given the most degraded land to farm and can only access it through their husbands. Migrants, widows, and divorced/separated women can rent land if they can afford it, but they also have a difficult time accessing quality land to farm. Starting in fiscal year 2017, the final year of the FFP projects, both organizations began working with a governmental body under MAHRH called l'Observatoire National sur le Foncier (National Land Observatory) to make sure that the farmers they support understand their rights and how the law can affect them. In addition, the 2009 law will use local committees to formalize the land leasing process, which has the potential to improve vulnerable groups' land tenure.

### Lessons Learned: Land Tenure

- The new land reform law will eventually have an impact on rural smallholder farmers, but application of these laws that will enhance land tenure for smallholder farmers, especially women and vulnerable households, and establish a local mechanism for local governments to oversee. This will likely take decades to materialize and will face significant cultural barriers.
- Collaboration with a parastatal called l'Observatoire National sur le Foncier to train targeted households on their land rights and key elements of the new land law have been well received by trainees.
- The VDCs supported by some FFP implementers will be important players in evolving land reform. Capacity strengthening and literacy training for VDCs by FFP will be instrumental.
- It has been helpful to follow the new land law's APFR certificate process when designating access to project-supported lowland areas that benefit a community yet are owned by an individual or are under traditional stewardship.

#### 4.1.5 Lowland Development

To increase productivity of marginal lands, FFP projects promoted a low-cost, simple-to-build water control mechanism on mild sloping lowlands to grow rice. Once appropriate areas have been identified, the projects sought advice from the government's Directorate for Irrigation Development (DADI), which was then engaged to monitor the site and provide technical training. Project teams identified a group of participants and negotiated access to the site with the owner. Given initial labor requirements to build bunds and put water control mechanisms in place, FFW was used to compensate community laborers. Such interventions were also paired with access to the improved NERICA rice variety and fertilizer. In many ways, these efforts have been a significant success and contribute to resilience against food insecurity and climate variability through increased income and production on marginal lands.

### Lessons Learned: Lowland Development

- Of the farmer groups assisted with rice production in lowlands, the most successful ones had good internal organization and were able to mobilize producers to commercialize rice and maintain the structures over time.
- The low-cost water control mechanism built in the early stages of the FFP projects failed due to heavy downpours. Recent lowland interventions used a more robust infrastructure that reinforces dikes with stones, protects gullies, and improves water management by adding a water regulation system.
- With the removal of subsidies for inputs such as improved rice seed and fertilizer, lowland producer groups struggled to access inputs. The FFP implementers connected producers to MFIs for loans to buy inputs, however many defaulted on their loans. Initial working capital and business skills training are needed to facilitate access to inputs and maximize investments.
- Some lowlands were negatively affected by drought. In some cases, it was possible to use some basic irrigation techniques, but the complete lack of water sources near these sites needs further consideration.
- Negotiations with landowners to develop lowlands took longer than expected. One should estimate that negotiations and technical and socio-cultural studies take 1 year before lowland sites can be developed and farming can begin.
- The ideal size plot for an improved lowland site managed by a community is 5-10 ha. Larger sizes are difficult to manage. In practice, each household has been allocated approximately 0.15 ha.

#### 4.1.6 Livestock

Livestock ownership is pervasive in Centre Nord and Est provinces where the FFP projects work. Most households have sheep, goats, and chickens and own between one and five animals. However, production is low due to the lack of veterinary care, limited fodder due to dry conditions, and lack of supplemental nutrients to enhance animal growth. One of the implementers sought to enhance the profitability of small ruminants—and improve household resilience—using a systemic approach to more effectively integrate agriculture and livestock production to make best use of organic manure, food and fodder crops, and production diversification. Some newly introduced techniques included rationing techniques for small ruminants that economize and use limited fodder efficiently, moving and conservation of fodder, hygiene of chicken coops, care for poultry and ruminants, and animal vaccination. For example, improved rationing of fodder allows pastoralists to stretch limited resources and encourages methods to ensure that herd animals can access equal amounts of fodder. Exposure to these techniques have enabled pastoralists to determine which fodder is most effective and profitable and has reduced mortality rates for animals, especially poultry, in the coverage area.

The animal health component included support to volunteer village vaccinators (VVs) to enhance vaccination coverage of small ruminants. One project linked livestock producers to Ministry of Livestock officers and VVs to access vital livestock inputs and veterinary services. Vaccination and deworming campaigns have been conducted in the past several years. A voucher program was also introduced to encourage pastoralists to vaccinate their animals, which has been quite successful. In the past year, one project collaborated with REGIS-AG to train FFP-supported VVs to expand their skills in the treatment of small ruminants and help them to qualify as more formal animal care providers, called *Auxiliaire d'élevage (AE)*.

## Lessons Learned: Livestock

### *Livestock production*

- Participants in the target zone have appreciated interventions to enhance small ruminant production and health given the importance of livestock to income, diet, and enhanced resilience.
- Pastoralists are adopting new forage management techniques such as mowing and conservation for small migrating ruminants and forage stocks. Producers now recognize that improving animals' diet through better quality fodder makes the animals more productive.
- One of the most impactful techniques introduced has been fodder rationing for small ruminants, especially poultry. This allows producers to improve management of their stock and feed the most animals.
- Some important techniques related to poultry-rearing include the care of chicklings in the first month, improved poultry varieties, construction of improved animal habitats, and introduction of improved and nutritious feed using locally produced grains and other ingredients.
- Producers have seen the benefits of collecting manure for use in agricultural production.

### *Animal health*

- Private veterinarians and paravets (VVs) were established in remote areas enabling producers there to access services and improve animal husbandry.
- An analysis of earnings received by trained VVs shows that this undertaking is profitable and is likely to continue beyond the life of the project.
- Organized animal vaccine campaigns that bring many producers together with their herds support demand for veterinary services such as vaccinations.
- Regular monitoring and meetings of VVs and AEs are best practices to ensure quality service delivery.
- The high cost of animal vaccines in rural areas remain a challenge.

### 4.1.7 Stock Warrantage

FFP implementers have experimented with a unique way to help producers earn more money for their harvests and access credit to finance input procurement or other needs through a *stock warrantage* mechanism. Since prices tend to slump after harvest when a glut of product is available on the market, a *stock warrantage* mechanism allows producers to store goods so they can sell them later when prices increase. In this mechanism, farmers, traders, exporters, or processors deposit commodities at a commercial or community warehouse and receive a document from the warehouse operator or collateral manager that confirms the quantity and quality of the commodities and the document holder's authorization to access the commodities (CNFA 2016a). This approach is akin to the warehouse receipts mechanism used widely in North America, South America, Asia, and Europe, but which normally include more legal mechanisms, formal collateral management, and insurance.

FFP implementers support farmer groups through training in the *stock warrantage* process, creating linkages to MFIs for loans and in some cases providing partial loan guarantees for initial transactions, guidance in warehouse and stock management, and identification of warehouses in the target zone that meets appropriate standards. The mechanism has the potential to improve the supply of rural finance by using stock as collateral for a loan so the farmer can access funds when he or she needs it most. Some of the biggest challenges to such programs are the availability and quality of warehouses, maintaining product quality in the warehouses, and access to credit. By the end of fiscal year 2016, ACDI/VOCA and



CRS had successfully used the *stock warrantage* mechanism to collectively store over 200 MT of cowpeas, sorghum, groundnuts, and millet in secure and accessible local warehouses. One group in Sanmatenga was able to collateralize 84 MT of commodities to access 9,416,500 CFA francs (US\$15,337) in credit. The group is composed primarily of women (70%) who used the credit to buy cereal for household consumption, processing, fattening of animals, catering, and small-scale trade.

