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# USAID OFFICE OF FOOD FOR PEACE FOOD SECURITY DESK REVIEW FOR NIGER

OCTOBER 2017

This publication was produced for review by the United States Agency for International Development. It was prepared by the Food and Nutrition Technical Assistance III Project (FANTA) managed by FHI 360. The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.



This report is made possible by the generous support of the American people through the support of the Office of Food for Peace, Bureau for Democracy, Conflict and Humanitarian Assistance, and the Office of Health, Infectious Diseases, and Nutrition, Bureau for Global Health, U.S. Agency for International Development (USAID), under terms of Cooperative Agreement No. No. AID-OAA-A-12-00005, through the Food and Nutrition Technical Assistance III Project (FANTA), managed by FHI 360. The contents are the responsibility of FHI 360 and do not necessarily reflect the views of USAID or the United States Government.

Recommended citation: Mathys, Ellen; Oot, Lesley; and Sethuraman, Kavita 2017. *USAID Office of Food for Peace Food Security Desk Review for Niger*. Washington, DC: FHI 360/FANTA.

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## ACKNOWLEDGMENTS

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The authors of the *USAID Office of Food for Peace Food Security Desk Review for Niger* wish to thank the staff of the U.S. Agency for International Development (USAID) Office of Food for Peace (FFP), USAID staff in Niger, and other USAID/Washington and USAID/West Africa staff for their assistance in providing valuable information for the desk review. Particular thanks are offered to Marie Therese Ndiaye, Ahmadou NDiade, Hadjara Moussa, Lara Evans, David Kauck, and Michael Heller. The authors also wish to extend special gratitude to the FFP development food security activity implementers in Niger, including Catholic Relief Services, Mercy Corps, and Save the Children, for taking the time to share lessons learned, project reports, studies, and other research that greatly enriched the desk review.

In addition, the authors would also like to thank staff from the Food and Nutrition Technical Assistance III Project (FANTA) for their technical input and edits to this document, particularly Emmet Murphy and Monica Woldt.

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## ACRONYMS AND ABBREVIATIONS

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ACPOR	Actions et Coopératives pour la Promotion des Organismes Ruraux
AGIR	Global Alliance for Resilience
ANC	Antenatal care
BDL	Bio-reclamation of degraded lands
CAADP	Comprehensive African Agriculture Development Programme
CB-FFS	Cluster-based farmer field schools
CILSS	Comité Permanent Inter-Etats de Lutte contre la Sècheresse dans le Sahel
CLTS	Community-led total sanitation
COFOCOM	Commission Foncière de la Commune
DHS	Demographic and Health Survey
DRR	Disaster risk reduction
ECD	Early childhood development
ECOWAS	Economic Community of West African States
ENA	Essential nutrition action
EW/EA	Early warning/early action
FAO	Food and Agriculture Organisation (UN)
FANTA	Food and Nutrition Technical Assistance Project
FCFA	Franc Communauté Financière Africaine
FEWS NET	Famine Early Warning Systems Network
FFP	Office of Food for Peace
FFS	Farmer field school
FGC	Female genital cutting
FHH	Female-headed household
FMNR	Farmer-managed natural regeneration
FP	Family planning
GoN	Government of Niger
HH	Household
HTSP	Health timing and spacing of pregnancies
ICCM	Integrated Community Case Management
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IGA	Income-generating activity
IMCI	Integrated management of childhood illness
IMNCI	Integrated management of neonatal and childhood illness
INRAN	Institut National de la Recherche Agronomique du Niger

IPC	Integrated phase classification
IQ	Intelligence quotient
IR	Intermediate result
ITN	Insecticide-treated bed net
IYCF	Infant and young child feeding
LAHIA	Livelihoods, Agriculture, and Health Interventions in Action
LAM	Lactational amenorrhea method
LM	Leader Mother
MAM	Moderate acute malnutrition
MCC	Millennium Challenge Corporation
MCHN	Maternal and child health and nutrition
MCU	Mother–child unit
MFI	Microfinance institution
MIYCN	Maternal, infant, and young child nutrition
MMD	<i>Matu Masa Dubara</i>
3N	Nigeriens Nourishing Nigeriens Initiative
NGO	Nongovernmental organization
NRP	National Resilience Priorities
OCHA	Office for the Coordination of Humanitarian Affairs (UN)
ODF	Open defecation free
OFDA	Office of Foreign Disaster Assistance (USAID)
ORS	Oral rehydration solution
OSV	Observatoire de Surveillance de la Vulnérabilité
PASAM-TAI	Programme d’Appui à la Sécurité Alimentaire des Ménages – <i>Tanadin Abincin Iyali</i>
PHAST	Participatory hygiene and sanitation transformation
PHH	Post-harvest handling
PICS	Purdue Improved Cowpea Storage
PLW	Pregnant and lactating women
PMTCT	Preventing mother-to-child transmission of HIV
PNSN	Politique National Multisectorielle de Sécurité Nutritionnelle
PSP	Private seed producer
PVS	Participatory variety selection
RA	Resilient agriculture
REGIS-AG	Resilience and Economic Growth in the Sahel – Accelerated Growth
REGIS-ER	Resilience and Economic Growth in the Sahel – Expanded Resilience
RISE	Resilience in the Sahel Enhanced



RUTF	Ready-to-use therapeutic food
SAREL	Sahel Resilience Learning Project
SAM	Severe acute malnutrition
SBCC	Social and behavior change communication
SCAP-RU	Système Communautaire d'Alerte Précoce et de Réponse aux Urgences
SD	Standard deviation
SGBV	Sexual and gender-based violence
SILC	Savings and internal lending communities
SIM-A	Système d'Information sur les Marchés Agricoles
SINAGRO	Salon International de l'Agriculture et de l'Agro-alimentaire
SO	Strategic Objective
SUN	Scaling Up Nutrition
TFR	Total fertility rate
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USG	United States Government
U5	Under 5
VAS	Vitamin A supplementation
VDC	Village development committee
VIP	Ventilated improved pit latrine
VSLA	Village savings and loan association
WAEMU	West African Economic and Monetary Union
WASH	Water, sanitation, and hygiene
WFP	World Food Programme (United Nations)
WUA	Water users association

## EXECUTIVE SUMMARY

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This food security desk review for Niger was requested by the United States Agency for International Development Office of Food for Peace (USAID/FFP) to help guide both FFP and prospective FFP applicants to design projects to address food security needs in Niger for the FY2018–FY2023 period. The review draws from secondary resources to understand the history, politics, economy, and food security situation in Niger, as well as Government of Niger (GoN) and other programs and policies relevant to the region. The review team interviewed and collected documentation from current FFP project implementers in Niger, specifically Catholic Relief Services, Save the Children, and Mercy Corps, and key stakeholders to compile lessons learned. Since 2011, Catholic Relief Services, Save the Children and Mercy Corps have implemented FFP projects with interventions in agriculture, natural resource management, health and nutrition, disaster risk reduction and early warning/early action, and civil society strengthening in Maradi and Zinder 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, which aims to increase the resilience of vulnerable populations through agricultural and economic growth, literacy, early warning and other complementary project activities. FFP projects collaborate with RISE projects (REGIS-AG and REGIS-ER) in their shared intervention zones. The review analyzes the food security situation in Niger through the lens of availability, accessibility, utilization, and resilience, and presents current ground realities that could promote or constrain food security programming in the coming years.

Following the 2010–2011 drought, the FY2012–FY2017 period has been characterized by broadly favorable rainfall and agricultural production, although localized food insecurity exists and chronic determinants of food insecurity – e.g., poverty, low access to capital and finance, high fertility and population pressure - persist. The GoN estimated that crop production for 2016–2017 would total 24 percent above the 5-year average (FEWS NET 2017a). According to the Cadre Harmonisé, localized food insecurity was projected in Tahoua, Zinder, Agadez, and Maradi regions due to low agricultural production, a second consecutive year of inadequate forage, and lower than normal livestock prices. Prices of millet, cowpeas, maize and imported rice began rising in May 2017, due to declining cereal imports from Nigeria and rising domestic demand in Niger (FEWS NET 2017b). Humanitarian crises driven by violent extremism in Diffa and refugee inflows from Mali to Tillabéri and Tahoua regions are exacerbating food insecurity. Analysis of climate trends indicates that Niger will likely experience increasing variability in temporal and spatial rainfall distribution, and increasing temperatures.

In the past decade, Niger has continued to see mortality rates (e.g., maternal, infant, child) fall; however, the country is still plagued by extremely high levels of both chronic and acute malnutrition that not only impact the health of the nation, but its development and economic goals as well. Chronic malnutrition (stunting) has remained above 40 percent for the last quarter century, with minimal improvement in that time. Although the prevalence of acute malnutrition (wasting) has declined since 2012 (when it was 18 percent), it remains alarmingly high (10 percent<sup>1</sup>). Poor infant and young child feeding (IYCF) practices are pervasive in Niger, including a low prevalence of exclusive breastfeeding for the first 6 months of life (23 percent) and inadequate complementary feeding (only 9 percent of children age 6–23 months received a minimally acceptable diet), which are significant drivers of both stunting and wasting in Niger. Micronutrient deficiencies of iron, vitamin A, and iodine also continue to affect the health and well-being of Nigeriens, and anemia prevalence is still unacceptably high, affecting 73 percent of children under 5 and 46 percent of women of reproductive age. Inadequate dietary diversity and early and numerous pregnancies also contribute to poor maternal health, which in turn can lead to poor infant and child

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<sup>1</sup>WHO classifications for population prevalence of wasting: < 5% Acceptable; 5-9% Poor; 10-14% Serious; ≥ 15% Critical (WHO 2010).

nutrition and intergenerational cycles of malnutrition. Poor hygiene practices, low access to sanitation facilities (in part due to reluctance to build and use latrines), a lack of continuously reliable improved water sources, low levels of education, and prevalent gender inequity are also key drivers of malnutrition in the country.

Profound and deeply entrenched structural gender inequities contribute to food insecurity, and GoN policies have had limited impact. Despite development interventions, Niger has a 4 percent population growth rate and fertility rate of 7.6 births per woman, which have driven the country's population to almost 20 million people, over half (57 percent) of whom are under the age of 15 (World Bank 2016). The percent of adolescent girls beginning childbearing by age 19 is 75 percent, which is an increase from 65 percent in 2006 (INS and ICF International 2013). Female-headed households (FHH) represent 15.9 percent of households, but they have twice the risk of moderate and severe food insecurity relative to non-FHH households (World Bank 2016, GoN et al 2016). At the same time, it is likely that women in male-headed households remain vulnerable due to gender discrimination in intra-household distribution of food and resources. Nationally, 60 percent of men have no education and 58 percent are illiterate, while 72 percent of women have no education and 85 percent are illiterate, which sharply curtails women's livelihoods, business opportunities and life skills (INS and ICF International 2013). Women and girls continue to face discrimination and inequities in inheritance, ownership and access to land and other assets, education and literacy, and decision making over their own health and life decisions.

The GoN faces acute budgetary and capacity constraints, aggravated by the high chronic burden of poverty, malnutrition and poor health of the population, and the need to respond to unfolding humanitarian crises in Tillaberi, Tahoua and Diffa regions. Advances in the institutional and programmatic context for food security programming in Niger stem from internationally funded partnerships and initiatives, such as the USAID-funded RISE Initiative, and the World Bank Adaptive Social Safety Nets Project. The GoN has established the Nigeriens Nourishing Nigeriens (3N) Initiative housed at the National Institute for the Prevention and Management of Food Crises (i.e., Dispositif National), as well as the newly established Ministry of Humanitarian Action and Disaster Management.

FFP implementers have been addressing some of the direct determinants and underlying contributors 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, and disaster risk reduction and early warning, and prepared questions for each topic to have a better understanding of the activity and discern lessons learned. FANTA then interviewed members of the Catholic Relief Services, Save the Children, and Mercy Corps teams that manage the PASAM-TAI, LAHIA, and Sawki projects, to discuss their written responses to the prepared questions. A brief synopsis of the key lessons learned are presented for agriculture and livelihoods interventions, maternal and child health and nutrition (MCHN) and water, sanitation, and hygiene (WASH) interventions, and gender, without attribution to specific projects or implementers.

## Lessons Learned: Agriculture and Livelihoods

**Land access:** The FFP implementers boosted women's access to land for gardening and farming by: advocacy with stakeholders, men and women; arranging land allocation to gardening groups; and supporting women's access to savings, credit, and livelihoods to be able to rent or purchase land.

*Lessons learned:* Women have limited decision-making authority over crop selection or adoption of improved agricultural techniques; collective gardening projects enable landless women to cultivate, but require official leasehold certificates (e.g., for 10-20+ years) to prevent the land from being given away or sold; women's participation in land governance (e.g., via Land Commissions) is beneficial.

**Producer organization, training, and extension:** The FFP implementers used a Farmer Field School (FFS) approach, wherein lead farmers train around 25 farmers in improved practices on a demonstration plot. Women were organized into collective market gardening groups.

*Lessons learned:* The FFS (or Cluster-Based FFS) model is well accepted in Niger, especially combined with peer-to-peer farmer sensitization strategies; market gardening can reduce dry season out-migration if it reaches sufficient scale and profitability; market gardens should have a water source (preferably with irrigation), permanent fencing, and linkages with input suppliers and prospective buyers.

**Agricultural inputs, value chains, and marketing:** The FFP implementers hosted seed fairs in partnership with local private seed producers; conducted participatory varietal selection (PVS) with FFSs and GoN partners; and supported marketing in key value chains (e.g., millet, cowpeas, and groundnuts).

*Lessons learned:* PVS benefits from engagement of GoN partners and peer-to-peer field observation strategies; engaging lead farmers in value chain studies builds future agribusiness capacity; formalizing market systems and strengthening market actors can boost market efficiency; agribusiness efforts should focus on selected high-value commodities, rather than on any commodities desired by communities.

**Conservation agriculture and environment:** The FFP implementers conducted bio-reclamation of degraded lands; promoted integrated soil fertility management, integrated pest management and conservation agriculture techniques; strengthened land governance; established information sharing between pastoralists and farmers; and integrated environmental factors into GON planning exercises.

*Lessons learned:* Land reclamation and water conservation techniques are effective and accepted in Niger (e.g., use of Zai holes, demi-lunes, and manure); land reclamation entails working closely with village land management committees and multi-year community sensitization efforts; and land reclamation boosts land value and creates competing public and private demands and potential conflict for the land.

**Post-harvest handling, storage, and processing:** The FFP implementers promoted improved drying, processing and storage techniques and materials (e.g., PICS bags, hermetic storage, drums/barrels, cans/jars). The FFP implementers took different approaches to the use of warehouses and granaries.

*Lessons learned:* PICS bags tend to be more durable in warehouses than on homesteads; promotion of market gardening requires a strategy for storage of fresh produce, to protect the profit margin for producers in this profitable (and often year-round) value chain; farmers preferred to grow cowpeas and groundnuts over millet and sorghum, because of the higher profit margin on small household plots.

**Livestock:** The FFP implementers supported *habbanayé* (goat rotation) and sheep fattening to increase livestock holdings among food insecure women, strengthened livestock health systems, trained herders in a range of herd management practices, and promoted techniques to improve livestock nutrition.

*Lessons learned:* The *habbanayé* model is culturally accepted, and offers several advantages relative to sheep fattening; the GoN guideline to distribute three nanny goats and one billy goat per beneficiary should be followed; para-vets require a range of training, equipment and follow-support to function effectively; providing para-vets with the training and certification using GoN standards is beneficial.

**Finance, credit and savings:** Two FFP implementers implemented stock warrantage activities, which improves the supply of rural finance by using stock as collateral for a loan, so farmers can access funds when they need it most and delay sale of stock post-harvest when prices are low. Savings groups were used to support income generation from off-farm livelihoods activities.

*Lessons learned:* Engaging local and religious leaders can help allay cultural sensitivities around credit and interest rates; leveraging public-private partnerships can strengthen savings and credit groups; savings and credit interventions can accommodate seasonal migration; warrantage benefits from quality warehouse facilities, management systems, and credit issuance by a micro-finance institution partner.

**Disaster risk reduction, early warning/early action, and humanitarian response:** The FFP implementers worked with the GoN and communities to develop contingency plans, build capacity of early warning units, incorporate vulnerability reduction into development and conflict mitigation efforts, and strengthen meteorological and market surveillance and dissemination.

*Lessons learned:* Capacity strengthening of the vulnerability observatories to synthesize data from local early warning units, strengthening the capacity of village development committees to collect, transmit, and act upon local early warning and vulnerability data, developing village level contingency and preparedness and response plans, and training early warning units in gender and equity are beneficial.

## Lessons Learned: MCHN and WASH

**Provision of food rations:** In addition to the preventative food aid approach (targeting the first 1,000 days), the FFP projects used food aid as incentives for participation in community-based group activities (e.g. food aid was provided to encourage participation in adolescent groups).

*Lessons learned:* Follow up on the effectiveness of the different food aid approaches would be useful; and given the high fertility rate and low contraceptive use in Niger, projects should be aware of how food aid distribution may have unintended impacts on family planning efforts.

**Treatment of malnutrition:** The FFP projects supported screening, referral, and follow up of acute malnutrition through training community-based health agents, community volunteers, and Leader Mothers (LMs).

*Lessons learned:* The FFP projects built the capacity of community-based networks to screen and refer children with acute malnutrition for treatment; supporting the capacity of health care workers to supervise/mentor MLs, as well as working with the government to prioritize and fund this supervision, can boost sustainability.

**Strengthening community health services:** The FFP projects helped community health workers (CHWs) provide preventive and curative outreach health services.

*Lessons learned:* Continued support to CHWs is needed to ensure necessary health services are provided in Niger, due to the limited range and scope of health facilities in the country.

**Strengthening of health facilities:** The FFP implementers sought to strengthen the overall health system and improve the quality of health service provision through capacity building and logistical support.

*Lessons learned:* Lack of necessary equipment and competent trained staff impedes quality improvement efforts; continued efforts to build health worker capacity, support infrastructure and logistical needs, and improve monitoring systems can help families have access to quality health services.

**Social and behavior change communication (SBCC):** Two of the FFP implementers used the care group approach, while the other used a wider community group model to promote interpersonal communication (IPC) and peer learning. The FFP implementers used mass media to support interpersonal and peer education.

*Lessons learned:* Utilization of mass media in addition to IPC appears to be creating effective behavior change in key areas, including handwashing and responsive feeding; the community video approach is an innovative idea and communities seem receptive to the videos; adolescent-targeted interventions and groups (e.g. safe space groups) appear to be making progress in empowering young girls but continued efforts are warranted given the high prevalence of adolescent pregnancy in Niger.

**Family planning (FP):** Two FFP implementers used community groups, awareness campaigns, health fairs, mass media, capacity building of health workers, supply management support, and other activities. One FFP implementer used the Couple Strengthening Approach, to build the capacity of couples to communicate effectively, negotiate, and make decisions jointly. All three FFP implementers included men in their FP activities.

*Lessons learned:* A multifaceted approach to address the low access to and utilization of FP has shown promise; approaches that specifically address adolescent FP needs separately are warranted through tailored interventions and messages; husband schools and other activities that involve men, including religious leaders and other key influencers, helped to gain their support for FP and have shown promise in increasing women's access to FP and healthy birth spacing.

**Water, sanitation, and hygiene (WASH):** All three FFP projects in Niger included the following WASH interventions: drilling, repair, and maintenance of boreholes and/or rehabilitation of wells 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 building latrines.

*Lessons learned:* Lack of household income impedes latrine access; coordination with the GoN, local user committees and NGOs to improve access to and funding for latrines could help achieve ODF status; repairing or constructing boreholes and forming user committees is not enough to ensure long-term water access; system strengthening can benefit from including links with government, reliable, well-run user committees with good management of financial resources, regularly paid fees, skilled masons with good business models and access to parts for maintenance and repair, and standardized monitoring.

### **Lessons Learned: Gender**

**Gender in agriculture, livelihoods, and disaster risk reduction:** The FFP implementers engaged men and women in literacy and livelihoods activities. Selected value chains targeted women only (e.g., peanut oil, cowpeas, small ruminants). Adolescent girls participated in livestock, life skills, and savings activities.

*Lessons learned:* Women's literacy activities promoted leadership skills, participation in household decision making, self-confidence, and potentially the willingness to send children to school; focusing on adolescents and youth, especially girls, promotes long-term sustainability of results; livestock and village savings and loan activities contributed significantly to women's increased revenue and savings.

**Gender in maternal and child health and nutrition:** Two FFP projects focused on promoting intra-couple dialogue regarding FP, health, and nutrition, including targeting men via their peer groups, who then return home to discuss with their wives.

*Lessons learned:* Men are key decision makers regarding women and children's health and nutrition in Niger; engaging men in FP and MCHN activities from project inception onwards is essential; engagement of men via volunteerism is challenging; intra-couple dialogue promotes discussion about FP and increased contraceptive use; FFP projects expanded access to FP information, referral and services; delaying adolescent marriage and childbearing and targeting adolescent mothers should be considered.



# 1. INTRODUCTION

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This food security desk review for Niger was requested by the United States Agency for International Development Office of Food for Peace (USAID/FFP) to help guide both FFP and prospective FFP applicants to design FFP development food security activities (hereafter referred to as FFP projects) to address food security needs for the FY2018–FY2023 period. FFP projects in Niger are part of the Resilience in the Sahel Enhanced (RISE) Initiative, a 5-year USAID-funded initiative designed to build resilience to recurrent shocks in Niger and Burkina Faso. The RISE Initiative design for the next phase is ongoing, and the FFP projects will continue to align with RISE objectives during the next phase.

Section 3 of this review analyzes the food security situation in Niger 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 five years. Section 4 presents lessons learned during the three current FFP projects, across the full range of project interventions—e.g., agriculture, livestock, microfinance, maternal and child health and nutrition, water, sanitation, hygiene, early warning, and disaster risk reduction—to inform planning for the RISE redesign and the upcoming FFP projects.

This review draws from secondary resources to understand the history, politics, economy, and food security situation in Niger, as well as Government of Niger (GoN), the U.S. Government (USG), and other stakeholder programs and policies relevant to Niger. The review team interviewed and collected documentation from current FFP project lead implementers in Niger, specifically Catholic Relief Services, Save the Children, and Mercy Corps, to compile lessons learned across the FFP projects. Interviews were conducted with staff of USAID/Niger, the three FFP implementers, and a range of stakeholders. A resilience lens was applied to this analysis, whereby the authors examined the levels and trends of shocks and stressors with the greatest current and projected medium-term impacts on household food security, and identified population groups with different levels of exposure, vulnerability, and adaptive capacities to manage those shocks and stressors.

## Box 1. Key Definitions

**Food security and nutrition:** Access to—and availability, utilization, and stability of—sufficient food to meet caloric and nutritional needs for an active and healthy life.

**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.

Sources: USAID 1992, USG 2016



## 2. BACKGROUND

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### 2.1 REGIONAL CONTEXT

Niger's geographic location makes it an ecological and economic crossroads of Africa. Niger exhibits an ecological transition from desert to grasslands to arable farmland as one moves from north to south, a pattern also seen in Mali to the west and Chad to the east. Niger is framed by Algeria and Libya to the north, and Benin, Burkina Faso and Nigeria to the south, and numerous coastal West African countries further to the southwest. The region's population is strikingly mobile. Citizens of Economic Community of West African States (ECOWAS) member states are permitted freedom of movement in Niger, if they have a national identification card, and citizens of several non-ECOWAS states in the region (e.g., Cameroon and Chad) have freedom of movement in Niger under bilateral agreements (IOM 2017a).<sup>2</sup> Perceptions of economic opportunities in Algeria, Libya, the Mediterranean and Europe, as well as in Nigeria, drive massive migration flows – primarily of young men - through Niger along migration routes each year, as Nigeriens seek dry season and longer-term work opportunities elsewhere, and as migrants from West Africa follow migration routes through Niger.<sup>3</sup> The International Organization for Migration (IOM) estimates that in 2016, 333,891 out-migrants (of Nigerien and other nationalities) passed via migration points in Agadez Region, en route to departing Niger, while 111,230 migrants passed via these points after returning to Niger (IOM 2017b). Crackdowns on migration and trafficking across Niger's northern frontier by the governments of Niger, Libya and Algeria have reduced flows since late 2016, including both the mainly Nigerien migrants crossing from Séguédine into Libya, and the Nigerien and West African migrants crossing from Arlit into Algeria and beyond (IOM 2017a, Altai Consulting 2016, Diallo 2016). Smugglers appear to be responding to arrests and vehicle confiscations by altering migration routes and destination. Driving factors behind continued migration and migrant smuggling are numerous: prospective migrants face few employment opportunities in countries and communities of origin; communities of origin depend on remittance income; communities along migration routes earn income from providing transport, food, lodging and other services to migrants; and traffickers in the north (especially around Agadez, Arlit, and Séguédine) generate substantial income for their communities from these lucrative – albeit dangerous and illegal – activities. Migration is discussed further in section 3.2.2 below.

The West and North Africa region shapes not only the economic landscape in Niger, but the conflict environment. The transnationalist extremist militant group Boko Haram is waging a violent insurgency in Nigeria, Cameroon, Chad and Niger (i.e., the Lake Chad Basin) (Batten-Carew 2016). Extremist militant groups such as al-Qaeda in the Islamic Maghreb (AQIM), Ansar Dine, the Movement for Unity and Jihad in West Africa (MUJAO), al-Mourabitoun Battalion, the Malian Tuareg independence movement (MNLA), the Libya-based Ansar al-Sharia, and the al-Mulathameen Brigade conduct attacks to destabilize Mali, Niger, Burkina Faso and Cote d'Ivoire (ibid). In 2015, the GoN deployed troops to an offensive against Boko Haram in Nigeria, and as a result, Boko Haram has conducted attacks and triggered internal displacement in Niger's Diffa Region. Attacks by AQIM and other northern militants are driving Malian refugee flows into western Niger.

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<sup>2</sup> ECOWAS member states include Benin, Burkina Faso, Cape Verde, Ivory Coast, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo. Source: ECOWAS (2017).

<sup>3</sup> IOM assists migrants with voluntary returns to their countries of origin. In 2016, the countries of origin that accounted for the largest numbers of migrants through Niger were Senegal, Guinea, the Gambia, Guinea-Bissau, Cameroon, Ivory Coast, Mali, and Nigeria. Source: IOM (2017a).

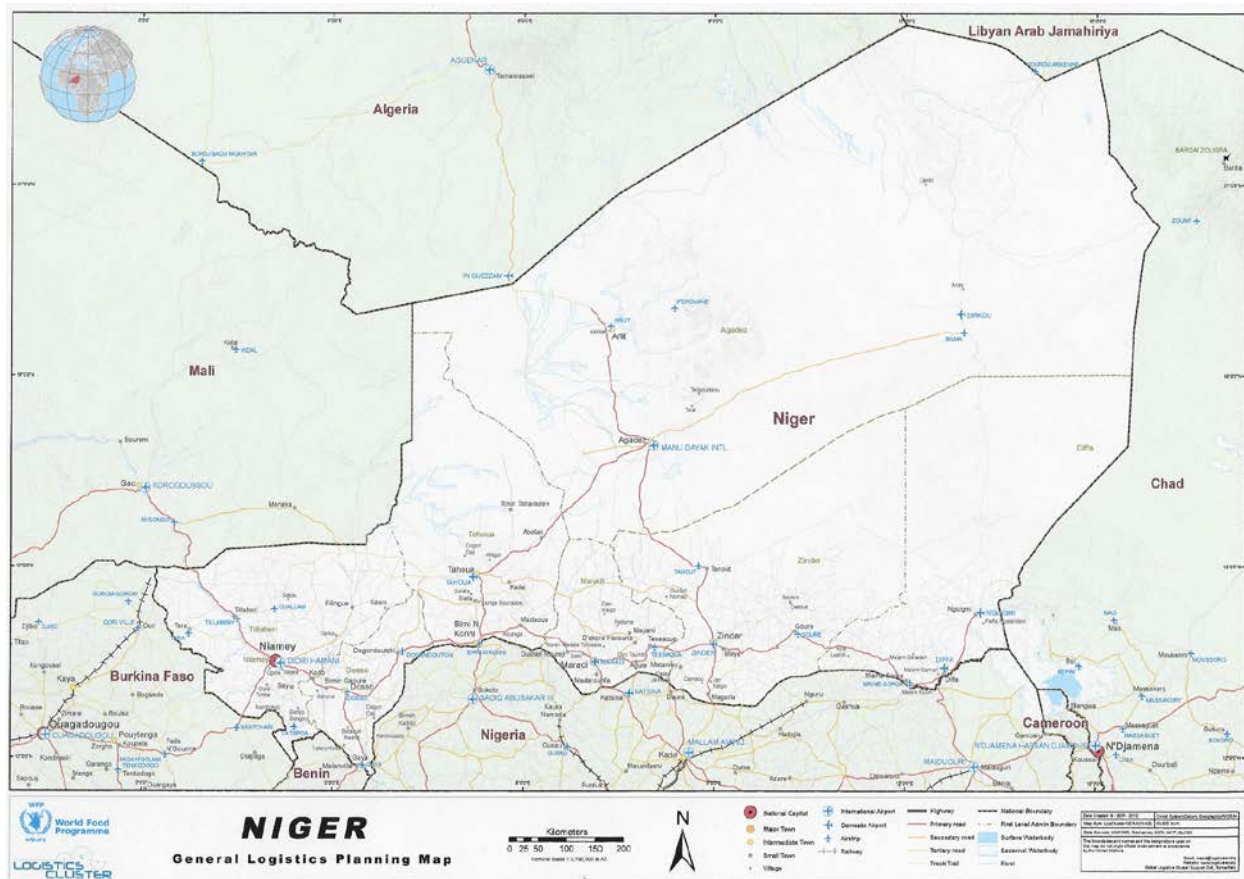
## 2.2 POLITICAL LANDSCAPE

Niger's political history has been tumultuous since Hamani Diori assumed the title of president of the newly independent Niger in 1960. President Diori's regime was marked by political oppression, severe drought, food shortages, and widespread dissatisfaction with government. Lieutenant Colonel Seyni Kountché overthrew President Diori in a coup d'état in 1974, and led until 1987, when his cousin Colonel Ali Saibou succeeded him as president, and oversaw a transition toward more democratic multi-party rule. Mahamane Ousmane of the Democratic and Social Convention Party won the presidential election in 1993. In 1995, the GoN signed peace accords with the Tuareg and Toubou groups that had been leading the Tuareg Rebellion in northern Niger, a movement founded on the belief that Tuareg and other pastoralists in the north were economically and politically marginalized, and did not benefit sufficiently from resources, political influence, and social services afforded to other groups throughout the country. In 1996, Colonel Ibrahim Baré Maïnassara overthrew President Ousmane in a coup and organized corrupt and irregular elections, in which he was questionably elected president. In 1999, a coup led by Major Daouda Malam Wanké led to Baré's assassination, and the drafting and adoption of a new constitution. Legislative and presidential elections were held in 1999, and Mamadou Tandja of the National Movement of the Development Society Party was elected president. In 2004, presidential, legislative, and municipal elections were held nationwide, whereby President Mamadou Tandja won a second term. In 2007, the Second Tuareg Insurgency erupted, which ended with a Libya-facilitated peace deal two years later. The Nigerien constitution limits presidents to two terms in office, so President Tandja's efforts to win the right to a third term in office in 2009 led to a military coup and his imprisonment. In 2011, a constitutional referendum and national elections were held, and Mahamadou Issoufou of the Nigerien Party for Democracy and Socialism was elected president. Elections held in 2016 resulted in reelection of President Issoufou for a second term, and some restructuring of GoN ministries (CIA 2017).

Niger is divided into seven regions, plus the capital district of Niamey (Map 1). The seven regions are further divided into departments and communes, the latter of which include urban communes, rural communes, and administrative posts for uninhabited desert areas or military zones. Niger is a member of the African Union, the West African Economic and Monetary Union, and the Comité Permanent Inter-Etats de Lutte contre la Sècheresse dans le Sahel (CILSS); these regional networks help to harmonize food security and economic policies, food security and nutrition surveillance, and early warning/early action protocols. Many GoN institutions and technical services are underfunded and have limited capacity to fulfill their mandates effectively without external funding and assistance. The GoN mandates the establishment of governance structures from central to village levels, but in practice one finds that traditional and religious leaders retain significant influence alongside GoN authorities.

The regional violent extremist actors described in section 2.1 have fueled displacement in Niger. As of May 2017, displaced populations in Niger were estimated to include: 120,956 Nigerien internally displaced persons; 106,162 Nigerian refugees; 15,423 returnees in Diffa; and 60,154 Malian refugees in Tillaberi (OCHA 2017, UNHCR 2017). The GoN has declared a State of Emergency in Diffa and selected departments of Tillaberi and Tahoua, and the GoN measures to prevent militant attacks such as closing markets and implementing curfews are disrupting livelihoods and undermining resilience. Superimposed on this overt political turmoil, conflict over natural resources simmers in Niger, particularly between agro-pastoralists and farmers in the south and pastoralists in the north, as well as between pastoralists and central government. The Tuareg have fought for economic development, the benefits of the region's mineral wealth (e.g., uranium mining), and assistance with poverty and pollution from mining (USAID 2014a). Access to agricultural land, grazing land, migration corridors, and dry season water sources continues to be a flashpoint for civil conflict. GoN institutions and processes for conflict mitigation are relatively weak.

Map 1. Map of Niger



Source: WFP (2012).

## 2.3 SOCIOECONOMIC LANDSCAPE

Poverty is declining in Niger, although it remains widespread, especially in rural areas. An estimated 45.7 percent of Niger's population was poor in 2014, down from 81.4 percent in 1994 and 50.3 percent in 2011 (World Bank 2016). Poverty is predominantly rural in Niger, driven by large household size, low educational attainment and literacy/numeracy rates, and reliance on rain-fed subsistence agriculture for livelihoods (World Bank 2013b). In 2014, poverty rates were highest in Maradi, Dosso, and Zinder regions (INS 2016).

Niger's urban population growth rate is 5.4 percent, and almost one-fifth (18.7 percent) of the population is urban (World Bank 2016, UNDP 2016). Increasing urbanization is likely to continue due to high rural poverty rates. Many urban migrants in Niger are members of households that maintain a residence and economic activities in rural areas, as a risk-spreading strategy. Poverty declined significantly in urban areas from 17.9 percent in 2011 to 9.1 percent in 2014 (INS 2016). Urban households exhibit numerous differences from their rural counterparts, including higher access to improved water sources, improved and non-shared sanitation facilities (e.g., latrines, toilets), electricity, improved housing materials (e.g., for roofs and flooring), slightly lower household size (5.5 versus 6.0 members); higher educational attainment and literacy rates, lower rates of polygamy, and lower fertility rates (ibid).

Largely rain-fed and oriented toward production of staple crops for consumption and domestic commercialization, the agriculture sector employs over 80 percent of adults (World Bank 2013a). Agriculture contributes around 43 percent of GDP, followed by commerce and services (41 percent), and industry (16 percent) (World Bank 2013b). Key extractive industries include uranium, coal, gold, and crude oil. Fluctuations in a positive GDP growth trend are driven by fluctuations in global oil and uranium prices as well as the effects of insecurity (CIA 2017, Table 1). GDP growth is being outstripped by rampant population growth, so GDP growth per capita only grew around 1 percent per year from 2001 to 2010, and has fluctuated significantly since then (World Bank 2013b).

**Table 1. Key Economic Indicators**

Indicators	2011	2012	2013	2014	2015
GDP growth (annual %)	2.31	11.81	5.27	7.05	3.60
GDP per capita growth (annual %)	-1.64	7.44	1.12	2.82	-0.48
Poverty headcount ratio at \$1.90/day (2011 purchasing power parity) (% population)	50.30	-	-	45.70	-
Inflation (consumer prices) (annual %)	2.94	0.46	2.30	-0.92	1.01

Source: WB 2017.

Opportunities are limited for local off-farm employment and income-generating activities (IGA) in rural Niger. Mining, handicrafts, artisanal production of soap and other health products, and collection and sale of firewood, construction materials, and other materials all provide options for income generation to varying degrees. The extractive industries provide limited employment. Migration is a common and indispensable livelihood strategy that many Nigeriens use to smooth consumption. Many Nigeriens migrate in the dry season for wage labor at off-season gardening sites. As discussed above, Nigeriens also migrate from Niger to Algeria, Libya, and onward to the Mediterranean, as well as to coastal West Africa for labor opportunities. Labor migration provides income and/or in-kind payment to support food security, but availability of this employment fluctuates because of economic dynamics, conflict, and government policies on migration in countries of Africa and Europe. Migration is discussed further in section 3.2.2.

Niger imports around 20 percent of its annual food requirements, mainly from Nigeria. Food security in Niger is subject to fluctuations in the exchange rate between Niger's Franc Communauté Financière Africaine (FCFA) and Nigeria's Naira: the current depreciation of the Naira has the effect of encouraging flow of Nigerian cereals into Niger and making Niger's exports (e.g., livestock, cowpeas, and vegetables) less competitive in Nigerian markets. Cereal availability, access, and marketing are discussed further in sections 3.1 and 3.2.

## 2.4 POPULATION AND HEALTH

Niger is home to 19.9 million people (World Bank 2016). Because of the country's extremely high fertility rate (7.6), over half (57 percent) of Niger's population is under age 15, and 32 percent is between 10 and 29 years of age (INS and ICF International 2013). Unchecked population growth driven by high fertility hobbles Niger's development efforts, and gives the country the unfortunate distinction of having the lowest Human Development Index in the world (ibid; UNDP 2016).

Chronic malnutrition (stunting) has remained above 40 percent for the last quarter century, with minimal improvement over that time. A key driver of the prevalence of chronic malnutrition, among other factors, is adolescent pregnancy, since the first-born children of adolescent girls are 33 percent more likely to

become stunted relative to children born to older peers (Fink et al 2014). Although the prevalence of acute malnutrition (wasting) has declined since 2012, it remains alarmingly high, at 10 percent, reaching 13 percent in Agadez and Maradi regions. The high prevalence of acute malnutrition is most likely related to poor complementary feeding, care, and water- and sanitation-related practices.

Suboptimal breastfeeding and poor complementary feeding practices are significant contributors to both chronic and acute malnutrition in Niger. Less than a quarter (23 percent) of infants are exclusively breastfed for 6 months and less than one-tenth (9 percent) of children 6–23 months consume a minimally acceptable diet. Anemia, vitamin A deficiency, and iodine deficiency are still significant problems in Niger, negatively impacting maternal and child health and nutrition (MCHN). There have been impressive reductions in maternal mortality, but high fertility rates, the high prevalence of adolescent pregnancy, and low contraceptive use all continue to inhibit optimal MCHN.

Poor water and sanitation, particularly extremely high levels of open defecation (84 percent of rural households practice open defecation), continue to negatively impact health and nutritional status in Niger. The poor water and sanitation infrastructure is exacerbated by the rapid population growth occurring in the country.

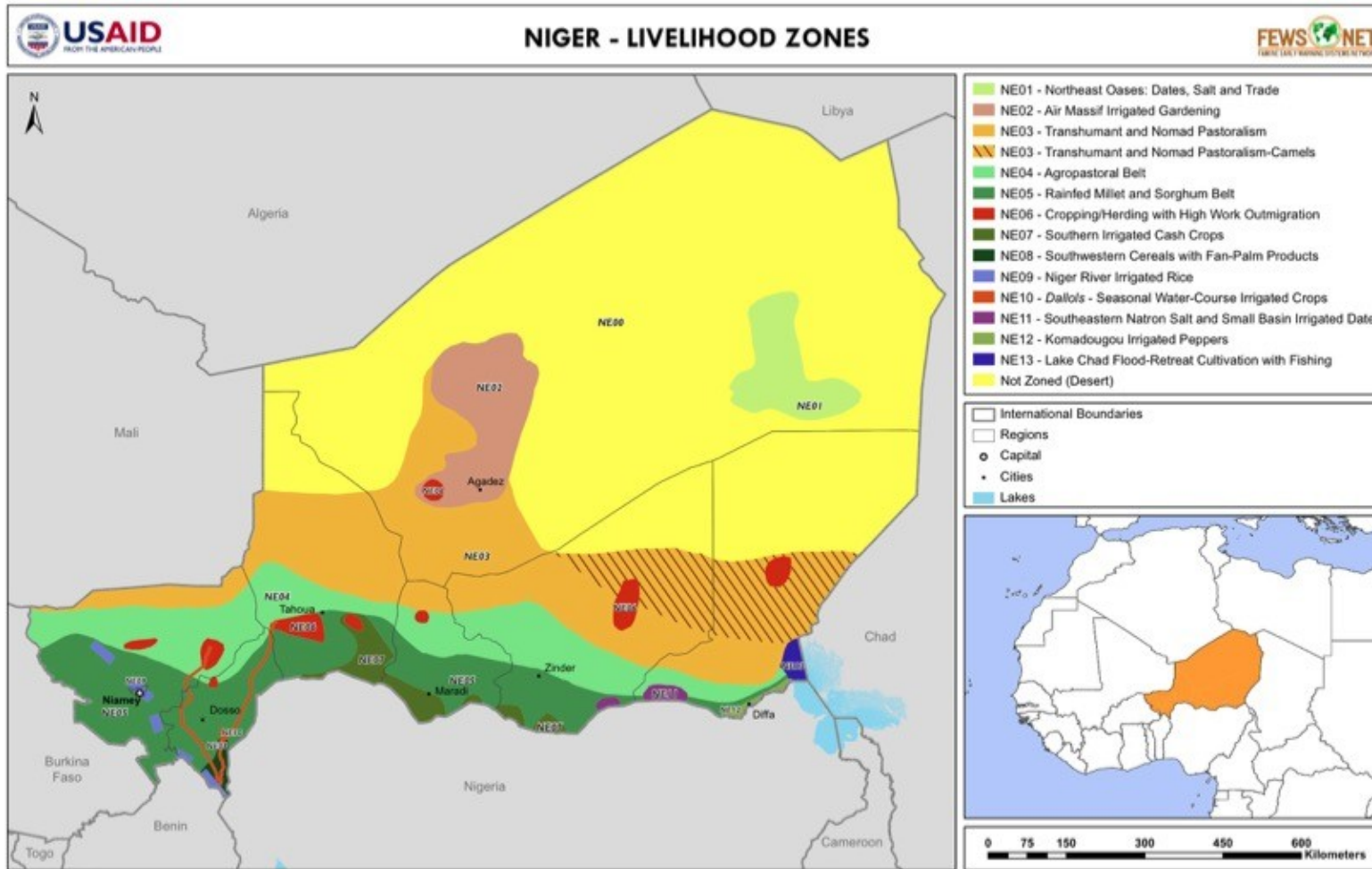
## 2.5 LAND

Niger's arable land toward the south and southwest is estimated to account for only 15 percent of the country's territory. The Niger livelihood zone map produced by the USAID-funded Famine Early Warning Systems Network Project (FEWS NET) and national partners illustrates the transition from agricultural land in the south, to a broad agro-pastoral belt, to a pastoral zone in the north (Map 2). Annual rainfall levels range from up to 750 mm/year in southern Tillabéri and Dosso regions, to less than 200 mm/year in Agadez (FEWS NET 2014). Since the 1970s, a worsening trend of desertification is fueled by loss of vegetation cover in agro-pastoral and pastoral regions, wind erosion, overgrazing on fragile vegetation, and loss of forest cover to fuelwood and farming (CILSS 2016). Tremendous population pressure in the west and south of the country has steadily eroded land cultivated per household since the early 1990s (Figure 1). Expansion of cultivated area, from 18.1 percent in 2000 to 24.5 percent in 2013, has caused a loss of steppe and savanna across Niger (USGS 2017).

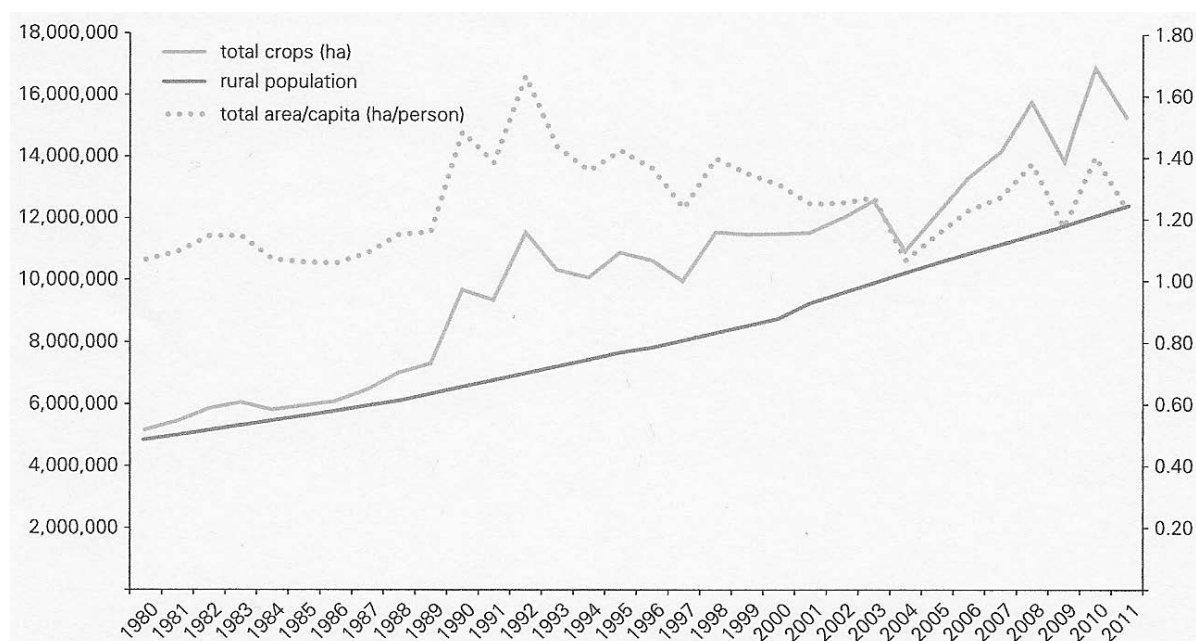
The GoN Rural Code (1993) aims to clarify and strengthen land tenure security, although implementation of the Rural Code varies across Niger, and GoN policies often exist alongside traditional and Islam-based land and natural resource management norms and laws (Hughes 2014). In agricultural communities, land is generally divided into individually held land, family-held land, and commonly held land (often called chieftaincy lands or *terres de chefferie*). Land is acquired via inheritance, borrowing in exchange for rent or payment in kind, cultivating a plot in exchange for giving the land owner a cash loan (“pledging”), and land purchase. Land transactions tend to be informal, except for land sales, which are often accompanied by written agreements (ibid). Local land commissions called COFOCOMS (*Commission Foncière de la Commune*) are charged with managing land disputes.



Map 2. Livelihood Zone Map of Niger



Source: FEWS NET (2011).

**Figure 1. Crop Area and Rural Population Trends**

Source: WB 2013a.

## 2.6 GENDER

Gender inequity is highly prevalent and deeply rooted in cultural norms in Niger (see Table 2 for a summary of gender indicators). The United Nations Development Programme (UNDP) Gender Inequality Index for 2014 ranked Niger 154 out of 155 countries (UNDP, accessed 2017). Only 12 percent of women reported participating in major decisions regarding their own health, household purchases, and visiting relatives (INS and ICF International 2013). Acceptance of sexual and gender-based violence is high: 60 percent of women believe that it is justifiable in at least one situation for a husband to beat his wife (INS and ICF International 2013). Women have lower educational attainment rates, lower asset ownership, lower income levels, and lower decision-making authority than men. In terms of governance, women are vastly underrepresented in positions of authority in public and private institutions, from the level of ministerial leadership in Niamey down to village development committees (VDCs) at the local level.

Although customary law and traditions vary by location and ethnic group, key household assets such as land belong to men in Niger. Nationally, only 20 percent of women report owning land (INS and ICF International 2013). Among the Hausa – Niger’s largest ethnic group – land is inherited by sons, although some women advocate to inherit land from their parents based on Islamic law (Doka and Monimart 2004). In most cases, a woman accesses land when her spouse allocates a small plot to her called a *gamana*, and the woman has user rights and decision-making authority over how to use the produce from that land. A wife also provides labor on the main farm plot (the *gandu*), and her husband has the authority and responsibility to share some of the produce of the *gandu* with his wife (or each wife in polygamous households) after harvest, which the wife will use to feed herself and her children during the dry season (ibid). A widow’s deceased husband’s assets return to his family, rather than remaining the property of the widow, unless she negotiates arrangements with his family to keep the land. The issue of gender and land is discussed further in in Section 3.1.4.

Female-headed households (FHHs) account for around one-sixth (15.9 percent) of all households (World Bank 2016). FHH are at twice the risk of moderate and severe food insecurity of non-FHH. In 2015, 22.6 percent of FHH faced moderate food insecurity, and 2.3 percent faced severe food insecurity, in contrast to 12.2 percent and 1.2 percent respectively for households led by a couple (male and female) (GoN et al 2016).

The extremely high prevalence of adolescent pregnancy hinders maternal and child nutrition in Niger. The burden of taking care of many children, maintaining the household compound, and fetching water largely falls on women. Sections 3.1.4 and 3.2.3 discuss differences in roles and responsibilities by gender in agriculture and other domestic and economic spheres. The gender study for the FFP projects found that women's responsibilities account for around 16–17 hours daily, allowing women less than one hour of personal time each day, in contrast to 4 hours daily for men (Faye 2014). Given Niger's high fertility rates and demographic profile, 42.3% of the population is under the age of 10; children with high care requirements but who do not contribute to the economic life of the household (INS and ICF International 2013). For this reason, rural Nigerien households may have a relatively large household size but still face labor constraints vis-à-vis the labor requirements of a typical rain-fed plot, particularly in the semi-arid agro-pastoral zone.

Youth face high unemployment and low educational enrollment rates, and the combination of these two factors leaves a million and a half young people (between the ages of 13 and 19) neither in school nor employed (Le Bissonnais 2010). This poses considerable risks for civil insecurity in a region battling violent extremism on all fronts. For rural youth, land fragmentation and land pressures are making it increasingly difficult to generate sufficient production to support a family. And as noted above (section 2.4), girls and young women have high rates of early marriage and adolescent pregnancy, trapping many of them in a cycle of undernutrition.

## 2.7 ENVIRONMENT, CLIMATE, AND NATURAL DISASTERS

Niger experienced seven major droughts 1980–2010, and large-scale acute food insecurity in 2001, 2005, 2010, and 2012 that was triggered by droughts, floods, and locusts (World Bank 2013a). Rainfall levels have increased in Niger since the 1960s, although it is uncertain whether this trend will continue, since rainfall levels are projected to decline by 10–20 percent across West Africa by 2025 (USAID 2012a). Climate research suggests that Niger faces increasing risk of rainfall variability, including inter-seasonal variability in total precipitation levels, as well as intra-seasonal variability in temporal and spatial distribution (Funk 2017). Recent climate science modeling suggests that polar ice melting may be associated with flooding of coastal West Africa, reductions to West African monsoon precipitation, a drastic reduction in rainfall in the Sahel, and potential distress migration of millions of people out of the Sahel as a result (Defrance et al 2017).

Temperatures in Niger have been rising around 0.15 degrees Celsius per decade in recent decades, a warming trend that climate research suggests will continue (FEWS NET 2012). Rising temperatures will exacerbate soil moisture constraints, boosting the risk of water scarcity and drought-induced crop failures. Rising temperatures are also expected to influence the burden of certain infectious diseases (e.g., malaria, diarrhea, and meningitis); worsen the cross-border spread of some agriculture and livestock pests and diseases (e.g., locusts); and increase food and water contamination and water-quality issues. These longer-term environmental and climate stressors threaten to worsen health and livelihoods in the coming decades.

The desert locust (*Schistocerca gregaria*) is a periodic hazard with devastating impact on lives and livelihoods. The 2003–2005 locust invasion contributed to a 27 percent cereal shortfall and forced



migration of residents from 4,000 affected villages. Desert locust invasions in Niger peaked in 1988, 2003–2005 and 2012, although sedentary grasshoppers are a lower-level chronic threat (SciDev.Net 2016). Other common crop diseases and pests include grain-eating birds, rodents, millet borer, downy mildew, smut, ergot, and the weed striga (WB 2013a). Livestock diseases and pests include Pasteurellose, Anthrax, Peste de Petits Ruminants, Newcastle Disease (poultry), sheep and goat pox, foot and mouth, blackleg, and contagious bovine pleuropneumonia (ibid).

## 2.8 EDUCATION

The education situation in Niger is very troubling, and undermines efforts to strengthen livelihoods and resilience. Less than one-fifth of the adult population is literate (19 percent, Table 3) (GoN et al. 2016). Almost three-quarters (72 percent) of women have no education and 85 percent are illiterate, while 60 percent of men have no education and 58 percent are illiterate (INS and ICF International 2013). Less than 1 percent of Nigeriens have completed secondary school, including 0.1 percent of women and 0.2 percent of men (ibid). Over half (57 percent) of Niger's population is under the age of 15, and 32 percent of the population is 10–29 years of age (INS and ICF International 2013). Both girls and boys have low levels of educational attainment and literacy. The adjusted net primary enrollment rate was 57 percent and 66 percent for primary school age girls and boys respectively in 2014 (World Bank 2016). The youth literacy rate was 17 percent and 36 percent for females and males age 15–24 respectively (ibid).

## 2.9 RESILIENCE

High shock exposure and sensitivity, and the erosion and failure of resilience, have trapped Niger in a cycle of dependence on external assistance to minimize excess malnutrition, morbidity, and mortality. The United Nations requested an estimated US\$139 million worth of humanitarian assistance for Diffa as a part of the UN Lake Chad Humanitarian Response for 2017, and the overall level of humanitarian assistance the UN requested for Niger in 2017 is US\$271 million (UN 2016a, UN 2016b). To directly address this cycle of humanitarian crises and relief, the GoN and international community have shifted to programming for resilience. Resilience reflects 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 (Box 1). The USG is implementing the RISE Initiative in Niger, including the three FFP projects examined in Section 4 of this desk review, to strengthen resilience. The Global Alliance for Resilience Initiative is implemented through the GoN Nigeriens Nourishing Nigeriens (3N) Initiative (see sections 3.2.5 and 3.3.8).

The main risks to food security in Niger include drought and flooding (worsened by climate change), market shocks such as high cereal prices, production shocks such as crop and livestock pests and diseases, reduced availability of fodder and low livestock prices, high fertility rates, household morbidity (high health costs) and mortality (loss of household income), and shocks to migrational labor opportunities. Structural risks and long-term stressors include low literacy and educational attainment, limited access to arable land, low use of improved agricultural and livestock techniques and inputs, poor market access, low access to water for production, limited access to off-farm income generating activities, and weak governance at every level. Although Niger has not faced a catastrophic drought, food-price crisis or locust event in the last five years, the country remains highly shock-prone, and strengthening the resilience of individuals, households, communities, systems, regions, and the country to shocks is of the highest priority.

Nigeriens face the daunting challenge of maintaining resilience in the face of shocks seasonally/intra-annually, and inter-annually. The lean season for farmers and agro-pastoralists coincides with low income

from crop sales, depletion of household food stocks, and high food prices on local markets. The lean season for pastoralists coincides with low milk production, low animal prices at the market (and thus poor terms of trade), and high need to purchase cereals at high prices on local markets. Even in the absence of a major shock such as a drought or locust infestation, many poor Nigerien households lack the ability to maintain resilience throughout the year (i.e., during the lean season).

Resilience capacities are defined as sets of conditions that can enable households to achieve resilience in the face of shocks. Through resilience capacities at the levels of individual, household, community, and beyond, people become able to absorb the effects of a shock, adapt to a shock, and ultimately to transform their conditions to reduce vulnerability to the shock. Research on vulnerability, resilience, and food insecurity in Niger and elsewhere suggests that households are more resilient to common food security shocks if they have: a diversified livelihood portfolio to spread risk (in Niger this frequently includes seasonal or longer-term migration); multiple economically active adults; productive assets such as livestock for income generation and sale in a crisis if needed; access to arable land (especially irrigated and sustainably managed); access to savings and/or remittance income; access to finance; literacy/numeracy and other skills needed to enhance production and engage in markets; and access to social networks for support during shocks (Frankenberger et al 2013, Béné et al 2015, Asfaw et al 2016, FAO 2015). Safety net programs that transfer cash and assets, conduct cash for work, and provide associated services/measures to beneficiaries suffering from chronic and/or transitory food insecurity can also protect household food security and nutritional status in the face of recurrent shocks (World Bank 2016, section 3.2.5). Also, households that practice key MCHN and WASH-related practices—for example, handwashing, use of an improved latrine, infant and young child feeding practices, access to clean water, and delayed marriage and child spacing—are at lower risk of malnutrition and associated negative health outcomes. Resilience is discussed in greater depth in section 3.2.4.

**Table 2. Key Gender Indicators**

	National	Agadez	Diffa	Dosso	Maradi	Tahoua	Tillabéri	Zinder	Niamey
<b>Asset ownership</b>									
<i>Women 15–49 years</i>									
% who report they do not own a house	60.8	61.8	89.9	58.6	44.3	58.1	68.1	64.6	83.3
% who report they do not own land	63.8	87.6	91.3	71.5	43.5	66.0	73.4	55.4	87.1
<i>Men 15–49 years</i>									
% who report they do not own a house	26.0	54.6	28.8	20.1	18.6	35.1	18.0	15.3	70.8
% who report they do not own land	44.7	80.2	40.5	50.6	49.1	61.6	20.1	23.0	76.4
<b>Income and decision making</b>									
Who decides on the use of women's income, as reported by women 15–49 years									
Woman	85.4	92.1	60.3	84.6	92.1	86.5	81.6	83.4	84.8
Woman and spouse	7.1	2.9	1.4	10.7	4.5	5.2	8.6	8.8	7.9
Spouse	6.8	2.4	37.9	3.6	2.7	7.9	8.9	7.3	6.4
% of women 15–49 years who report their income is less than their spouse's	85.3	83.5	95.0	89.7	81.6	88.3	88.2	82.9	82.5
% of women 15–49 years who report participating in all three decisions (woman's health, household purchases, visiting relatives)	12.3	14.1	30.0	3.7	13.6	8.5	15.9	15.6	12.4
<b>Domestic violence</b>									
% of women 15–49 years who report use of violence against women is acceptable	59.6	22.4	33.7	68.0	48.2	47.1	84.4	75.3	55.3
% of men 15–49 years who report use of violence against women is acceptable	26.0	9.4	57.2	42.4	35.7	9.0	45.8	9.8	33.5

Source: INS and ICF International 2013.

**Table 3. Education**

	National	Agadez	Diffa	Dosso	Maradi	Tahoua	Tillabéri	Zinder	Niamey
<b>Education</b>									
<i>Women 15–49 years</i>									
% who report no education	72.6	61.9	79.6	71.3	75.8	81.7	67.2	76.5	34.3
% who report completing secondary school	0.1	0.2	0.0	0.0	0.1	0.1	0.2	0.1	0.8
% who are literate	14.0	29.0	10.0	11.4	9.6	8.7	10.7	10.9	53.1
<i>Men 15–49 years</i>									
% who report no education	60.0	55.0	73.8	57.0	58.0	66.3	61.6	66.8	28.3
% who report completing secondary school	0.2	0.7	0.3	0.1	0.1	0.1	0.2	0.2	1.3
% who are literate	41.7	58.6	19.2	36.1	39.4	44.1	29.2	34.5	71.8
<i>Girls 7–12 years</i>									
Net primary enrollment rate	44.3	52.7	32.7	47.5	41.6	34.2	55.6	40.4	82.7
<i>Boys 7–12 years</i>									
Net primary enrollment rate	53.0	58.3	36.3	60.8	58.4	47.1	53.5	43.0	86.3

Source: INS and ICF International 2013.

## 3. FOOD SECURITY CONTEXT

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### 3.1 FOOD AVAILABILITY

#### 3.1.1 CROP PRODUCTION

**Land availability and access:** Advances in total agricultural production since the 1990s were achieved largely by bringing marginal areas under cultivation, rather than by increasing productivity (i.e., extensification rather than intensification). The land area put under cultivation doubled from 1973 to 2013, while yields stagnated for most crops (FAO, CILSS and USGS 2017, FEWS NET 2012). Driven by high population growth rates, the area where rain-fed agriculture is practiced is creeping northward and eastward, effectively expanding the Agro-Pastoral Belt Livelihood Zone (Map 2) into areas without reliable soil moisture or groundwater access. At the same time, land fragmentation has reduced the average amount of land a household puts under cultivation to 4.1 ha or less (WB 2013a). Fortunately, increasing rainfall has supported cultivation in marginalized areas during the last several years. However, in the absence of significant investment into agricultural intensification in Niger’s southernmost agriculturally fertile departments, yields and production per capita will continue to decline relative to domestic requirements. Intensification would require a concerted effort to address water constraints, although most cultivated land in Niger is not irrigable, and less than one percent of arable land is under a water management scheme (MCC 2014, World Bank 2016).

**Production systems levels and trends:** Niger has one main rainy season June–September, followed by the harvest during October–December, and off-season irrigated and flood recession cultivation during the dry season of January–May (Figure 2). Agriculture in Niger includes smallholder dry-season production (most rain-fed), commercial production (irrigated), flood recession production along the Niger River and other waterways, and *marâchage* (lowland irrigated market gardening). Millet, sorghum, rice, maize, wheat, fonio, and cowpeas are the principal staple crops, and cowpeas, groundnuts, sesame, onions, *souchet* (tiger nuts), irrigated rice, and a range of vegetables and tubers (tomatoes, watermelon, carrots, lettuce, potatoes) are the main cash crops (Tables 4 and 5). The main crop export markets are in Nigeria, Benin, and Cote d’Ivoire (World Bank 2013).

The 2012–2016 cropping seasons were favorable overall. Total agricultural production averaged 254 kg cereals per capita from 2011–2014, and provisional estimates for the 2016 season are for 5,856,530 MT cereals, or 283 kg per capita; this is about 9 percent above last year and 24 percent above the 5-year average (FAO and GoN 2017, GoN et al. 2016, FEWS NET 2017a). Gross cereal production estimates by region were 670 MT in Agadez; 65,375 MT in Diffa; 987,243 MT in Dosso; 1,320,360 MT in Maradi; 30,374 MT in Niamey, 1,072,389 MT Tahoua; 1,042,490 MT in Tillabéri; and 1,137,132 MT in Zinder (GoN et al. 2016). Rainfall replenished surface water and groundwater sources in 2016, supporting dry season irrigated production in the first half of 2017. The GoN provisional harvest assessment for 2016–2017 indicated that the cereal deficit departments would include: all departments in Agadez Region; all departments in Diffa Region; Dosso Town in Dosso Region; Bermo, Guidan-Roundji, and Mayahi Departments and Maradi Town in Maradi Region; the city of Niamey; the departments of Abalak, Bagaroua, Bouza, Illela, Tassara, Tchintabaraden, and Tillia as well as Tahoua Town in Tahoua Region; the departments of Abala, Ayerou, Banibangou, and Bankilare and Tillabéri Town in Tillabéri Region; and Tesker Department and Zinder Town in Zinder Region (ibid). As of early June 2017, early season rains had begun falling across western and central Niger (FEWS NET and NOAA 2017).

**Agricultural practices:** Four-fifths (80 percent) of Nigerien adults work in agriculture, and agriculture and livestock provide an estimated 46 percent of household income in Niger (World Bank 2013a, GoN et

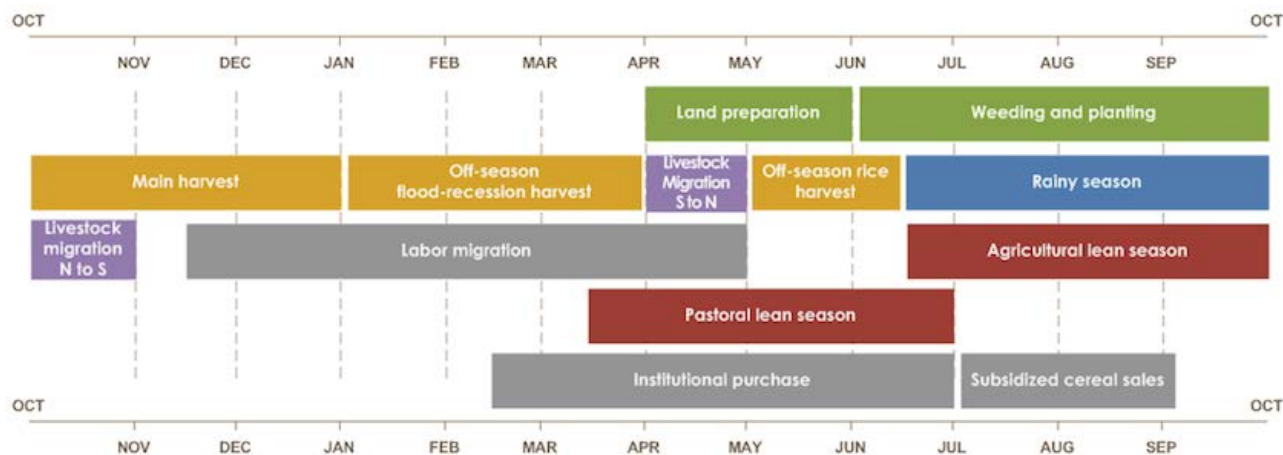
al. 2016). Most smallholder farmers practice the intercropping of millet, sorghum, and cowpea, the three crops that collectively account for 85–90 percent of land area planted (World Bank 2013a). This cropping strategy spreads production risk by using drought-resistant varieties with varying seasonality and soil requirements and impacts. Other crops commonly planted in smaller quantities include groundnuts, rice, maize, sorrel (*oseille*), voandzou (bambara nut), okra (*gombo*), sesame, and tiger nut (*souchet*). Dry-season lowland production of high-value vegetables and other crops (*culture maraîchère*) can be lucrative for those who have the land, labor, and finance to practice it, but the land planted under this system is only equal to 1 percent of total rainy season cultivation (ibid). Most smallholders cultivate with hand tools using traditional techniques, without the benefit of improved seeds, fertilizer, animal traction, or mechanization.

**Labor availability:** Families provide the bulk of labor on smallholder farms in Niger, although large household size does not necessarily guarantee adequate labor power for family farms (section 2.6). Commercial agro-enterprises and farms owned by better-off households can hire labor, but laborers must often leave the area to find this type of work, and only one-tenth (10.0 percent) of households report that agricultural employment is among their three top sources of income (GoN et al. 2016). A tiny fraction (0.6 percent) of villages reported that the main problem they faced was lack of labor power (and/or rural out-migration), and only 2.5 percent of respondents reported that their main challenge was lack of labor power (and/or rural out-migration) (ibid). Respondents identified low production (poor harvest), lack of water, and lack of health centers as their top priorities (ibid). High prevalence rates of malaria and other infectious diseases reduce labor availability for agricultural work and other physically demanding tasks.

**Post-harvest treatment:** Post-harvest processing and storage techniques are not well developed in Niger. Most households dry newly harvested product outdoors, and store produce in temporary storage structures such as traditional granaries. Long-term storage facilities such as silos and warehouses are lacking, leading to high post-harvest losses to pests (locusts, grasshoppers, grain-eating birds, rodents, and millet borer) and diseases (e.g., fungal diseases).

Long-term constraints to the agriculture sector include inadequate water resources and infrastructure; lack of access to finance; inadequate access to improved seeds, fertilizers, and other inputs; inadequate access to capital (e.g., arable land, agricultural equipment); weak markets; weak governance systems and capacities; low levels of organization and capacity among producers; inadequate control of crop pests and diseases; and climate change.

**Figure 2. Seasonal Calendar for Niger**



Source: FEWS NET 2014.

**Table 4. Annual Staple Crop Production (2010–2016)**

Crop		2010 (2010–2011)	2011 (2011–2012)	2012 (2012–2013)	2013 (2013–2014)	2014 (2014–2015)	2015 (2015–2016)	2016 (2016–2017)
Maize	Area harvested (ha)	12,398	8,308	9,600	14,452	32,154	-	-
	Yield (kg/ha)	7,567	7,662	8,750	12,326	17,602	-	-
	Production (MT)	9,381	6,366	8,400	17,813	56,597	-	-
Millet	Area harvested (ha)	7,253,200	7,052,175	7,095,105	7,082,959	7,358,247	-	-
	Yield (kg/ha)	5,299	4,149	5,443	4,125	4,514	-	-
	Production (MT)	3,843,351	2,926,176	3,862,155	2,921,982	3,321,753	-	-
Sorghum	Area harvested (ha)	3,322,142	2,878,823	3,111,086	3,565,084	3,572,330	-	-
	Yield (kg/ha)	3,928	2,804	4,422	3,704	3,992	-	-
	Production (MT)	1,304,832	807,268	1,375,697	1,320,490	1,425,980	-	-
Fonio	Area harvested (ha)	11,329	11,612	11,329	10,300	10,300	-	-
	Yield (kg/ha)	4,826	4,833	5,237	4,420	4,420	-	-
	Production (MT)	5,467	5,612	5,933	4,553	4,553	-	-
Rice (paddy)	Area harvested (ha)	20,055	8,729	5,300	21,572	25,678	-	-
	Yield (kg/ha)	14,940	13,976	10,189	40,379	42,426	-	-
	Production (MT)	29,963	12,200	5,400	87,106	108,941	-	-
Wheat	Area harvested (ha)	3,221	1,651	1,883	1,883	2,923	-	-
	Yield (kg/ha)	18,119	18,861	30,090	30,090	18,978	-	-
	Production (MT)	5,836	3,114	5,666	5,666	5,548	-	-
Total—all cereals	Area harvested (ha)	10,627,231	9,962,697	10,236,723	10,700,120	11,005,619	-	-
	Yield (kg/ha)	4,893	3,775	5,142	4,074	4,475	-	-
	Production (MT)	5,200,370	3,761,229	5,264,128	4,359,002	4,924,794	4,651,123	5,856,530
	Production/capita (kg)	319	222	298	237	258	234	283
Population		16,291,990	16,946,485	17,635,782	18,358,863	19,113,728	19,899,120	20,714,984

Sources: FAO 2017, FEWS NET 2015, FEWS NET 2016, WB 2016.



**Table 5. Annual Cash Crop Production (2010–2014)**

Crop		2010	2011	2012	2013	2014
Cowpeas	Area harvested (ha)	5,570,969	4,644,771	4,700,833	5,135,774	5,325,168
	Yield (kg/ha)	3,185	3,266	2,828	3,495	2,992
	Production (MT)	1,774,464	1,517,142	1,329,514	1,794,886	1,593,166
Groundnuts (with shell)	Area harvested (ha)	795,768	690,853	741,309	760,455	778,994
	Yield (kg/ha)	5,105	5,727	3,936	4,507	5,179
	Production (MT)	406,245	395,669	291,763	342,772	403,422
Sesame	Area harvested (ha)	172,207	181,735	133,012	96,197	131,676
	Yield (kg/ha)	4,976	4,871	4,181	4,854	4,194
	Production (MT)	85,694	88,517	55,607	46,693	55,186
Bambara nuts/beans (earth peas)	Area harvested (ha)	63,879	51,536	70,404	68,301	70,505
	Yield (kg/ha)	4,301	4,288	4,641	4,800	4,593
	Production (MT)	27,472	22,098	32,678	32,784	32,383

Source: FAO 2017.

**Financing:** Most rural smallholders have no access to formal financial services to support production, storage, processing and marketing. Microfinance institutions are underdeveloped and financially vulnerable, and high risk of production shocks and lack of capital for collateral discourage the issuance of loans for small scale producers. This forces smallholders who seek credit to turn to informal social networks, relatives who migrated to seek employment, and/or village-level savings and loan activities (where present).

**Cereal availability, agricultural trade, and national food stocks:** Niger produced an estimated 90 percent of its domestic cereal requirements in 2016–2017 (Table 6). Domestically produced cereals are most often transported by traders from Niger’s breadbasket areas—in southern Tillabéri, Dosso, Tahoua, Maradi, and Zinder—toward deficit communities northward and eastward into Diffa, and even onward to Mali, Algeria, and Libya (FEWS NET 2014). National production tends to adequately supply markets until around January, when the national food system shifts to reliance on imports. To fill the cereal gap in 2017, Niger aims to import an estimated 568,000 MT of cereals, mostly via rice, maize, millet, and sorghum imports from Nigeria, Benin, Burkina Faso, and Mali (FEWS NET 2014). Nigerien import estimates are unreliable due to the large volume of unregulated trade across Niger’s porous borders. Traders move commodities from Nigeria to major markets primarily in the south—e.g., Tillabéri, Niamey, Gaya, Tounfafi, Maradi, Zinder, and Diffa. Commodities are then purchased and transported northward into deficit markets in agro-pastoral and pastoral Niger until the following harvest (FEWS NET 2017a). Domestic markets are not well integrated, due in part to poor physical infrastructure, high transaction costs, and lack of market information, which discourage traders from serving remote food insecure villages. The high inter-annual variability of cereal prices reflects the sensitivity of Nigerien markets to supply fluctuations—originating in production shocks, currency exchange rates, policy actions, speculation or other factors—in the Niger-Nigeria production basin and West Africa (FEWS NET 2014).

As noted above, the GoN Office des Produits Vivriers au Niger maintains national cereal stocks up to 154,700 MT (FEWS NET 2014). Storage capacity is largest in Zinder, Maradi, Tahoua, and Niamey. The GoN purchases an average of 60,000–80,000 MT of cereals on domestic and regional markets annually, for food assistance and safety net programs (ibid).



**Table 6. Cereal Supply/Demand Balance Sheet for the 2016–2017 Marketing Year (November–October)**

Indicators	Wheat	Rice	Coarse Grains	Total Cereals
<b>Previous Production and Imports (000 MT)</b>				
Average production, incl. paddy rice (2015–2016)	-	133	5,232	5,366
Previous 5-year average production, incl. paddy rice	2	89	4,608	4,699
Previous year imports	101	360	65	526
Previous 5-year average imports	105	367	76	548
<b>2016–2017 Domestic Availability (000 MT)</b>	-	97	5,708	5,805
2016 production (incl. paddy rice)	-	149	5,708	5,857
2016 production (incl. milled rice)	-	97	5,708	5,805
Possible stock drawdown	-	-	-	-
<b>2016–2017 Utilization (000 MT)</b>	101	497	5,775	6,373
Food use	100	471	4,743	5,314
Non-food use	1	21	922	944
Exports or re-exports	-	-	20	20
Possible stock build-up	-	5	90	95
<b>2016–2017 Import Requirement (000 MT)</b>	101	400	67	568
Anticipated commercial imports	100	300	65	465
Of which: received or contracted	-	-	-	-
Food aid needs	1	50	2	53
<b>Current Aid Position</b>				
Food aid deliveries	-	-	-	-
<b>Estimated Per Capita Consumption (kg/year)</b>	5	23	229	257
<b>Cereal Supply and Utilization Indices (%)</b>				
2016 production compared to average (incl. paddy rice)	-	167	124	125
2016–2017 import requirement compared to average	96	109	88	104
Cereal share of total calorie intake	-	-	-	69

Source: FAO/GIEWS 2016.