### Lessons Learned: *Stock Warrantage*

- The *stock warrantage* mechanism has already proven to be viable by helping producers, especially women, access funds at a crucial time while simultaneously making more money on the eventual sale of their products. Many warrantage participants are using funds to invest in other small businesses to enhance resilience.
- Other NGOs set a potentially bad precedent by providing funds to MFIs to guarantee stored commodities, ostensibly in lieu of insurance. In locations where this was not done, FFP implementers were not required to deposit funds to protect stored stock.
- An effective *stock warrantage* mechanism requires good warehouses and an MFI willing to use the stock as collateral in its loan portfolio. Implementers found that quality warehouses were hard to find. Much preparation is needed before launching such a program to ensure that these elements are in place.
- Implementers have found it advantageous to foster management committees among producer groups to act as the interface between MFIs and benefitting communities to ensure long-term trust and success.

#### 4.1.8 Community Savings and Loan Activities

There are few formal and informal financial services where the current FFP projects are engaged. Both interventions have launched initiatives to promote community-based savings and lending activities to generate capital for income-generating activities, e.g., SILCs and women's savings groups (CECI). Both implementers introduced this activity later in the project cycle after other groups had been formed to ensure that members would be able to mobilize savings. Generally, member contributions are collected weekly and loans are given to members based on the capital available. Part of the savings collected covers group events or emergencies that affect members. At the end of a cycle, usually 9–12 months, accumulated capital from sales of shares and interest income on loans is distributed to members based on the number of shares that each has purchased. After completing a cycle, the group decides whether to start a new cycle and whether changes to the savings and lending terms are needed. To create new savings groups using a local mechanism, one implementer launched a private service provider (PSP) network composed of the strongest savings groups to help new groups set up in return for a small payment. This approach contributed to the creation of many more savings groups than would have been possible through the project alone, though nearly half of the PSPs formed are not performing as expected.

Some of the current projects have linked more advanced community savings and loan participants to established MFIs and credit unions (*caisses populaires*) in implementation areas to encourage access to financial services. Through partnership with these credit unions, one implementer helped establish several village banks with thousands of mostly female members who were able to save and borrow to support activities such as sheep fattening, input purchases for growing vegetables, small businesses, and commercial trade.

### Lessons Learned: Community Saving and Loan Activities

- Program participants were very enthusiastic about the positive impact of savings and credit, especially women and vulnerable households. Savings groups have improved social cohesion and access to financial resources for household needs, health care, education, and further investment into income generating activities.
- Since one implementer introduced the savings groups late into the project life cycle—well after the formation of producer groups—the producer groups showed limited interest in participating in or forming a new savings group. It is better to have the savings group component integrated with the other SOs from the start.
- When working with new savings groups, it is helpful to have training in basic literacy, simplified accounting, basic financial education, and marketing.
- When creating a network of PSPs that will help to create more rotating savings groups, participating PSP members must understand their roles and responsibilities. In addition, active PSP members must be paid for their work to make this model truly sustainable and possibly paired with other income-generating opportunities.
- A diagnostic tool to assess the capacity of the PSP should be developed and used to monitor performance regularly.

#### 4.1.9 Value Chain and Smallholder Marketing

Implementers took a value chain approach to link key value chain actors to find opportunities and address constraints. During the project design phase, FFP projects chose 11 value chains—sorghum, cowpeas, rice, sweet potatoes, millet, maize, sesame, onions, tomatoes, small ruminants, and poultry—given their importance to household food security and potential for improved integration into national and sub-regional markets, especially for crops such as cowpea, rice, sweet potato, sesame and vegetables. There has been a significant effort to improve producer group capacity through literacy and production-specific training (e.g., *Farming as a Family Business*) in crop calendar development, collective input purchase, bulk marketing, and accounting. For rain-fed crops, the projects linked producer groups to commodity-specific unions that can negotiate on their behalf and provide commodity finance. A good example of this is the Union Départementale des Producteurs de Niébé (UDPN) of Pissila that has linked around 20 groups of cowpea producers to larger buyers. Some producers received coupons to buy PICS (Purdue Improved Crop Storage) bags from local agro-dealers to reduce insect infestation in stored commodities. For off-season crops, the market is both volatile and competitive, so farmer groups have been advised to undertake bulk storage and marketing, especially for onions. Concerted value chain efforts have helped farmers to collectively sell nearly US\$1 million of cowpeas, onions, small livestock, and poultry in this fashion. The best performing producer group received training in quality standards and received marketing equipment such as scales, sewing machines for sacks, and cleaning machines. Another important effort has been to train producers in the importance of using standardized metric weights for commodity sales.

To improve the transmission of market information to smallholder farmers, various mobile solutions have been promoted among smallholder farmers. One implementer used a platform called *SIMAgri*, which provides real-time price and sales information for agriculture and livestock products. The project registered producers as *SIMAgri* members to access prices and sales opportunities through their mobile phones, though no transactions had been made through the platform as of fiscal year 2016. Another organization used the Ghana-based platform called *Esoko* that provides market price information and a

way to sell and make bids. Both programs conducted basic value chain analyses (VCA) of cowpeas and sesame, and REGIS-AG conducted more comprehensive VCAs of cowpeas and small ruminants in fiscal year 2016.

### **Lessons Learned: Value Chain and Smallholder Marketing**

- Value chain actors such as producers, agro-dealers, processors, and buyers have benefited from attending a regular meeting to prepare action plans, address constraints, and discuss other issues. One of the most significant outcomes has been to agree upon standardized weights in kilograms for transactions.
- Working through commodity-specific unions has been beneficial for producer groups to access larger markets and negotiate prices through economies of scale.
- For producer organizations to take advantage of bulk marketing opportunities in the commercial market, as well as WFP's Purchase for Progress program or SONAGESS, producers should be trained in quality standards, have marketing equipment (scales, PICS bags, sewing machines, etc.), and have fundamental literacy and numeracy skills.
- Literacy among producer group members is key to successful bulk marketing. Implementers have seen significant transformation among individuals who achieved basic literacy and numeracy after a 3-month training.
- One organization used a self-evaluation tool to measure producer groups' performance. The tool has helped the groups address constraints and orient projects to their needs.
- One challenge with SIMAgri is that information is in French. It would be more beneficial to have information in local languages. Platforms such as Esoko and SIMAgri can also be difficult for producers to use because of low literacy.
- Initial access to the Esoko market information license was provided through a former USAID project. When the project ended, smallholders lost access and could not pay for a subscription. It is unclear how market information can be collected and disseminated in a sustainable way without project support.