### 3.1.2 LIVESTOCK PRODUCTION

Livestock contributes 40 percent to the country's agricultural GDP (World Bank 2013a). Herders in Agadez and northern parts of other regions (see Transhumant and Nomad Pastoralism Livelihood Zone in Map 2) practice livelihoods that are heavily based on transhumant animal husbandry, particularly with camels and small ruminants, for consumption and sale. Further south, agro-pastoralists balance livestock keeping (especially cattle and small ruminants) with farming, in an environment in which farming is increasingly necessary but unreliable, and seasonal transhumance is often practiced due to insufficiency of local grazing during the dry season. At the other end of the spectrum, the livestock owned by agriculturalists (farmers) tends to be concentrated among better-off households and is used to diversify income portfolios, spread risk, and improve household nutrition. Transhumant herders take livestock along migration corridors to far-flung grazing and agricultural areas in the dry season (e.g., around November), to graze on fodder as well as agricultural residues, based upon negotiations over grazing and water access rights with local leaders and land owners, and they return north (e.g., around May) as the early rains of the next season are anticipated. Fodder shortages are typically experienced from March–June, during the pastoral lean season (Figure 2). Increasing demand for farmland and the transition from pastoralism to farming are disrupting traditional migration patterns and aggravating seasonal livestock feed shortages.

Table 7 illustrates the reconstitution of herds following the drought emergency in 2010–2011. Livestock numbers increased in 2012–2014 with successive good seasons, reaching around 15 million goats, 11 million sheep, and 11 million cattle in 2014 (Table 7, FAO and GoN 2017). The 2016 pastoral season was variable, however, and fodder production was only sufficient to meet 50 percent of requirements (i.e., 4–5 months of the 9-month dry season). After the 2016 harvest, the GoN estimated a pasture deficit of 12 million metric tons in the transhumant pastoral areas of Tahoua, Zinder, Agadez, and Maradi in 2017 (GoN 2016, FEWS NET 2017a). Many livestock subsisted on crop residues in agricultural areas after harvest. Some pastoralists purchased fodder or received it through emergency distribution programs. By May 2017, two consecutive years of poor forage conditions strained food security conditions among pastoralists and drove livestock prices downward, despite fodder distribution (FEWS NET 2017b). Because of concerns about eroded terms of trade (millet/livestock) and fodder availability after February, forage constraints may create unusual distortions in transhumance patterns, livestock conditions, and livestock sales in 2017. It is projected that many pastoralists will be in Integrated Phase Classification (IPC) Phase 2 (Stressed) or 3 (Crisis) from March–September 2017 (FEWS NET 2017a).

Sale of livestock products is dominated by live animal sales to butchers (e.g., in domestic urban markets), as well as to traders serving destination markets in Nigeria, Benin, and other countries in the region. As mentioned previously, livestock exports to Nigeria are declining due to depreciation of the Nigerian naira, which reduces the competitiveness of Nigerien exports such as livestock for Nigerian consumers. Livestock hides, skins, and leather are sold in domestic and export markets, including for handicrafts.

Long-term constraints to the livestock sector are similar to those faced by the agriculture sector: inadequate water resources for livestock, lack of access to finance, inadequate access to improved feed and feed inputs, constraints on access to grazing land, lack of access to capital to promote value-added processing (i.e., to diversify beyond selling live animals), weak markets, weak governance systems and capacities, low levels of organization and capacity among producers, inadequate control of livestock pests and diseases, and climate change.

### 3.1.3 FISHING AND AQUACULTURE

Over 112 species of fish and other marine animals can be harvested from the Niger River and its tributaries, Lake Chad, the Komadougou Yobé River, and natural ponds and perennial water bodies in

Niger (RECA 2014a). Traditional artisanal and semi-modern fishing principally occur along the Niger River in Tillabéri Region, around ponds in Tahoua Region, and around Lake Chad in Diffa Region (ibid). Fish are typically either consumed or sold fresh in local markets. Table 8 provides estimates of fishing production from 2010–2013 in Niger. In addition, aquaculture produces an estimated 40 MT harvest per year for the country (INS 2017).

Aquaculture has gained some prominence in Niger since 2010, although it is still very underdeveloped by regional and global standards. Aquaculture has proven to be more successful in Niger in large ponds with relatively limited intervention, rather than when practiced intensively with water quantity and quality, feeding, and fertilizer controls in place (RECA and FNGPN 2014). The fishing and aquaculture sectors are constrained by climate change, drought, erosion, invasive plants, inadequate data for planning and management, poor water control, low levels of producer and market organization, poor production and marketing infrastructure, weak national systems for support and extension, lack of financing, and insufficient legislation and regulation (GoN and UEMOA 2013).

### 3.1.4 GENDER AND AGRICULTURAL PRODUCTION

Women experience challenges accessing land, agricultural inputs and services, markets, and financial resources for agricultural production in Niger (INS and ICF International 2013, Hughes 2014). Women's access to land, already sharply circumscribed by customary law (section 2.5), is increasingly threatened by population pressure and land scarcity. Doka and Monimart (2004) documented processes in Niger whereby declining land availability to households gave rise to increasing levels of social control over land, and the erosion of land access for women (Box 2).

As noted in section 2.6, the gender baseline study from USAID/FFP projects describes gender-specific labor patterns on smallholder farms in Maradi and Zinder (Faye 2014). On the average smallholder farm, men provide most (but not all) labor for weeding, clearing, planting, and surveillance at rain-fed plots. Women's labor contributions increase with the harvest of cereals, legumes, and roots/tubers. Men provide the bulk of labor for transport, storage, and commercialization of produce. On irrigated off-season plots (*culture de contre saison*), the crops differ, but the gendered labor patterns remain relatively consistent. Women typically maintain a garden for household consumption and small-scale trade. Women do engage in value-added processing of certain crops, such as groundnuts, cowpeas, and millet. Women may also engage in collective market gardening, a program approach often used by development organizations, but it is typically necessary to negotiate a land lease for women for that activity.

Regarding gender and other on-farm production-related activities, men provide most of the labor for herding, veterinary care, livestock sales, fishing, and beekeeping (Faye 2014). Women's engagement is highest in poultry production and the sale of animal by-products such as milk, cheese, butter, eggs, manure, hides, meat, honey, and poultry. Men provide most of the labor for cutting and selling wood for construction, and women are more involved in collection of wild foods. Men tend to be responsible for fishing, while women engage in fish commercialization.

**Table 7. Livestock Holdings (2010–2014)**

Livestock	2010	2011	2012	2013	2014	
Agadez	Cattle	70,061	26,025	27,586	29,241	30,995
	Sheep	622,890	422,564	437,353	452,661	468,504
	Goats	750,042	699,513	727,494	756,594	786,857
	Camels	144,216	144,715	146,597	148,503	150,434
	Donkeys	98,271	92,445	94,293	96,179	98,102
Diffa	Cattle	1,070,334	910,441	965,069	1,022,973	1,084,352
	Sheep	849,831	730,557	756,127	782,590	809,980
	Goats	1,227,630	1,108,772	1,153,122	1,199,247	1,247,217
	Camels	391,797	384,787	389,790	394,858	399,991
	Donkeys	153,071	150,593	153,605	156,677	159,810
Dosso	Cattle	942,291	986,205	1,045,377	1,108,100	1,174,586
	Sheep	784,074	779,506	806,789	835,026	864,252
	Goats	1,022,043	1,033,178	1,074,505	1,117,485	1,162,184
	Camels	29,686	29,597	29,983	30,372	30,767
	Donkeys	137,356	139,502	142,293	145,139	148,042
Maradi	Cattle	1,516,070	1,585,527	1,680,658	1,781,498	1,888,388
	Sheep	1,806,168	1,795,974	1,858,835	1,923,894	1,999,123
	Goats	2,421,007	2,469,719	2,568,508	2,671,248	2,778,098
	Camels	266,565	268,410	271,900	275,435	279,015
	Donkeys	201,504	202,098	206,141	210,264	214,469
Niamey	Cattle	48,948	51,883	54,997	58,297	61,794
	Sheep	164,806	170,574	176,544	182,723	189,119
	Goats	91,614	95,278	99,089	103,053	107,175
	Camels	45	45	46	47	47
	Donkeys	2,727	2,781	2,837	2,894	2,952
Tahoua	Cattle	1,923,523	1,907,395	2,021,838	2,143,149	2,271,738
	Sheep	2,349,453	2,170,908	2,246,890	2,325,531	2,406,925
	Goats	2,542,291	2,447,245	2,545,135	2,646,941	2,752,819
	Camels	512,878	505,939	512,516	519,179	525,928
	Donkeys	417,285	421,540	429,971	438,571	447,342
Tillabéri	Cattle	2,074,422	2,087,532	2,212,785	2,345,552	2,486,286
	Sheep	1,535,547	1,408,042	1,457,323	1,508,330	1,561,121
	Goats	1,767,006	1,717,878	1,786,593	1,858,056	1,932,378
	Camels	90,956	90,100	91,019	92,202	93,401
	Donkeys	307,142	306,085	312,207	318,451	324,820
Zinder	Cattle	2,171,690	1,997,602	2,117,457	2,244,504	2,379,174
	Sheep	2,804,463	2,540,732	2,629,660	2,721,698	2,816,958
	Goats	3,851,440	3,659,847	3,806,240	3,958,491	4,116,831
	Camels	233,709	231,456	234,466	237,514	240,602
	Donkeys	313,454	316,540	322,870	329,327	335,913
Total	Cattle	9,817,339	9,552,610	10,125,767	10,733,314	11,377,313
	Sheep	10,917,232	10,018,857	10,369,521	10,732,453	11,115,982
	Goats	13,673,073	13,231,430	13,760,686	14,311,115	14,883,559
	Camels	1,669,852	1,655,049	1,676,317	1,698,110	1,720,185
	Donkeys	1,630,810	1,631,584	1,664,217	1,697,502	1,731,450

Source: INS (2017).

**Table 8. Annual Production from Fishing (MT) (2010–2013)**

Region	2010	2011	2012	2013
Agadez	-	-	-	-
Diffa	7,350	7,350	7,350	7,350
Dosso	511	356	294	-
Maradi	25	0	30	-
Niamey	351	274	278	444
Tahoua	927	1,414	1,447	863
Tillabéri	365	637	701	435
Zinder	142	208	268	287
<b>Total</b>	<b>9,671</b>	<b>10,239</b>	<b>10,368</b>	<b>9,379</b>

Source for 2010–2013: INS (2017).

### **Box 2. Levels of Land Scarcity and Social Control over Land in Niger**

**Level 1:** Cultivable land is readily available. Men have land inheritance rights and the right to clear new (unclaimed) land, and women may have land clearing, inheritance, and land use rights.

**Level 2:** No unclaimed cultivable land is available, but households still own land in reserve that is not yet being used. Men have inheritance (ownership) rights, and women have inheritance (rights of use) rights.

**Level 3:** All land is utilized. Fallowing is practiced. Men have inheritance (ownership) rights. Women may inherit land, but the land remains in the family and women have no rights to use this land. Women receive a land parcel (*gamana*) as a loan from their husbands, upon which they have user rights to but do not own.

**Level 4:** With increasing land fragmentation, family farms break up. Households cultivate parcels in different locations to spread risk. Fallowing is less frequent. Households may seek loans of land from others. Men access land through inheritance and by borrowing loaned land from others. Women do not inherit land; they receive smaller *gamanas*; and where possible, they may seek land through loans or purchase.

**Level 5:** Land fallowing is no longer practicable, and land is rarely loaned to others. Men's *gandu* plots are too small to meet household needs, so they try to complement small *gandus* with land via rental, pledging, and loans. Women are still allotted small *gamanas*, and they start claiming inheritance rights via Islamic law.

**Level 6:** *Gandus* are too small to divide up, and land is not available to allocate *gamanas* to women. Men acquire land through inheritance, rental, and pledging. Enclosure of fields becomes more common. Women do not receive *gamanas*, and they claim inheritance through Islamic law.

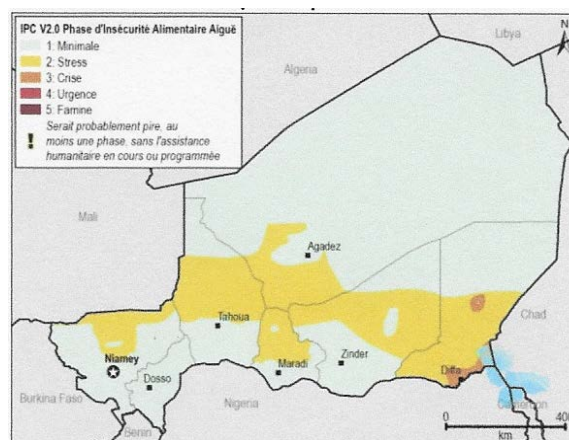
Sources: Doka and Monimart (2004).

## 3.2 FOOD ACCESSIBILITY

### 3.2.1 FOOD CONSUMPTION AND POVERTY

Projected food security conditions in Niger are fairly positive for most of the country in 2017 (Figure 3). Given the favorable harvest in October–December 2016, positive development of ongoing dry-season irrigated production, and adequate supplies on the market, minimal food insecurity is projected across most of Niger in February–June 2017 (FEWS NET 2016, FEWS NET 2017a). However, reductions in grain flows from Nigeria due to the Government of Nigeria’s export restrictions threaten to increase food insecurity and price shocks through September 2017 (FEWS NET 2017b). Furthermore, depreciation of the Nigerian naira undermines income from livestock and cowpea exports for Nigerien producers. Localized low production in northern Maradi (Dakoro and Mayahi Departments) will cause many households to be in IPC Phase 2 (Stressed) from March 2017 onward. Transhumant pastoral zones of Tahoua, Zinder, Agadez, and Maradi Regions will be in IPC Phase 2 (Stressed) from March onward, because of inadequate forage (FEWS NET 2016) and low prices and demand for Nigerien livestock (FEWS NET 2017a). The ongoing humanitarian crises in Diffa and among Malian refugees in western Niger are also of concern. Household food insecurity tends to be most acute from June through September for farmers and agro-pastoralists, and from March through June for pastoralists (Figure 2).

**Figure 3. Likely Food Security Scenario (June–September 2017)**



Source: FEWS NET 2017b.

Table 9 presents findings of the GoN and partners about assistance needs during the 2016–2017 marketing year (GoN 2017, GoN et al. 2016). The prevalence of severe and moderate (combined) household food insecurity was highest in Zinder (18.6 percent), Diffa (13.9 percent), Tillabéri (15.4 percent), and Maradi (10.5 percent). The prevalence of severe household food insecurity was highest in Tillabéri (1.8 percent), Zinder (1.1 percent), Maradi (0.9 percent), and Dosso (0.9 percent). Given variation in population density, Tillabéri, Tahoua, and Maradi were expected to have the highest number of agro-pastoral households suffering from moderate or severe food insecurity, and Tahoua was expected to have the highest number of pastoral households facing moderate or severe food insecurity.

Table 10 summarizes findings from the 2015–2016 national post-harvest food security assessment (GoN et al. 2016). Survey findings indicate that households at greater risk of moderate or severe food insecurity in 2015–2016 were headed by: a female; a divorced person, widow, or widower; someone whose principal economic activity was ‘inactive,’ ‘woodcutter,’ or ‘handicrafts’ (not employment, trade, or agriculture); or someone who did not own animals. A 2013 World Bank study provides additional insight into correlates of household vulnerability to food insecurity: Chronic food insecurity (as measured by low food consumption) was highest among urban households; households in Maradi, Tahoua, Zinder, and Niamey; larger households; households with an older household head; and households in lower wealth quintiles (INS and World Bank 2013).

Table 11 summarizes food security trends from post-harvest household food security surveys from 2010–2011 through 2015–2016 (GoN et al. 2016). The prevalence of household moderate and severe household food insecurity (combined) rose in 2011–2012 because of the drought, and declined slowly thereafter.



Poverty is a key driver of chronic food insecurity. The incidence of poverty declined from 59.5 percent in 2008, to 48.2 percent in 2011, to 45.4 percent in 2014 (INS 2016). This improvement was not shared evenly, geographically, or socially (ibid, INS and World Bank 2013).

- In contrast to the declining trend at national level, the incidence of poverty increased from 2011 to 2014 in Maradi, Zinder, and Dosso, and was highest in those regions in 2014.
- Poverty status and depth of poverty are directly correlated to household size.
- Poverty status and depth of poverty are inversely correlated to the educational status of the household head.
- Poverty risk and depth of poverty increase with increasing age of the household head, until 45–49 years of age, when they begin to decline somewhat.
- Poverty incidence is highest among households in which the household head is primarily engaged in agriculture (e.g., farming, livestock, fishing) rather than off-farm livelihoods.
- Female-headed households (FHH) do not appear to be poorer than non-FHH, which may be explained in significant part by the smaller size of FHH.
- In terms of income inequality, the richest quintile (20 percent) of Nigeriens accounted for 42.0 percent of national consumption in 2014, compared to only 7.9 percent of national consumption for the poorest quintile of Nigeriens (World Bank 2013).

### 3.2.2 INCOME, LIVELIHOODS, AND FOOD PURCHASES

Households with the lowest income levels are at the greatest risk of food insecurity (GoN et al. 2016). Households facing severe and moderate food insecurity reported incomes of 21,871 FCFA and 28,977 FCFA, compared to 38,161 FCFA for households at risk of any food insecurity, and 48,911 FCFA for food secure households (ibid). Four out of 10 (41.2%) households reported having two or more income sources, and households with multiple income sources were at lower risk of moderate or severe food insecurity than households reporting a single income source (ibid).

In addition to selling crops, many household members migrate during the dry season for wage labor at off-season gardening sites. As of May 2017, availability of this work was still around average, despite rising food prices (FEWS NET 2017b). Short-term seasonal migrants, most of whom are male, tend to travel in the dry season and return home in time for planting. Men seek work in commerce, petty sales, as guards, and in artisanal mining, among other areas, while women search for agricultural work on off-season irrigated plots or jobs as domestic laborers. Dosso, Tahoua, and Zinder account for much of Niger's temporary (3–6 months) out-migrants, due to high levels of chronic poverty and food insecurity, exacerbated by climate change in those areas (GoN et al 2016). Niamey, Tillabéri, Tahoua, and Agadez account for the majority of migrants who remained out of the country for 9 months or longer (ibid). Nigeriens migrate to Algeria, Libya, and onward to the Mediterranean, as well as to coastal West Africa (Nigeria, Togo, Benin, Ivory Coast, and Ghana) for labor opportunities. The ongoing crackdown on migrant smuggling in Agadez raises concerns about heightened food insecurity and conflict, given the relative economic importance of migrants and trafficking to this poor and arid region (Sengupta 2016). An estimated one out of eight people (12.7%) born in Zinder Region lived abroad in 2011 (GoN 2011). The IOM estimates that Niger has a net migration rate of -0.3 migrants per 1,000 population, indicating that out-migration outweighs immigration, on average (IOM 2017c).

Remittances accounted for an estimated 2.3 percent of GDP in 2014 (IOM 2017c). The volume of remittances rose sharply from US\$25.5 million (current US\$) in 2003, to US\$165.9 million in 2011, before decreasing to US\$145.9 million in 2015 (Table 12) (WB 2017). Remittance income provided an

average of 115,544 FCFA for Nigerien households in 2015, and little is known about how these funds are used. These funds could help catalyze development in Niger if recipient families have access to services to help them use the funds for maternal and child health and nutrition, as well as investment and IGAs (GoN et al 2016).

Opportunities are limited for off-farm IGA in rural Niger. Mining; handicrafts (e.g., carving, leatherwork, sewing, weaving, jewelry); artisanal production of soap and other health products (e.g., using sesame oil, hibiscus, neem, baobab, moringa); and collection and sale of firewood, construction materials, and other materials, all provide options for income generation to varying degrees. The oil (e.g., in Diffa), cement, coal, gold (e.g., in Djado and Arlit), gypsum, limestone, salt, silver, tin, and uranium (e.g., Arlit) industries provide limited employment. The 2015–2016 national food security survey determined that severely food insecure households earn a greater proportion of their household income from agriculture and informal work, and less from livestock, trade, and employment, than the average Nigerien household (GoN et al. 2016).

Financial inclusion is still quite low in Niger, although digital financial services are increasingly available and community mechanisms to access credit are gaining in popularity (Table 12, GoN et al 2016). Over four-fifths of the population reside in rural areas (82 percent) and less than one-fifth of the population are literate (19 percent) or have access to electricity (14 percent) (ibid). Around 40–50 percent of the population have access to a mobile network, although only 2 percent of the population use the Internet (ibid). Niger’s total financial inclusion rate is 7 percent (ibid). The expansion of cellular phone networks is boosting access to mobile money services, and although relatively few Nigeriens receive payments through formal employment, access to mobile money for savings, purchases, and remittances may prove an important catalyst to household food access. The GoN has closed many microfinance institutions, but of the roughly 10 viable microfinance institutions that remain, at least one is partnering with FFP projects to provide digital financial services to village-based clients. The GoN has recently established government-run national money transfer services (WB CGAP 2016). Village savings and loan associations (VSLAs), savings and internal lending communities (SILCs), and *Matu Masa Dubara* (MMD) groups are increasing community-level access to financial resources in Niger (see section 4.2.6).

*Warrantage* (i.e., an inventory credit or warehouse receipts program) is a program model that aims to provide a partial payment to producers at harvest, based upon the inventory that they place in a well-managed storage facility. The approach allows producers to use the funds to purchase food or to fund entrepreneurial activities before they sell their commodities during the dry season. *Warrantage* essentially enables poor (and often indebted) households to improve their terms of exchange and avoid deepening their debt. *Warrantage* is gaining interest and support in Niger, although it is still relatively uncommon.

Given the dearth of financing options for low-income rural Nigerien households, many are stuck in a cycle of debt. Families accrue debt for food, non-food necessities, and education, because savings, credit, and food storage options are inadequate to sustain them during difficult periods. One-quarter to one-half of households reported being indebted to other households within several months following the 2015 harvest, including over half (53 percent) of severely food insecure households as well as 25 percent of food secure households (GoN et al 2016). About 41 percent of severely food insecure households had incurred a debt “in kind,” 35 percent had incurred debt “in kind and in cash,” and 24 percent had incurred debt “in cash” only (ibid). Indebtedness is not only linked to years of poor production, but is fueled by the need to obtain food or cash during the lean season, when consumption requirements remain high, but income reaches the lowest levels of the year. Differences in indebtedness prevalence and debt levels by gender of household head are not known. As noted above (section 3.2.1), FHH do not appear to be poorer than non-FHH, due at least in part to smaller household size.



Food purchases increase when domestic reserves are depleted, which is by March for most Nigerien farming households. Millet, maize, cowpeas, and imported rice are the most commonly purchased staples. Millet and cowpeas are the primary staples for poor rural and urban households, and maize and imported rice are the primary staples for better-off urban counterparts (FEWS NET 2017c). The Maradi, Tounfafi, Diffa, and Zinder markets are regional assembly and cross-border markets, particularly for Nigeria. The Agadez, Nguigmi, and Abalak markets are key for pastoral populations (ibid). Cowpea prices are currently trending relatively in line with 5-year averages. Millet prices are beginning to rise above last year's prices, and in some cases (such as Maradi), above the 5-year average (ibid) (see Figures 4a-4b). There are initial indications that restrictions on cereal trade out of Nigeria are constraining flows into Niger and contributing to these price trends (FEWS NET 2017b). The terms of trade between millet and livestock tend to track fairly steadily in Niger, although the combination of rising cereal prices and declining livestock prices in 2017, is likely to be detrimental to food security among pastoralists and requires close monitoring (Figure 5).

Niger imports about 20 percent of its cereal needs, primarily rice, millet, sorghum, and maize, from Nigeria and Benin (FEWS NET 2014). As of May 2017, prices of millet, cowpeas, maize, and imported rice were rising above five-year averages in Nigerien markets (Figures 4a-4d) (FEWS NET 2017c). These concerning price trends were being driven by: declining cereal imports from Nigeria; increasing demand on Nigerien markets as household stocks ran out; increasing demand by pastoralists as they returned from seasonal transhumance; and increased demand due to the Ramadan holiday (ibid). Around the same time, food security conditions were deteriorating in Diffa because: household stocks were largely exhausted; household income from animal sales and migration was decreasing; and conflict and GoN measures to crack down on Boko Haram-related attacks (e.g., through banning motorbikes) continued to disrupt markets (ibid). Smallholders rely heavily on food purchases after their stores run out, and herders and urban households rely on cereal purchases during most of the year.

Because of cash needs and a lack of storage and processing options, producers sell a portion of their harvest at low prices and purchase cereal for later in the year. Purchase prices during the lean season are pushed upward by market inefficiencies; poor transport infrastructure, particularly in remote rural areas' and competing demand in neighboring countries such as Nigeria.

**Table 9. Projected Food Security Conditions in Niger (2016–2017)**

	National	Agadez	Diffa	Dosso	Maradi	Tahoua	Tillabéri	Zinder	Niamey
<b>Food Insecurity in 2016 (GoN et al., 2016) <sup>1</sup></b>									
Severely food insecure (%)	1.1	0.6	0.5	0.9	0.9	0.2	1.8	1.1	1.0
Moderately food insecure (%)	11.3	5.6	13.4	7.8	9.6	3.3	13.6	17.5	8.0
Poor or borderline food consumption score (%)	43.1 (rural)	12.4	39.2	47.2	49.9	38.7	50.5	39.0	19.9
With food stocks (%)	61.8	22.8	30.8	68.4	66.2	49.8	56.9	81.6	33.1
In the lowest 40% of wealth (i.e., last two wealth quintiles) (%)	40.0	7.0	40.0	39.0	47.0	34.0	32.0	52.0	10.0
Practicing crisis and/or emergency strategies (%)	18.8	10.6	10.5	15.0	17.5	20.0	17.2	24.8	7.0
<b>Projected Food Insecurity in the 2016–2017 Marketing Year (GoN 2017)<sup>2</sup></b>									
# of people in agro-pastoral households projected to suffer moderate or severe vulnerability to acute food insecurity in 2017	1,227,015	-	118,559	138,020	202,825	243,400	362,577	142,326	19,308
# of people in pastoral households projected to suffer moderate or severe vulnerability to acute food insecurity in 2017	226,253	12,652	11,771	-	9,643	164,018	-	28,169	-

Sources: GoN 2017, GoN et al. 2016.

**Table 10. Food Security Status by Characteristic (2015–2016)<sup>1</sup>**

Characteristic	Food secure	At risk of food insecurity	Moderate food insecurity	Severe food insecurity	Total
Gender of head of household					
Male	61.8	26.2	10.9	1.0	100
Female	40.6	34.9	22.2	2.3	100
Marriage status of head of household					
Married and monogamous	59.4	27.7	11.9	1.0	100
Married and polygamous	66.8	23.6	8.7	0.8	100
Divorced	46.0	30.1	18.4	5.5	100
Widowed/widower	42.7	30.5	24.0	2.8	100
Single	48.6	37.8	10.2	3.4	100
Principal economic activity of head of household					
Inactive	33.2	31.5	31.9	3.4	100
Woodcutter	36.7	31.8	28.4	3.1	100
Other	41.7	32.8	23.6	1.9	100
Handicrafts	46.6	29.4	20.4	3.7	100
Daily labor	47.2	36.6	14.8	1.5	100
Commerce	57.6	30.4	11.1	0.9	100
Agriculture	59.3	27.4	12.1	1.2	100
Private sector	60.4	36.2	3.5	0	100
Public sector	62.6	35.3	2.1	0.1	100
Hunting/fishing	67.6	31.9	0.5	0	100
Animal husbandry	89.5	7.8	2.7	0	100
Possession of animals					
Yes	65.1	24.3	10.0	0.5	100
No	39.0	37.5	19.9	3.6	100
Cultivation of field/garden					
Yes	60.6	26.6	11.7	1.2	100
No	53.0	30.8	15.0	1.2	100
<b>Total</b>	<b>59.4</b>			<b>1.2</b>	<b>100</b>

<sup>1</sup> Percent of households  
Source: GoN et al. 2016.

**Table 11. Trends in Prevalence of Food Insecurity in Rural Niger<sup>1</sup> (2010–2015)**

Region	2010–2011			2011–2012			2013–2014			2014–2015			2015–2016		
	At risk	Mod.	Severe	At risk	Mod.	Severe	At risk	Mod.	Severe	At risk	Mod.	Severe	At risk	Mod.	Severe
Agadez	-	-	-	-	-	-	38.0	9.2	0.8	23.5	8.6	0.6	29.7	5.6	0.6
Diffa	12.3	0.8	-	23.2	28.5	5.6	59.3	13.3	0.4	19.2	12.6	1.7	27.8	13.4	0.5
Dosso	30.0	6.5	4.9	26.5	22.9	3.6	46.5	16.4	0.1	37.0	9.6	0.8	22.7	7.8	0.9
Maradi	26.6	8.4	6.6	25.4	21.2	6.7	36.2	22.2	0.6	28.3	11.7	3.2	16.8	9.6	0.9
Tahoua	35.2	8.2	8.8	25.9	25.2	8.6	57.3	24.5	1.0	35.0	14.4	2.6	26.8	3.3	0.2
Tillabéri	31.9	6.7	6.1	27.0	26.7	8.5	47.5	23.4	0.0	35.9	15.3	3.8	35.0	13.6	1.8
Zinder	29.4	9.3	7.4	25.5	32.1	3.7	42.1	22.2	1.1	35.6	14.3	2.0	29.0	17.5	1.1
Niamey	47.8	3.8	3.9	19.8	22.0	7.3	64.1	13.5	0	20.2	14.6	2.5	23.9	8.0	1.0
National	29.8	7.6	6.6	25.9	25.8	6.3	46.5	21.7	0.6	33.3	13.2	2.5	25.8	11.3	1.1

<sup>1</sup> Percent of the population

Source: GoN et al. 2016.

NB: 2012 data are unavailable.

### 3.2.3 GENDER, INCOME, AND ASSET OWNERSHIP

As discussed above (sections 2.5 and 3.1.4), control and decision making about use of household income and assets rest primarily with men in Niger. Women are largely responsible for the upkeep of the home, including sweeping, fetching wood and water, collecting wild fruits and leaves, preparing meals, hulling, caring for children, doing laundry, pounding grain, making mats, and washing dishes (Faye 2014). Men assist primarily with collection of wood (felling trees), fetching water, child care to an extent, making bricks, refurbishing the home as needed, and transporting manure. The large burden of domestic responsibilities of women is striking, given large family sizes and woman's role in contributing to income-generating activities for the family, as well. Studies of women's time underscore the very long work days for women, relative to their spouses. Girls are expected to assist their mothers with these activities until they are married, while boys assist their fathers and help with herding.

The gender study conducted under the FFP projects list the economic activities that are primarily undertaken by men, by women, and by both (Faye 2014). Activities that are primarily done by women include petty local trade, braiding, sale of livestock by-products, and sale of prepared foods. Activities that are primarily done by men include charging batteries, commerce, vehicle/motorcycle repair, tanning, selling traditional medicines, working as a barber, blacksmith, or goldsmith, manual labor such as shoveling, brickmaking, working as a butcher, working in a shop, and working in rural markets. Activities that are done by both include keeping poultry, dry season agriculture (although tasks differ by gender), taking care of livestock (primarily men), labor migration, sale of wood, sale of livestock (primarily men), sale of rope and collected materials, sale of water, wickerwork, and making leather goods and other handicrafts.

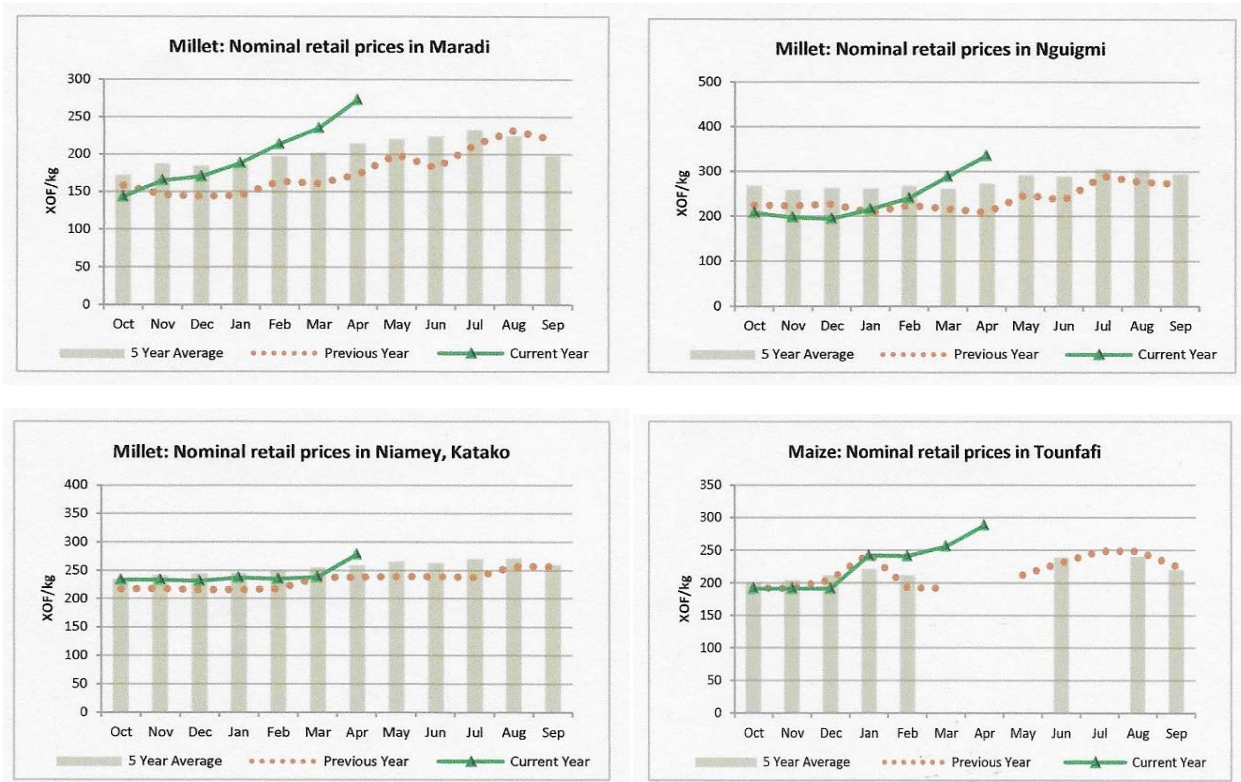
Given restrictions on women's mobility outside of the home and village in Niger, it is not surprising that women are less likely to be formally employed than men. Women have higher unemployment rates than men: in 2014, 28.1 percent of women in Niger reported being unemployed, compared to 4.4 percent of men (INS 2016). As discussed in sections 2.5 and 2.6, men retain ownership and authority over key household assets, such as land.

**Table 12. Financial Inclusion Indicators**

Indicators	2011	2012	2013	2014	2015
Personal remittances received (current US\$)	165,934,780	151,843,055	145,870,768	145,870,768	145,870,768
Personal remittances received (% of GDP)	2.6	2.2	1.9	1.8	2.0
Access to a mobile phone or Internet at home (% age 15+)	-	-	-	49.7	-
Access to a mobile phone or Internet at home, female (% age 15+)	-	-	-	46.4	-
Access to a mobile phone or Internet at home, male (% age 15+)	-	-	-	52.9	-
Financial account (% age 15+)	1.5	-	-	6.7	-
Financial account, female (% age 15+)	1.5	-	-	4.3	-
Financial account, male (% age 15+)	1.6	-	-	9.1	-
Borrowed from a financial institution in the past year (% age 15+)	1.3	-	-	1.4	-
Borrowed from a financial institution in the past year, female (% age 15+)	-	-	-	0.7	-
Borrowed from a financial institution in the past year, male (% age 15+)	-	-	-	2.1	-
Saved at a financial institution in the past year (% age 15+)	1.2	-	-	2.0	-
Saved at a financial institution in the past year, female (% age 15+)	1.0	-	-	1.8	-
Saved at a financial institution in the past year, male (% age 15+)	1.3	-	-	2.2	-
ATMs per 1,000 adults	0.9	0.9	1.3	-	-
Branches per 1,000 adults	1.1	1.3	1.5	-	-
Made or received digital payments (% age 15+)	-	-	-	5.9	-
Made payment using a mobile phone (% age 15+)	-	-	-	3.1	-
Made payment using the Internet (% age 15+)	-	-	-	1.0	-
Mobile agent outlets per 100,000 adults	7.8	46.4	131.1	256.3	-
Mobile money transactions per 100,000 adults	-	-	92,218	154,289	-
Received wages or government transfers into an account (% age 15+)	-	-	-	1.5	-

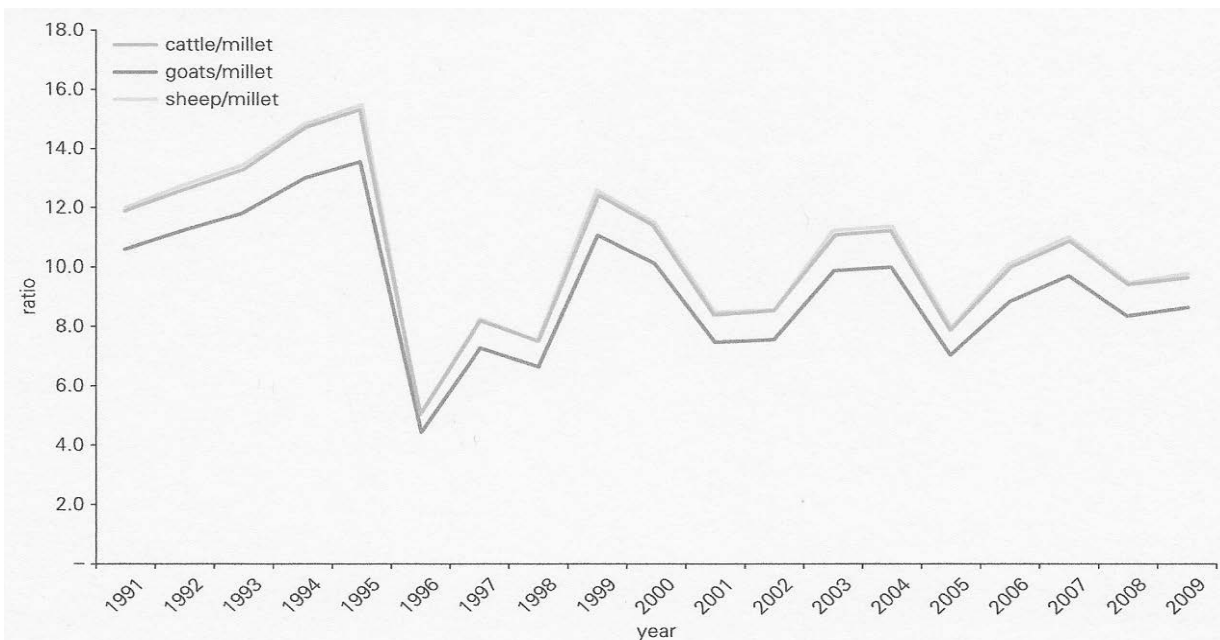
Source: WB 2017.

Figures 4a-4d. Millet and Maize Prices in Selected Nigerien Markets



Source: FEWS NET 2017c.

Figure 5. Livestock–Millet Price Ratios (Meat)



Source: WB 2013a.

### 3.2.4 SHOCKS, COPING CAPACITY, AND RESILIENCE OF POPULATIONS VULNERABLE TO FOOD INSECURITY

Resilience is a highly complex concept to operationalize for a number of reasons (ODI 2016). Resilience can be measured at multiple levels or units including individual, household, community, system, region or nation. People can be resilient in the face of numerous types of shocks and stressors of varying frequency, duration and scale, and the shocks and stressors frequently interact. Capacities driving resilience can be defined in many ways (e.g., the adaptive/absorptive/transformational framework). And there are numerous outcome and wellbeing indicators that can serve to reflect resilience. This Niger desk review is not designed to conduct a comprehensive resilience analysis, nor does it include an evaluation of the impacts of ongoing food security programs on resilience. The secondary literature review and interviews suggest a set of broad conclusions about short and medium-term trends in food security shocks/stressors and resilience capacities in the face of those shocks/stressors (see GoN et al. 2016, Essam et al. 2015, Chevrier and Millogo 2015, Chevrier 2017, World Bank 2013a).

**Shocks/stressors:** Nigerien households continue to face a challenging set of rapid-onset shocks and slow-onset/chronic stressors that undermine livelihoods, cause poor health and malnutrition, and fuel a cycle of vulnerability and dependence on external humanitarian assistance (Figure 6). Drought, loss of income, market price volatility (particularly for millet, sorghum, and livestock), crop and livestock pests and diseases, human morbidity and mortality, and other shocks that reduce household income are all too common. As noted in section 2.9, even in the absence of a major (idiosyncratic) shock such as a drought or locust infestation, many poor Nigerien households lack the ability to maintain resilience throughout the year (i.e., during the lean season). This leads to the high burden of poor and chronically food insecure households, as captured in Table 11: by 2015/2016, even after 3 consecutive years of improved food security conditions, one out of eight Nigerien households (12.4%) was moderately or severely food insecure, and over one-third (38.2%) of households were at risk of food insecurity (GoN et al. 2016).

Drought is the production shock of greatest concern for Niger's pastoralists and agro-pastoralists, and it will likely increase in impact according to climate change research. Drought exposure is highest in the northern third of the country; the 2006–2007 season did not have a drought, but areas of low rainfall led to a 50 percent loss of pasture/forage in pastoral areas. Sensitivity to drought is high among almost all rural residents because agriculture and livestock production dominate livelihoods, with low utilization of improved inputs and recommended techniques for water and soil conservation. Drought causes loss of income by reducing crop yields, deteriorating pasture and watering conditions, and engendering distress in crop and animal sales that erodes terms of trade at the market.

Price shocks (e.g., millet retail prices, deteriorating livestock/millet terms of trade, and fluctuations in the naira/FCFA exchange rate) are also of major concern to food security in Niger. Exposure to price shocks is highest in Maradi, Zinder, and increasingly Diffa, among low-income households with high food-expenditure shares, and among urban households.

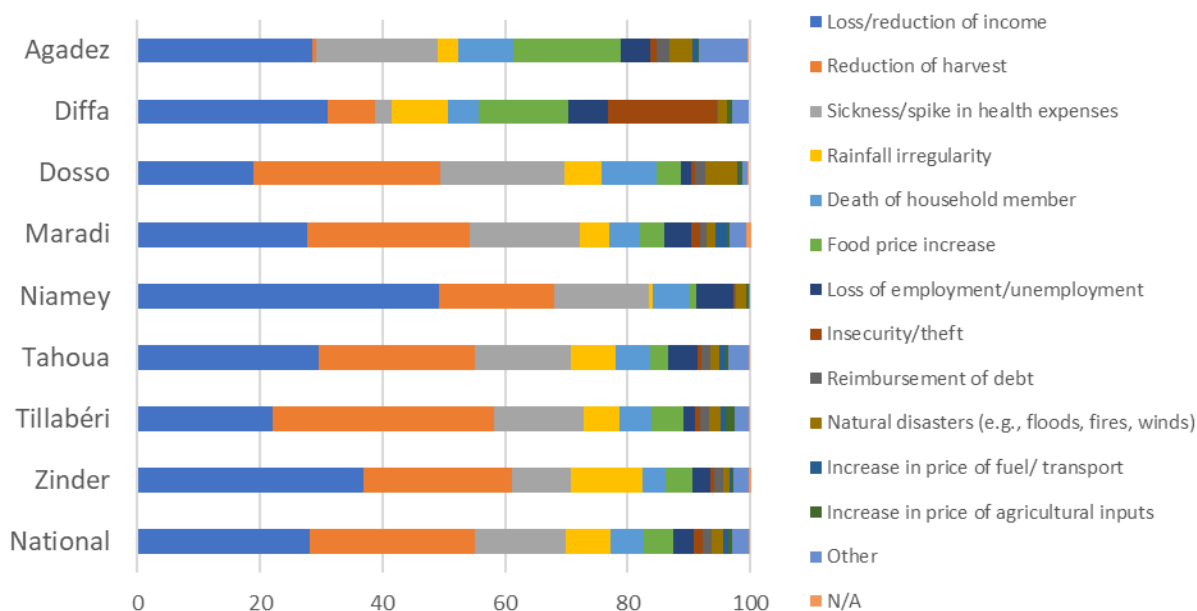
Conflict is an acute shock for refugees, internally displaced populations, and host communities in Diffa. It creates a simmering ongoing concern where pastoralists and agro-pastoralists compete for management of natural resources (e.g., grazing land, natural water points, migration routes) and is a potential significant concern in and around Agadez, given long-running tensions between pastoralist groups and the GoN, aggravated by the ongoing crackdown on migrant smuggling out of Agadez.

Crop and livestock pests and diseases and political instability are the other major covariate of food security shocks in Niger. High animal mortality erodes income earning potential from the sale of live animals as well as from the sale of livestock products (milk, meat, hides, eggs, etc.).



An idiosyncratic shock of paramount importance is illness or death of a household member, which is often accompanied by a significant rise in health care expenses. Respiratory infections, malaria, diarrheal illnesses, HIV/AIDS, tuberculosis, and other communicable diseases increase health expenses, divert time and effort from non-ill household members to the sick, and rob households of valuable labor needed for livelihoods (WHO 2015). Rates of mortality from cardiovascular diseases, diabetes, and other chronic illnesses are on the rise in Niger (ibid). Loss of economically active labor also reduces household income earning potential.

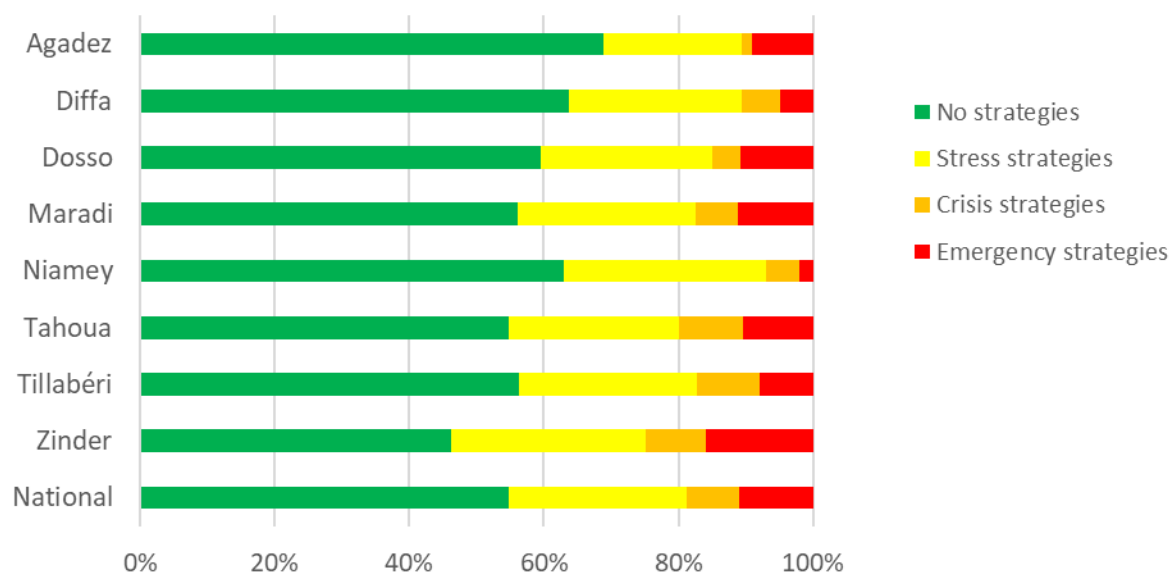
**Figure 6. Main Shocks Faced by Households, by Region (2015–2016)**



Source: GoN et al. 2016.

**Coping capacity:** Adaptive capacity for managing these shocks is lowest in the agro-pastoral belt (northern Tillabéri, central Tahoua, northern Maradi, northern Zinder, and northern Diffa) due to low literacy rates; landlessness and land fragmentation; low access to irrigation and water harvesting techniques; low use of improved natural resource management techniques and technologies; high population density; high fertility and dependency ratio at the household level; low access to finance; chronic poverty and malnutrition; and dependence on unreliable rain-fed agriculture with minimal to no livestock. As noted above, research in Niger suggests that households are more resilient to common food security shocks if they have a diversified livelihood portfolio, multiple economically active adults, productive assets such as livestock for income generation and sale in a crisis if needed, literacy/numeracy and other skills needed to enhance production and engage in markets, access to water harvesting and/or irrigation, adoption of improved natural resource management and agricultural techniques (to mitigate effects of low precipitation and/or soil moisture), and/or access to social capital (e.g., strong social networks, access to remittance income). Households that practice key MCHN and WASH-related practices—e.g., handwashing, use of an improved latrine, infant and young child feeding practices, use of clean water, and delayed marriage and child spacing—are at lower risk of malnutrition and associated negative health outcomes. (Figure 7 illustrates coping strategy patterns by region.)

Weak GoN systems for disaster management and mitigation—many well designed on paper but underfunded and lack capacity in practice—undermine adaptive capacity and resilience (section 3.2.5).

**Figure 7. Percent of Households Using Coping Strategies, by Region (2015–2016)**

Source: GoN et al. 2016.

**Resilience:** The positive food security trends of 2013–2017 appear to be due more to the lack of a large-scale severe shock, than to resilience gains. Broadly speaking, shock exposure and resilience gaps appear to still be highest among agro-pastoral households, particularly in Zinder and Maradi. Pastoralists face drought-related pasture shocks, but recent herd accumulations provide a cushion or safety net in 2017. Repeated years of shocks to pasture and watering conditions will erode that safety net, to the point where spikes in food insecurity and/or malnutrition will be expected. For the time being, many Nigerien households have the capacity to absorb the types and levels of shocks that they are currently facing. However, long-term factors such as low education/literacy, high fertility rates, lack of access to savings and credit, lack of infrastructure and services to support production and marketing, and weak governance continue to fuel chronic food insecurity, hampering household capacity to adapt to and overcome shocks. Nigerien women and girls have higher risk exposure, lower access to assets and services for coping with shocks, and less influence over household and public decision making about resource utilization than men and boys. Given this risk and capacity context, one NGO identified eight key resilience capacities that require strengthening: increasing the capacity of women and girls to influence and make decisions; improving stability and social cohesion; improving access to and use of adapted financial services; improving productivity and access to regional markets for agro-pastoralists and pastoralists; improving access to productive rural and urban employment; improving access to and use of irrigated natural resource management systems; improving access to basic social services (e.g., education, health, social protection); and improving access to social protection and disaster risk reduction (Mercy Corps 2016).

### 3.2.5 KEY POLICIES, STRATEGIES, AND PROGRAMS RELATED TO FOOD AVAILABILITY AND ACCESSIBILITY

The GoN encompasses institutions and units charged with developing and implementing policies and programs related to food security and nutrition. The principal institutions operating in food security include the Ministries of Agriculture, Hydraulics, Livestock, Public Health, and Humanitarian Action, and Disaster Management (established in 2016). In addition, a National Institute for the Prevention and Management of Food Crises (i.e., Dispositif National de Prevention et de Gestion des Crises Alimentaires, DNPGCCA or DN) is positioned in the Office of the Prime Minister, and comprises a food

crisis unit (Cellule de Crises Alimentaires), an early warning unit (Système Communautaire d'Alerte Précoce et de Réponse aux Urgences, or SCAP-RU), and a safety net unit (Cellule de Filets Sociaux). A humanitarian response unit (Cellule de Crises Humanitaires) was also situated in the DN, but was moved to the newly established Ministry of Humanitarian Action and Disaster Management. The Ministry of Humanitarian Action and Disaster Management and its Cellule de Crises Humanitaires are staffed and functional primarily in Diffa; operationalization lags behind in Niger's other regions. Table 13 summarizes key policies, strategies, and programs related to food availability and accessibility in Niger, while Table 17 in section 3.3.8 summarizes those related to MCHN and WASH.

The DN houses the GoN's Nigériens Nourishing Nigériens (3N) Initiative, which is run by the High Commission (HC3N) and driven by a strategy and a Priority Investment Plan (Table 13). The 3N Initiative leads implementation of the Global Alliance for Resilience Initiative (AGIR), which aims to achieve zero hunger in Sahelian West African countries by 2032 (ECHO 2015). Through the 3N Initiative, the GoN has articulated AGIR National Resilience Priorities (NRP-AGIR), which aim to reinforce resilience among 6,280,000 households (GoN and HC3N 2015).

The GoN has a sophisticated early warning/early alert (EW/EA) system in theory, but effectiveness and timeliness of the system in translating local early-warning information into a coordinated and appropriate response remain highly variable. Recent efforts to strengthen the EW/EA system in food insecure communities in Niger include strengthening the capacity of village-based EW/EA mechanisms to inform village-based contingency planning and emergency response mechanisms and establishing community-based mechanisms to ensure funding for responses in advance of shocks. The GoN Office des Produits Vivriers au Niger maintains national cereal stocks up to 154,700 MT for use in assistance and safety net programs and for market stabilization, as needed (FEWS NET 2014).

USAID has also launched an initiative to support resilience strengthening in Niger: the regional 5-year RISE Initiative (2013–2018) is a multi-sectoral initiative that layers, integrates, and sequences resilience-promoting activities, including life-saving interventions in nutrition, health, and livelihoods, combined with strategic investments in agricultural productivity, natural resources management, conflict prevention and management, finance, access to markets, health, nutrition, and governance (USAID 2015a). The three FFP projects of focus in this review are part of the USAID-funded RISE Initiative. RISE has five main resilience objectives: to reduce malnutrition in targeted areas; to reduce vulnerability and the need for humanitarian assistance; to reduce food insecurity through increased food and water availability and improved livelihoods; to improve productivity in the agricultural sector and the livestock industry; and to increase the representation of women in food and nutrition activities at the community level (ibid). RISE includes three discrete but interrelated projects (Box 3).

The numerous domestic and cross-border security challenges faced by the GoN divert scarce government resources from humanitarian and development efforts to the security sector, and increase the dependence of the GoN DN and ministry partners on external support (sections 2.1 and 2.2). A number of large-scale, donor-funded programs are being implemented in Niger in partnership with the GoN. African Risk Capacity (ARC) is an insurance risk pool-based mechanism, run by the African Union, that provides disaster insurance to African countries facing drought (and in the future, other shocks such as flooding). ARC payouts arrive early after the harvest (within four months) to enable early intervention, which is less costly than late emergency responses that only occur once evidence emerges on loss of lives and livelihoods. Niger became a signatory to ARC in 2012, and it has an ARC Operations Plan for 2016–2017 (GoN DNPGCCA 2016).

The World Bank's Adaptive Social Safety Nets Project aims to establish and support a safety net system in Niger, designed to increase access of poor and food insecure households to cash transfer and cash-for-work programs (World Bank 2016). The Adaptive Social Safety Nets Project has four components: Building an Adaptive and Scalable Safety Nets System (Component 1); Cash Transfers and Accompanying Measures (Component 2); Cash for Work for Resilience (Component 3); and Project Management (Component 4). The Adaptive Social Safety Nets Project receives support from the World Bank's Adaptive Social Protection Program, as part of a regional safety net program across the Sahel (ibid). The cash transfers under Component 2 are complemented by two accompanying measures: activities to encourage investment in IGA and production activities (e.g., savings groups); and MCHN/WASH/psychosocial health social and behavior change communication (SBCC) activities, conducted in partnership with the United Nations Children's Fund (UNICEF) (ibid). Component 3 engages beneficiaries in work on microprojects such as land restoration, environmental protection, and livelihoods promotion (e.g., firebreaks, half-moons, pond desilting, dune stabilization, pasture protection).

**Table 13. Summary of Key Policies, Strategies, and Programs Related to Food Availability and Accessibility**

<b>Government of Niger</b>	
Policies and Strategies	Nigeriens Nourishing Nigeriens Initiative (3N) (2012); Strategy for Food Security, Nutrition and Sustainable Agricultural Development (2012–2015); and Priority Investment Plan (2012–2015): The 3N Initiative aims to coordinate strategies, programs, projects, and research related to food security at multiple levels. It also aims to strengthen assessments; mobilize human, financial and material resources; conduct information and sensitization activities; and strengthen institutional capacity.
	Economic and Social Development Plan (PDES) (2012–2015) and Priority Action Plan (2012–2015): The PDES aims to strengthen public institutions; create sustainable conditions for equitable and inclusive development; support sustainable agricultural development and food security; promote a diversified and competitive economy for accelerated and inclusive growth; and promote social development.
	National Social Protection Policy (PNPS) (2011): The PNPS aims to reduce vulnerability among marginalized groups and help populations face major risks by: fighting food and nutritional insecurity; reinforcing social security; promoting employment; reducing barriers to access to social services and basic social infrastructure; intensifying activities that target vulnerable groups; and reinforcing consolidation of legislative and regulatory frameworks.
	National Gender Policy (PNG) (2007): The PNG aims to build a society without discrimination, in which men, women, girls, and boys have the same opportunities to participate in Niger’s development and enjoy the benefits of national growth. The PNG aims to do this by: establishing an institutional, socio-cultural, legal, and economic environment conducive to achieving equity and gender equality in Niger; and ensuring the effective integration of gender into all analyses; planning, implementation, and monitoring and evaluation activities; and studies and research on the socio-economic conditions of populations.
	National Framework on Climate Services (2015): This National Framework was developed under the World Meteorological Association’s Global Framework for Climate Services.
	Sustainable Livestock Development Strategy (SDDEL) (2013–2035) and Plan of Action (2013–2015): The SDDEL aims to strengthen animal health and hygiene for livestock products; diversify and increase the quantity and value of animal production; and create a legal and institutional environment conducive to sustainable livestock development.
<b>U.S. Government</b>	
Food for Peace projects	Household Food Security Support Program ( <i>Programme d’Appui à la Sécurité Alimentaire des Ménages-Tanadin Abincin Iyali</i> , PASAM-TAI) (Catholic Relief Services) (2012–2018)
	Livelihoods, Agriculture, and Health Interventions in Action (LAHIA) (Save the Children) (2012–2018)
	Sawki (Mercy Corps) (2012–2018)
USAID projects	RISE Initiative: Sahel Resilience Learning Project (SAREL) (2014–2019)
	RISE Initiative: Resilience in the Sahel Enhanced – Accelerated Growth (2015–2020)
	RISE Initiative: Resilience in the Sahel Enhanced – Enhanced Resilience (2013–2018)
	Millennium Challenge Corporation (MCC) Sustainable Water and Agriculture Compact (2016) and Threshold Program (2008–2013)
	West Africa Trade and Investment Hub
<b>Other</b>	
AU	Comprehensive Africa Agriculture Development Program (CAADP) Compact (2009) and African Risk Capacity (ARC) (2012)

	Global Alliance for Resilience Initiative (AGIR) (2014) and National Resilience Priorities document (2015)
ECOWAS	Economic Community of West African States (ECOWAS) Common Agricultural Policy
WAEMU	West African Economic and Monetary Union (WAEMU) Agricultural Policy
UN	United Nations Development Assistance Framework (UNDAF) (2014–2018)
World Food Programme	Protracted Relief and Recovery Operation 200961: Strengthening Resilience in the Niger through an Integrated Multi-Sector and Multi-Partner Safety Net and Disaster Risk Reduction Approach (2017–2019)
FAO	Country Program Framework (2013–2016)
World Bank	Country Partnership Strategy (FY13–FY16), Adaptive Social Safety Nets Project, Climate Smart Agriculture Support Project, Urban Water and Sanitation Project, and Niger Solar Electricity Access Project
European Union	National Indicative Programme for Niger (2014–2020)
African Development Bank	Combined Country Strategy Paper and Portfolio Review: Niger (2013–2017)

### Box 3. RISE Initiative Projects in Niger and Burkina Faso

#### **The Resilience and Economic Growth in the Sahel – Enhanced Resilience Project (REGIS-ER)**

*Implemented by NCBA-CLUSA (2013–2018)*

Objectives: a) Sustainable livelihoods: diversified economic opportunities, intensified climate-smart agricultural and animal production and marketing, increased access to financial services; b) Enhanced governance: strengthened natural resource management, disaster risk management, conflict prevention and management, increased coordination between regional and local governance structures; and c) Improved health and nutrition: increased access to potable water, improved health and nutrition practices.

#### **The Resilience and Economic Growth in the Sahel – Accelerated Growth Project (REGIS-AG)**

*Implemented by CNFA (2015–2020)*

Objectives: a) Strengthened vertical and horizontal value chain linkages and relationships in selected value chains; b) Strengthened input supply and other supporting services and improved smallholder and agro-pastoralist access to interconnected markets; c) Increased innovation and private-sector investment; and d) Improved environment for local and regional private sector investment.

#### **The Sahel Resilience Learning Project (SAREL)**

*Implemented by The Mitchell Group (2014–2019)*

Objectives: a) Test, expand, and accelerate the adoption of proven resilience-enhancing technologies and innovations; b) Develop, test, and promote widespread adoption of new models that integrate humanitarian and development assistance; c) Promote ownership, build the capacity of national and regional institutions, and coordinate humanitarian and development interventions; d) Address gender issues key to resilience and growth; and e) Create a knowledge management database that will house a baseline assessment, ongoing monitoring data, and impact evaluations for the RISE Initiative.

Sources: USAID 2015b, USAID 2015c, USAID 2015d.

### 3.3 FOOD UTILIZATION AND HEALTH

#### 3.3.1 CHILD HEALTH AND NUTRITIONAL STATUS

**Trends in child health and nutritional status.** Although Niger still has some of the highest under-5 (U5), infant, and neonatal mortality rates in the world, all three rates have dropped since 2006. Between 2006 and 2012, U5, infant, and neonatal mortality declined from 198 to 127 deaths, 81 to 65 deaths, and 33 to 24 deaths, respectively, per 1,000 live births (IRIN 2014; INS and Macro International, Inc. 2007; INS and ICF International 2013). This is likely due, in part, to increased access to and utilization of health services for children under 5 and obstetric services, although issues with the health system remain (e.g., supply chain management issues that slow the re-stocking of essential drugs). According to the 2012 Demographic and Health Survey (DHS), the leading causes of child mortality are malaria (27.3 percent), cough and cold (18.6 percent), pneumonia (10.7 percent), and diarrhea (10.1 percent), with malnutrition most likely a large underlying contributor<sup>4</sup> (INS and ICF International 2013).

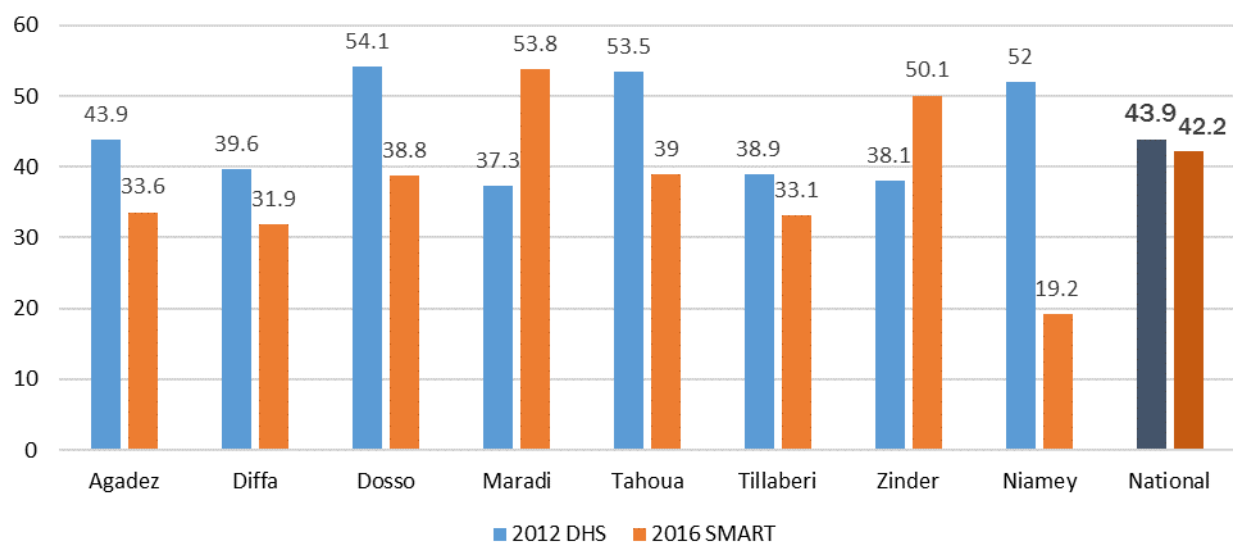
Malnutrition has significant negative consequences for Niger, particularly in terms of poor human health, lost human capital, and decreased economic productivity. Not only are children more likely to die from common childhood illnesses (e.g. diarrhea, pneumonia, and measles) if they are malnourished (Black et al. 2013), but malnutrition also negatively impacts 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 significantly impedes long-term national development and 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 (i.e. physical and mental) outcomes, as well. Recent evidence suggests that integrated nutrition and early childhood development (ECD) 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 hygiene and IYCF practices. Children who are stunted are at increased risk of repeated infections and illness and are also at risk of poorer cognitive and motor development and lower school achievement (Black et al. 2013). According to the 2016 National Nutrition Survey, referred to as the SMART survey, 42 percent of U5 children are stunted, which places Niger in the World Health Organization's (WHO) highest classification for public health concern for high stunting prevalence<sup>5</sup> (INS, UNICEF, and WFP 2016; WHO 2010). Stunting prevalence differs quite dramatically by region, with the highest prevalence of stunting in Maradi (54 percent) and Zinder (50 percent) regions, and the lowest prevalence in Niamey (19 percent) (INS et al. 2016). While there were slight reductions in stunting prevalence in several regions between the 2012 DHS and the 2016 SMART survey (see Figure 8), stunting remained consistently high across most of the country. Nationwide, there has been little improvement in 25 years; stunting prevalence was 45.2% in 1992. In addition, boys were more likely to be stunted than girls in 2012 (46 percent versus 42 percent) (INS and ICF International 2013). Table 14 presents a summary of key infant and child health and nutrition indicators at both the national and regional level.

<sup>4</sup> The 2013 *Lancet* series on nutrition estimates that 45 percent of under-5 mortality is attributed to malnutrition (Black et al. 2013).

<sup>5</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).



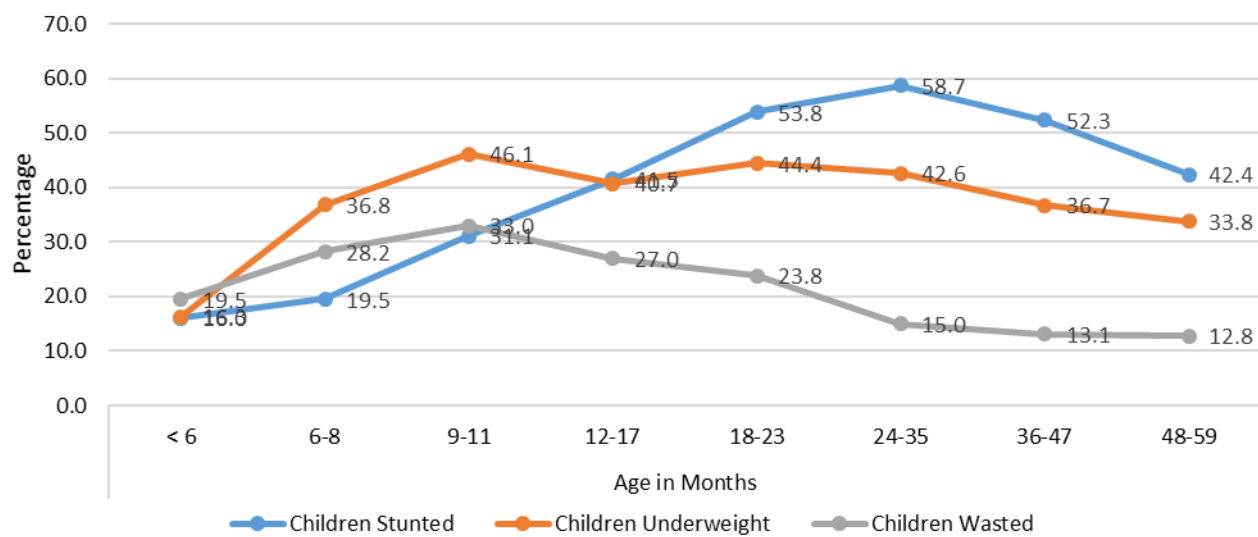
**Figure 8. Stunting Prevalence by Region (2012–2016)<sup>6</sup>**

Sources: INS and ICF International 2013; INS et al. 2016.

As shown in Figure 9, stunting begins early in life, with 54 percent of infants stunted before they reach 2 years of age (INS and ICF International 2013). Therefore, efforts to prevent and reduce chronic malnutrition are best focused during the first 1,000 days. These should 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 Niger is the high prevalence of adolescent pregnancy. Not only does adolescent pregnancy adversely affect the nutritional status of the young mother and child, but adolescent mothers have less capability to provide optimum care and nutrition to their children because of their age and their lack of access to and control over resources.

<sup>6</sup> Differences in survey design and approaches to data analysis and interpretation (e.g., differences in data inclusion cut-offs—the SMART survey uses a narrower standard deviation (SD)) many influence comparisons between the DHS and SMART surveys.



**Figure 9. Nutritional Status in Niger, by Age in Months (2012)**

Source: INS and ICF International 2013

Wasting refers to acute malnutrition, which is usually a result of recent and/or repeated infection and/or inadequate diet. Despite a significant reduction from 2012, when wasting levels were 18 percent in children under 5, the current prevalence (2016) of 10 percent is still high, and it is slightly higher in the regions of Agadez and Maradi, which have a prevalence of 13 percent (INS and ICF International 2013; INS et al.2016). Although the 2016 data are not broken down by age, the 2012 wasting data indicate that children 6–23 months are at greatest risk of malnutrition (prevalence ranges from 24–33 percent), indicating that poor practices related to complementary feeding (e.g., 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 (INS and ICF International 2013).

Nationally, 2 percent of children had severe wasting or severe acute malnutrition (SAM), a dangerous condition with high risk of death that requires urgent medical treatment and specialized nutritional products; and 8 percent were moderately malnourished (INS et al.2016). UNICEF supports the GoN's SAM programs, including provision of therapeutic food at health facilities; the World Food Programme (WFP) supports the GoN's moderate acute malnutrition (MAM) efforts through treatment of MAM at health centers. In some areas, UNICEF and WFP are co-located with the objective of increased overlap, per the recent *communes de convergence* approach, which is an effort by all implementing UN programs to coordinate their efforts with the intention of providing a comprehensive range of services to beneficiaries.<sup>7</sup> According to UNICEF, SAM intervention coverage is 78 percent (UNICEF/Coverage Monitoring Network/ACF International 2012). The prevalence of MAM and SAM is sensitive to acute local food shortages and infections.

SAM and MAM are also more likely to occur in unstable political situations. Violence by Boko Haram in Nigeria (as well as attacks in Niger) has negatively affected nutritional status, including among the

<sup>7</sup> Note, unfortunately this set-up is rarely functional due to lack of regular funding, different funding cycles, and leadership issues.

thousands of refugees fleeing from the conflict, in the Diffa region. According to a doctor from Diffa's state-run Center for Intensive Nutritional Recuperation, "the current crisis has put additional stress on the system. Over one-third of the critical cases of malnutrition we see are people displaced by the war" (Helen Keller International 2016). UNICEF and other NGOs (e.g., Helen Keller International) are working in the region to help mitigate the impact of the conflict, but as of October 2016, the situation remains difficult. Attacks on health centers have resulted in medical supplies and ready-to-use therapeutic food (RUTF, treatment for SAM) being stolen. Given these attacks, the provision of community health services as well as screening for malnutrition have suffered, and reaching families who are too afraid to visit health centers is difficult.

### 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 12 percent of all births and 14 percent of births among mothers under 20. Low birth weight is a consequence of poor maternal nutritional status during pregnancy, especially during adolescence, as girls are often even more malnourished than their older peers. Pregnancy during adolescence prevents further growth in height, leading to shorter mothers—which increases the risk of pregnancy complications related to short stature and leads to an intergenerational cycle of malnutrition (Rah et al. 2008).

**Fertility and birth spacing.** Niger has the highest fertility rate in the world at 7.6 births per woman of childbearing age, which is an increase from 2006, when the fertility rate was 7.0 (INS and Macro International, Inc. 2007; INS and ICF International 2013). The GoN has set a goal of reducing the fertility rate by 50 percent by 2020. Inadequate birth spacing and frequent births are clear risk factors for chronic malnutrition in Niger, and closely spaced births likely reduce mothers' ability to provide optimum care to each young child and to recuperate from previous births. In addition, early childbearing results in women having higher lifetime fertility, both of which (early childbearing and high parity) compound the risk of stunting in their children and increase the chances of maternal complications and mortality.

**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 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 because 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 Niger (Begum et al. 2010; Barros et al 2012). Promotion of optimal breastfeeding practices is one of the most effective interventions to prevent U5 child deaths worldwide (Bhutta et al. 2013). Breastfeeding is also associated with human capital benefits, since 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 six 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.

Although breastfeeding is nearly universal in Niger, support is needed to achieve adoption of a range of optimal breastfeeding practices (e.g., early and exclusive breastfeeding). Exclusive breastfeeding

prevalence for the first six months of life is only 23 percent, and prevalence of early initiation of breastfeeding (within one hour of birth) is 53 percent (INS and ICF International 2013) (see Table 14 for more information on regional breastfeeding information). Although the prevalence of exclusive breastfeeding has improved since the 2006 DHS, when it was 14 percent, continued support and action to improve breastfeeding practices in Niger is critical to reduce both chronic and acute malnutrition (INS and Macro International Inc. 2007).