#### **4.1.10 Off-farm Enterprises**

One implementer has a competitive small grants program that supports new and existing rural micro-enterprises. Successful applicants are eligible to receive grants up to 3 million CFA (US\$5,100) for primarily off-farm enterprises in one of the FFP intervention zones (4 communes). Applicants are not required to be existing participants in any FFP project activities. There is significant interest in this program given that the program received 909 applications within one month of its being announced. In early 2017, the program awarded grants to 176 micro-enterprises; women make up 74% of the entrepreneurs. The application review process and monitoring of awardees is undertaken by a grants manager, assistant, and two temporary interns during the peak application period. Team members undertake a field visit during the review process to validate the project and candidate. Critical elements that reviewers look for when assessing applications include:

- Relevance to objectives of FFP project
- Innovative and pertinent nature of grant to its surrounding environment
- Quality of the application
- Potential to protect the environment
- Existence of a profitable and sustainable market for product or service

- Convincing cash flow projection that exhibits realistic revenue and mitigating factors
- Grantee has an account at a bank or MFI which can be a source of future financing

The organization carried out an assessment of 20 microenterprises that received grants in FY2016. They found that value-added food products or services were the most profitable, but negatively affected by volatile market prices during the lean season when commodity and livestock prices were at their highest. Small scale artisans also appeared to be more profitable than other businesses. Livestock fattening and hygiene-oriented businesses such as soap making were the least profitable businesses.

### **Lessons Learned: Off-farm Enterprises**

- The large number of applicants for the microenterprise grant program suggests there is keen demand for financing and interest to start small businesses in remote rural areas the FFP programs serve.
- Volatile commodity prices and the high cost of equipment undermine profitability and potential viability of grantee microenterprises specializing in value addition of commodities or livestock.
- Though participation in an FFP intervention is not a prerequisite to apply for a grant, FFP participants who secure a grant tend to run more profitable businesses as a result of previous technical assistance.
- Grantees who operate as an individual business tend to perform better than collective ventures.
- Illiteracy rates are high in the FFP intervention area so many applicants have literate people in their communities prepare the grantee application on their behalf. Nonetheless, microenterprises run by literate people or those who have taken part in FFP-supported basic literacy/numeracy training perform better.
- Female applicants have submitted the strongest grantee applications, comprising 74% of the current grantee pool. An analysis of FY2016 grantees revealed that female-run microenterprises are slightly more profitable than their male counterparts.

#### **4.1.11 Village Development Councils**

One FFP implementer supports VDCs composed of elected members who manage village community development and support CBOs in the village (e.g., PTAs, mother's associations, lowland rice producers, water user associations). The project strengthens VDC capacity using good governance practices in planning and mitigating and responding to food insecurity risks. Interventions have been promoted by laws that require the election of new VDC members every three years with an emphasis on members who are literate, female, and representative of various socioeconomic groups and professions in the village. Though such councils have existed for some time, it was in name only, often reflecting the priorities of its president. One of the most impactful interventions has been to help VDC members prepare a planning document that prioritizes needs and potential actions. It has been observed that villages that have a planning document vetted by the local population have a better chance of mobilizing finances from the community, diaspora, local government, or donors. These plans are also important because local governments often lack human, material, and financial resources to implement and supervise communal development plans. After several years of support, VDCs are now recognized as legitimate and legal structures to manage local affairs at the village level.

### Lessons Learned: Village Development Councils

- Local populations often have limited interaction with municipal councilors or input in the implementation of communal development plans. Capacity strengthening for VDCs has bolstered these interactions to engender tangible development outcomes that benefit the community.
- VDCs have an easier time mobilizing funds for development projects from community members when a development plan has been developed in a participatory way with the community.
- Monitoring of VDC activities by the municipalities decreases once external financing has been withdrawn unless it has been budgeted by the central government, which rarely occurs.
- There has been more conflict than synergy among different actors such as city councilors and VDCs due to lack of understanding of their roles and responsibilities. Joint training sessions on the roles and responsibilities of each have reduced such misunderstandings.
- Self-assessment tools have helped VDCs reflect on their strengths and weaknesses to address problems.
- VDCs are well positioned to have an active role in evolving land tenure issues. They can also benefit from the support of the National Program for Land Management (*le Programme Nationale de Gestion des Terroirs*) which has a local development fund.
- Training municipality staff in their roles and responsibilities improved their relationship with the VDCs and led to their participation in municipal meetings on a regular basis.

#### 4.1.12 Parent-Teacher Associations

After several decades, school feeding programs funded by USAID/FFP through development assistance were phased out in Burkina Faso during the life of the project, though this intervention was undertaken by only one of the FFP implementers. Support to PTAs had long been an element of this assistance, especially given their involvement in hygienic preparation of food for wet feeding at primary schools. After providing initial food aid support to 300 schools in the first years by one of the FFP implementers, the organization challenged PTAs to work with VDCs to garner local financial support to maintain school feeding. In addition, the national government launched a fund to match monies raised by PTAs. This is part of an ongoing decentralization effort to encourage communes and local communities to take greater responsibility to manage local schools. Regrettably, the results have been mixed as the communes have not received sufficient funds for these activities, though the situation is better in areas where gold mines contribute to such funds. Though many PTAs have requested funds to support school feeding from local government and communities, they have not been able to match the coverage provided by a donor-supported program. In addition to school feeding, PTAs have been involved in actions to promote girls' education.

### Lessons Learned: Parent-Teacher Associations

- One major goal of school feeding in Burkina Faso was to help increase enrollment of girls in primary school. Despite the end of FFP-supported school feeding, girls' enrollment in the targeted zones has remained at the same levels.
- Support to PTAs and school canteens have been most successful when it includes organizational management training for school head masters to ensure that the canteen can be maintained through contributions from parents and enable the PTAs to approach donors for additional resources and ensure accountability of funds and materials.
- Hygiene training for food preparation at school canteens for PTAs has helped improve hygiene standards and encouraged many PTAs to raise funds to build dedicated food preparation structures at schools. They have also encouraged children to wash their hands before eating and to use clean plates and utensils.
- The girls' mentoring program helped participating girls earn higher scores on national exams, with an average score of 91.8% versus the national average of 82.2%.

## 4.2 MATERNAL AND CHILD HEALTH AND NUTRITION AND WATER, SANITATION, AND HYGIENE LESSONS LEARNED

### 4.2.1 Provision of Food Rations

To address the high levels of stunting in Burkina Faso, both FFP projects used a preventive approach, targeting the first 1,000 days from pregnancy to age 2. One FFP implementer also worked with a partner who produced and promoted a locally made fortified flour (*Yonhama*) for consumption by women of childbearing age and children 6–23 months. In these project areas, the fortified flour was provided to participants instead of the preventative rations. Preventive rations were provided to all pregnant women (beginning in the second trimester), women up to 6 months postpartum, and children up to 2 years based on the criteria that they received either pre- and postnatal services from their health facility or general health services from the other project. Projects made concerted efforts to provide food distribution sites within 10 km of the communities receiving support. For one project, food distribution typically took four to five days, with each village having its own day. Wait periods were initially very long but then dropped to two to three hours when a more structured order was established, with beneficiaries divided into groups: pregnant women, lactating women, and children. In addition, a protective household ration was provided in the lean season (June–October) to reduce the risk of sharing among other household members, as is common. During the rainy season beneficiaries had trouble accessing rations, so one program pre-positioned food in secondary stores that serve areas that are hard to access. In addition, communities have organized means of transport (carts, motorcycles, bicycles) to collect rations and transfer the food from the shops for distribution in the communities.