Formative research on IYCF practices in select regions of Niger indicate a widely-held belief that infants need water in addition to breastmilk. In addition to water, teas are given to infants to soothe them so that the mother can work or sleep (Wuehler and Hassoumi 2011). The practice of providing tea and other prelacteals before 6 months contributes to both acute and chronic malnutrition in Niger. Current FFP implementers have found success in changing breastfeeding behaviors using multiple strategies at various levels (e.g., interpersonal communication, sensitization through community groups for both men and women, including grandmothers, care groups, husband schools (community groups for men that hold discussions on health, gender equity, nutrition, and WASH), safe space groups (groups where adolescent girls discuss gender, reproductive, health, and other issues with mentors), and mass media (community video, radio, etc.)) to support behavior change. One project noted that the exclusive breastfeeding rate increased from 36 percent at baseline (2012), to 89 percent in 2016. These findings highlight the continued need for FFP projects to not only change individual behavior, but create a supportive environment (such as women having enough time and resources) for women to practice optimal IYCF.

In Niger, although women may know the benefits of exclusive and continued breastfeeding, their lack of decision-making ability within the household severely limits their ability to act on that knowledge. Women's lack of control over their time is another barrier to optimal breastfeeding, since women have numerous chores and responsibilities that often take precedence over the care of an infant. This is particularly true for younger mothers, who often have less autonomy. Engaging men, grandmothers/mothers-in-law, and other key decision makers in the household is critical to support individual behavior change of the mothers (see Box 4).

Six percent of married women in Niger are in polygamous unions (INS and ICF International 2013). Additional research on how that dynamic affects maternal and IYCF practices is warranted, since additional wives within a household can influence feeding practices.

Improving IYCF in Niger requires addressing key drivers behind suboptimal practices: women's lack of time (with poor access to water being a specific barrier in Niger); women's low social status and decision-making ability; and women's competing priorities in terms of household chores, especially among younger mothers. The 2016 *Lancet* Breastfeeding Series, highlights that involving husbands, mothers-in-law, fathers-in-law, and other influencers in the community is critical to providing 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

#### **Box 4. 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.

multiple levels (family, community, and societal). This means promoting optimal breastfeeding practices as 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 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. Factors to consider when designing off-farm activities for women include low education and literacy levels, time, child-care responsibilities, household responsibilities, and proximity to their homes.

**Complementary feeding.** Appropriate feeding of infants continues with the introduction of solid and semi-solid foods at six months, along with continued breastfeeding and sound complementary feeding practices thereafter. There are extreme difficulties with complementary feeding in Niger, including both early and late introduction of complementary food, poor dietary diversity, poor feeding frequency, and low levels of responsive feeding. According to the 2012 DHS, only 6 percent of children 6–23 months consumed a diverse diet and 9 percent of children 6–23 months consumed a minimally acceptable diet (INCS and ICF International 2013). The baseline report on the FFP project activities in Niger found that egg and flesh food consumption was very low among breastfed children age 6–8 months at 2 percent and 3 percent respectively (USAID 2014). Formative research in Maradi supports the DHS findings, indicating that complementary foods are often not diverse or nutrient dense. In addition, since young children (6–24 months) eat from the family bowl, caregivers do not know how much food the child is consuming and do not practice responsive feeding<sup>8</sup> (SPRING/Digital Green 2015). A food security report by FEWS NET indicates that food taboos, lack of knowledge around the nutritional value of foods, and limited income and purchasing power all impact household food consumption and subsequent dietary diversity (Sisa 2014). It is important to note that food taboos are likely local and dynamic, varying from community to community, and that formative research to determine the impact of these beliefs within communities is necessary to address their impact on maternal and child diets.<sup>9</sup> 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 food diversity, quantity, and quality, including nutritional density, which is often overlooked (Van Haeften et al. 2013). Although the reasons for poor complementary feeding may vary slightly from region to region, poor complementary feeding practices exist across the country as shown in Table 14, and significantly contribute to poor nutritional status in the country as well as the high infant and U5 mortality rates.

In Niger, there are several locally made complementary feeding products available. GRET, a local NGO that is working with a current FFP implementer, produces *Misola* and *Garin Yaara*, which are fortified flours that can be used to make complementary foods for children 6–24 months. The flour is being produced in Matameye and Mayahi and 12 metric tons of flour have been produced, as of 2016. *Garin Yaara* is made from local ingredients including millet, soybeans, cowpeas, and peanuts. It contains approximately 415 kcal per 100g sachet and is fortified with calcium, zinc, iodine, iron, folic acid, and vitamins A, D, B12, among other micronutrients (see Appendix 1 for a listing of the nutrient content per 100 g). In addition, another FFP implementer is working on the small-scale production and distribution of cowpea flour to diversify diets; however, it is not specifically intended as a complementary food.

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<sup>8</sup> The SPRING Project has developed a responsive feeding indicator to increase focus on and adequately monitor this important practice. The use of the indicator, as part of a larger questionnaire “Caregiver’s Feeding Style Questionnaire,” was tested in Niger and found to be a reliable measure of feeding styles for the context of Niger (SPRING 2017).

<sup>9</sup> The variability in food taboos is highlighted in the baseline report of a current FFP implementer, which noted that in some areas of Niger, girls are not permitted to eat eggs; however, other survey respondents indicated that girls were now allowed to eat eggs (USAID 2014).

**Childhood illnesses.** Malnutrition in Niger is not only a result of poor IYCF practices, but is a consequence of repeated illnesses such as diarrhea, malaria, and acute respiratory infections that affect the youngest children. Among children under 5, 14 percent experienced a diarrheal episode in the 2 weeks prior to the 2012 DHS survey. Diarrhea significantly increases at 6 months of age to 28 percent, suggesting that lack of hygiene practices 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 the high prevalence of diarrhea in Niger.<sup>10</sup> When U5 children have diarrhea, around half (51 percent) of caretakers reported seeking advice or treatment from a health facility or provider, 59 percent reported giving them the recommended rehydration fluid, such as an oral rehydration solution or a similar pre-packaged liquid, and 10 percent received zinc as treatment (INS and ICF International 2013).

Around 14 percent of children under 5 had a fever in the 2 weeks preceding the 2012 DHS. Of the children under 5 who had a fever, 51 percent of caretakers sought advice or treatment from a health facility or provider (INS and ICF International 2013). Around 4 percent of children had symptoms of acute respiratory infections in the 2 weeks preceding the 2012 DHS, and around 53 percent of caretakers sought advice or treatment from a health facility or provider (ibid). Formative research in Maradi provides insights into the low levels of care-seeking for diarrhea and fever: the study found that diarrhea and malaria are viewed as “normal” conditions and many do not know that these diseases are preventable (SPRING/Digital Green 2015).

Malaria is highly prevalent in Niger. Malaria is a significant contributor to morbidity and mortality in the country and it is the leading cause of child mortality. Six out of 10 Nigerien households own at least one insecticide-treated mosquito net (ITN), yet only 20 percent of children under 5 and 20 percent of pregnant women (15–49 years) reportedly slept under an ITN the night prior to the interview (INS and ICF International).

Infectious disease is common in Niger, since the country lies in the meningitis belt of sub-Saharan Africa and experiences measles epidemics and cholera outbreaks (UNICEF 2015). As a result of climate and demographic changes in the country, the frequency of meningitis outbreaks in Niger has increased from once every 8 to 10 years to once every 2 to 3 years. Since the beginning of 2017, the meningitis epidemic situation in Niger has continued to worsen. The type of meningitis in Niger is Meningococcal C, which affects children 5 to 14 years most significantly. In March 2017, the Government of Niger declared a meningitis epidemic in three health centers of the Niamey II health district. Six additional health districts are on alert in the regions of Tillabéri, Dosso, and Tahoua. In response to the epidemic, in April of 2017, the Ministry of Health launched a vaccination campaign in the three affected districts of Niamey, targeting people 2 to 20 years of age (Reliefweb 2017a). However, vaccine shortages are an issue and the government is seeking support from national and international NGOs, civil society organizations, and the public and private sectors to help the MOH’s response to this epidemic. As of May 7, 2017, 3036 cases and 179 deaths have been recorded in the country (International Federation of Red Cross and Red Crescent Societies 2017). Currently, the death rate is 5.9%. Cholera outbreaks are also becoming more frequent in Niger. The last outbreak, which occurred in 2014/2015, namely in the Tahoua, Maradi, and Diffa<sup>11</sup> regions, had more than 1500 cases. Cholera remains a constant threat due to a lack of access to clean water and poor sanitation systems within the country (Reliefweb 2017b).

<sup>10</sup> Discussions with stakeholders confirm that it is common for children to play in areas where animals are loose in the compound and defecate.

<sup>11</sup> 96 percent of the cases in Diffa are in the Nigerian refugee population.



**Micronutrient status.** Anemia among children under 5 continues to be pervasive in Niger at 73 percent, although the situation has improved slightly since 2006, when the prevalence was 84 percent (INS and Macro International, Inc. 2007; INS and ICF International 2013). The 2012 DHS did not assess the causes of anemia in Niger; however, given that the contribution of iron deficiency to anemia was lower than expected in other countries in West Africa, iron deficiency is likely not the main cause of anemia (INS and ICF International 2013). Anemia among this age group is most likely due to low consumption of iron-rich foods, deficiencies in other key micronutrients (e.g., vitamin A, B12, folate), high levels of chronic infection and inflammation (malaria, environmental enteric dysfunction,<sup>12</sup> helminths), suboptimal breastfeeding practices, poor maternal nutrition, and low levels of consumption of iron and folic acid tablets during pregnancy (INS and ICF International 2013; Crane et al. 2015). 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. The provision of deworming medication to children 6–59 months is low at 27 percent (INS and ICF International 2013). Wheat flour is fortified in Niger with iron and zinc, but the product is most likely consumed by women and not young children (Wuehler and Hassoumi 2011).

Consumption of iron-rich and vitamin A-rich foods among children 6–23 months is low at 17 percent and 37 percent, respectively.<sup>13</sup> Consumption of both iron-rich and vitamin A-rich foods varies by region, but is particularly low in Zinder and Maradi, with only 8 and 11 percent of children 6–23 months consuming iron-rich foods and only 29 and 26 percent consuming vitamin A-rich foods, respectively (INS and ICF International 2013).

An adequate level of vitamin A is required for proper functioning of the immune system and the body's epithelial tissue. Current prevalence of vitamin A deficiency is unknown; however, the WHO's global database on vitamin A deficiency for the period of 1995–2005, estimates that vitamin A deficiency is a moderate problem in Niger (WHO 2009). More recently, vitamin A deficiency has most likely decreased among children under 5 years of age due to an improvement in bi-annual vitamin A supplementation (VAS). The 2014 UNICEF annual report indicates that VAS of children 6–59 months is 95 percent, an improvement from the figure cited in the 2012 DHS of 60 percent (UNICEF 2014; INS and ICF International 2013). However, the coverage may still be variable across the country. Therefore, it is unclear whether vitamin A deficiency is still an issue among young children in Niger. Because the consumption of vitamin A-rich foods is low at 37 percent among children 6–23 months, vitamin A deficiency may still be an issue among this age group. Lastly, there is voluntary fortification of cooking oil with vitamin A in Niger; however, it is not likely to be consumed by young children (Wuehler and Ouedraogo 2011).

Iodine deficiency during pregnancy is the main cause of preventable brain damage worldwide, and it can lead to irreversible brain damage of varying degrees in infants, with losses, on average, in intelligence quotient (IQ) of 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 Niger is of great concern. Although there are no recent data on iodine deficiency in the country, the 2013 National Strategy for the Prevention of Chronic Malnutrition "WADATA YARA" mentions that iodine deficiency is prevalent among school-age children (6–12 years), and coupled with the low levels of salt iodization (only 59 percent of households in Niger had iodized salt), it can be assumed that iodine deficiency is an issue in Niger (INS and ICF International 2013). The DHS did not assess whether the salt was adequately iodized and, therefore, it is possible that the population may not

<sup>12</sup> Environmental enteric dysfunction refers to an incompletely defined syndrome of inflammation, reduced absorptive capacity, and reduced barrier function in the small intestine (Crane et al. 2015).

<sup>13</sup> Based on a 24-hour recall.



have adequate access to iodized salt. As the 2012 DHS indicates, despite almost two decades of mandatory salt iodization, a proven intervention to reduce iodine deficiency, progress on adequate salt iodization country-wide has been elusive.

Zinc deficiency is also likely an issue in Niger. Although no national survey exists, the International Zinc Nutrition Consultative Group estimated that Niger is at medium risk of zinc deficiency and that an assessment to determine the extent of deficiency would be beneficial (Wuehler and Hassoumi 2011).

**Water, Sanitation, and Hygiene (WASH).** Addressing the high levels of stunting in Niger, 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 Niger (see section 3.3.4 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.

Table 14. Key Child Health and Nutrition Indicators

	National	Agadez	Diffa	Dosso	Maradi	Tahoua	Tillabéri	Zinder	Niamey
<b>Prevalence of Malnutrition</b>									
% of children under 5 stunted (< -2 [SD])	42.2	33.6	31.9	38.8	53.8	39.0	33.1	50.1	19.2
% of children under 5 underweight (< -2 SD) (*2012 data)	36.4	21.2	58.7	31.2	43.0	33.1	33.8	42.3	13.1
% of children under 5 wasted (< -2 SD)	10.3	12.9	11.4	7.4	12.9	7.7	9.3	11.7	8.2
% of children under 5 overweight (+2 SD) (*2012 data)	0.4	0.9	0.8	0.5	0.5	0.5	0.1	0.5	0.5
<b>Anemia and Micronutrient Nutrition</b>									
Anemia (Hb < 11 g/dL) (6–59 months)	73.4	76.7	87.9	75.4	68.7	73.6	70.1	76.3	78.5
Received deworming treatment in the past 3 months (6–59 months)	26.5	5.0	38.6	19.6	38.3	23.7	21.5	24.6	22.2
Living in a house with iodized salt (6–59 months)	59.1	29.7	82.1	74.1	61.7	68.6	60.3	31.0	76.9
Received vitamin A supplement in the past 6 months (6–59 months)	59.6	42.5	59.8	56.0	72.9	54.5	53.8	56.3	64.0
<b>Nutrient-Rich Food Consumption (6–23 months)</b>									
% of children consuming iron-rich foods in the past 24 hours	16.8	36.5	35.1	17.4	10.6	18.8	20.0	7.8	45.1
% of children consuming vitamin A-rich foods in the past 24 hours	37.2	50.1	43.4	47.7	29.2	43.5	34.8	25.6	62.6
<b>Breastfeeding Practices</b>									
% of children < 6 months exclusively breastfed	23.3	--	--	--	--	--	--	--	--
Median duration (months) of exclusive breastfeeding	0.6	0.6	0.5	0.4	0.7	0.6	0.5	0.5	0.5
<b>Among children born in the 2 years preceding the survey</b>									
% who were breastfed	98.8	97.9	99.8	99.2	98.9	99.0	98.0	98.7	97.7
% who were put to the breast within 1 hour of birth	52.9	70.7	83.0	57.1	40.7	50.2	45.1	63.4	64.3
Among children born in the 2 years preceding the survey who were breastfed, % who received pre-lacteal feeds	49.2	32.4	62.5	75.0	38.6	47.0	58.1	43.8	44.4
<b>Complementary Feeding Practices among All Children 6–23 Months (breastfed children)</b>									
% with minimum diet diversity	5.8	14.8	8.2	3.7	4.0	6.2	9.3	3.0	15.7
% with minimum feeding frequency	52.4	32.3	47.7	55.6	55.4	46.6	68.2	48.2	43.0
% with minimum acceptable diet	8.7	23.6	20.6	5.5	5.7	7.9	10.4	4.8	32.7

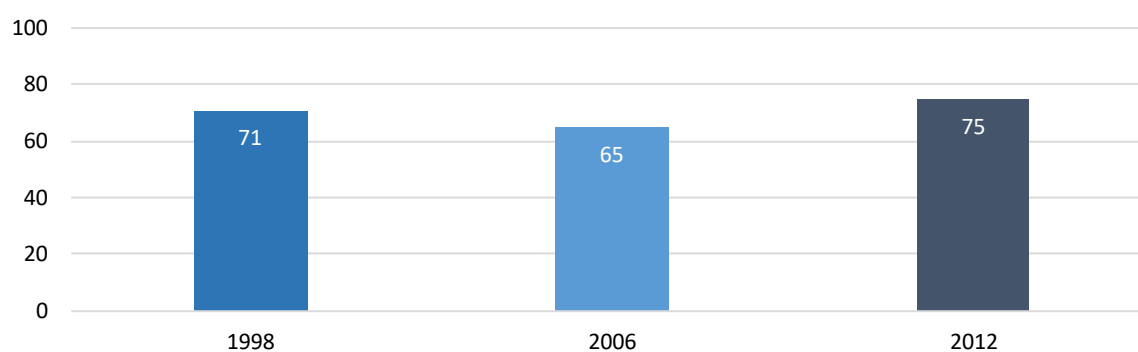
	National	Agadez	Diffa	Dosso	Maradi	Tahoua	Tillabéri	Zinder	Niamey
<b>Illness Prevalence and Prevention</b>									
% of children 12–23 months who received immunizations	52.0	65.7	41.8	60.9	54.1	46.8	58.0	40.8	72.5
% of children under 5 who had diarrhea in the 2 weeks preceding the survey	14.1	15.7	8.8	12.2	10.7	13.4	15.1	17.0	24.6
Among children under 5 with diarrhea, % for whom advice or treatment was sought from a health facility or provider	50.9	36.2	40.8	53.5	46.9	44.0	58.2	56.9	48.5
Among children under 5 with diarrhea, % who received oral rehydration therapy	59.3	45.4	61.6	69.2	58.3	53.1	70.6	54.8	62.2
Among children under 5 with diarrhea, % who received zinc supplements	10.3	9.2	16.3	17.9	17.7	4.3	13.0	5.2	10.6
% of children under 5 who had a fever in the 2 weeks preceding the survey	14.2	11.6	4.8	17.3	10.3	15.5	13.0	15.2	22.7
Among children under 5 with a fever, % for whom advice or treatment was sought from a health facility or provider	51.0	59.3	(56.7)	53.6	50.1	43.7	55.4	51.8	59.3
% of children under 5 who had an acute respiratory infection in the 2 weeks preceding the survey	4.4	3.8	0.2	5.6	3.9	6.0	3.4	2.8	7.4
Among children under 5 with acute respiratory infection, % for whom advice or treatment was sought from a health facility or provider	53.1	(82.4)		60.7	42.4	48.7	53.9	(56.9)	67.2
% of children 6–59 months who tested positive for malaria, diagnosed by blood smear	13.6	11.2	(24.6)	18.0	11.4	12.1	15.2	10.3	19.7
% of children under 5 who slept under a long-lasting insecticidal net the night before the interview	24.3	25.4	17.8	29.2	18.2	14.9	45.9	20.0	50.9
<b>Infant and Child Mortality (per 1,000 live births)</b>									
Under-5 child mortality	127	51	41	190	166	140	168	160	80
Child mortality (13–59 months)	81	23	24	125	100	80	105	106	40
Infant mortality (under 12 months)	51	29	18	75	73	65	70	60	42
Neonatal mortality (within the first 28 days)	24	17	4	39	38	32	33	26	22

Sources: Anthropometry (stunting, wasting): INS et al.2016; all other information INS and ICF International 2013.

### 3.3.3 MATERNAL HEALTH AND NUTRITION STATUS

**Trends in maternal health and women’s nutritional status.** Poor maternal nutrition is highly prevalent in Niger, especially among adolescent girls, and contributes to an intergenerational cycle of malnutrition and poverty in the country. Few women in Niger have short stature (less than 1 percent); however around 16 percent of women 15–49 years of age are underweight (BMI < 18.5), indicating thinness. Among girls age 15–19, 31 percent are underweight, indicating that adolescent girls are more likely to be malnourished than older women. Although maternal underweight is still a more prevalent issue among the poorest women in Niger than overweight (20 percent are underweight versus 11 percent overweight), maternal overweight/obesity is quickly becoming a more prevalent issue. Nationwide, more women are overweight or obese than underweight (18 vs. 16 percent), with overweight/obesity prevalence rising to 44 percent of women in Niamey and 37 percent among women in the highest wealth quintile (INS and ICF International 2013). Among adolescent girls (15–19 years), 75 percent have begun childbearing by 19 years of age, which is an increase from 2006, when 65 percent of girls 15–19 years had begun childbearing by 19 years of age (see Figure 10) (INS and ICF International 2013; INS and Macro International, Inc. 2007). 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 percent 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>14</sup> In addition, a study by Fink et al. (2014) that analyzed DHS data for more than 100 countries on the impact of early childbearing on child nutrition found a 33 percent increased risk of stunting among first-born children of adolescent mothers, when compared to first-born children of adult women in Sub-Saharan Africa. 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 5 shows that the prevalence of stunting among children of adolescent mothers is 52 percent, compared to 36 percent among children of mothers age 23 or older. Table 15 provides a composite snapshot of women’s health and nutritional status, both nationally and at the regional level.

**Figure 10. Percentage of Women 15–19 Years Who Began Childbearing by 19**



Source: INS and ICF International 2013; INS and Macro International, Inc., 2007; Attama et al. 1999.

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

**Adequacy of women’s diets and micronutrients.** Many women in Niger do not have adequate diets, which contributes to micronutrient deficiency. This situation is most dire during the lean season (May–September), when food stocks are at their lowest levels. Although neither the DHS nor the National Nutrition Survey contained information on women’s dietary diversity, the baseline study for FFP implementer activities in Niger found that among the implementation areas, women’s dietary diversity ranged from 2.9 to 3.6 food groups out of nine possible food groups; this indicates very low dietary diversity, with egg and organ meat consumed least frequently, at 2 and 4 percent, respectively (USAID 2014). Formative research in the Maradi region found that women receive no special care or food while pregnant or lactating and that multiple wives are critical barriers to an adequate diet (SPRING/Digital Green 2015).

Anemia during pregnancy increases the risk of pre-term delivery and low birth weight, and increases the risk of both maternal and perinatal mortality (Black et al. 2013). Anemia among women 15–49 years in Niger is a severe public health problem, as classified by the WHO<sup>15</sup> (2010), with 58 percent of pregnant women and 46 percent of non-pregnant/non-lactating women suffering from anemia (INS and ICF International 2013). Anemia is quite high among men at 26 percent nationally, particularly among adolescent boys (43 percent) (INS and ICF International 2013). Although iron deficiency plays a role in the high levels of maternal anemia,<sup>16</sup> other factors, including other micronutrient deficiencies, malaria and helminth infection, chronic inflammation, and genetic diseases such as sickle cell anemia, may also be contributing factors. Additional research into the specific causes of the incredibly high rates of anemia among all populations in Niger is suggested, given the continually high prevalence of anemia in the country. The high levels of anemia in Niger are likely a significant contributor to the country’s poor maternal nutritional status, high maternal mortality rate, high prevalence of low birth weight births.

As mentioned in reference to children under 5, it is unclear whether vitamin A deficiency is still an issue in Niger, since there is no recent information on vitamin A deficiency among women or children. However, the 2006 DHS finding that 6.6 percent of pregnant women suffered from night blindness, which is an indication of vitamin A deficiency, was much higher than the 1 percent WHO threshold. Thus, vitamin A deficiency is still likely an issue in Niger (INS and Macro International Inc. 2007). As with children under 5, iodine deficiency is most likely an issue with other populations in Niger, which is of particular concern given the negative impact iodine deficiency during pregnancy has on the health and development outcomes of the infant.

**Family planning (FP).** The total fertility rate (TFR) in Niger is extremely high at 7.6, which is an increase from 2006 when the TFR was 7.0, reflecting the lack of family planning services and access to and utilization of these services, coupled with socio-cultural norms that favor high fertility in women (INS and Macro International, Inc. 2007; INS and ICF International 2013). This socio-cultural desire for high fertility is particularly evident, since the desired number of children is even higher than the current TFR. The ideal number of children that women say they want is 9.0, whereas men say they want 11–12 (INS and ICF International). This extremely high fertility rate has numerous consequences at multiple levels and increases the risk of infant, child, and maternal mortality as well as malnutrition in children and women. At the same time, having large numbers of children reduces the amount of time and resources that mothers 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, leading to greater food insecurity.

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<sup>15</sup> WHO classifications for population prevalence of anemia:  $\geq 40.0\%$  is “severe;” 20.0–39.9% is “moderate;” 5.0–19.9% is “mild;” and  $\leq 4.9\%$  is “no public health problem” (WHO 2010).

<sup>16</sup> One small study conducted in 1991 identified iron deficiency among 60 percent of anemic pregnant women (Daouda et al 1991).

Improved access to and use of FP services is crucial to improving maternal health, especially for younger couples. However, the 2012 DHS found that modern contraceptive use is only 12 percent among currently married women of childbearing age, which is an increase from 5 percent reported in the 2006 DHS. Modern contraceptive use among married women is extremely low in the Tahoua region at 6 percent (INS and ICF International 2013; INS and Macro International, Inc 2007). Notably, contraceptive use is much lower (4 percent) among married adolescent girls age 15–19 than older married women, despite the increased risks from early pregnancy and delivery (ibid).

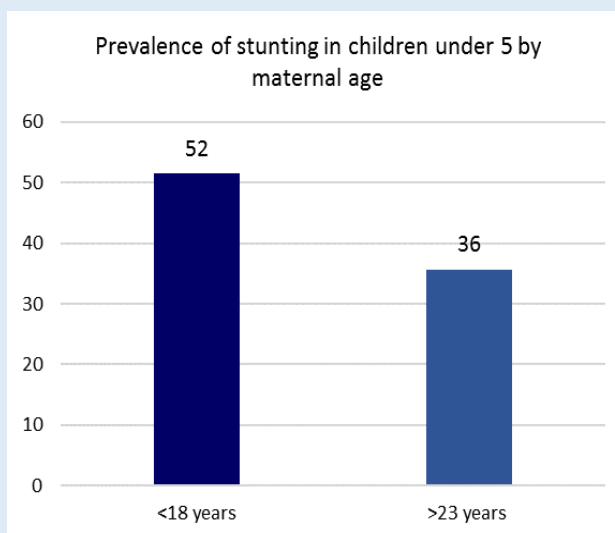
Understanding the importance of reducing the extremely high fertility rate for the health and well-being of the country, the GoN has requested help from partners to reach its goal of reducing fertility by 50 percent by 2020. According to a 2016 family planning assessment, a major barrier to increasing FP use is limited access to services, since over half of the population lives over 15 km from a health facility and existing facilities are often understaffed (USAID 2016). Formative research from Maradi region indicates that there is high interest in FP and high unmet need, but a lack of support for couples to discuss the issue is a major barrier to FP use (SPRING/Digital Green 2015). In addition, low contraceptive use may be in part due to men’s disapproval of its use. One current FFP implementer’s annual report indicates, “the main constraint related to low adoption of FP practices was the refusal of some men to utilize modern methods of contraception” (Mercy Corps 2016). Support from implementing partners is needed to strengthen access to FP services

in areas where they are implementing activities. The type of support needed includes effective communication among couples around a multitude of issues, including FP; continuing to engage men and other key influencers (e.g., Imams) within the community to build knowledge on the importance of healthy birth spacing; addressing women’s low societal status and diminished role in decision making with their spouse; and couple-based decision making, as well as addressing myths and misconceptions on

## Box 5. Adolescent Malnutrition

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

- Thirty-one percent of adolescent girls are malnourished, the highest of any age group.
- Seventy-five percent of adolescent girls have begun childbearing by 19 years of age, an increase since 2006.
- 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, first-born children of adolescent mothers are 33 percent more likely to be stunted than first-born children of older mothers.
- Reducing young child malnutrition in Niger requires an urgent focus on preventing adolescent pregnancy and strategies that promote access to and/or adoption of family planning, delayed marriage, and delayed first pregnancy.



Source: INS and ICF International 2013; Fink et al. 2014; Bhutta et al. 2013.



FP. In addition, effective referral systems are essential so that women can access FP services through the government health system or other community-based distributors of FP commodities. 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, provides men and women with information on FP methods, and improves linkages to services. Implementing specific interventions targeting men, given their influence over FP access and use, is also warranted.

Social and behavior change approaches should also be used to target adolescents, with the understanding that they are often overlooked by FP campaigns, and they face different issues regarding sexual and reproductive health and access to FP than older women. Given the prevalence of early pregnancy in Niger, 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 the social norms related to the widespread adolescent pregnancy in the country, covering such topics 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 and their families to acquire the knowledge and skills they need to adopt healthier behaviors related to reproductive health and nutrition.

**Maternal mortality, antenatal care, and birth care.** In 2015, Niger was ranked 175 out of 179 countries on the Mothers Index according to Save the Children's *State of the World's Mothers Report*. This is because Nigerien women have a 1 in 20 lifetime risk of maternal death; although maternal mortality has been reduced, it is still very high at 535 maternal deaths per 100,000 live births (INS and ICF International 2013). Despite access to free prenatal care and the GoN's prohibition on home births, including a 5,000 FCFA fine, only 30 percent of women reported receiving assistance for their most recent birth from a medically trained provider (INS and ICF International 2013). (Table 15 below provides more information on national and regional maternal health and nutritional status.)

According to the 2012 DHS, although 83 percent of women received some antenatal care (ANC) from a medically trained provider, only 33 percent of women had the recommended number of ANC visits (four or more), which is an increase from 2006, when 15 percent of women had four or more ANC visits (INS and ICF International 2013; INS and Macro International, Inc 2007). Despite subsidized antenatal care, uptake of ANC services is quite low, as 29 percent of women took the recommended 90+ days of iron tablets/syrup, 52 percent took deworming medication, and 50 percent of women reported having two or more tetanus toxoid injections (INS and ICF International 2013).

**Table 15. Maternal Health and Nutrition**

	National	Agadez	Diffa	Dosso	Maradi	Tahoua	Tillabéri	Zinder	Niamey
Maternal mortality ratio (per 100,000 live births)	535	--	--	--	--	--	--	--	--
Total fertility rate (children per women)	7.6	5.7	6.4	7.5	8.4	7.3	7.9	8.5	5.3
Ideal number of children, as reported by women 15–49	9.2	7.0	8.4	8.7	10.0	9.1	9.9	9.6	7.0
Median age at first union (of women 20–49 years)	15.8	17.3	16.5	16.3	15.4	15.8	16.2	15.4	19.5
% of women 15–49 in polygamous unions	5.7	6.2	2.0	5.7	8.8	4.5	5.6	3.6	6.9
Median age at first birth (of women 20–49)	18.5	19.9	18.2	18.8	17.5	18.4	18.9	18.0	n/a <sup>17</sup>
% of women 15–19 who have begun childbearing by 19	74.7	--	--	--	--	--	--	--	--
% of women 15–19 who have begun childbearing	40.4	25.6	43.1	33.0	43.6	46.4	37.5	52.3	15.0
% of women 15–49 who are undernourished (BMI < 18.5)	15.5	14.9	10.7	12.7	17.9	13.0	13.4	23.5	9.8
% of women 15–49 who are overweight (BMI ≥ 25.0)	17.8	29.2	10.7	22.8	9.2	19.6	21.0	6.5	43.8
% of women 15–49 of short stature (< 145 cm)	0.8	1.2	1.1	0.5	1.2	0.9	0.4	0.7	0.2
% of women 15–49 who are anemic (non-pregnant < 12.0 g/dL; pregnant < 11.0 g/dL)	45.8	50.0	17.1	58.1	42.7	40.5	46.4	50.3	47.4
% of women 15–49 reporting having taken iron supplements for more than 90 days during their last pregnancy	28.6	4.7	14.0	31.9	37.8	23.4	27.1	29.5	20.3
% of women 15–49 reporting having taken deworming tablets during their last pregnancy	51.5	34.9	19.5	51.6	59.4	46.9	68.4	43.6	49.1
% of women with a child born in the past 5 years given vitamin A supplements after birth of last child	37.7	28.1	51.6	38.8	43.2	29.1	27.3	42.8	47.6
% living in houses with iodized salt (among women with a child born in the previous 5 years)	59.4	30.7	82.5	74.6	61.9	69.4	60.6	39.2	78.3
% of pregnant women 15–49 who slept under a long-lasting insecticidal net the previous night	23.9	(18.2)	20.3	29.1	19.9	13.9	39.9	20.7	45.3
% of women 15–49 who gave birth in the preceding 2 years who reported receiving 2 doses of intermittent preventive treatment of malaria	34.8	22.2	28.1	40.2	43.4	27.0	34.3	33.4	32.7
Median number of months since preceding births (of women 15–49 years)	30.9	32.7	31.0	32.3	29.9	31.2	31.0	30.4	34.1
% of women 15–49 using any modern method of birth control	12.2	17.8	11.5	18.0	6.9	5.8	11.7	16.0	31.8
% of women in union reporting wanting to limit births	8.5	13.5	3.8	13.4	6.5	7.5	7.6	8.2	13.4

<sup>17</sup> Less than 50% of women had a birth before reaching the beginning of this age group.

	National	Agadez	Diffa	Dosso	Maradi	Tahoua	Tillabéri	Zinder	Niamey
% of women 15–49 receiving antenatal care from a medically trained provider*	82.8	75.5	57.3	90.8	83.7	77.5	89.8	78.1	97.7
% of births delivered by a medically trained provider	29.3	57.1	32.0	33.2	25.1	24.7	28.8	20.1	86.8
% of women circumcised (FGC)	2.0	0.2	0.1	0.1	0.3	1.2	9.2	1.7	1.8
% births delivered at a health center	29.8	54.6	31.7	33.2	26.7	25.2	29.3	19.9	86.3
% having received two or more tetanus injections during the last pregnancy	49.5	37.4	40.1	49.5	59.2	47.8	42.6	51.0	39.1
% of women 15–49 receiving post-natal care check up in the first two days of birth	36.9	51.4	26.9	54.7	37.1	24.7	46.0	26.0	68.1
% of women 15–49 who experience at least one problem accessing health care	70.2	69.8	76.3	58.0	74.8	68.0	68.7	77.1	67.0
% of men 15–19 with any anemia < 13.0g/dl	42.8	--	--	--	--	--	--	--	--
% of men 15–59 with any anemia < 13.0g/dl	26.2	16.6	10.7	36.9	20.6	24.3	26.1	31.1	21.9

Source: INS and ICF International 2013

### 3.3.4 WATER, SANITATION, AND HYGIENE

Access to sanitation and an improved water source, combined with improved hygiene behaviors, are essential to prevent fecal-oral disease transmission and the long-term consequences of repeated diarrheal infections on children’s nutritional status, physical growth, and cognitive development (Humphrey 2009). Poor WASH contributes to undernutrition through increased risk of diarrhea, which suppresses appetite and nutrient absorption, despite increased nutrient needs. Poor WASH also contributes to intestinal worm infection, which impairs appetite and nutrient absorption, environmental enteric dysfunction, and inflammation of the intestines caused by chronic exposure to environmental pathogens, all of which hinder nutrient absorption and are linked to poor growth. Meanwhile, malnutrition weakens the immune system, making a child more susceptible to the pathogens present in an unhygienic environment (WHO, UNICEF, USAID 2015). Weak WASH infrastructure, management capacity, and practices increase nutritional risk in Niger. Poor WASH access/utilization and behaviors remain exceedingly problematic across Niger, confounding efforts to address acute and chronic malnutrition and reduce infant and U5 mortality. The health and nutrition implications of WASH deficits are exacerbated by the country’s lengthy rainy season (June–September) and endemic waterborne diseases (e.g., cholera).

With the support of UNICEF, in 2010, the GoN adopted a community-led total sanitation (CLTS) strategy (a social and behavior change approach) to address poor water and sanitation conditions and practices, with the goal of ending open defecation by 2030. This is a lofty goal, since as of 2012, open defecation was still nearly universal (84 percent) in rural households, and only 4 percent of rural households had improved toilets (INS and ICF International 2013). Poor water and sanitation are cited as some of the biggest challenges in Niger to improving nutrition and food security (USAID 2014). This is partially due to the rapid population increase, as Niger’s population has nearly doubled since 1990, and the already poor water and sanitation infrastructure that has not been able to cope (USAID 2010). (See Table 16 for a summary of WASH indicators in Niger). One challenge for latrine use in Niger is the sustainability of latrines built using local materials; USAID/FFP implementers have reported that wooden latrines have collapsed after the rainy season. Use of stone slab latrines may help with stability issues, but are costlier.

Determinants of latrine use include access/perceived access to resources to construct latrines and smell/cleanliness. However, when addressing issues of maintenance and care (e.g., cleanliness), it is important to ensure that these tasks do not mainly fall to women, particularly maintenance and cleaning of latrines. Most households in Niger lack a place for handwashing, as well as soap and water, with availability lower in rural areas. A USAID/FFP baseline survey found that handwashing knowledge and practices are generally low in Niger; although 90 percent of those surveyed knew to wash their hands before eating, few could identify the other critical times for handwashing (USAID 2014). The same survey found that among households that have handwashing stations, only 15 percent of households have both soap and water (USAID 2014). One current USAID/FFP implementer also found that a main barrier to optimal handwashing practices is that handwashing with soap is not a habit. The problem is not poor access to soap: most households have soap, but they use it for other purposes: bathing, laundry, and so on. While another formative research study in Maradi found that although handwashing is widely practiced for religious reasons, there are limited handwashing stations and soap is not used (SPRING/Digital Green 2015). Additional contributors to poor hygiene practices include the lack of water (not enough boreholes, broken boreholes, distance to boreholes, low water levels at pumps). In 2012, 67 percent of households had access to an improved water source (INS and ICF International 2013). Pumps break down frequently, however, because of inadequate preventative maintenance and the unavailability of locally qualified technicians, requiring people to use unsafe water sources like rivers or ponds. Since only 17 percent of households treat their water (e.g., filtering water through linen, boiling), there is an increased risk of poor health and nutrition outcomes (INS and ICF International 2013). Time to access water is still an issue for many households in Niger; 54 percent of rural households reported that it took more than 30 minutes to collect water (INS and ICF International 2013). 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.

Effectively preventing malnutrition in children under 2 years in Niger 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 water, sanitation, and hygiene facilities alone, will not be sufficient if behavior change to improve handwashing and food hygiene behaviors and the household environment do not improve in tandem. Globally, 94 percent 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 as a result of lack of access to water and sanitation and poor hygiene practices in the Niger context is 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 2). A meta-analysis conducted in 2008 found that the risk of diarrhea was reduced by 48 percent from handwashing with soap, 17 percent from improved water quality, and 36 percent from safe feces disposal (effects are not additive since each overlaps the others) (Cairncross et al. 2010).

During public health emergencies, such as the Ebola virus disease 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 alternate and often unsafe sources of water (ACAPS 2015). UNICEF has been working with the GoN to develop an operational preparedness and response plan in case of a similar outbreak to help mitigate the impacts on the health and food security of the nation (UNICEF 2015). Future FFP projects can take lessons learned from the social and behavior change successes organized

during the Ebola outbreak in Sierra Leone, particularly regarding community engagement, to promote not only improved WASH, but other practices that need community support to improve, such as IYCF.

**Table 16. Key WASH Indicators**

	National	Urban	Rural
% of households with access to improved water sources (in the house)	67.0	96.7	61.2
% of households with open defecation	72.7	13.7	84.3
% of households with improved toilets (non-shared)	9.3	34.4	4.4
% of households using appropriate method of water treatment	16.5	3.3	19.1
% of households where it took 30 minutes or longer (in round trip travel time) to obtain drinking water	47.8	17.2	53.8

Source: INS and ICF International 2013.

### 3.3.5 HEALTH CARE SYSTEM AND ACCESS

According to the 2012 DHS, 70 percent of women reported at least one problem in accessing health care, with 60 percent of women reporting lack of money to pay for services as a barrier, followed by 43 percent who reported that distance to the health center was a deterrent (INS and ICF International 2013). Access to health facilities is even further restricted during the rainy season, when transportation becomes exceedingly difficult due to poor road conditions. A qualitative study for Maradi found that most respondents had a favorable view of health facilities and would utilize a health post if they lived near it. For those who did not have a health post within their locality, however, access was problematic due to distance and lack of transport (or money for transport) (UNICEF 2012). This may contribute to the poor indicators of health services use and access: 37 percent of women 15–49 years of age received a post-natal care check-up in the first 2 days after birth, and only 51 percent of children who had a fever in the last 2 weeks received treatment (INS and ICF International 2013).

### 3.3.6 GENDER AND NUTRITION

Gender inequality is pervasive in Niger and is a significant underlying factor that exacerbates food insecurity and malnutrition; as such, it is a critical issue to address. The combination of early childbearing, high fertility levels, and women's lack of control over resources and limited decision making, adversely affect the food security and nutrition of Nigerien 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. See Table 2 on p. 18 above for regional information on gender indicators.

In Niger, many adolescents are sexually active. Of those sexually active as teens, the average age of first sexual intercourse for girls is 15.4 years of age, versus 17.5 years of age for boys. The average age upon the birth of their first baby was 16.5 years for girls and 18.3 years for boys (WHO 2016). Among all Nigerien adolescents, 61 percent of adolescent girls are in a union, as compared to 3 percent of boys. Analysis of 2012 DHS data by WHO found that among adolescent girls who are sexually active, 93 percent of girls in a union are not using any form of birth control, even though 26 percent of adolescent girls in a union report not wanting a child in the next 2 years. Adolescents are most likely to get their birth control from a government facility (49 percent), and for adolescent girls in a union, the most common types of birth control used are the birth control pill and lactational amenorrhea (around 3 percent utilization for each method) (ibid).

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 nutritional 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 and loan groups and other livelihood activities to improve their food security, all of which relate to their nutritional status and that of their children. In addition, efforts to delay marriage and first pregnancy, improve access to secondary education for girls and boys, and promote secondary school completion will go a long way toward sustainably reducing the overall prevalence of undernutrition in Niger.

Gender inequality is also reflected in several other key indicators. For example, women are not as likely to be employed as men; 25 percent of women of childbearing age reported being employed, versus 81 percent of men (INSD and ICF International 2012). Although 85 percent of currently married women reported being able to decide on their own how to dispose of income they earned, only 12 percent of women (15–49 years) reported participating in three major decisions (decisions around her own health, household purchases, and visiting relatives), with adolescent girls being least likely to make these decisions (10 percent) (ibid). These data are not surprising. Most women in Niger have limited say regarding how their young children are fed, which is further limited by their lack of access to resources to support the health and well-being of their children as well as themselves. In this context, promoting shared responsibility for the nutritional status of women and children among husbands, second wives (when in a polygamous relationship), and parents-in-law, in addition to working with mothers, is essential, as improving maternal decision-making capacity can have significant positive impacts on mothers' and children's health and nutrition.

The implication is that while Nigerien women are the principal meal preparers and caregivers for their children and are primarily responsible for acquiring and/or producing food, their limited 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).

Domestic violence undermines women's empowerment and reinforces their lack of control over resources and decision making. Although the 2012 DHS did not include information on the prevalence of domestic violence, 60 percent of women and 26 percent of men reported that the use of violence against women is acceptable. 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). It is likely that domestic violence is prevalent in Niger, and given the depth of gender inequality, it is essential to engage men and communities to tackle social norms related to the use of violence against women in order to protect and sustain efforts to empower women and enable them to have greater decision-making authority and control over resources and their fertility for further progress.

### **3.3.7 HIV**

HIV is not a widespread problem in Niger, where 0.4 percent of men and women (15–49 years of age) tested positive (INS and ICF International 2013). This is an improvement from 2006, when 0.7 percent of women and 0.8 percent of men were HIV positive (INS et Macro International, Inc. 2007). Urban women are slightly more likely to have HIV than women living in rural areas (1.1 versus 0.2 percent).



### 3.3.8 KEY POLICIES, STRATEGIES, AND PROGRAMS RELATED TO FOOD UTILIZATION AND HEALTH

Since joining the Scaling Up Nutrition (SUN) movement in 2011, the GoN has made concerted efforts to improve the health and nutrition of women and children through the development and implementation of several policies to address the high levels of malnutrition in the country (see Box 6, Table 17). In January 2016, the Government of Niger launched its first multisectoral nutrition security strategy, titled “Politique Nationale Multisectorielle de Sécurité Nutritionnelle” (PNSN), which seeks to address both the immediate and underlying causes of malnutrition. Also in 2016, the acting Minister of Health delivered a strong statement in support of breastfeeding and highlighted the importance of improving breastfeeding in the country to improve the nation’s overall development.

In the past, Niger’s focus on malnutrition has mostly been on the treatment of acute malnutrition. Given the negative impact of chronic malnutrition on the health and development of the nation, however, Niger has recognized the need to put prevention at the forefront of its nutrition strategy. Therefore, in 2013, Niger developed a strategy to address the high prevalence of chronic malnutrition. The government’s priority nutrition interventions are identified in its 2013 National Nutrition Strategy to Prevent Chronic Malnutrition “*WADATA YARA*” (see box below for more information). The plan outlines the need for both nutrition-specific and nutrition-sensitive actions to effect change in Niger. Nutrition-specific activities focus on the need to improve IYCF, address micronutrient deficiencies, and improve preventive services (e.g., growth monitoring and promotion), while nutrition-sensitive interventions focus on addressing poor WASH practices, low utilization of pre- and post-natal care, and family planning.



### **Box 6. Priority food security and nutrition interventions as identified in the Niger National Strategy to Prevent Stunting (2013)**

1. Improve infant and young child feeding practices
  - Early initiation of breastfeeding
  - Exclusive breastfeeding for the first 6 months
  - Complementary feeding for infants 6 months and older
  - Multi-micronutrient supplementation for children 6–23 months
2. Provide vitamin A supplementation and deworming
  - Vitamin A supplementation for children 6–59 months
  - Deworming for children 12–59 months
3. Support growth promotion and monitoring
  - Community-based growth monitoring
  - Screening for malnutrition and referrals
  - Cooking demonstrations
  - IYCF behavior change communication
4. Improve water, hygiene, and sanitation
  - Eliminating open defecation
  - Handwashing with clean water and soap
  - Access to clean and treated water
5. Improve access to nutrition-related health services for families and the community
  - Insecticide-treated bed nets
  - Immunization, vitamin A supplementation, and deworming
  - Efforts to improve access to quality health care services
  - Uptake of preventatives services for three priority childhood illnesses, including acute respiratory infections, malaria, and diarrhea, and promotion of Essential Nutrition Actions (ENA) (see Appendix 3 for more on the ENA)
6. Support focused antenatal care
  - At least four ANC visits, as per WHO standards
  - Health facility-based and/or assisted delivery
  - Iron folate supplementation, immunization, intermittent preventive treatment (malaria) for pregnant women
  - Prevention of Mother-to-Child HIV Transmission (PMTCT) services, as needed
  - Nutritional counseling: Iodized salt consumption, deworming, exclusive breastfeeding
  - Family planning
7. Support education on nutrition, farming, and small-stock breeding for schools and communities to improve food security and social safety nets
  - School-based nutrition education on diet diversity, WASH, and positive living
  - School gardens
  - Kitchen garden
  - Small livestock farming/breeding

Source: MoH and UNICEF 2013.

**Table 17. Summary of Key Policies, Strategies, and Programs Related to Food Utilization**

<b>Government of Niger</b>	
Policies	<p><b>National Multisectoral Nutrition Security Policy “PNSN” (2016):</b> This policy focuses on addressing malnutrition in the country through both nutrition-sensitive and nutrition-specific interventions, understanding that reducing malnutrition will take multisectoral effort. The PNSN serves as a common framework for programs and activities to recognize, protect, and achieve the right to nutrition security for all. The PNSN identifies roles and responsibilities for the management and coordination of all stakeholders, including donors, technical providers, civil society, and the private sector.</p>
	<p><b>National Protocol on Integrated Management of Acute Malnutrition (2012):</b> This protocol is a national reference tool for the management of acute malnutrition. It is a revision to the Protocol for the Management of Malnutrition from 2005. The revision incorporates lessons and findings from the Monitoring and Evaluation Meeting in Dakar in November 2010, lessons learned from management of the 2010 crisis, and evaluation of the protocol carried out by FANTA-2 in October 2011.</p>
	<p><b>National Food and Nutrition Policy (2011):</b> The overall objective of this policy is to ensure that everyone is provided with adequate food and nutrition and access to adequate nutrition. It also seeks to achieve socially sustainable and safe development environments to contribute to the improvement of nutrition and health. The specific objectives range from reducing acute malnutrition in children under 5 to reducing illiteracy rates, with special efforts directed towards women.</p>
Strategy	<p><b>Community-Led Total Sanitation (2010):</b> A national community-led total sanitation strategy developed in partnership with UNICEF and nongovernmental organizations was adopted in 2010, as an integrated social and behavior change approach to reduce open defecation and improve the health and well-being of families in Niger.</p>
	<p><b>National Strategy for the Prevention of Chronic Malnutrition "WADATA YARA" (2013):</b> In 2013, Niger created a national strategy to address the high rates of chronic malnutrition, seeking to address both the nutrition-specific and nutrition-sensitive factors that contribute to stunting. The overall objective of this strategy is to contribute to the reduction of the prevalence of chronic malnutrition (stunting) among young children. This objective is to be attained through the following interventions: 1) Promotion of infant and young child feeding; 2) Vitamin A supplementation and deworming; 3) Promotion of early childhood growth; 4) Water, hygiene, and sanitation; 5) Nutrition-related health services for families; 6) Prenatal consultation; and 7) Food security and social safety net programs. To achieve these interventions, the strategy will promote high-level multisectoral integration, strengthen the capacity of actors on the local and national levels, increase community participation, and coordinate partnerships to ensure the effectiveness of interventions. See Box 5 above for more information.</p>
	<p><b>National Child Survival Strategy Document (2012):</b> The overall objective of this strategy is to help Niger attain a child mortality rate of 103/1000 (a reduction of two-thirds, relative to 1990). This objective is to be attained through the following interventions: 1) Nutrition (reduction of chronic and acute malnutrition of children under 5, reduced low birth weight prevalence, and increased percentage of children under 6 months of age exclusively breastfed); 2) Vaccination and essential preventive services (boosting immunization coverage, eradicating poliomyelitis, preventing measles, and supporting vitamin A supplementation); 3) Integrated Management of Childhood Illness (management of malaria, diarrhea, and acute respiratory infections at the community and health facility levels, increased use of insecticide treated nets in the home among pregnant women and children, and preventive care in pregnant women); 4) Prevention of mother-to-child HIV transmission (antiretroviral therapy use in HIV-positive pregnant women and children); 5) Maternal and neonatal health (increased use of contraceptives, prenatal consultations, iron/folic acid supplementation in pregnancy, and appropriate care in case of pregnancy and delivery complications, and increased availability of essential health services); and 6) Water, sanitation, hygiene, and environment (establishment of appropriate sanitation facilities and increased access to an improved water source at the household level).</p>

	<p><b>National Strategy for Infant and Young Child Feeding (2008):</b> The main goal of this strategy is to improve the nutritional status of children. The specific objectives include targeted feeding interventions such as improving the early initiation of breastfeeding, exclusive breastfeeding for children under 6 months of age, and continuation of breastfeeding up to 24 months and beyond. The strategy also addresses operational objectives that include placing nutrition at all levels of national priorities and including essential nutrition actions in health activities at all levels.</p>
<b>U.S. Government</b>	
Food for Peace Projects	Household Food Security Support Program ( <i>Programme d'Appui à la Sécurité Alimentaire des Ménages-Tanadin Abincin Iyali</i> , PASAM-TAI) (Catholic Relief Services) (2012–2018).
	Livelihoods, Agriculture, and Health Interventions in Action Project (LAHIA) (Save the Children) (2012–2018).
	Sawki Project (Mercy Corps) (2012–2018).
<b>Other</b>	
ACF	ACF is working in Maradi and Tahoua on several nutrition-related activities, including strengthening local capacity to address MAM, WASH promotion, and food security efforts with the European Union.
Helen Keller International	HKI supports nutrition in Niger at the national, regional, and community levels. Serving as a key partner to the MOH for vitamin A supplementation and the national fortification of oil with vitamin A, HKI promotes nutrient-rich diets through SBCC based on research on culturally appropriate and available foods. HKI is also helping to update the diarrhea management policy to include zinc, and it is working to improve the provision of iron and folic acid during prenatal care. In addition, HKI supports the MOH on the control of neglected tropical diseases in partnership with FHI 360, and is working with the MOH on improving the quality of prenatal care. HKI implemented several USAID-funded child-survival projects and Office of Foreign Disaster Assistance (OFDA) projects. Currently, it is a partner on the USAID FFP Sawki project. It has recently been awarded a new OFDA project in Diffa for community malnutrition management through the strengthening of community-based prevention and treatment interventions.
GRET	Conducts nutrition education activities and is working to build the technical and marketing capacities of the local fortified <i>Misola</i> product.
Médecins Sans Frontières (MSF)	MSF is working in three regions of Niger (Zinder, Maradi, and Tahoua) to address both the high rates of malnutrition and malaria.
World Food Programme	<p>WFP implements resilience programming through its community-based asset creation program, where in exchange for food assistance, beneficiaries create assets by regenerating land or rehabilitating ponds, with a focus on working with women. WFP supports treatment of moderate acute malnutrition and the production of local fortified nutritious foods. From 2017–2019, WFP will implement a project to address resilience needs by providing an integrated package of interventions, including food aid and an unconditional social safety net, to:</p> <ul style="list-style-type: none"> <li>• improve nutrition through prevention and treatment of malnutrition, and nutrition-sensitive activities</li> <li>• enhance the productive, natural, and financial capital of poor people by supporting asset creation and local purchases</li> </ul>
UNICEF	UNICEF provides support to the government to manage severe acute malnutrition, implement community-led total sanitation, support refugees, address outbreaks of cholera and other infectious diseases, provide antimalarial drugs, and support water and sanitation infrastructure and programming, among other activities.



**Box 7. SOs and IRs for Catholic Relief Services' *Programme d'Appui à la Sécurité Alimentaire des Ménages-Tanadin Abincin Iyali (PASAM-TAI)* Project in Maradi and Zinder Regions, Niger**

**Strategic Objective (SO) 1: Households (HH, especially with pregnant and lactating women [PLW] and children U5) have reduced chronic malnutrition**

- Intermediate Result (IR) 1.1: HH (esp. with PLW and children U5) have adopted appropriate health, hygiene and nutrition behaviors
- IR 1.2: MCUs (mother-child units) have accessed quality community- and facility-based health, WASH, and nutrition services

**SO 2: Vulnerable HH have increased the production and consumption of food for nutrition and income**

- IR 2.1: HH have increased and diversified the production of more nutritious foods for consumption and income
- IR 2.2: HH have adopted improved varieties of staple crops for consumption and income
- IR 2.3: HH have effectively managed environmentally responsible integrated crop production systems
- IR 2.4: HH have increased sources of revenue

**SO 3: Target communities have improved integrated disaster risk management**

- IR 3.1: Community-based early warning systems function as an integral part of the national early warning system (EWS) mechanism
- IR 3.2: Targeted communities have managed disaster responses

**SO 4 (cross cutting): Women and men expand gender roles to enhance sustainable results**

- IR 2.1: Target communities have improved gender equity
- IR 2.2: Women and men have increased basic literacy and numeracy skills
- IR 2.3: Governance of targeted communities and national structures strengthened

Source: Catholic Relief Services

### **Box 8. SOs and IRs for Save the Children’s Livelihoods, Agriculture, and Health Interventions in Action (LAHIA) Project in Maradi Region, Niger**

#### **SO 1: Nutritional status of children < 5 and PLW improved**

- IR 1.1: Adoption of key MCHN practices at household level by men and women increased
- IR 1.2: Utilization of key MCHN services at community and health facility levels increased
- IR 1.3: Access to potable water and sanitation facilities for men, women, girls, and boys increased

#### **SO 2: Access to food by vulnerable households increased**

- IR 2.1: Women’s roles in livelihoods diversification and protection enhanced
- IR 2.2: Use of ecologically sound agriculture and natural resource management practices by women and men increased
- IR 2.3: Agriculture marketing improved for women and men

#### **SO 3: Resilience/vulnerability to food security shocks reduced**

- IR 3.1: Community-level resilience to respond to and mitigate shocks improved
- IR 3.2: Commune management structure related to crisis prevention and response improved

#### **SO 4 (cross cutting): Gender/meaningful participation by women at household and community levels improved**

- IR 4.1: Integration of active women’s participation in community activities is promoted
- IR 4.2: Community leaders’ engagement in promoting women’s status is improved

Source: Save the Children

### **Box 9. SOs and IRs for Mercy Corps’ Sawki Project in Maradi and Zinder Regions, Niger**

#### **SO 1: Chronic malnutrition among PLW and children under 5, with an emphasis on children under 2, is reduced**

- IR 1.1: Appropriate nutrition practices during a child’s first 1,000 days adopted by pregnant women, mothers, and caretakers
- IR 1.2: Appropriate nutrition practices and healthy timing of first pregnancy adopted by adolescent girls and their partners
- IR 1.3: Counseling and care appropriately provided by health centers and other community actors (training and support provided to agents working in health centers and village-level “health huts”; progress of health partners is monitored and opportunities to reinforce health care capacity)

#### **SO 2: Local availability of and household access to nutritious food is increased by diversifying agricultural productivity, rural household income, and increasing resilience to shocks**

- IR 2.1: Local availability and household access to nutritious food increased
- IR 2.2: Land and livestock productivity increased at the household and community levels
- IR 2.3: Household incomes increased

#### **SO 3: Household and community resilience to shocks is improved through community development and good governance**

- IR 3.1: Capacity of local government and community structures to mitigate the impacts of drought is increased
- IR 3.2: Community-based early warning systems reinforced
- IR 3.3: Gender empowerment

## 4.1 CROSS-CUTTING PROJECT LESSONS

### 4.1.1 PROJECT SCALE, FLEXIBILITY, AND TARGETING

All three FFP projects in Niger reduced their geographic coverage substantially from initial targets. One FFP implementer was unable to provide their planned target area with a consistent package of services, so it reduced the target number of villages by 30 percent. Another FFP implementer reduced its target number of villages by 65 percent, in accordance with the level of food resources allocated to the FFP project for MCHN rations. The third FFP implementer scaled down the number of targeted villages by 17 percent when a population census in project year one revealed that population figures were higher than previous GoN estimates. After these reductions, one of the FFP projects still had 10 times the number of target villages relative to the other two (643, 62, and 72 villages respectively).

The FFP implementers have demonstrated flexibility in response to numerous challenges, including low levels of literacy/numeracy and low economic development; departure of consortium members and the consequent need to reallocate roles and responsibilities to remaining partners; difficulties with recruitment and retention of key management and field staff; staff fears about exposure to Ebola and other personal risks during field visits; weak capacity of key technical partners (especially the GoN and local NGOs); political interruptions/sensitivities during national elections; and civil insecurity that required compliance with heightened security and convoy protocols for some field travel.

The beginning of the FFP projects preceded the release of USAID guidance on developing theories of change to underpin and guide FFP projects, so the FFP projects had results frameworks, however one FFP project developed a theory of change mid-way through the activity. The results frameworks and theory of change were used for evaluating the projects at mid-term, as well as for planning and monitoring. Having a project theory of change (rather than just a results framework) helped to guide project management and adaptation by explicitly articulating the mechanisms through which FFP project activities were to engender impact, the intermediate variables were to be influenced (e.g., knowledge, attitude, and practices), and the assumptions underlying those mechanisms. The theory of change also communicates the interlinkages among project components, highlighting the relevance and interdependence of each project activity and staff member in achieving project objectives.

The three FFP projects target chronically food insecure communes in Maradi and Zinder regions (Map 3 above). One targets three communes in Maradi's Mayahi Department and nine communes in Zinder's Kantché Department; another targets five communes across Maradi's Aguié, Gazaoua, and Guidan Roudji departments; and the third targets three communes in Maradi's Dakoro and Guidan Roudji departments and five communes in Zinder's Mirriah Department. The RISE Initiative also targets Maradi and Zinder regions, as well as Tillabéri Region in western Niger, enabling partnerships between RISE projects and FFP projects based upon each project's strengths and complementarities.

In terms of beneficiary targeting, all three FFP projects aim to target the most vulnerable households and communities to the extent possible. The FFP projects broadly shared a three-pronged approach to beneficiary targeting: 1) prevention services and rations were targeted to PLW and children under 2; 2) agriculture, livestock, and savings and credit interventions generally aimed to include poor and vulnerable households and women, but the activities were often open to others, as well; and 3) disaster risk reduction (DRR), EW/EA, and systems-level interventions aimed to benefit entire communities and systems (e.g., health, education, and market systems).



### **Lessons Learned: Activity Scale, Flexibility, and Targeting**

- The largest FFP project achieved scale by engaging a formal partnership with a national organization with a large field presence and capacity to manage food distribution. Because of this larger coverage, the activity was able to engage with authorities at numerous levels to make system-wide changes, in addition to reaching a larger number of beneficiaries. FFP project staff felt that covering 100 percent of the villages in a geographic area boosted their credibility in the eyes of GoN authorities. However, disadvantages of having a very large program included challenges in recruiting and retaining qualified staff; the enormous management burden; the coordination challenge of working closely with two sets of regional authorities; the high number of volunteers required; and the difficulty of implementing a relatively standard set of activities and ensuring quality control across villages.
- Advantages of having a smaller coverage area include the ability to provide beneficiaries with more frequent and synergistic multi-sectoral project-activity exposure; the ability to implement a complete and consistent package of activities across all project villages; and lower administrative, logistical, and management burdens.
- For some program components, rather than targeting every village and sub-village directly, FFP projects may be able to only target villages, and use program strategies to promote the diffusion of knowledge, attitudes, and practices to sub-villages in the hamlets. However, this is not the case for project components where more intensive and ongoing interaction is needed with individual beneficiaries for impact.
- Qualitative research was essential to activity flexibility. The FFP projects conducted qualitative and operations research across a range of areas, including value chain studies, gender, literacy program approaches, targeting adolescents, and conducting SBCC with women and couples.
- High turnover at senior leadership levels was a challenge, but highlighted the advantages and disadvantages of different types of management styles. Technical qualifications and depth of experience are important considerations in recruiting senior leadership (e.g., Chief of Party, Deputy Chief of Party), but it is equally vital to recruit leaders and managers who cultivate an organizational culture of mutual respect, listening, curiosity, collaboration at all levels, flexibility, innovation, and provision of safe mechanisms to express issues and complaints.
- Most women lack adequate access to land in rural Niger, so targeting poor women with activities that require land (e.g., farming, market gardening, livestock) typically requires securing access to land for the beneficiaries, and risks excluding poor women.
- Targeting women often requires initial consultations and advocacy with village chiefs and other traditional and religious leaders to secure their permission for women to participate. Targeting adolescent girls often requires the same, as well as permission of their family members. With adequate and continued sensitization, most village leaders and parents are willing to allow wives and daughters to participate.

#### 4.1.2 COORDINATION WITH GOVERNMENT, OTHER ORGANIZATIONS, AND OTHER PROJECTS

The three FFP projects addressed the challenges of intra-consortium coordination and allocation of roles and responsibilities differently. One FFP implementer had three NGOs that divided up geographic and technical areas; after the departure of one of the agencies, two NGOs implemented the project thereafter. Another FFP implementer had two NGOs that divided responsibilities by technical and geographic areas. The third FFP implementer had one large NGO and a large national partner with an extensive footprint in Niger.

The FFP implementers coordinated with a range of GoN partners on both activity oversight and implementation. High-level coordination was established with the governors of Maradi and Zinder regions, the *Préfets* of the departments, and communal mayors. Key GoN partners included the Ministries of Education and Literacy, Agriculture, Livestock, Environment and Sustainable Development, Population, Women's Promotion and Child Protection, Finance, Public Health, and Humanitarian Action and Disaster Management. The FFP implementers put mechanisms in place for regular communication and reporting with these partners, such as task forces and a steering committee. Agreements negotiated with these stakeholders outlined the roles, responsibilities, and expectations for communication. In terms of collaborating with local government, the three FFP projects coordinated closely with communal authorities, and the technical services of the relevant ministries (e.g., Agriculture, Livestock, Planning, Population, Literacy). The primary village-level authorities with which the FFP projects collaborated are the village development committees (VDCs), which were initially established by the GoN.

A partnership with the RISE Initiative and the USAID/FFP projects resulted in Memoranda of Understanding between FFP projects, Resilience and Economic Growth in the Sahel–Accelerated Growth (REGIS-AG) Project, and Resilience and Economic Growth in the Sahel–Expanded Resilience (REGIS-ER) Project. In these partnerships, REGIS-AG focused on cowpea processing and storage and small ruminants, while REGIS-ER focused on conservation agriculture, literacy training, research to inform adolescent programming, and early warning activities.

Coordination was also required among the three FFP projects to harmonize policies related to remuneration, payments, and incentives, such as for GoN partners, community volunteers, and latrine construction.

##### **Lessons Learned: Coordination**

- GoN partners preferred monthly to quarterly partner meetings because more frequent meetings allowed the GoN partners to have the level of information exchange and engagement that they felt they needed to provide the oversight/engagement expected of them. However, quarterly meetings were often preferred by FFP implementers.
- Establishment of an MOU between two FFP implementers that worked in close proximity helped to ensure consistency between the activities in terms of operational protocols and remuneration policies.
- Development of an activity guide on establishing and supporting community structures helped to promote inclusive development processes and clarify roles and responsibilities of all partners.

### 4.1.3 INTEGRATION OF PROJECT ACTIVITIES

The three FFP implementers made considerable effort toward project integration at the level of project design, although integration in practice was more challenging. Activities across multiple SOs were often targeted to the same vulnerable households and individuals. For example, the projects targeted women from vulnerable households with MCHN-focused Care Group activities, market gardening for consumption and sale, savings and credit activities, and distribution of moringa seedlings for home gardens, in order to reinforce messaging and maximize impact on household food security and nutrition outcomes.

Integration of FFP project activities was also emphasized in SBCC, so that a key set of consistent messages were promoted across multiple activities to enhance message comprehension and uptake. Coordinated messages were disseminated via public plenary sessions, dramatic enactments, locally produced videos, caravans, men's groups (e.g., Husbands' Schools), women's groups (e.g., Care Groups), and adolescents' groups (e.g., Safe Spaces). Integration may be enhanced by management strategies, such as co-location of field staff across sectors, encouraging active consultation and collaboration across sectors/activities, and the continued use of a theory of change for project management.

#### Lessons Learned: Integration of Project Activities

- The FFP projects gave rise to numerous innovative examples of activity integration. In one FFP project, adolescent girls participating in a Safe Spaces activity were given an additional package of services to promote their economic empowerment, in addition to services and SBCC related to FP/reproductive health, education, and nutrition. Local NGOs were engaged to train the girls in vocational skills (e.g., sewing, embroidery, production of incense and henna, and food processing). The girls also received IGA start-up materials, entrepreneurship training, and small ruminants. The girls were not able to take their livestock to their marital homes when they married, so they passed on those animals to younger girls in the group. But participation provided livelihood skills, literacy and numeracy, social cohesion, and key skills and knowledge related to MCHN, WASH, and IYCF, which will benefit them even after marrying and leaving the Safe Spaces group.
- Beneficiaries who are literate and numerate are often disproportionately represented in FFP project activities, and particularly in leadership positions, because individuals with these skills are relatively few in rural Niger. Functional literacy training helps to boost inclusion.
- Literacy training addresses a key constraint to food security, development, and resilience in Niger. The curriculum can be closely tailored to reinforce the development activity's SBCC messages across SOs.
- At the level of the community-activity interface, the focal point for integration is the VDC. When the VDC is empowered and enabled to oversee and guide all activities in the community, it can provide a dynamism and focus to the local development process and enhance project impact and sustainability. VDCs can also help to ensure that vulnerable households, FHH, widows, and other target groups are participating in and benefiting from the FFP project activities.
- The FFP implementers demonstrated gender sensitivity by engaging women, men, girls, and boys. Husbands and wives were still largely engaged in parallel rather than as couples, however, despite the fact that the projects aimed to change intra-household resource sharing and decision-making dynamics. One FFP implementer conducted independent research on an approach that focuses on the couple as the foundation of the household, which may clarify what benefits may be gained by conducting couples-focused SBCC and other activities.

#### 4.1.4 STAFF RECRUITMENT AND RETENTION

The FFP projects faced challenges with staff recruitment and retention, as might have been expected given the low-development settings and concerns about potential spread of conflict from neighboring regions and countries. FFP projects lost key staff at the levels of activity leadership and field personnel. Staff tried to move between the three FFP projects as well as to seek positions with UN and other organizations with preferable remuneration packages or working conditions. GoN regulations compounded the problem by slowing down recruitment.

##### **Lessons Learned: Staff Recruitment and Retention**

- One FFP implementer dealt with the termination of involvement of one of the three international NGO consortium members by recruiting the majority of that organization’s staff for activity continuity.
- An innovative approach to preemptively addressing recruitment challenges was to collaborate with the GoN Inspectorate for Workforce Development to host interns and build a roster of possible future job candidates. Another useful strategy was to develop a list of possible future candidates from the list of applicants to every job advertisement, thereby generating a pool of prospective candidates for future recruitment.
- Field agent positions have relatively high turnover rates due to the demands of the positions, and field agent recruitment is frequently necessary. Recruitment of rotating field agents creates a cadre of field agents who can be slotted into newly vacant field agent positions quickly.
- Planning for succession for senior and key positions in advance—well before they are vacated—can expedite recruitment and minimize disruption.
- To minimize the impact of activity staff leaving one FFP project to join another, the FFP implementers found it useful to not recruit staff from another development activity without discussing it with that project’s leadership first.

#### 4.1.5 SOCIAL AND BEHAVIOR CHANGE ACTIVITIES AND PROJECT COMMUNICATION

The FFP projects conducted SBCC across a range of sectors and topics, including preventative and curative health services and practices, water, sanitation, hygiene, nutrition and diet, family planning, agriculture- and livestock-related practices, savings and credit, and gender- and youth-related issues. The FFP projects had varying degrees of success by the mid-term evaluation in social and behavioral change communication activities. One challenge encountered was that GoN partners such as INRAN often employed top-down lecture-style communication and training approaches, rather than the more interactive, experiential, and iterative approaches known to be most effective in rural development settings. Another challenge was that the FFP projects had not included indicators in their M&E frameworks to capture how well SBCC-promoted messages were comprehended and received. The FFP projects employed radio-based programming (including debates), skits, visual materials, competitions, public events, digital videos developed in partnership with Digital Green, trainings, peer-to-peer networking and modeling, caravans, and other methods to disseminate messages. Low literacy and numeracy and very limited information and communication technology infrastructure impeded information dissemination and comprehension. The FFP projects conducted qualitative research to identify barriers to the uptake of recommended behaviors, practices, and techniques, and to help tailor SBCC messages.

### **Lessons Learned: Social and Behavior Change Activities and Project Communication**

- A project M&E system that focuses on measuring delivery of communication messages (e.g., activity outputs) risks failing to capture valuable data about the level of comprehension and uptake of activity-promoted messages (activity quality).
- Training GoN and nongovernmental partners not only in the technical content and key behaviors to be promoted to beneficiaries, but also in the training/communication techniques that the project will use, helped to enhance beneficiaries' comprehension and uptake of key activity-promoted behaviors. This will expand the time required for training of partners and staff at the outset, which must be budgeted for.
- Pictorial SBCC materials, in which any text is in the local/indigenous language, were essential because of very low literacy rates. Videos were particularly effective and appreciated.
- Peer-to-peer networking had particular impact in the Nigerien setting. For example, farmers within the same farmer field school (FFS) visited each other's fields to share experiences and successes; farmers between different FFSs conducted field visits to learn from other groups' experiences; men who successfully adopted recommended behaviors served as models; and lead mothers conducted outreach to disseminate good practices. Peer-to-peer networking also enhanced linkages, which supports future development.

#### **4.1.6 CONFLICT**

Fortunately, the Boko Haram-related conflict in Diffa region and throughout the Lake Chad region had relatively minimal direct impact on the three FFP projects' daily operations. The FFP project areas were affected by generalized insecurity, however, driven by kidnappings by violent extremists elsewhere in Niger and in the region. This necessitated that the FFP implementers remain vigilant; travel in convoy during high-level field visits and avoid risks associated with working with traditional and religious leaders in a very public fashion.

Conflict prevention and mitigation, conceptualized more broadly than threats to staff and beneficiaries, were overarching issues for all three FFP projects and were integrated into activities related to disaster risk reduction, EW/EA, natural resources management, governance, and gender. The FFP projects integrated conflict prevention and mitigation by training staff at the outset; training members of committees associated with the FFP projects; and conducting field activities such as conflict caravans. Addressing gender-related conflict was included.

### Lessons Learned: Conflict

- Conflict is fueled by chronic issues such as inequities in access to natural resources, government services, or social/political influence. It is important that VDCs are actively engaged in working with their communities to resolve conflict on an ongoing basis, rather than assuming that conflict is to be dealt with solely by early warning units (SCAP-RUs).
- Climate change is believed to be increasing the risk of conflict over natural resources. This heightens the urgency of clarifying and strengthening regional, district, communal, and local governance over public, communal, and private resources, which require governance strengthening interventions as well as advocacy at the level of policy.
- Organization of forums of pastoralists and sedentary farmers helped to prevent and mitigate conflict.
- Targeting youth is important to reduce the risk of radicalization and involvement in regional conflicts.
- Although the conflict in Diffa had little direct impact on the project areas, contingency planning efforts needed to account for scenarios in which conflict might play a role, such as environmental/climate crises that might aggravate underlying natural resource management-related conflicts.
- A gender-sensitive conflict monitoring system is essential, because perceptions and risks of conflict differ by sex. As a result, conflict-related early warning indicators should account for these gender differences.

#### 4.1.7 SUSTAINABILITY AND EXIT STRATEGY CONSIDERATIONS

Strengthening the capacity of national government institutions and systems is an essential element of sustainability. The three FFP projects worked closely with the GoN, particularly at the regional level and below, in planning, implementation, and oversight of project activities. GoN partners provided significant technical engagement in the areas of agriculture, livestock, education, women's promotion, and other aspects. GoN partners also participated in steering groups and other committees designed to provide project oversight (this is discussed further in section 4.1.9 below). The governance environment in Niger is challenging, and partners at all levels often require significant strengthening to be able to contribute effectively to the FFP projects. Although all three FFP projects provided technical and material support to GoN partners, one FFP implementer developed an operational guide for setting up and supporting community structures, which assisted with all training and coaching/support done with community structures, including VDCs. Empowering GoN partners sometimes required advocacy for the allocation of resources and decision-making authority to local levels.