The ration component raised the larger concern over the propriety of providing preventive rations and how to do so without fostering dependency and disrupting markets, and there is general concern about avoiding dependency, promoting self-sufficiency, and avoiding market disruption. In addition, one project found that while most beneficiaries and community members found the selection criteria for food aid acceptable, limiting participation to one cycle (i.e., a woman cannot benefit twice from rations even if she becomes pregnant again during the project) was highly criticized. Certain men felt that this was an effort to limit births in a concealed attempt at FP. Conversely, a nurse in one project area felt that the food distribution to pregnant women could hinder FP efforts, as the women treated have reportedly removed

their implants in order to get pregnant and receive the ration. The other project did not mention this issue, and it is unclear how widespread it may be. Still, the project suggested that health/nutrition education (e.g., care groups and community mobilization around breastfeeding, water, sanitation) should begin the year before food distribution so communities see the promotion of optimal health/nutrition behaviors as the main project elements and that the food is only secondary. Village health and nutrition committee members told the project that they understood that FP reduces health problems and helps fight malnutrition; continued promotion of the overall benefits of FP to health and nutrition could also be helpful.

Before the distribution of food rations were ended, FFP projects sought to ease the transition by promoting local alternatives. One project sought to help communities adjust to the phase out of rations by promoting *Yonhama* in all project areas (not just those where the flour was used originally). Families were sensitized to the product through care groups, radio broadcasts, and promotion at local markets. In addition, a fortified-flour production unit was set up in project areas to increase production capacity. Both projects, through care groups, emphasized cooking demonstrations and use of local foods and recipes to take the place of food rations. One project also worked with women on storage of these foods for up to two weeks. Video screenings on health topics (e.g., breastfeeding, complementary feeding, hygiene and sanitation, the benefits of giving birth in a health center, and the importance of vaccinations for children), which were popular, were also used to promote recipes and foods.

#### **Lessons Learned: Provision of Food Rations**

- Increasing the number of distribution sites during the rainy season helped ensure beneficiaries could access the food.
- Locally made complementary foods (e.g., *Yonhama* and *Misola*) that can be bought in the market or made at home are options that can be promoted. Formative research has shown that locally made fortified complementary foods are acceptable and that families are even willing to pay for them. However, production of these foods requires subsidies by the implementing partner and therefore may not be a sustainable option.
- Initiating behavior change activities before food distribution may be necessary to prevent unintended consequences on FP. However, additional discussion and research on this issue is warranted.

#### **4.2.2 Treatment of Malnutrition (Acute Malnutrition)**

Current FFP projects support the screening, referral, and follow-up of both MAM and SAM through training community-based health agents, CHWs, and mother leaders (MLs). Health facilities were routinely able to treat children with SAM with support from UNICEF, although there were occasional stock-outs of supplementary foods (provided by WFP) for children with MAM. Depending on the project, CHWs or MLs follow up to make sure referred children were taken to the health facility, promote adherence to treatment, and provide additional counseling to the family. However, the project using CHWs found that doing so may not be sustainable as the CHWs were supported through stipends paid by the project. At the time, MLs were not used to screen for malnutrition as the project thought it too burdensome on top of their food distribution and peer support (i.e., leading care groups) responsibilities. The project also initially was worried about the ability of MLs to report on malnutrition screening activities because most MLs were illiterate. However, research in the Sahel has shown that illiterate women can conduct screening nearly as effectively as literate CHWs; in addition, MLs that the other

project used successfully screened and referred SAM and MAM cases<sup>30</sup> using low literacy reporting tools. Moreover, because MLs already have relationships with other women and young children in their communities and do not expect compensation for their work, the project felt they could be used to continue community-based screening efforts when the project ends.

### Lessons Learned: Treatment of Malnutrition

- Using MLs to screen for malnutrition may be a sustainable alternative to using CHWs, who require compensation. However, if MLs are used, low- or non-literacy training and reporting materials will be necessary.
- FFP projects play a key role in strengthening the capacity of community-based networks to screen and refer children with acute malnutrition and link them to health services. Projects can strengthen avenues for following up on referred children and help fill gaps in the system and ensure children are found and referred appropriately.
- FFP projects can continue to build capacity at both the community and facility level to identify, treat, and monitor the malnutrition situation. Using MLs is one way to improve sustainability, but project support to build the capacity of health care workers to provide supervision and mentoring, as well as working with the government to prioritize and fund this supervision, is also critical to increased sustainability.

### 4.2.3 Strengthening Health Facilities

The continued use of health services, which was supported by the provision of food aid (both projects based ration eligibility on health service utilization), relies on provision of quality services. Both projects sought to strengthen the overall health system and improve the quality of health service provision through capacity strengthening and logistical support. As noted, one project used the Partnership Defined Quality (PDQ) strategy to improve care in two pilot health centers (see footnote 29 for a definition of PDQ). The project's midterm evaluation found that the PDQ strategy was successful,<sup>31</sup> and it was rolled out to additional health facilities. One project provided active supervisory support to ensure protocols for treatment of acute malnutrition were followed and worked to improve IYCF counseling skills. However, both projects remarked that lack of equipment continues to be a problem and decreases the quality of care provided at the health facilities. Training of health facility staff by the projects was limited, as other implementers working in the region provided training (e.g., UNICEF provided training on management of acute malnutrition in one project area), indicating that continued coordination among implementing partners to reduced duplicative activities is warranted. Overall, however, high turnover of health facility staff make frequent trainings necessary.

One project's midterm evaluation noted that health facility staff were unaware of how to identify and address stunting, as Burkina Faso has been so focused on acute malnutrition. In addition, health cards reviewed had outdated growth curves, and facility staff acknowledged that they do not fill in growth cards consistently. Additional work on monitoring under-5 growth and how to address chronic malnutrition is warranted.

<sup>30</sup> One project in Burkina Faso found that MLs' malnutrition screening was 81% accurate.

<sup>31</sup> In one project area, the development activities increased assisted childbirth from 50% to 90%.



### Lessons Learned: Strengthening of Health Facilities

- The use of a systematic approach (e.g., PDQ), to improve the quality and accessibility of health services has worked in Burkina Faso, and further use of the strategy (or a similar strategy) would benefit the country's health system.
- Continued support from future FFP projects to strengthen the capacity of health facilities, support infrastructure and logistical needs, and improve monitoring systems are important to ensure families have access to quality health services.
- Lack of necessary equipment impedes quality improvement efforts. Support from future FFP projects could help to address these needs through coordination with the Ministry of Health.
- There is a need for increased awareness and training on how to monitor and prevent chronic malnutrition.

#### 4.2.4 Strengthening Community Health Services

The FFP projects in Burkina Faso engaged with community health service providers—CHWs, community health agents (CHAs), and community health volunteers) and MLs to support the provision of preventive and curative outreach services (more information on MLs and the care group model is discussed below in the social and behavior change communication [SBCC] section). These community-based workers have a wide range of responsibilities but are often illiterate or have very low literacy due to low rates of formal education in Burkina Faso, which limits their capacity. Both projects trained community-based workers to strengthen their capacity. One project strengthened CHW capacity to conduct more comprehensive outreach to provide preventive and curative services through training in several essential health and nutrition areas; CMAM, IYCF, WASH; promotion of optimal health behaviors through counseling and home visits; treatment of basic child illnesses through community case management; and referral of clients to health facilities as needed. The other project also built capacity through trainings, but focused more on immunization and vitamin supplementation campaigns, ORS and zinc distribution for identified diarrheal cases, and screening and referral for SAM and MAM. Burkina Faso has many very remote and hard-to-reach areas, and access and transport posed challenges to supporting community health services.

### Lessons Learned: Strengthening Community Health Services

- Continued support to CHWs is critical to ensuring necessary health services are provided due to the limited range and scope of health facilities in the country.