The FFP projects aimed to strengthen the continued availability and quality of key facilities and services (e.g., MCHN, agriculture and livestock extension, early warning systems, market information systems), particularly at commune and community levels. Strategies to strengthen services included training, provision of equipment and materials, and networking/peer visits.

The primary entry point to conducting development work in Niger is the GoN-established VDCs. Many villages either lacked VDCs, or had remnants of previously active VDCs that were no longer functional. Where VDCs were lacking, the FFP projects worked with communities to establish the VDCs. Once identified, many VDCs require significant coaching and support to function well. Other community institutions and structures central to project success included water management committees, SCAP-RUs, natural resource management committees, women's savings groups, husband schools/groups, safe spaces for adolescent girls, farmer field schools, pastoralist/livestock field schools, and others. The FFP projects also engaged and worked through volunteers, such as health volunteers, committee members, and animal health volunteers.



## Lessons Learned: Sustainability and Exit Strategy Considerations

- Working through local institutions is essential for sustainability. The strategies to strengthen the VDCs that proved most effective included training (e.g., in governance, leadership, gender, planning, and monitoring and evaluation); supporting VDC leadership in key advocacy and implementation activities (e.g., supporting access to land for women or access to finance); and supporting their participation in commune-level workshops (e.g., focused on implementing communal development plans).
- Because weak governance at the community level is a paramount constraint to food security in Niger, one FFP implementer developed an operational guide on setting up and supporting community structures.
- In some cases, the GoN services and systems that the FFP projects wanted to strengthen were not budgeted for (or adequately budgeted for) by the GoN. For example, the district and commune governments did not provide financial support for the food security observatories (OSVs). Lack of funding continues to raise concerns about sustainability, especially for services and functions to be provided by GoN institutions such as the GoN hydraulic, agriculture, and livestock technical services.
- VDC members and community members are often unclear on the roles and responsibilities of VDCs. The roles and responsibilities were clarified by training VDC leadership, and further underscored by FFP implementers' efforts to facilitate and promote, rather than duplicate, the functions of the VDCs.
- For services to be sustainable after the FFP projects end, they must often be financially sustainable (profitable or sustainably subsidized). Community members appeared to be willing to pay for numerous promoted services, such as para-vets/village vaccinators and literacy trainers. The services that appear to be the most financially sustainable meet a public demand, and often are linked to and supported by private sector entities. The FFP projects relied on volunteers for village-level operations, and tried to incentivize the sustainability of their work through: supporting their capacity strengthening (e.g., literacy) and economic empowerment (e.g., subsidizing their access to agricultural inputs); promoting remuneration for their services; formally recognizing their efforts and capabilities in front of the community and GoN authorities; and linking them with GoN authorities so they can be drawn upon as "local experts" in the future.
- Literacy and numeracy training are foundational for sustainability, and are highly valued by women, men, and adolescents in this low-literacy context.
- Village development plans have varying degrees of quality and buy-in, since they were often developed by external consultants as a one-off activity. However, they often align broadly with FFP project objectives. By strengthening these village development plans in partnership with local authorities, FFP implementers can build local consensus and buy-in of local stakeholders in these plans, which can build support for the FFP development activity if the objectives are seen as aligned.
- When high-functioning and successful VDCs are identified, leaders (chiefs and Imams) from surrounding villages that lack VDCs can be invited to visit, observe, and dialogue with the successful VDCs. This generates demand for VDCs, and fosters linkages to promote diffusion of successful practices.
- The functionality and effectiveness of VDCs is strongly influenced by the personality and leadership style of VDC presidents. VDC presidents are elected in public village assemblies. Village chiefs and Imams are ineligible for the VDC president position. Recently established or revitalized VDCs will be more effective in supporting development and food security efforts if villagers understand the demands of the VDC president position, and the desired qualities of a VDC president (e.g., literacy, dynamism, knowledge of the Village Development Plan, understanding of patterns of vulnerability in the community, ability to lead/facilitate a participatory planning process, and intent to stay in community year-round).



#### 4.1.8 INFRASTRUCTURE

Efforts to strengthen infrastructure in the three FFP project areas focused largely on water and clinic infrastructure for MCHN/WASH (i.e., SO1), and irrigation infrastructure for crop and livestock production (i.e., SO2). The FFP projects established and/or rehabilitated irrigation wells at gardening sites, boreholes with manual or motor pumps, rainwater retention structures (e.g., small retention basins), ponds, and water towers. The main GoN partner in these efforts was the Ministry of Environment and Hydrology. Health clinics and sanitation facilities were also built and rehabilitated. Food storage infrastructure such as warehouses and community granaries were constructed and rehabilitated. Transport infrastructure construction/rehabilitation was not included in the FFP projects' activities, despite rural Niger's severe infrastructural constraints.

##### Lessons Learned: Infrastructure

- Household level ventilated improved pit (VIP) latrines and public VIP latrines segregated by sex were desired by communities, which valued a well-constructed cement-based latrine over one made with temporary materials, because of the tendency of those made from local materials to be destroyed by rains.
- Motivation to use latrines was higher in communities where there was little natural surrounding foliage to provide privacy for open defecation.
- Communities expected cement and/or financial assistance to be provided for household latrine construction, because other agencies in the area subsidized latrine construction. Establishment of agreements on protocols about subsidies, incentives, and remuneration is essential to avoid the disincentives and disruptions that inconsistencies in these policies can cause. Where it is not possible to reduce or eliminate these interagency policy differences, the issue can be counteracted in part with an active campaign to boost buy-in and commitment by the community in the activity being promoted (e.g., latrine construction).
- An essential program component was the training of masons, and implementation of the latrine activities in a way that provides ongoing profitability and financial incentives for local masons. Programs targeting life and livelihood skills among adolescents can train them to be masons and repair persons for local infrastructure.
- The largest FFP project was only able to provide for less than 5 percent of physical water needs in this frequently drought-stricken region, calling into question whether resources dedicated to water were sufficient.
- The role of infrastructure governance in low-literacy communities tends to fall to the same minority of individuals who are literate. To counter this tendency, literacy/numeracy training can be provided, and pictorial guidelines and tools can be developed for non-literate individuals who could then fulfill leadership roles in their communities.
- Water point management committees typically store funds at community level, but if a safe system is established for them to store funds in formal accounts in GoN offices (e.g., mayors' offices), this can help build their capacity to apply for other financial services.
- Contributions from community members for infrastructure repair is often insufficient, particularly if the contributions are based on the household's livestock assets, information about which respondents are very hesitant to share.

## 4.2 AVAILABILITY, ACCESSIBILITY, AND DISASTER RISK REDUCTION LESSONS LEARNED

### 4.2.1 LAND ACCESS

In Niger, formal and traditional land tenure and inheritance practices conspire with demographic shifts (high population growth, shift from pastoralism to farming) to erode land access, particularly for poor households and women. Land constraints faced by women continue to be a key obstacle to food security in Maradi and Zinder. The three FFP projects targeted women from vulnerable households with market gardening and/or livestock activities, which require land for farming and grazing respectively. The FFP implementers adopted different approaches to boosting land access for women beneficiaries. The FFP projects engaged in advocacy with a range of stakeholders to increase women's access to land: COFOCOMs, village chiefs, husbands, communal authorities, and religious leaders. The FFP projects advocated for changes in traditional inheritance customs, which often dictate that sons receive land and daughters do not. The FFP projects also advocated for land allocation in the project areas to women in communities so that women could conduct collective market gardening or other activities. Finally, the FFP projects targeted women with credit and savings activities so they can generate enough savings to purchase land on their own, in which case the FFP projects provided support to facilitate women's acquisition of land titles.

#### Lessons Learned: Land Access

- Religious leaders (e.g., Imams) were valuable partners in the effort to change beliefs and behaviors around land inheritance. Imams taught communities that Islam dictates that girls inherit land, livestock, and other assets from their fathers. The Imams clarified that Islam dictates that daughters receive half of what their brothers receive. Engaging the Imams in advocacy involved a different message than one that the FFP implementers may have preferred, i.e., equal inheritance for sons and daughters.
- When local leaders allocated land to women's groups for gardening, they did so on the premise that that land would otherwise lie fallow or unused. When the women invested in the land, such as through zai holes or semi-lunes for water retention, the land became more valuable, and in some cases husbands, landowners, or local leaders tried to take the land back. Leasehold certificates were essential to protect the beneficiaries' access.
- Even where advocacy for land allocation to women's groups was successful, lease periods tended to peak at 10 to 20 years, after which the land would return to the original owner. Also, the number of women reached by collective gardening is relatively small compared to the number that could be reached if women were able to gain more authority/control over a portion of their families' land. Solutions for permanent land access for these beneficiaries would have been preferable.
- Supporting women in savings and credit groups to mobilize funds to purchase their own land is a more sustainable long-term approach to increasing women's land access than negotiating access to communal land for a specified period of time.

- Efforts to increase women’s access to land can be bolstered by increasing their participation in COFOCOMs (land commissions).
- In cases where husbands forcibly tried to take back their land from their wives, the wives had to file a complaint with government authorities. The initiative thus increased the risk of conflict between spouses over control of the land resources, potentially increasing the risk of violence. This is an important consideration in conflict and gender analyses and strategies/action plans.
- Efforts to reach women who had access to land through their families were important, but insufficient because the most vulnerable women were landless.
- Bio-reclamation of degraded lands (BDL) and gardening sites protected by green fencing were not successful unless the fencing trees/shrubs were well protected during growth, because of livestock damage. One FFP project elected to retain a portion of the original BDL plots, and invest in metal fencing for protection of the site. One FFP project found that it was better to have a smaller number of BDL sites that were converted to collective market gardens and protect them with metal fences, than having a larger number of BDL sites with green hedges.
- Research will be needed to clarify how women, their spouses, and other relatives manage funds that women generate from land that they own and/or manage.

#### 4.2.2 FARMER AND HERDER ORGANIZATION, TRAINING, AND EXTENSION

The three FFP implementers targeted multiple producer groups, such as women’s market gardening groups, mixed groups of men and women focused on staple crop production (e.g., millet and cowpeas, groundnuts and sorghum), mixed groups focused on a specific value chain (e.g., cowpeas), and herders. For most agricultural activities, the FFP projects used variations of the farmer field school (FFS) approach to organize producers, which was very well accepted in Niger. The cluster-based FFS approach (CB-FFS) builds on the traditional hamlet-based settlement pattern, in which a central village is surrounded by smaller villages. Lead farmers were selected to manage demonstration plots, which provided sites for field-based research on productivity of crop varieties as well as teaching and discussion.

Key partners included INRAN, ICRISAT, and the GoN Agriculture and Livestock Technical Services. INRAN provided materials such as Purdue improved cowpea storage (PICS) bags, assisted with input selection and training, and conducted production assessments. ICRISAT helped with input selection and provision of improved seeds, and trained market gardening participants. And although GoN Agriculture and Livestock Technical Services were involved in training and supervising FFSs, at least two of the FFP projects found that their GoN counterparts reported not feeling satisfied with communication, coordination, and involvement in the FFP projects—likely in part because their capacity limitations tended to discourage the FFP implementers from engaging the GoN Technical Services to take responsibility for training and other direct services to farmers and herders.

Regarding market gardening (horticulture), two FFP projects organized women from vulnerable households into women’s gardening groups, and the third organized dry season gardening FFSs that were mixed groups of men and women (although the majority of participants were women who were also members of savings and loan groups). Participants were given basic tools or vouchers for these tools from

local vendors. Seeds/planting materials (typically improved varieties) and tools were distributed. The three FFP projects promoted homestead gardens in addition to collective site market gardening.

In addition to staple and garden (horticultural) crops, the FFP projects promoted the moringa tree (*Moringa oleifera*) for nutrition, water, hygiene, and livelihoods. Moringa seedling nurseries were established to provide a local sustainable source for local household purchase. Other multi-use trees promoted by one or more FFP implementers include the Pomme du Sahel, the Gum Acacia (*Acacia senegal*), and an indigenous shrub called *Bauhinia rufescens*.

The major constraints faced by agricultural activities were land access, water access, low soil fertility, pest attacks, and damage by livestock.

Under the partnership with the RISE Initiative, REGIS-ER helped FFP projects introduce conservation agriculture in 2016, including integrated soil fertility management, integrated pest management, and farmer-managed natural regeneration. REGIS-AG supported economic activities that were dominated by women, including livestock activities such as the distribution and marketing of red goats, adoption of advanced storage techniques (e.g., PICS bags), and value-added processing of cowpeas.

### **Lessons Learned: Farmer Organization, Training, and Extension**

- Female participants in FFSs were often unable to make decisions on adopting the promoted agricultural techniques and technologies, unless they owned land over which they had that decision-making authority.
- At the FFP projects' inception, GoN partner INRAN was less effective at training farmers than they were at assisting in field research. As a national agricultural research institution, INRAN lacked expertise and experience in training. To address this problem, it was helpful to support INRAN with developing skills in field-appropriate training and group management techniques, development of a curriculum tailored to the needs and questions of farmers, and development of complementary materials in local languages.
- The moringa tree proved valuable across the FFP projects' strategic objectives, because of the nutritional value of its fruits and leaves, and the potential uses for livelihoods (e.g., cosmetics, handwashing, livestock forage, and water purification). Moringa offers advantages for cultivation, such as high seed propagation rates in nurseries, and tolerance of arid and semi-arid environments. It can be grown on homesteads or in communal gardens, and helps stabilize eroded soils. Routes between plant nurseries and market garden sites were often impassable during the rainy season, so FFP implementers addressed this constraint by establishing locally run nurseries at (or near) market garden sites, and creating sales points for the seedlings nearby.
- Irrigated market gardening can reduce out-migration by women, youth, and men, but only if production and income generated reach sufficient scale. It required significant investment in fencing, site development, and establishment of linkages with GoN Technical Services, input suppliers, and potential buyers.
- Engagement of the local NGO Actions et Cooperatives pour la Promotion des Organismes Ruraux (ACPOR) helped organize women into coops that could be formalized and registered for sustainability.
- Improved farming techniques that require a longer period before yielding results have a lower uptake rate than those that yield results quickly. For example, farmer uptake of using bio-pesticides, using organic fertilizers, establishing moringa installations, and measuring and cordoning plot borders, was hampered by the amount of time these practices required. In contrast, farmers readily adopted using crop varieties with low water requirements, shorter growing season, and drought resistance (e.g., rapidly growing millet varieties), and planting multiple seeds per planting hole and thinning after germination.
- The keyhole garden model was not effective where it was piloted, because it was too costly to set up the gardens (10,000 FCFA–20,000 FCFA to install); it was difficult to find the wood and clay that setup required; it was difficult to maintain them in such a dry environment; and production was low relative to average household size.

- Doing collective irrigated market gardening proved challenging, and FFP projects shifted to supporting household gardens, although garden wells were usually unavailable at household level.
- Permanent fencing was too costly for homestead gardens, and so to minimize livestock damage, green fencing options needed to be explored (e.g., *Acacia mellifera*).
- Collective women's gardens had advantages in that they promoted women's leadership; however, home gardens expanded the scale and likely sustainability of impact on household dietary diversity.
- Dry season market gardening tends to happen year-round, rather than just during the dry season.
- Contests and reward days were useful for incentivizing households in applying recommended practices and behaviors, while accessing levels of communities' ownership, buy-in, and capability to undertake and support recommended practices. Farmer-to-farmer visits within and among FFSs helped boost uptake of recommended techniques. Peer-to-peer networking approaches are well accepted in Niger, and effectively foster linkages between positive deviant (model) communities with less advanced communities.
- Given the low literacy context, illustration-based sensitization materials (e.g., pagivoltes) were key in training and SBCC activities.
- Conducting weekly demonstrations and farmer-to-farmer visits within FFSs can have far greater impact on FFS participant adoption of recommended practices if complemented by a variety of other SBCC techniques, such as sensitization caravans with GoN Technical Services to hold public sensitization sessions, organization of reward days in which communities assemble and identify their most successful adopters of improved practices; radio programming targeting men and women; and use of pictorial SBCC materials. A strategy that is perhaps underutilized by the FFP development activities is the dissemination of sensitization/training materials via SMS/mobile phones, such as is practiced by USAID's Democracy and Governance team elsewhere in Niger

#### 4.2.3 AGRICULTURAL INPUTS, VALUE CHAINS, AND MARKETING

The FFP projects employed a market-based approach to strengthening seed systems by promoting seeds produced by local seed producers via seed vouchers and fairs. Two of the three FFP projects partnered with a local private seed producer (PSP) Halal, to provide seeds and advice to producers, although the seed supply from Halal was at times inadequate. Halal and other PSPs partnered with selected local producer groups for local production of improved seeds. The FFP projects used a community agent model whereby agents acted as intermediaries between producers and input suppliers such as Halal, as well as with other production and market actors. The FFP projects worked with agro-input stores to stock recommended seeds. Farmers were also supported in adopting improved pest management techniques, such as using neem juice and biological pest control.

Water is a key constraint to food security, production, health, and nutrition in Niger. The FFP projects established water sources for irrigation near market gardening sites, such as wells, boreholes, and water collection basins for rainwater harvesting. Some sites were equipped with manual or motor pumps. Water access remained a key constraint to scaling up production for market gardening and staple crop production.

The FFP projects selected the value chains of millet, cowpeas, groundnuts, and small ruminants for their rain-fed agriculture activities. The FFP projects distributed seeds for a wide range of crops for market gardening, including sweet potatoes, beans, cabbage, lettuce, onion, potatoes, tomatoes, bell peppers, carrots, okra, hibiscus (*oseille*), and sicklepod (*Senna obtusifolia*). The PVS methodology was used, in which farmers worked with the GoN agricultural services and INRAN to test and select seed varieties

most successful on their own demonstration plots. For homestead gardening, the FFP projects promoted indigenous seeds that beneficiaries were familiar with and could find locally, such as sorrel, okra, sicklepod, and amaranth. The FFP projects used radio and cell phones to inform farmers about input sales points. The FFP projects conducted value chain studies for selecting priority food and cash crops, and livestock breeds and fodder crops (e.g., *niebe forrager*).

The FFP projects implemented activities to strengthen farmers' and herders' access to market price information. One FFP implementer trained price collectors in the collecting agricultural commodity price data in collaboration with *Système d'Information sur les Marchés Agricoles* (SIM-A), with the expectation that the activity will be handed over to SIM-A by the end of the project. One FFP implementer also installed rain gauges for rainfall monitoring to support the early warning system.

Local producers required access to credit to finance inputs, invest in storage, and support marketing activities. The FFP projects fostered linkages between the producer groups and microfinance institutions, such as ASUSU, a Nigerien bank with extensive microfinance activities across the country that provides loans, credit, money transfers/mobile money, and financial guidance; and the AgroFinance branch of the company *Salon International de l'Agriculture et de l'Agro-alimentaire* (SINAGRO). In addition, all three FFP projects conducted savings and credit activities to increase producers' access to finance options (section 4.2.6 below).

### **Lessons Learned: Agricultural Inputs, Value Chains, and Marketing**

- PVS proved to be a useful approach to testing and selecting crop varieties, particularly when GoN technical services were involved in testing, and when farmers were given the opportunity to conduct farmer-to-farmer field visits.
- The partnership with REGIS-ER on conservation agriculture was well appreciated by farmers, who demonstrated rapid uptake of many of the recommended practices.
- Microdosing enables farmers in Niger to effectively use fertilizers to boost production as part of broader soil fertility management approaches.
- Through partnership with seed suppliers, local seed multipliers could organize and scale up production in line with quality standards.
- The cowpea value chain offers numerous processing and transformation options, including flour for young child feeding, pasta, bread, and biscuits.
- Helping producers analyze their production costs and profits early in the FFS process incentivized them to participate in additional trainings.
- FFP projects working in Niger, where water constraints are key drivers of food insecurity and malnutrition, would benefit from having a project-level water strategy, which could be adapted for each targeted community if/when needed.
- Partnerships with large private seed producers such as Ferme Amate can strengthen seed availability and support local seed multiplication, although in the Niger context, few women could serve as seed multipliers in these public-private partnerships, because they did not own the land required (e.g., 1 ha).
- Women are able to grow moringa trees in their homestead gardens because moringa trees require very little water.
- Three kinds of tree nurseries had different levels of success. Collective tree nurseries were less successful, and small-scale tree nurseries run by local individuals were not profitable. Tree nurseries run as private commercial enterprises proved the most successful and sustainable.
- Niger's markets include producers, large-scale traders, and a middle tier of informal market actors such as traders, middle men, and input dealers who are not well organized. Formalizing market systems can benefit from organizing these informal market actors so they can function more efficiently.
- The use of organic manure and Zaï holes for water and nutrient retention has been well accepted in Niger.
- Water is the main constraint to horticulture/market gardening, and the activity worked best where the FFP projects supported the establishment of wells or boreholes. Rainfed agriculture in Niger is far more challenging.
- As much as farmers benefit from value chain studies and strengthening, they need training and mentorship, so they can replicate the process and establish the necessary organizational linkages in the future.



#### 4.2.4 POST-HARVEST HANDLING, STORAGE, AND PROCESSING

The FFP projects promoted post-harvest handling (PHH) and storage technologies, including the use of PICS bags, triple bagging, hermetic storage, jute bags (for crops other than cowpea), drums/barrels, cans/jars, and warehouses/stores. FFP projects focused more on storage infrastructure after the mid-term evaluation, because the scale of production had sufficiently expanded by that point to require increased storage capacity, and savings and loan activities were in place to finance storage and marketing. The FFP projects worked with communities on construction and/or rehabilitation of warehouses and/or community granaries, providing non-local materials such as iron sheeting and shutters. Management systems associated with warehouses/storage structures varied among the three FFP projects. One FFP project supported the construction/rehabilitation of warehouses, and then producer organizations approached microfinance institutions (MFIs) to access inventory credit facilities (*warrantage*) through MFIs. Another FFP project supported construction or rehabilitation of storage structures; the *warrantage* system is implemented whereby producers are extended credit based on the inventory placed in storage, credit which is provided by the MFI ASUSU, and backed by the project. The third FFP project supported constructing structures managed by FFSs, and connected the FFSs with MFIs. Credit- and savings-related activities are discussed further in section 4.2.6.

Farmers were trained in sorting, drying, and processing. Producer groups that specialized in specific crops were given specialized training and supported to attend agricultural fairs. Under the partnership with REGIS-AG, producer groups were trained in cowpea processing, and assisted producer groups to link to supermarkets where their produce was then sold. Cowpea processing opportunities include infant flour, pasta, and biscuits. Through a public-private partnership with the local company MAGAS Industry, groundnut producer groups were given processing kits and training in groundnut processing, and others were given grinding mills to process millet and sorghum into flour.

In terms of key partners in PHH, storage, and processing, INRAN provided PICS bags and training in areas such as soil fertility management, mineral fertilizers, green manure, and micro-dosing. SINAGRO provided training and equipment for storage, processing, and agribusiness, although at least one FFP project encountered significant challenges with the company's capacity to deliver on its commitments.

##### **Lessons Learned: PHH, Storage, and Processing**

- PICS bags are more effective at preserving crops such as cowpeas when the bags are stored in warehouses, because the bags are less likely to be moved or disturbed in warehouses than at the homestead.
- The FFP project was more successful in improving storage for cereals/grains and legumes, than for the fresh produce harvested in the gardening activities.
- Agribusiness efforts should focus on selected high-value commodities, rather than being open ended to include any commodities desired by communities.
- Farmers were expected to prefer millet production for commercialization, but the FFP development activities found that farmers preferred to grow cowpeas and groundnuts because of the higher profit margin on small household plots, and the availability of market information and storage/pest management solutions.

#### 4.2.5 LIVESTOCK

The three FFP projects employed multi-pronged approaches to boosting engagement and profitability of the livestock sector for smallholder farmers and herders, as well as addressing the key threat of seasonal variation in livestock feed supply. Livestock distribution provided assets to vulnerable households; training and SBCC promoted improved management practices, fodder production and conservation, and other initiatives aimed to boost animal nutrition; and the livestock veterinary care system was strengthened.

Two program strategies were used to increase small stock holdings among food insecure households: sheep fattening and goat rotation (*habbanayé*). The animals were distributed via ruminant fairs, and women who had been organized into livestock groups and/or savings and lending groups were targeted. In the sheep fattening activity, the beneficiary feeds two sheep for around six months, sells the animals, and returns the original capital to the livestock group to fund further IGAs. In the *habbanayé* activity, the beneficiary receives one or two goats, breeds them, keeps the kids and gives the nanny goats to a successor in her livestock group. The GoN Ministry of Livestock Technical Services was a key partner for this activity. REGIS-AG connected sheep fattening participants with the Institut Professionnel du Bétail. The National Center for Excellence for Livestock is being established under the ECOWAS West Africa Agricultural Productivity Programme.

The three FFP projects selected breeds of small ruminants that are native to the region—improved Red Goats and improved Balami Sheep—because they are culturally familiar and well-adapted to the semi-arid and arid environment. One of the FFP projects distributed imported poultry breeds, whose high mortality rates after distribution led to the termination of the poultry distribution program in favor of providing health services for existing local poultry species (chickens, guinea fowl, and ducks) through trained poultry vaccinators, and training local poultry owners in village aviculture in pastoral/livestock field schools. Another FFP project added the poultry value chain following encouragement by REGIS-AG.

In pastoral/livestock field schools, lead herders who had been trained by the FFP project went on to train herders on herd management practices, including herd management, feeding/nutrition, deworming and tick management, vaccination, livestock hygiene, animal health care, animal reproduction, herd housing, hygiene and sanitation, and animal production (milk, meat, eggs).

The FFP project employed a number of strategies to improve livestock nutrition. To address grazing-related constraints during the dry season, FFP projects rehabilitated pasture land by creating planting holes/pits, regenerating natural tree stumps, and planting seedlings useful for grazing and/or browsing. The FFP projects conducted fodder production and conservation activities to provide income for targeted beneficiaries and increase herders' access to nutritious feed for their livestock during the long dry season. Seeds and/or cuttings of fodder crops such as cowpea fodder (*Niébé fourrager*, *Vigna unguiculata*), *bourgou* millet (*Echinochloa stagnina*), and alfalfa (Lucerne, *Medicago sativa*) were distributed, along with mineral fertilizers. One FFP project increased the number of crop residue crushing machines available to transform crop residues into livestock feed. Other FFP projects promoted mineral-vitamin blocks and treatment of dry fodder with urea.

Niger's indigenous cattle breeds are well recognized in West Africa for their productivity and potential market value. To increase the quality, access, and use of animal health services to improve animal health and body condition, the three FFP projects trained para-vets and community animal health workers in para-veterinarian modules, poultry production, and herd management, and equipped them with basic animal health supplies (startup kits). The para-vets were trained at a GoN veterinary center in Maradi.

REGIS-AG assisted in linking para-vets with agro-vet stores and private veterinarians, in order to strengthen para-vets' services, facilitate supply of medicines and other supplies, support referrals, and ensure sustainability of the agro-veterinary system. Para-vets provide services for a fee to ensure sustainability, and they are supervised by GoN Ministry of Livestock personnel. REGIS-AG also organized animal fairs for Tabaski, including in Niger and West Africa.

### Lessons Learned: Livestock

- The *habbanayé* program model is culturally acceptable and popular among beneficiaries in Niger. However, distribution of two female goats per beneficiary was insufficient, because local herds lack sufficient adult male goats, which tend to be sold and butchered at relatively young ages. The GoN policy on goat rotation programs recommends the distribution of three nanny goats and one billy goat per beneficiary, which is costlier but provides a higher likelihood that at least one nanny goat will successfully become pregnant and deliver.
- *Habbanayé* is easier than sheep fattening in Niger, because goats are more resistant to drought and difficult environmental conditions than sheep, and goats can subsist on a wider variety of foods than sheep.
- Goat distribution was more effective at reaching the most vulnerable women than market gardening, because participants were not required to have access to and control over land.
- For para-vets to function effectively, they required start-up training, equipment and support, and then considerable follow up support. Follow up support included regular meetings to exchange knowledge; ongoing communication and coordination with GoN Livestock Technical Services at commune level; continued replenishing of medical supplies; support for transportation to expand rural geographic coverage; and investment into linkages and partnerships to improve stability and sustainability of their work. Where resources allow, providing para-vets with the training and certification from GoN in line with national protocols, although costlier and more time-intensive than the training provided by the FFP projects, will help increase the legitimacy and sustainability as part of the GoN livestock extension services.
- Traders capture most of the profits from livestock sales in Niger, so interventions are needed to shift profits from traders to producers. Complementary options might include improving animal health care access and coverage; improving animal feed through increasing availability and quality of affordable feed blocks using nutritional supplements and appropriate technologies (e.g., *broyeurs*); developing a comprehensive strategy for harvesting crop residues to produce livestock feed in a way that benefits farmers and herders and facilitates well-functioning seasonal migration movement; and investment into alternative livestock product-based value chains (e.g., dried meat).

### 4.2.6 FINANCE, CREDIT, AND SAVINGS

The three FFP projects utilized similar but distinct approaches to increasing beneficiaries' access to savings and credit. One FFP implementer used the SILC approach, another used the *Matu Masa Dubara* (MMD) approach, and the third used the VSLA approach. All three FFP projects targeted women almost exclusively. Women typically selected the IGAs in which they wished to engage, such as making and selling prepared foods, petty trade of cereals or vegetables, groundnut or cowpea processing, and sheep fattening. In addition to those savings and credit groups, two FFP projects supported *warrantage* in project communities (see section 4.2.4). To promote diffusion and sustainability of their SILC model, one

FFP implementer established a PSP network, in which advanced SILC groups were trained and equipped to be able to assist new SILC groups to become established in return for payment.

To promote sustainability and scale, the FFP projects linked savings and credit groups with MFIs such as ASUSU. The FFP implementer helped to facilitate and negotiate the initial contacts among communities, savings and credit groups, and the MFIs, but thereafter the communities and groups negotiated directly with the MFIs.

### **Lessons Learned: Finance, Credit, and Savings**

- Public-private partnerships can be leveraged to strengthen and increase the scale of production for well-functioning savings and credit groups.
- Training private service providers, followed by certification by local administrative and traditional authorities, strengthened their credibility and authority in the community.
- Many participants in savings and credit groups also participated in MCHN-focused care groups (under the FFP development activities' SO1), as well as groups focused on land reclamation and horticulture. One project specifically targeted the women's SILC groups with livestock activities.
- Men are more likely than women to migrate for part of the year, and migration of group members disrupts group solidarity and undermines compliance with a 9-month savings and loan cycle. However, a modified approach to savings and credit that focuses on building capacity of migrants to use their migration income for IGAs and business development, would serve to capitalize on the significant migration-related income and remittance flows that families receive.
- Rather than being conceptualized solely as a livelihoods intervention, credit and savings activities have far-reaching effects on project impact on beneficiary health and nutrition, food security, income, and empowerment.
- Backing initial loans with MFIs in the warehouse receipts system helped beneficiaries build trust in the MFI, an essential element of sustainability.
- Issues of credit and interest rates are potentially sensitive in Islam and in Nigerien society. The FFP development activities found it helpful to engage local religious leaders, local authorities, and communities to explain the approach and solicit concerns before proceeding to implementation.

### **4.2.7 ENVIRONMENT**

The three FFP projects operated in largely agro-pastoral areas suffering from environmental degradation and climate change; strengthening resilience of agricultural and livestock systems necessitated measures to improve land quality. Each activity adopted a different approach to how it addressed environmental challenges and considerations. The largest FFP project implemented a multi-pronged approach comprising 1) BDL as a discrete activity conducted as food for work or food for assets; 2) incorporation of integrated soil fertility management, integrated pest management, and ultimately conservation agriculture into its agricultural activities; 3) governance strengthening of COFOCOMs; 4) establishment of information sharing and consultations between pastoralists and farmers geared toward conflict prevention and mitigation over natural resource management; and 5) integration of environmental emergency scenarios into GoN contingency planning exercises and early warning processes. A second FFP project implemented similar interventions, though at a smaller scale. The third FFP project focused land reclamation efforts to a significant degree on reclamation of pastoral lands, incorporated

environmental considerations through a resilient agriculture (RA) approach, and conducted caravans on farmer managed natural regeneration (FMNR), and other environmental topics.

The FFP projects selected interventions from a set of techniques and technologies that have proven effective for reducing and reversing environmental degradation in the Sahel, such as developing Zai holes, half-moons, and trenches; micro-dosing with fertilizers; planting/regenerating trees, shrubs, and specific plants that protect soil, reduce wind and water erosion, and boost soil fertility; promoting composting; fighting invasive terrestrial and aquatic plants such as country mallow (*Sida cordifolia*), witchweed (*Striga*), and bulrush (*Typha australis*); fencing; creating nurseries for promoted trees and plants; and promoting fuel efficient stoves. Promoted tree species included the Gum Arabic/Acacia (*Acacia Senegal*), Chinese Date (*Ziziphus mauritiana*), Camel's Foot (*Piliostigma reticulatum*), Thorny Acacia (*Acacia nolitica*), and Silver Butterfly (*Bauhinia refescens*). For rehabilitating communal pasturelands, each household in surrounding villages provided labor. The highly drought-resistant grass cram-cram (*Cenchrus biflorus*) was sown to stabilize and restore vegetation in denuded areas.

One FFP implementer was particularly active in natural resource management governance, working with commune-level authorities to develop communal natural resource management plans in participatory forums with GoN stakeholders, local and international NGOs, associations, and other actors. The same FFP implementer also established a system of information exchange between sedentary and nomadic/pastoralist groups to identify conflict flashpoints and prevent conflict, using radio messaging to address issues around security, pastoral corridors, and movement of pastoralists into and out of agricultural areas for pasture and water.

### Lessons Learned: Environment

- Integrating environmental efforts into agriculture and livestock projects helped protect and rehabilitate the natural resource base on which livelihoods depend. Yet it was also essential to integrate environmental considerations into conflict prevention and mitigation, early warning, and disaster risk reduction efforts, as well as into gender analyses and gender action plans.
- Nigeriens practice traditional, and environmentally benign, crop and livestock pest and disease management techniques, which can be incorporated into project-promoted messaging. Pest control examples in Maradi and Niger include using neem, tobacco, chili pepper, and ash.
- Deforestation for fuelwood is a major driver of desertification in Niger; combatting deforestation requires that Nigeriens adopt strategies to minimize fuelwood consumption. Improved stoves are needed that can be locally produced for a profit, as an off-farm IGA. Substituting natural gas for fuelwood is a strategy that should be explored, given that the GoN offers subsidies and other support for adopting this domestically produced fuel source.
- Natural regeneration of pastureland shows promise in Niger. The approach uses native herbaceous seeds and trees (e.g., cram-cram). As a publicly owned resource, regeneration of communal pastureland entails a sensitization effort to mobilize labor from every household that utilizes the pastureland. Land regeneration is also observed to foster the return of wildlife to the area.

- Land reclamation requires establishing and working closely with village land management committees, which can facilitate regeneration activities, and educate the community on issues related to sustainable use of the resource and overgrazing. If well trained and sensitized in issues of gender and equity, land management committees can help ensure that women and vulnerable households can benefit equally.
- Ongoing sensitization (e.g., via fairs and demonstrations) is needed to continue momentum on land reclamation, because food for work/assets are only provided in the first year.
- Once land fertility is restored on a formerly fallow plot, the economic value of that land increases, creating competing demands for that land between public/communal uses and private owners (current and prospective). This potential conflict of interest must be planned for with local authorities in advance.

#### **4.2.8 DISASTER RISK REDUCTION, EARLY WARNING, AND EMERGENCY RESPONSE**

The three FFP projects implemented multi-pronged approaches to DRR and EW/EA, which aimed to strengthen existing GoN-run systems while building village-level capacities and mechanisms that could complement (and operate somewhat independently from) those national systems.

The FFP projects assisted communes to develop contingency plans based on an assessment of commune vulnerabilities and shock history. One FFP project trained field agents to support villages to develop their contingency plans.

Two of the three FFP projects worked to strengthen the GoN EW/EA system, run by the national institutions for the prevention and management of food crises. The GoN EW/EA system encompasses community early warning units (SCAP-RUs) that transmit early warning information to commune-level observatories (OSVs), which synthesize and transmit the data to regional and central levels, although lack of institutional and financial support for OSVs and SCAP-RUs has left many less than functional. Two of the FFP projects provided training and material support to these structures. One FFP project established a Memorandum of Understanding with REGIS-ER in which REGIS-ER assumed responsibility for early warning activities in the FFP project area.

The FFP projects supported communities to analyze and address chronic and longer-term risks. Natural resource management and agricultural activities fought invasive plants, conducted land reclamation, and utilized other strategies to protect and strengthen the natural resource base. The FFP projects reduced risk of conflict by promoting consultation and improved management of natural resources key to pastoralists' and farmers' herds.

One FFP implementer managed a market information system that was to be handed over to SIM-A; the FFP project also transmitted meteorological information to farmers via radio, provided training and equipment to SIM-A, and managed an online market price database with SIM-A.