#### 4.2.5 Social and Behavior Change Communication (SBCC)

Both projects use the care group model, which is an interpersonal communication and peer learning approach, for the majority of their SBCC work. The projects selected MLs to work with 15 women (pregnant/lactating women and women with children under 2) in their community. Project health promoters trained the MLs to counsel other mothers on optimal health and nutrition behaviors through group sessions and in-home visits. MLs were encouraged to do the following within their respective groups: monthly meetings, home visits, cooking demonstrations, and, for one project, routine screening for malnutrition. The care group model appears to be quite successful in Burkina Faso, as projects found (from baseline to mid-term evaluation) that the care group model helped increase demand and use of health services (e.g., antenatal care, assisted delivery, postnatal care, child immunization, and child

growth monitoring). The government has chosen, with UNICEF's support, to establish its own cadre of women, called *Groupes d'Apprentissage et de Suivi des Pratiques d'ANJE* (GASPA), to lead similar groups in an effort to address high rates of chronic malnutrition with a specific focus on addressing IYCF. There will be specific groups for pregnant/lactating women and women with children under 2, which will allow for targeted messages (e.g., the pregnant group will not cover complementary feeding as much as the group with children under 2). However, the coverage area may need to be expanded to find enough women of the same physiological status, which could limit the interaction of group members outside of their monthly meetings.

When food distribution ended, MLs were encouraged to continue their activities through award ceremonies and participation in activities including agriculture, SILCs, and WASH. For example, MLs were used to support CLTS activities and were rewarded with a kit to help build latrines for their own homes. Incentives and continued inclusion of MLs in project activities were key to motivating MLs, but their inconsistent engagement and lack of supportive supervision still impedes this approach.

Radio is the primary means of disseminating BCC through mass media in Burkina Faso. One project is also using theater and community gatherings to promote maternal, infant, and young child nutrition and WASH messages, including specific messages on CLTS and on using local nutritious foods for complementary feeding. Another project showed videos in villages, which was so well-regarded by the communities that the midterm evaluation recommended scaling up the activities and having the project invest in its own equipment. Lastly, one project used giant scoreboards to track how the communities were doing in terms of antenatal visits, safe delivery, malnutrition, and exclusive breastfeeding. This strategy has been used in other countries as well, but the efficacy of the approach is unclear.

### Lessons Learned: SBCC

- Active supervision and support to MLs are critical to their success and are among the main sustainability issues for both the current care groups and the GASPA.
- One FFP implementer recommends working with the government to ensure that ML training and supervision is part of the CHWs' job description and that they are compensated for supporting the groups. Future projects can build on the structure of both care group models to support adoption of optimal health and nutrition behaviors.
- Because SBCC is so critical to the projects' success and requires additional attention to be effective, one project recommended hiring staff to manage the mass communication activities and other staff to oversee community mobilization.
- Promoting behavior change through interpersonal communication and various forms of mass media targeting women, adolescents, and key influencers (men, mothers-in-law, imams, etc.) is beneficial to changing individual behavior and creating an enabling environment that fosters behavior change.
- The use of video showings within communities appeared to be particularly popular and the activity was scaled up after the midterm evaluation.

### 4.2.6 Family Planning

Family planning services are available at most health centers (74% of modern contraceptives are obtained through the public sector). Injectables, implants, and condoms were the most common approaches (INSD and ICF International 2012). However, FP is not a cultural norm and is not commonly practiced. Men are the primary decision makers on FP and have been found to be resistant to its use, perhaps due to their desire to have numerous children (men's ideal number of children is 6.3 versus 5.5 for women).

FP was not an integral part of either project. One project addressed FP through its PDQ trainings,<sup>32</sup> their public service magazines, and radio broadcasts. The other used the Couple Strengthening Approach, which seeks to build the capacity of couples to communicate effectively, negotiate, and make decisions jointly; birth spacing and natural FP were discussion topics. The project sought to address the demand for non-artificial methods of FP, encouraging health and/or social marketing programs to create demand for these natural products. However, these activities occurred only during the project's extension period. Given the extremely high fertility rate in the country and the high desired number of children, addressing FP is difficult—but it will have a tremendous impact on maternal and child health and nutrition.

### Lessons Learned: Family Planning

- Due to extremely high adolescent fertility rates, addressing adolescent FP needs separately is warranted. Interventions and messages need to be tailored to adolescents, as they often have different barriers to FP methods and require different modes of communication than their older peers.
- Since addressing family planning issues was not an integral part of either FFP project, additional research is needed to understand effective ways to increase access, demand, and use of FP in Burkina Faso.

#### 4.2.7 WASH

Both FFP projects in Burkina Faso implemented the following WASH interventions:

- Drilling, repair, and maintenance of boreholes to improve access to safe water
- CLTS, a behavior change approach, to achieve open-defecation free (ODF) communities
- Promotion of key hygiene and sanitation behaviors (and installation of handwashing stations)
- Building of latrines

Both FFP projects engaged communities to take responsibility for maintaining water and sanitation infrastructure and supported current government efforts. One project worked with the community and the government by training masons to build and maintain water pumps and latrines and by strengthening the capacity of water user associations (WUAs), with trainings focused on the reform of the rural water infrastructure-management system, infrastructure maintenance, improved hygiene and sanitation around water points, and the internal governance of water management structures. These trainings led to more regular association meetings and increased contributions from the community. However, lack of trust between some WUAs and municipal governments and lack of clarity on roles and responsibilities of the WUA versus the municipal councils continue to be challenges. The project used both an interpersonal communication strategy (using masons and WASH committee members to share WASH counseling messages) and mass media (radio) to reinforce the WASH messages. The other project conducted a community mapping exercise to identify locations where open defecation is practiced and then worked with CLTS/WASH committees, which they helped develop, to promote ODF status and other hygiene activities. Committee members taught beneficiaries about handwashing station construction, use and maintenance of family latrines (emphasizing the importance of their use), and messaging on handwashing and hygiene. The project focused on supporting the government's effort to promote building individual family latrines and handwashing stations and construction and/or rehabilitation of public latrines in schools, mosques, health centers, and markets.

<sup>32</sup> PDQ activities in Guatemala helped increase the number of new family planning users by 270% after 3 years (Save the Children 2010).

Despite intensive efforts, progress on WASH has been particularly challenging as one project example illustrates: only 37% of households in project areas had access to improved latrines (although this exceeded the target of 25%). The lack of success in ODF communities is in part due to the issue around the provision of subsidies to purchase and build latrines. CLTS in Burkina Faso is intended to be implemented without subsidies for latrine construction to encourage local and more sustainable solutions. However, the government promotes a specific model of latrine that is often too expensive for families to purchase, and therefore organizations working in Burkina Faso have provided subsidies for the latrines to help with the costs. This is a challenge for the current FFP implementers, as they promote the building of the latrines without a subsidy per the government guidelines. The provision of subsidies by other organizations creates an expectation that subsidies will be provided, and often families wait to see if a project will pay for the latrine instead of finding a way to purchase the latrine themselves. This situation greatly hinders the FFP implementers' ability to promote an ODF community and impedes the sustainability of the ODF status of the country. Creation of ODF communities is also difficult due to the wide acceptance of the practice, with people reverting to previous practices even in communities with latrines, particularly when the latrines are not cleaned and maintained.

Additional remaining WASH challenges include boreholes that fall into disrepair due to limited capacity to maintain them, communities' mistrust of WUAs and reluctance to pay user fees, lack of funds to pay for water user fees, and confusion over roles and responsibilities to maintain WASH infrastructure.

### **Lessons Learned: WASH**

- Use of subsidies to support latrine purchase and development by other organizations working in the FFP implementers' areas are obstacles to the project work (which cannot provide subsidies per government regulation) and hinders sustainability as families do not find sustainable ways to purchase and maintain their family's latrine.
- Lack of household income to pay for latrines is a barrier, but this could partly be addressed with subsidies or financial support through saving and lending and/or village development committees. Although more expensive, stone latrines appear to be more sustainable than wooden ones.
- Activities such as community oversight, ensuring responsible management of funds, and constant feedback helped build community confidence that WUAs would use fees responsibly and encouraged fee payment.
- FFP implementers have found that repairing/building boreholes and forming user committees are not enough to ensure long-term access to water. They are now focused on strengthening the entire system including links with government by supporting the creation of reliable, well-run WUAs with good financial management; promoting the regular payment of fees by community members to ensure WUAs have the necessary funding; support the hiring of skilled mechanics with good business models and access to parts for maintenance and repair; and create a standardized monitoring system. Communities must discuss and agree on maintenance (including cleaning) to ensure continued use.
- Because approval from community leadership is needed for new initiatives to take hold, strong political will and the support of village elders was required to mobilize communities and successfully launch CLTS in communities.
- Continued use of CLTS to achieve ODF status is an effective means of reducing diarrhea. In one village covered by one of the projects, diarrheal disease declined from 15% to 6% in a year and then to 2% in the following year. In June 2016, the village became the only one in the FFP activity area declared ODF.
- Intensive and regular follow-up was required for communities to achieve ODF status.

## 4.3 GENDER LESSONS LEARNED

### 4.3.1 Programmatic Gender Integration

FFP's projects in Burkina Faso were awarded in 2010, the first year FFP made gender integration a requirement in new awards. At that time, the expected depth and breadth of gender integration were quite different from what is expected of more recent awards. It is important to note that while the projects in Burkina Faso integrated and addressed gender as a cross-cutting issue, neither was required, for example, to hire staff with gender expertise or conduct a gender analysis in the first year. That said, both projects did address gender issues, though using different approaches.

To improve food security and nutrition in Burkina Faso, gender issues must be addressed. The widespread practices of early marriage and childbearing that starts in adolescence and the high fertility rate drive population growth. In turn, population growth, combined with climate change, is fueling land scarcity, which ultimately impedes women's access to land. Women also lack access to key resources like water and farming inputs. Poor access to water means women must spend more time collecting water, leaving less time for other responsibilities such as child care, household duties, and farming.

The projects recognized that women were constrained by their dependence on men for access to land, resources, and health care. Project activities targeted women, but how much and when men and community leaders were engaged varied by technical sector. For example, both projects engaged men and community leaders at the start because the projects needed their consent for women to be able to access land and participate in the projects' agricultural activities. But after that, engagement with men and community leaders was limited.

Both projects recognized the need and value of conducting a gender analysis, developing a gender strategy, training their staff in gender, and hiring staff with specific expertise in gender to ensure gender issues were effectively addressed. One project took those steps, which enabled it to have clear approach on what gender issues to focus on. The other project did not plan these steps but as project activities progressed they recognized that this was a limitation for integrating gender. Overall, both projects addressed similar gender issues, focusing on women's empowerment; women's literacy; increasing women's participation in project activities; expanding women's access to resources, such as land, farming inputs, and capital; and saving women time by investing in improved access to water or improved cook stoves. One project focused on promoting women's leadership, training women on communicating and negotiating with men, and increasing knowledge of and access to FP. The women valued the training because they could better manage their time and efforts in project activities, farming, child care, and household duties when they could manage the number of children they had. However, neither project recognized or prioritized youth and adolescent issues as important, in part because this was perceived as beyond the scope of their projects' work.

Both projects emphasized the need for women to participate in project activities in each of the strategic objectives; overall, the projects accomplished this. However, they recognized that they needed to do more over the life of the projects to engage men more meaningfully, given their household authority, control over resources, and decision-making power. As such, the projects leaned more toward a "women in development" approach than a "gender in development" approach. The projects saw that because women started with less—farming less or poorer quality land or being unable to invest as much in the land—they could not produce as much as men. This reinforced the need for men and community leaders to be engaged consistently across all sectors of the projects over the life of the projects, so that women could achieve more through their participation in project activities. Another concern, which the projects did not have direct data on, was how women's increased participation in project activities had an impact on their

other responsibilities, such as child care. This is another reason to carefully consider not just increasing women's participation but how to do so in a manner that does not overburden them or undermine their ability to provide optimal care for their children and family. In this regard men have a shared responsibility to support women, but to do so, projects must engage them and ensure that they are clear on their specific role and contribution to improving the health and lives of their children.

### Lessons Learned: Programmatic Gender Integration

- The projects noted that integrating gender from the inception of the project was important given how much food security and nutrition are linked to gender in Burkina Faso—in that women depend on men for access to key resources such as land, and men are the key decision makers regarding access to food, the sale of goods, women and children's access to health care, and children's education, among other things. Conducting a gender analysis was also seen as important to inform the development of a gender strategy, and what gender issues a project should prioritize. Integrating gender early in the life of a project is also important to ensure that men and community leaders' support women's participation in project activities.
- There are important benefits to training staff on gender in the project's first year so they better understand gender issues in the project context and why these issues are important to address in their daily work.
- Hiring staff with gender expertise at the project's start to ensure and oversee gender integration across the project seems important as these staff serve as stewards of gender integration in a project, although they are not solely responsible for its effective integration. Also, establishing a gender-focused position at a high enough level is important because this provides greater authority to direct and oversee how gender is integrated and to hold staff accountable. Investing in such staff also reflects the project's commitment to address gender issues.
- Given the extent to which men have decision-making authority, it is important to adopt a gender and development approach that engages community leaders, men, and women to promote gender equality so that women and men benefit optimally from their participation in project activities. Using a win-win approach in which men and women perceive gains in shifting gender norms is also important to support sustainable change.
- To achieve the intended impact of promoting gender equality and improving household food security, it is important to integrate gender evenly and consistently across all project objectives.

### 4.3.2 Gender in Agriculture and Livelihoods

**Agriculture.** Women and men have access to land for farming, but land tenure is insecure. Recent studies have clearly shown that population pressure and climate change have sub-divided the land available to farmers to smaller portions. In this changing context, women's access to land is even more constrained than men's because they depend on men to gain access to land. Despite these challenges, the projects in Burkina Faso focused on improving farmland, including lowlands, to enable women and some men to access that land for farming. Once the land was improved and became productive, the landowners could take back the land, which resulted in men and women being reluctant to invest in the land they farmed. Also, growing crops on improved lowlands was challenging, but women persisted with farming in these areas more than men simply because they had less choice over what land they could access; men could choose to work on upland plots, which were more productive and less labor intensive. The Zai farming technique seemed to work particularly well for women, so much so that in some instances men wanted to try it. Other agriculture activities focused on training farmer groups—which included women's groups,

men's groups, and mixed groups—to adopt improved varieties of crops, improved farming practices and simple technologies, post-harvest processing and value addition, and improved livestock practices. As noted, the main constraints for women that the projects observed were that they had less access to land, the land was smaller and of poorer quality, and if they were seen as leaving it fallow, the land could be reallocated to others. Land allocated to women could also be rotated to other family members, making women reluctant to invest in their land. Though more than 50% of the farmers the projects worked with were women, they produced less than men because of gender-based constraints related to access to land, inputs, water, and capital. However, the projects do not currently report this information in a sex-disaggregated manner, as it is not required, making it difficult to track trends and changes in men's and women's participation in these activities and explain why men or women may choose certain activities over others.

**Livelihoods.** The projects' livelihoods activities focused on selling parboiled rice, livestock, and produce from market gardens. They also benefitted from mechanisms to improve incomes or safety nets through *stock warrantage*, village savings and loans and microfinance, and literacy for men and women. The introduction of a small grants program in FY2016 for off-farm enterprises had significant participation of women who secured funding for nascent and existing small businesses. One project taught women how to build improved cook stoves that required less fuel and reduced the time women spend collecting firewood. This activity, which women widely appreciated, was effective from both a natural resource management perspective and a gender perspective. While several activities promoted the sale of goods and assisted women with marketing, the projects noted that women reported having to rely on their husbands to sell on their behalf if the sale of goods, such as livestock, occurred at a large market. Women could sell items in their community but they felt it was not proper to go outside of their communities. Overall the projects succeeded in having more women than men participate in these activities, but women could not always control the sales or the resulting revenues.

The literacy activity was also successful and highly regarded by both men and women. This approach worked well in Burkina Faso because the infrastructure for education is very weak, resulting in a highly illiterate population. While promoting children's access to secondary school is an important long-term resilience-building strategy, the poor infrastructure would not allow for much focus on this level of education. However, one added benefit of the literacy activity was not only that it was valued by adults because they could manage their agriculture and livelihood activities better, but it also led them to value education for their children more—creating community-level demand for improved education infrastructure. The literacy activities improved women's self-confidence, leadership skills, and ability to participate in household decision making.

### **Lessons Learned: Gender in Agriculture and Livelihoods**

- The projects found that improving women's literacy contributes to building their leadership skills, participation in household decision making, and self-confidence.
- Despite women's participation in a wide range of activities under this strategic objective, women did not always have control over the decisions related to how to dispose of what they produced, or control over the revenue from what they produced, indicating a need to consistently work with men to enable women to benefit more.
- Investing in labor-saving technologies like teaching women how to build improved cook stoves benefits women in terms of time saved, as well as the environment.
- To track how well male and female beneficiaries are doing over the course of the project, adopting more sex-disaggregated indicators in these technical sectors is beneficial.

### 4.3.3 Gender in Maternal and Child Health and Nutrition

In both FFP projects, maternal and child health and nutrition (MCHN) activities predominantly engaged women. Male engagement in enabling and supporting women to adopt improved health and nutrition practices is important because without the support of men, the degree of change in practices is likely to be smaller and less sustained. While the projects noted that male engagement was important for MCHN activities, they were unable to address this issue on a large scale.

The projects sensitized men and community leaders to the MCHN activities, but they were not consistently engaged in them. One project engaged men and community leaders by holding regular group discussions on the topics covered in the care groups. Men and women did see how MCHN activities improved children's health and resulted in their spending less on health-related costs and experiencing greater harmony in their households. One project noted that the link between improved health and reduced costs resonated with men, and they became willing for women to continue participating. Men were more active in the water and sanitation committee activities, which supported the adoption of improved hygiene practices. Women also benefited from the water access point improvement activities, which reduced the time they spent collecting water. In the other project, women reported benefiting from FP.

#### **Lessons Learned: Gender in Maternal and Child Health and Nutrition**

- FFP projects acknowledged the need to develop an approach from the project's inception to engage men, such as having leader fathers work with men to promote the adoption of FP practices and improved health and nutrition practices.
- Improving access to and maintenance of water points can reduce women's time burden in collecting water
- FFP projects play a key role in expanding access to FP information, referrals, and services.
- To address key underlying drivers of malnutrition in Burkina Faso, an approach that delays adolescent marriage and childbearing, and targets adolescent mothers is an important consideration when developing key messages to accompany other training subjects.



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## APPENDIX 1. SELECTED ECONOMIC AND POVERTY INDICATORS FOR BURKINA FASO

<b>Indicator<sup>33</sup></b>	
<b>Population<sup>35</sup></b>	
Total (million) (2015 Census, Statistics Burkina Faso)	18.1
Rural population (% of total)	70.1
Population density (per sq km)	66.1
<b>Economy<sup>35</sup></b>	
GNI per capita	US \$640
Consumer price index	107.9
<b>Poverty<sup>35</sup></b>	
Age dependency ratio (% of working age population)	92.2
Population below poverty line (% of population earning < US\$1.25/day) (World Bank) (2014)	40.1
<b>Human Development<sup>34</sup></b>	
Human Development Index	0.402
Gender-Related Development Index (2014)	0.881
Mobile subscribers (per 100 people) <sup>1</sup>	80.6
Internet users (per 100 people) <sup>1</sup> (2015)	11.4
<b>Agriculture</b>	
Food production index (2013)	123.9
Agriculture value added per worker (2015)	386.2
Use of improved cereal seed (% of seed planted) <sup>35</sup>	2
<b>Education<sup>36</sup></b>	
Literacy rate (adult female)	22.5
Literacy rate (adult male)	35.5
Literacy rate (female youth 15–24 years)	32.9
Literacy rate (male youth 15–19 years)	47.4
Net primary school enrollment	44.4
Net primary school completion rate (% female)	3.4

<sup>33</sup> Source is the World Bank's online database except where noted: <http://data.worldbank.org/country/burkina-faso>

<sup>34</sup> UNDP: [http://hdr.undp.org/sites/default/files/2015\\_human\\_development\\_report.pdf](http://hdr.undp.org/sites/default/files/2015_human_development_report.pdf)

<sup>35</sup> GOBFc 2016 PRP-AGIR

<sup>36</sup> 2010 DHS.

Net primary school completion rate (% male)	4.9
<b>Life Expectancy, Fertility, and Mortality<sup>38</sup></b>	
Life expectancy at birth (female)	60
Life expectancy at birth (male)	58
Total fertility rate (children per woman)	6.0
Under-5 mortality rate (per 1,000 live births)	129
Child mortality (13–59 months) (per 1,000 live births)	68
Infant mortality rate (per 1,000 live births)	65
Neonatal mortality rate (per 1,000 live births)	28
<b>HIV Prevalence<sup>38</sup></b>	
Female (15–49 years)	1.2
Male (15–49 years)	0.8
<b>Maternal Health<sup>38</sup></b>	
Maternal mortality rate	341
Median age at first marriage (for women 25–49 years)	17.8
Median age at first birth (for women 25–49 years)	19.5
% of women 15–19 years who have begun childbearing by age 19	57.5
<b>Food Security Indicators</b>	
Global Hunger Index <sup>37</sup>	31.8
% of households who are moderately or severely food insecure <sup>38</sup>	19
Proportion undernourished in total population (%) <sup>39</sup>	20.7
<b>Water and Sanitation<sup>40</sup></b>	
Improved sanitation/toilets (% of population with access)	20.4
Improved water source (% of population with access)	76.6
<b>Malnutrition<sup>41</sup></b>	
Stunting prevalence (children under 5)	27.3
Wasting prevalence (children under 5)	7.6

<sup>37</sup>IFPRI <http://dx.doi.org/10.2499/9780896299641>

<sup>38</sup>WFP: 2012 : <https://www.wfp.org/content/burkina-faso-evaluation-approfondie-securite-alimentaire-april-2012>

<sup>39</sup>FAO : <http://faostat3.fao.org/download/D/FS/E> 3-year range value for 2014-2016

<sup>40</sup>INSD et al. 2015

<sup>41</sup>MOH et al. 2016

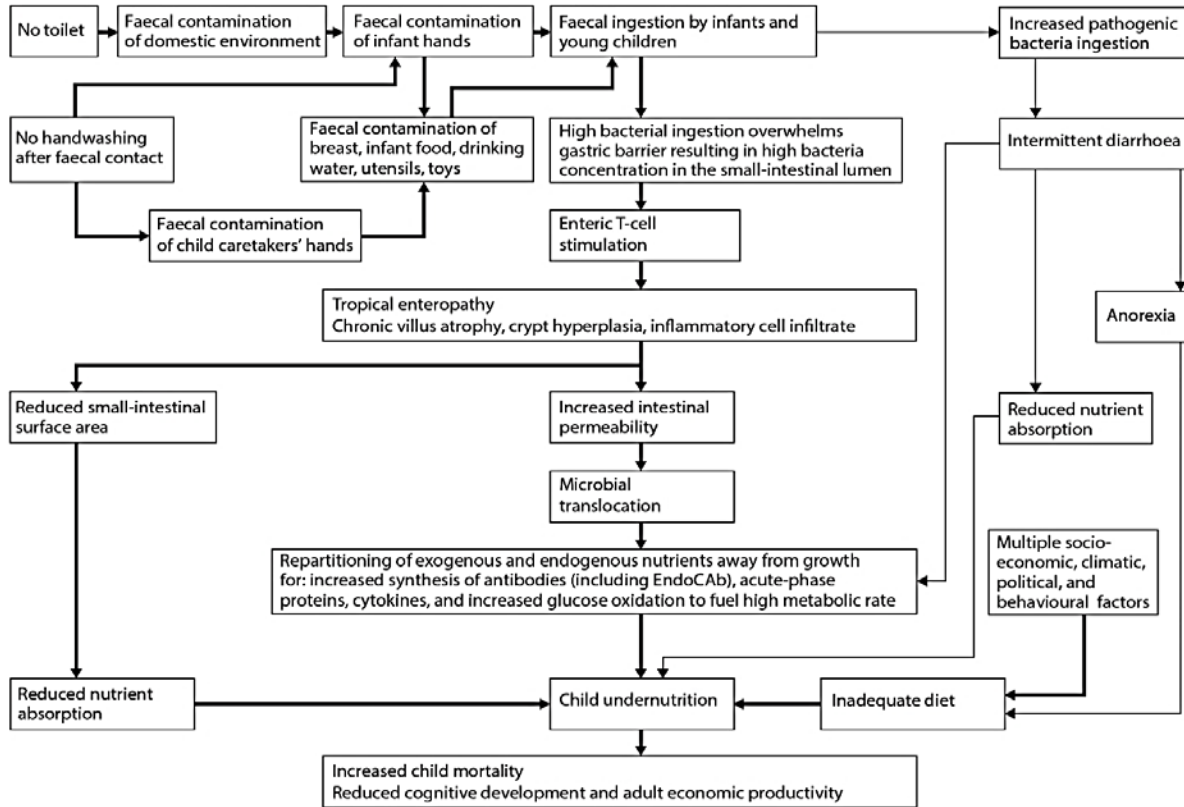


## APPENDIX 2. NUTRITION CONTENT OF YONHAMA

<b>Energie et macronutriments</b>		<b>Vitamines</b>	
Energie	369 kcal	Vitamine A	484 µg ER
		Vitamine C	25 mg
Protéine brut	15 g	Vitamine D	105 UI
Protéine digestible	13 g	Thiamine	401 µg
Lipide	9 g	Riboflavine	333 µg
<b>Minéraux</b>		Vitamine B6	390 µg
Sodium	275 mg	Nicotinamide	7 mg
Potassium	482 mg	Vitamine B12	1 µg
Calcium	262 mg	Acide folique	170 µg
Chlore	421 mg	Acide pantothénique	740 µg
Phosphore	324 mg	Vitamine E	18 UI
Fer	32 mg	Vitamine K1	13 µg
Magnésium	122 mg	Biotine	3 µg
Cuivre	649 µg		
Iode	209 µg		
Zinc	10 mg		
Manganèse	2 mg		
Sélénium	24 µg		

## APPENDIX 3. POSSIBLE PATHWAYS OF INFECTION LEADING TO CHILD UNDERNUTRITION AND MORTALITY

Poor water, sanitation, and hygiene access (e.g. improved latrines, clean water, clean play spaces for children) and practices are significant contributors to child undernutrition, morbidity and mortality through multiple pathways as shown in the figure below.



Source: Humphrey 2009

## APPENDIX 4. THE ESSENTIAL NUTRITION ACTIONS

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**Women’s nutrition for adolescents and women:** the importance of the healthy timing and spacing of pregnancy; consumption of diversified diet and/or of fortified foods (commercial and/or in-home fortification).

**During pregnancy and lactation:** increased protein, caloric, and micronutrient (vitamin A, iron, calcium, zinc) intake; dietary change to increase iron absorption; rest during pregnancy; and the lactation amenorrhea method (LAM) of contraception.

**Breastfeeding:** early initiation of breastfeeding (immediately after birth); exclusive breastfeeding for the first 6 months; continued breastfeeding with complementary foods up to 2 years or beyond; and infant feeding in the context of HIV.

**Complementary feeding:** from 6 months (age-appropriate frequency, amount, density, diversity, utilization and active feeding) with continued breastfeeding for up to 2 years or beyond; consumption of fortified foods (commercial and/or inhome fortification); responsive feeding; and food hygiene.

**Nutritional care of sick and malnourished children:** feeding more during and after illness; provision of vitamin A; treatment of diarrhea with low-osmolarity ORS and zinc supplements; treatment of anemia; and the integrated management of acute malnutrition (IMAM) for moderate and severe acute malnutrition.

### **Prevention and control of anemia:**

*Among women:* increased dietary intake of iron-rich or enhancing foods; iron-folic acid supplementation during pregnancy, post-partum, and more routinely by women of childbearing age; intermittent preventive treatment during pregnancy for malaria and de-worming treatment during pregnancy; use of insecticide-treated bed nets (ITN); and delayed cord clamping at birth.

*Among children:* delayed cord clamping at birth; implementation of the integrated management of neonatal and childhood illness (IMNCI) algorithm and integrated community case management (iCCM) of malaria, diarrhea, pneumonia, anemia and acute malnutrition; use of ITN; de-worming from 12 months; increased dietary intake of iron-rich, iron-enhancing and fortified foods from 6 months, as well as iron supplementation where indicated.

### **Prevention and control of Vitamin A deficiency:**

*Among children and women:* through breastfeeding, high dose supplementation of children 6–59 months and of post-partum women where appropriate; low dose supplementation during pregnancy where indicated; and promoting the regular consumption of vitamin A-rich, fortified or bio-fortified foods.

### **Prevention and control of iodine deficiency:**

*Among children and women:* use of iodized salt or iodine supplementation in the absence of scaled up iodized salt programs.

Source: Guyon A. MD.MPH, Quinn V. PhD, Nielsen J. PhD, Stone-Jimenez M.MSc, IBCLC. 2015. Essential Nutrition Actions and Essential Hygiene Actions Training Guide: Health Workers and Nutrition Managers.

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