### Lessons Learned: Disaster Risk Reduction, Early Warning, and Emergency Response

- Because women in Niger don't have authority over land and livestock, SCAP-RUs are disproportionately male. Gender sensitivity is needed with emergency and contingency plans.
- Mobile application (DataWinners) was used to transmit early warning information to the OSVs.
- The FFP development activities could establish a system at the OSVs to synthesize data from the SCAP-RUs.
- It is useful to engage the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) to help establish a framework for regional cooperation in EW/EA and an integrated approach to management of disasters and food crises at village, municipality, department, and region levels. The functionality of all structures, however, especially at commune level, depends on political will and funding.
- Extension of communal and municipal government contingency planning support to village level contingency planning enabled villages to develop locally funded community-level preparedness and response plans (at village and inter-village levels). This would support the management of covariate and idiosyncratic shocks without needing to depend on a national EWS that can be slow and inefficient.
- Conducting a simulation workshop helped identify gaps and challenges and prepare for operationalizing a contingency plan.

## 4.3 MCHN AND WASH LESSONS LEARNED

### 4.3.1 PREVENTION OF MALNUTRITION

**Provision of food rations.** To address the high levels of stunting in Niger, all three FFP projects used a preventive approach, targeting the first 1,000 days from pregnancy to age 2. 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 who received pre- and post-natal services. FFP implementers provided rations every two months to ease the logistical burden of the activity as well as save beneficiaries time through fewer distribution rounds. Food distribution is coupled with culinary demonstrations and ENA and WASH discussions. In one project area, distributions are carried out in beneficiaries' villages (about 500-meter radius) to prevent transportation issues, while in the other two FFP project activity areas, FFP implementers made efforts to have distribution sites within 5 km (1 hour walk) from most of the beneficiaries.

Challenges to ration distribution included one FFP implementer determining that it had more eligible beneficiaries than originally enrolled, forcing it to reduce the geographic area of the intervention. Another FFP implementer found that as women separated out their rations, they did so without washing their hands and using dirty containers. The FFP implementer addressed this issue by distributing clean containers to each woman/mother and installing tippy-tap (handwashing stations) at most of the food sites. One FFP implementer in Burkina Faso found that the limit of participation to one cycle (that is, a woman cannot benefit twice from rations even if she becomes pregnant during the project), was seen as an attempt to enforce family planning. Although this was not an issue in most of the FFP project areas in Niger, one FFP implementer mentioned there were isolated cases of men encouraging their wives to get pregnant to receive food as well as women being incentivized on their own. To compensate for this, the FFP implementer conducted multiple awareness-raising activities around MCHN practices and reinforced



these messages through the School for Husbands and communication networks (composed of religious and customary leaders). To monitor beneficiary satisfaction with the FFP projects, all three FFP implementers established complaint committees at each of their distribution centers, which are intended hear from the beneficiaries and adjust the program where necessary.

In addition to the food aid provided to PLW and children 6–23 months, one FFP implementer provided a household ration during the three months of the lean season (July–September), while another FFP implementers gave Leader Mothers (LMs) a 50 kg of bulgur wheat once every six months as an incentive to motivate their active leadership roles. One FFP implementer created groups for adolescent girls called Safe Spaces, where the girls learned about nutrition, family planning, consequences of early marriage, etc., where both the mentors (who were female and served as role models) and the beneficiaries, received a ration of 25 kg of lentils every six months for their participation. The intent of the ration was to incentivize male family members to allow the girls to participate in the Safe Space groups.

Before the conclusion of food aid distribution, the FFP projects sought to ease the transition off food support, by promoting local alternatives. Two FFP implementers sought to help communities adjust to the phase out of rations by promoting *Garin Yarin* or *Misola*, which are locally fortified flour produced by women’s groups trained by GRET, as a complementary food for children 6–24 months. The FFP project activities sensitized families to the locally made product through care groups, home visits, education lectures, listening clubs, cooking demonstrations, and SILC groups. One FFP implementer encouraged LMs to set up small businesses to purchase and re-sell the flour at the community level for a small profit. The FFP implementer also monitored the local markets to ensure there was adequate supply during promotion. In addition, a fortified-flour production unit was set up in project areas to increase production capacity. All three FFP projects, through community-based groups (one activity used farmer field schools), emphasized cooking demonstrations and using locally available nutritious foods (e.g., Moringa, vegetables, potatoes, sweet potatoes) and recipes to take the place of the food rations. In addition, one FFP implementer notified mothers two months ahead of time that their child would be graduating (when the child reached 2 years) so they could prepare for the end of the food aid. Another FFP implementer announced graduations at distributions to ensure it was clearly known when families graduated.

### Lessons Learned: Provision of Food Rations

- FFP implementers in Niger used food aid in differing ways as incentives for participation in community-based group activities (e.g., food aid was provided to encourage participation in adolescent groups). Follow up on the effectiveness of this approach would be useful.
- Locally made complementary foods that can be purchased in the market (e.g., fortified flour) or made at home through nutritious, seasonally available foods, are options that can be promoted. However, further research on their availability and use may be warranted.
- Given the high fertility rate and low contraceptive use, FFP projects should be aware of potential disruptions to current family planning efforts.

### 4.3.2 TREATMENT OF MALNUTRITION

Current FFP project activities support the screening, referral, and follow up of both MAM/SAM through training community-based health agents, community volunteers,<sup>18</sup> and LMs . Health facilities were

<sup>18</sup> One FFP implementer used village promoters to screen for malnutrition in children under 5 on a monthly basis. The mid-term evaluation noted that additional training and support were needed to ensure measurements were being taken correctly.

routinely able to treat children with SAM with support from UNICEF; however, there were occasional stock outs of therapeutic supplementary foods because of supply chain issues. Depending on the activity, volunteers or LMs followed up to make sure referred children were taken to the health facility and to promote adherence and additional counseling to the family; however, follow through on referrals is often weak.

### **Lessons Learned: Treatment of Malnutrition**

- FFP projects play a key role in building the capacity of community-based networks to screen and refer children with acute malnutrition, as well as to link them to health services once identified as malnourished. Continued support by FFP projects to help identify and refer children for treatment can help reduce the risk of mortality and the long-term consequences of malnutrition.
- FFP projects support the identification, referral, and following up of SAM/MAM cases, which is critical as the activities fill gaps in the health system; however, sustainability should still be an end goal. FFP implementers can continue to build capacity at both the community and facility level to identify, treat, and monitor the malnutrition situation in the country. Using community-based volunteers and mothers is one way to improve sustainability, but FFP 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.

### **4.3.3 STRENGTHENING HEALTH FACILITIES**

All three FFP projects sought to strengthen the overall health system and improve the quality of health service provision through capacity building and logistical support. FFP project activities worked to build the capacity of health facility staff on ENA, family planning, integrated management of childhood illness (IMCI), and other relevant topics. One FFP implementer worked with the GoN Ministry of Health and United Nations Population Fund to strengthen the supply management of FP supplies while another worked with the government to support its roll out of a new National Strategy of Chronic Malnutrition Prevention, focusing on the first 1,000 days of life, by providing training on key health and nutrition messages and activities during the first 1,000 days (including IMCI) at the national, regional, and district levels. However, high turnover of health workers and demand for higher per diems (other organizations pay higher rates and GoN workers often prioritize trainings with higher per diems) have hurt the training process. The same FFP implementer also noted difficulty in working with the government at the national level since the government has institutional requests that were not budgeted for by the implementer, and, therefore, addressing them was difficult. Working with the government during its annual action planning and improved coordination with other NGOs has helped alleviate some of these difficulties, however.

The continued use of health services, which were supported by providing food aid (for all three projects, food ration eligibility was based on health service utilization), rely on quality services being provided. The lack of equipment continues to be a real issue, however, and decreases the quality of care provided to beneficiaries.

### **Lessons Learned: Strengthening of Health Facilities**

- Continued support by FFP projects to build the capacity of health facilities, support infrastructure and logistical needs (including transport options), and improve monitoring systems is important to ensure families have access to quality health services.
- Lack of necessary equipment and competent, trained staff impedes quality improvement efforts. Support by future FFP project activities could help address these needs through coordination and advocacy with the government.
- Discussions during annual government action planning, and improved coordination with other NGOs, can help to alleviate some of the difficulties in working with the government at the national level.
- Additional effort to build partnerships with local governments and other partners to make more effective use of resources and enhance sustainability of project impacts, activities, and approaches could be beneficial.

#### **4.3.4 STRENGTHENING COMMUNITY HEALTH SERVICES**

The FFP projects in Niger engaged with community health service providers to provide preventive and curative outreach services. FFP implementers worked at the community level to establish an active screening and referral system for malnutrition, with one FFP implementer working specifically with village level health huts. The implementer also supported government outreach visits, helping to increase access to the vaccination campaigns, as well as antenatal care services, FP, and malnutrition screening. One FFP implementer also worked with community health workers to provide increased access to FP, as well as screen for acute malnutrition. Niger has many very remote and difficult-to-reach areas and access and transport posed challenges to supporting community health services, therefore the support of community health resources is critical.

### **Lessons Learned: Strengthening Community Health Services**

- Continued support to community health workers is needed to ensure necessary health services are provided in Niger due to the limited range and scope of health facilities.

#### **4.3.5 SOCIAL AND BEHAVIOR CHANGE COMMUNICATION (SBCC)**

Two of the FFP implementers used a community based strategy, called the Care Group model, to promote healthy behaviors that improve the nutritional status of pregnant women and children under 5 through an interpersonal communication and peer learning approach. A LM was selected to work with 10–15 women in her community (this includes pregnant, lactating, and women with children under 2). The LM received training once a month from the activity staff to counsel other mothers on the adoption of optimal health and nutrition behaviors through group sessions and in-home visits. LMs were encouraged to do the following within her group: hold monthly meetings, make home visits, provide cooking demonstrations, and schedule routine screening for malnutrition. LMs in one FFP project area were chosen based on the following criteria: a woman accepted by her peers, who accepts volunteer work, and is literate. LMs were encouraged to continue their activities through award ceremonies and participation in other projects. Incentives and continued inclusion of LMs in FFP project activities were key to motivating LMs, but their inconsistent engagement and lack of supportive supervision still impedes this approach.

All three FFP projects created additional community groups, with at least one group targeting men. One FFP implementer created the men's group "School of Husbands" (one for young men, married and unmarried, and one for older married men), and Safe Space groups (groups for adolescent girls) to facilitate community level behavior change. Another FFP implementer created a group for men, "Male Learning groups," where training on eight essential family practices were conducted, enabling the groups to support the efforts of LMs in their communities.

One FFP implementer used a more comprehensive community group model—where communities decide what groups they would like to form or reinvigorate, since some of the groups were already in existence at the start of the activity, while others were created with activity support. Participation in any group is voluntary. All FFP project activities, except for the warehouse receipts program, are completely community owned. The warehouse receipts program is overseen by the VDC, a government-promoted institution. The activity uses male and female peer educators to provide health, nutrition, and hygiene messages during ration distributions, community gatherings, and home visits. Depending on what the community desires, different groups are also established to provide peer support (e.g., IYCF groups and positive deviance groups). This FFP implementer also created husband schools to target men in the community. Limited qualitative information in the mid-term evaluations from all three projects indicates that the use of these community groups is helping to change community perceptions surrounding gender norms and improve health and nutrition practices.

The FFP projects used multiple forms of mass media to support interpersonal and peer education approaches. FFP implementers used theater (skits and storytelling), community scoreboards,<sup>19</sup> listening clubs, and showing community videos to promote health, nutrition, and WASH messages. The community video approach, which was developed by the USAID-funded SPRING project and Digital Green, enables rural communities to create and share videos to promote the adoption of improved maternal, infant, and young child nutrition (MIYCN), and hygiene behaviors to reduce chronic malnutrition. The idea is that communities watch a series of videos that feature their friends, family, and neighbors demonstrating recommended MIYCN and hygiene practices in their households. Through the videos, pregnant and lactating mothers (and other family members, with a special emphasis on men/husbands) learn simple nutrition and hygiene behaviors that can prevent stunting and reduce maternal and child anemia in the first 1,000 days. The videos emphasize barriers and facilitating factors that were identified through discussions with mothers, mothers-in-law, husbands, and adolescents. The videos were shown once a month by a mediator who would pause the video at key points and facilitate a group discussion. Ideas for future videos come from discussions with community members and a technical advisory group making the creation flexible and on-demand (SPRING/Digital Green 2015). The videos allow beneficiaries to see appropriate practices that they can practice themselves at home, providing relatable and context-specific solutions to barriers to behavior change. An evaluation of the approach found that handwashing practices were improved; the percentage of households with a handwashing station (the evaluation assumed these data represented routine use) increased from 14 percent at baseline to 49 percent after video exposure, and 59 percent at endline. The survey also indicated improvements in responsive feeding.<sup>20</sup> At baseline 31.2 percent of women actively encouraged their child to eat, but after video exposure the percentage rose to 70.2 percent and then again to 96.6 percent at endline (ibid). As recommended by the project, these videos should be shown in coordination with other forms of SBCC, including interpersonal communication and peer group discussions.

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<sup>19</sup> One FFP implementer used giant scoreboards to enable communities to keep track of how the communities were doing on key health topics.

<sup>20</sup> The active feeding scale was calculated based on 20 validated questions that measure the extent that a caregiver is actively feeding a child.

### Lessons Learned: Social and Behavior Change Communication

- Active supervision and support to LMs is critical to their success, and is one of the main sustainability issues.
- The utilization of mass media in addition to interpersonal communication appears to be creating effective behavior change on key areas, including handwashing and responsive feeding. The community video approach is an innovative idea and in particular seems to be appreciated by the communities.
- Promoting behavior change through both interpersonal communication coupled with various forms of mass media to women, adolescents, and key influencers (men, mothers-in-law, imams, etc.) is beneficial to changing individual behavior and creating an enabling environment for behavior change to occur. The utilization of community groups directly involving men is essential to changing health and nutrition behaviors.
- Adolescent-targeted interventions and groups appear to be making progress in empowering young girls; continued efforts to address this target group is warranted given the high prevalence of adolescent pregnancy in Niger.

#### 4.3.6 FAMILY PLANNING

Family planning services are available and free at most health centers (according to the 2012 DHS, 85 percent of modern contraceptives are obtained through the public sector). Injectables, implants, and condoms were the most common methods (INS and ICF International 2013). FP is not a cultural norm, however, and is not commonly practiced. Men play a primary role in decision making around FP and have been found to be resistant, wanting even more than the already high number children. All three FFP projects included men in their FP activities. One FFP implementer sought to address FP needs through multiple entry points, at the community level through the care groups, husband schools, and safe space groups. The FFP implementer specifically addressed adolescent FP needs through its Safe Space groups, seeking to address their specific barriers to use. The FFP implementer also promoted the importance of delayed childbirth for maternal health and sensitized the community to the economic benefits of girls' education through influential male and female community members, awareness raising campaigns, health caravans, radio, and talk shows. The same FFP implementer also provided support to the government to increase its capacity to provide FP through training health facility staff and by strengthening the management of FP supplies. Another FFP implementer also addressed FP on multiple levels, through the use of community groups, including husband schools, awareness raising by community volunteers (peer education, religious leaders, model husbands), training health workers on FP counseling and linkages to services, organizing fairs on FP, incorporating the healthy timing and spacing of pregnancies (HTSP) into community theater events, radio, and media events (e.g., during exclusive breastfeeding week). One FFP implementer sought to address FP needs only through non-artificial methods, using the Couple Strengthening Approach, which seeks to build the capacity of couples to communicate effectively, negotiate, and make decisions jointly; birth spacing and natural family planning were discussion topics. Given the extremely high fertility rate in the country and the high desired number of children, addressing FP is a difficult endeavor but one that will have a tremendous impact on MCHN. One FFP implementer that used a multifaceted approach to address the low access to and utilization of FP noted that contraceptive utilization rate as communicated by the health district, rose from 20.5 percent in 2014 to 30.5 percent in 2015, indicating that while change can occur, progress is slow. As mentioned previously, the government is committed to reducing the high fertility rate and is seeking support from partners to reach its goal of reducing the fertility rate by 50 percent by 2020 (USAD 2016).

### Lessons Learned: Family Planning

- Due to extremely high adolescent fertility rate, continuing to use approaches that specifically address adolescent family planning needs separately is warranted. Interventions and messages need to be tailored to adolescents, since they often have different barriers to family planning use and require different modes of communication than their older peers.
- Additional research to understand effective ways to increase access, demand, and use of FP is warranted.
- Husband Schools and other activities that involve men, including religious leaders and other key influencers in the community, that sensitized and engaged men helped to gain their support for FP in their families and communities, and therefore have shown promise in increasing women's access to FP and healthy birth spacing.

#### 4.3.7 WASH

All three FFP projects in Niger included the following WASH interventions: drilling, repair, and maintenance of boreholes and/or rehabilitation of wells 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 building latrines.

All the FFP projects engaged communities to take responsibility for maintaining water and sanitation infrastructure and supported current government efforts. One FFP implementer worked with the community and the government, by establishing water user associations (WUAs) and CLTS activities, as well as with the Ministry of Environment and Hydrology on the rehabilitation of wells. Communities supported the rehabilitation through labor and local materials and WUAs were then responsible for the management and maintenance of the waterpoints. The same activity sought to reduce the workload of women and girls by improving accessibility of water by building modern water points (well and boreholes) in the communities and promoting women's leadership in the management of water points. The FFP implementer promoted water treatment techniques to ensure quality drinking water and promoted training and employment of local youth in sanitation projects to increase both sanitation and self-sufficiency. The activity is seeking cost-effective solutions to improve water quality such as bio-sand or silver filters when the existing water source is not potable or far away. Two of the FFP implementers worked with households to build safe and hygienic latrines using local materials, and trained masons to become sanitation entrepreneurs and provide quality, affordable products that are locally made, helping them market themselves to customers. The two FFP implementers also supported the building/rehabilitation of latrines and handwashing stations in schools and public localities. One FFP implementer sought to help schools become certified as WASH Friendly Schools through infrastructure support and behavior change communications activities.

One FFP implementer used multiple approaches to address the poor WASH practices in its activity areas, using CLTS and the participatory hygiene and sanitation transformation (PHAST) approach,<sup>21</sup> training community and government staff on the CLTS approach. One FFP implementer tested water points that were constructed and found that 9 of the 72 were contaminated with arsenic, heavy metals, or chemicals, indicating that continued monitoring of water quality is critical. In coordination with the government,

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<sup>21</sup> PHAST is a participatory approach that works on the principal that behavior change will not occur without understanding and belief that change is necessary. Community groups need to analyze their own behaviors to determine how to best change them (WHO and UNDP 2000).



affected communities were informed of the contaminated water points and instructed to treat water when using alternative water sources.

In most of the FFP project activity villages, WUAs were recognized as playing a key role in the management of water points. Support from communities through fees were typical. FFP projects sought to improve the capacity of the WUA. Mobilization of community financial support, especially from men, is difficult; links with municipal councils were not operationalized, limited literacy and numeracy had a negative impact on record-keeping, and those individuals who were responsible for managing the associations were overburdened.

FFP projects used an interpersonal communication strategy (using interpersonal groups e.g., Care Groups, and WASH committee members to share WASH counseling messages) as well as mass media (radio, videos, plays, listening clubs) to reinforce the WASH messages. One FFP implementer used the Child-to-Child<sup>22</sup> (CtC) approach, which identifies children as effective change agents, to change WASH behaviors in schools. That same implementer found that creating separate latrines for boys and girls increased school latrine access from 2 to 38 percent.

Despite intensive efforts, progress on WASH has been particularly challenging, as one activity example illustrates: a total of 18.5 percent of households are using an improved sanitation facility compared to 5.5 percent at baseline; 26.9 percent of households have hand washing stations and use soap and water compared to 15.1 percent at baseline. Although activities are seeing significant improvement, optimal practices are still critically low. Remaining challenges include previously drilled boreholes and wells falling into disrepair because of limited capacity to maintain and repair them, communities hesitant to pay user fees for WUAs, and communities hesitant to accept handwashing and water treatment messages. Achieving ODF communities was particularly challenging. CLTS would trigger communities to build latrines, but with open defecation widely accepted, people reverted to previous practices, particularly when the latrines were not cleaned and maintained. In addition, community members couldn't always afford water user fees or pay for latrines, and there was limited knowledge of existing government subsidies.

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<sup>22</sup> “The child-to-child (CtC) approach is based on the belief that children can be effective agents of change. Children are often responsible for caring for their younger siblings, tending to animals, collecting water, and cleaning, and therefore there is considerable potential for children to raise awareness about hygiene. The CtC approach facilitates children’s understanding of healthy behavior and allows them to identify health/development priorities in a fun, challenging and interesting way, which has had a particular impact as part of health education and promotion in schools” (Save the Children 2016).



## Lessons Learned: WASH

- Lack of water points is a significant barrier to behavior change—for both nutrition and WASH behaviors; without easy access to clean water sources, optimal behaviors are more difficult to implement (e.g., handwashing at all the critical times).
- FFP project activities can aim to strengthen the management capacity of WUAs and encourage community support (both time and monetary inputs) to ensure more efficient and sustainable access to water resources by community members.
- Lack of household income to pay for latrines is a real barrier, but one that could partially be addressed through subsidies or monetary support through saving and lending and/or VDCs. Coordination with the government and other NGOs to improve access to and funding for latrines could help achieve ODF status.
- Although more expensive, stone latrines appear to be more sustainable than wooden ones. FFP projects can help guide communities on how to best build and maintain latrines in their villages.
- Despite in-home water treatment being important for optimal health and nutrition, use of in-home water treatment is not widely available or acceptable in Niger. According to one FFP implementer, despite messaging through skits, plays, listening clubs, peer groups, and so forth, households still felt that water treatment was not useful.
- Close monitoring of new and existing water points is necessary because contamination is possible.
- Activities that support improved community oversight, promoted responsible management of funds of WUA, and provided continual feedback to committee members, helped to build community confidence that WUA used fees responsibly and encouraged community payment of the fees to continue supporting the WUA.
- FFP implementers have found that repairing or constructing boreholes and forming user committees is not enough to ensure long-term access to water. Therefore, they've adjusted their focus to strengthening the entire system, including links with government, reliable, well-run user committees with good management of financial resources, regularly paid fees, skilled masons with good business models and access to parts for maintenance and repair, and standardized monitoring. Communication around maintenance (including cleaning) is warranted to ensure continued use.
- Utilization of community-video techniques coupled with interpersonal communication appears effective in creating changes in WASH behavior.
- Continue to use CLTS to achieve ODF status. Intensive and regular follow-up was required for communities to achieve ODF status under CLTS.

## 4.4 GENDER LESSONS LEARNED

### 4.4.1 PROGRAMMATIC GENDER INTEGRATION

FFP's development activities in Niger were awarded in 2012, soon after FFP made gender integration a requirement in new awards. At that time, however, the expected depth and breadth of gender integration was quite different to what is expected of more recent awards. Given this background, it is important to note that the FFP projects in Niger integrated and addressed gender as a cross-cutting issue, but the FFP projects were not required to hire staff with gender expertise, for example, because that was not an FFP requirement at the time. Similarly, completing a gender analysis in the first year was also not a

requirement. That said, the three FFP projects did address gender issues, though the approaches used differed.

Improving food security and nutrition in Niger is gendered. The widespread practice of early marriage and childbearing that starts in adolescence combined with the high fertility rate is driving population growth; the population of Niger is overwhelmingly young. In turn population growth combined with climate change is fueling land scarcity, which ultimately has an adverse impact on women's access to land. Women also lack access to key resources like water and farming inputs. Lack of access to water results in women spending time collecting water, leaving them with less time to meet their other responsibilities including child care, household duties, and farming.

The FFP projects jointly undertook a gender analysis recognizing the constraints women faced relative to men, in that women's access to land, resources, and health care depends on men. Following the gender analysis, a gender action plan was developed, and one of the three FFP implementers hired staff with expertise in gender. Activities were targeted to women, but the extent to which and when men and community leaders were engaged varied by technical sector across the FFP projects. For example, at the start of the FFP project activities, when it was clear that for women to gain access to land to participate in the project's agricultural activities, it was necessary to discuss women's access to land with men and community leaders and obtain their consent; FFP projects discussed and engaged men and community leaders on this issue. All three FFP implementers also continued to engage men throughout the life of the projects.

One of the three FFP implementer's activities placed a significant focus on working with adolescent girls, enabling them to participate in literacy, livestock, VSLAs, and life-skills training and access to FP information. At the same time, while they recognized the importance of working with adolescent boys, this was not something they could actively work on since staff were overburdened with other activity commitments. Project staff perceived that working on adolescents and youth is critical going forward because the results over the long-term would be more sustainable, since adolescents and youth are more malleable and amenable to change than are older community members who are more set in their ways. At the same time, access to resources such as land and capital for both women and youth remains a significant problem.

An important emphasis of FFP project activities from a gender perspective was ensuring that women participated in project activities in each of the strategic objectives; overall the FFP projects were successful in this objective. Given the context in Niger, this was understandable because men control so much of the resources. The other important concern that FFP projects did not have direct data on is the impact of women's increased participation in project activities on their time in managing 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 families. In this regard, engaging men to share responsibility with women to support women is essential; men need to be clear on their specific role and contribution. Two of the FFP implementers promoted intercouple dialogue regarding FP, but this approach was not applied to the management of household resources and food security.

### Lessons Learned: Programmatic Gender Integration

- The FFP implementers noted that integrating gender from the inception of the project was important given the extent to which food security and nutrition is gendered in Niger: 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. Undertaking a gender analysis was seen as important to informing the development of a gender strategy, and what gender issues a FFP project should prioritize. Integrating gender early in the life of a project is also important to ensure that men and community leaders support and permit women to participate in project activities.
- Hiring staff with expertise in gender at the start of the development activity helps to ensure gender integration across the project. These staff serve as stewards of gender integration in a project, but are not solely responsible for its effective integration. Establishing a gender-focused position at a high enough level is also important to provide the authority to direct and oversee how gender is integrated, and hold staff accountable. Investing in such staff also reflects the commitment of the project to addressing gender issues.
- It is important that the gender and development approach 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.
- The intercouple dialogue approach worked well for promoting dialogue on FP, and could be applied to discussions related to household management of resources for improved food security and nutrition.
- Gender needs to be integrated evenly and consistently across all development activity objectives to achieve the intended impact of promoting gender equality and improving household food security.

#### 4.4.2 GENDER IN AGRICULTURE, LIVELIHOODS, AND DISASTER RISK REDUCTION

**Agriculture.** Both women and men have access to land for farming, but land tenure is insecure. More recent studies have also clearly shown that population pressure and climate change have sub-divided the land available to farmers into smaller portions. In this changing context, women's access to land is more constrained than men's because they depend on men to gain access to land. Despite these challenges, the FFP projects in Niger focused on reclaiming land to enable women and some men to access that land for farming. Once the land was improved and became productive, the land owners could take the land back, which resulted in men and women being unwilling to invest in the land they farmed. That said, one FFP implementer managed to take steps to negotiate access to reclaimed land for a period of 10 years, and this was negotiated by the FFP implementer holding roundtable discussions with local community leaders and government staff, as well as through local advocacy efforts targeting key decision makers who were authorities on customary and state laws. Land that was obtained through this approach was divided into smaller equal-sized plots for women to undertake market gardening activities. However, growing crops on improved lands was challenging; one FFP implementer noted that even with improved land, relative to men, women faced more challenges in accessing inputs and resources to exploit that land. Another FFP implementer noted that in general, older women participated in farming activities, while the younger women participated in the MCHN activities.

The Zai farming technique seemed to work particularly well for women. Other agriculture activities focused on training farmer's groups, which included women and men farmers, or women's groups, men's groups, and mixed groups, to adopt improved varieties of crops, improved practices and simple technologies, post-harvest processing and value addition (such as milling grains), and improved livestock practices. For women, relative to men, the main constraints that the FFP projects observed were that women had less access to land, the size of 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 wary and risk-averse to investing in their land. Women also did not have the same access to farming inputs as men, which resulted in men producing more than women. Though more than 50 percent of the farmers the FFP projects worked with were women, one challenge was that the FFP implementers do not currently report this information in a sex-disaggregated manner because it is not required, making it difficult to track trends and changes in men and women's participation in these activities and explain why men or women may opt for certain activities over others. It is also difficult to comment on whether women produced less than men because of the gendered constraints related to access to resources, be it land, inputs, water, or capital.

**Livelihoods.** The FFP projects' livelihoods activities focused on creating and strengthening value chains and selling post-harvest products such as peanut oil, cowpeas, or small ruminants, which were activities only women worked on; market gardening, *warrantage*, livestock sales, village savings and loans and microfinance, and literacy were activities that men and women participated in. One FFP implementer worked with adolescent girls, giving them access to livestock, life-skills, and village savings and loans. Although several activities promoted the sale of goods, if the sales of goods such as livestock took place at a large market, the FFP implementer noted that women reported not being able to sell these products themselves and instead having to rely on their husbands to sell on their behalf. Women were able to sell items locally in their community but felt it was not proper to sell outside of their communities. Overall, the FFP implementer succeeded in having more women than men participate in these activities, but they could not always control the sales or revenue resulting from them. FFP implementer staff and reports noted that the literacy activity was also successful and highly regarded by men, women, and adolescent girls; it was also acknowledged that adolescent boys and youth should have been engaged in these activities. In the Niger context, this approach worked well because the infrastructure for education is very weak, resulting in a highly illiterate population. Although promoting children's access to secondary school is an important long-term gender equality and resilience-building strategy, the current situation would not allow for FFP projects to focus much on this level of education because of the poor infrastructure. FFP implementer staff noted, however, that one added benefit of the literacy activities was not only that they were valued by adults, because they could manage their agriculture and livelihood activities better, but the literacy activities also led them to value education for their children more, therefore creating the demand at the community level for improved education infrastructure. For women, the literacy activities improved their self-confidence, leadership skills, and ability to participate in household decision making. Another approach that project staff and reports noted worked exceedingly well in the Nigerian context was women's participation in VSLAs.

**Disaster Risk Reduction:** Two of the three FFP implementers undertook activities in DRR and early warning and response. Both encouraged women to participate, and set aside quotas to ensure women's participation. One challenge was that women could not always participate in the meetings, partly because the EWS was not functioning optimally. The distance to the groups also meant that women could not always go to the meetings to participate. When women could participate, however, project staff noted that these activities allowed women to develop leadership skills and have a voice and the self-confidence to speak at meetings.

### **Lessons Learned: Gender in Agriculture and Livelihoods and Disaster Risk Reduction**

- In this context, the FFP implementers found that improving women’s literacy contributes to building their leadership skills, participation in household decision making, and self-confidence. Participants in literacy activities also valued formal education more and were more willing to send their children to school.
- 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 whether they would keep or sell 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.
- The post-harvest processing and value addition activities for women, such as milling grains, was challenging to achieve scale; the gender-specific challenges related to scaling up need to be better understood. One of the main constraints was women’s limited access to and control over resources.
- Focusing on adolescent girls was perceived by FFP implementer staff as very effective to ensure long-term sustainability of results, but they also recognized that the focus should broaden to target adolescents and youth to promote and maintain sustainable results.
- Livestock and village savings and loans activities were very successful for women in the Nigerien context, and contributed significantly to women’s increased revenue and savings.
- Women’s participation in village savings and loans and early warning and response committees gave them a greater voice and self-confidence.
- Adopting more sex-disaggregated indicators in these technical sectors is necessary to track how well male and female beneficiaries are doing over the course of the activity.

#### **4.4.3 GENDER IN MATERNAL AND CHILD HEALTH AND NUTRITION**

Across all three FFP projects, MCHN objectives predominantly engaged women. Men and community leaders were initially sensitized to the MCHN activities, but over the course of the FFP project activities, they were engaged as peer educators or model men. How men were engaged varied, from providing them with training on MCHN needs and the importance of gender equality, to men accompanying their wives to health centers to receive pre- and post-natal care and assisted delivery. There was clear recognition on the part of FFP projects that engaging men was essential because men are the key decision makers regarding women and children’s health and nutrition. Two of the FFP implementers focused on promoting intercouple dialogue regarding FP, health, and nutrition; this was implemented by targeting men to discuss FP in their peer groups first and then to return home to discuss with their wives. Project data also show increased contraceptive use; however, it is not clear whether this is a direct result of engaging men, though it may have contributed to this change. In one activity, staff and reports note that engaging men transformed how men and women related to each other, and they could see more couple dialogue related to FP and men accompanying women to receive health care services. Engaging men seems to have resulted in men changing attitudes and recognizing that women are overburdened with a heavy workload; they discussed solutions to support women, in addition to accompanying them to health centers and providing them with financial support for health center visits. But the FFP implementers also noted that sustaining male engagement activities was challenging because it depended on men volunteering for these activities.

The other challenge they noted was the lack of health infrastructure—while men were willing to accompany their wives to health centers, their area may lack health services. The FFP projects also

worked with adolescents, in school and out of school, mostly in terms of providing them with life-skills; they did not undertake activities around delaying the age of marriage and child bearing in their FFP project activities in a consistent manner to change norms or views. The main approach for targeting mothers was through the Care Groups with LMs, and in some instances this included home visits where group members visited mothers. During household visits, however, group members focused on talking with mothers directly and did not involve the men in the households. In addition, activities were not targeted to the needs of younger or older mothers; all mothers were grouped together. The FFP implementers recognized the importance of working with religious leaders, but only one FFP implementer actively engaged them, with the aim of changing gender norms in the project areas.

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

- FFP implementers noted that engaging men in this context was essential to achieving the MCHN and WASH objectives, and that this has to be an integral part of how the FFP project activity is implemented from project inception to promote the adoption of FP practices, and improved health and nutrition practices; getting men to volunteer their time was challenging. The benefit of this approach, however, was that it could transform relations between men and women to support improved health, FP, and nutrition practices.
- Intercouple dialogue was a successful approach that engaged men to discuss family planning with their wives; there was an increase in contraceptive use, and project data indicate that women valued accessing FP services.
- FFP projects play a key role in expanding access to FP information, referrals, and services.
- One FFP implementer developed an approach to work with community and religious leaders to support normative changes in gender relations. Continued work through similar approaches appears beneficial.
- To address key underlying drivers of malnutrition in Niger, an approach that delays adolescent marriage and childbearing, and targets adolescent mothers is important to consider.



## 5. REFERENCES

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- ACAPS. 2015. “WASH in Guinea, Liberia, and Sierra Leone: The Impact of Ebola.” Thematic Note.
- Alive & Thrive. 2014. “Don’t Forget About Dad: Six Strategies for Getting Fathers More Involved in Child Feeding.” *Degrees*, June 29. Available at: <http://degrees.fhi360.org/2014/06/dont-forget-about-dad-six-strategies-for-getting-fathers-more-involved-in-child-feeding/>.
- Altai Consulting. 2016. *Labor Market Assessment, Reintegration of Returnees: Senegal, The Gambia, Nigeria, Mali, Niger*. Geneva: IOM.
- Anderson, J.W. et al. 1999. “Breast-Feeding and Cognitive Development: A Meta-Analysis.” *American Journal of Clinical Nutrition*. Vol. 70(4), pp. 525–535.
- Asfaw S et al. 2016. *Diversification Strategies and Adaptation Deficit: Evidence from Rural Communities in Niger*. Rome: FAO.
- Attama, Sabine, Michka Seroussi, Alichina Idrissa Kourguéni, Harouna Koché, and Bernard Barrère. 1999. *Niger Enquête Démographique et de Santé 1998*. Calverton, Maryland, USA: Care International/Niger and Macro International.
- Batten-Carew, M. 2016. “Storm in the Sahel: Cross-Border Violence in West Africa.” Available: <http://insightonconflict.org/blog/2016/os/storm-in-the-sahel-cross-border-violence-in-west-africa>.
- Barros, A., et al., *The Lancet*, Vol. 379, “Countdown to 2015: a retrospective review of survey data from 54 countries: equity in maternal, newborn, and child health interventions,” 2012.
- Begum, K., & Dewey, K., Alive & Thrive Insight, “Impact of early initiation of exclusive breastfeeding on newborn deaths,” 2010.
- Béné et al. 2015. *Design, Monitoring and Evaluation of Resilience Interventions: Conceptual and Empirical Considerations*. IDS Working Paper 459. Brighton: Institute of Development Studies.
- Bleichrodt, N. and Born, M.P. 1994. *A Metaanalysis of Research on Iodine and Its Relationship to Cognitive Development: The Damaged Brain of Iodine Deficiency*. J. Stanbury. New York: Cognizant Communication Corporation, pp. 195–200
- de Benoist B., Darnton-Hill I., Davidsson L., Fontaine O. & Hotz C. 2007. “Conclusions of the Joint WHO/UNICEF/IAEA/IZiNCG Interagency Meeting on Zinc Status Indicators.” *Food and Nutrition Bulletin* 28 (3 Suppl), S480–S484.
- Bhutta, Z.A. et al. 2013. “Evidence-Based Interventions for Improvement of Maternal and Child Nutrition: What Can Be Done at What Cost?” *The Lancet*. Vol. 382, No. 9890, pp. 452–477.
- Black, R.E. et al. 2008. “Maternal and Child Undernutrition: Global and Regional Exposures and Health Consequences.” *The Lancet*. Vol. 371, No. 9608, pp. 243–260.
- Black, R.E. et al. 2013. “Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries.” *The Lancet*. Volume 382, Issue 9890, pp. 427–451.
- Cairncross, S. et al. 2010. “Water, Sanitation and Hygiene for the Prevention of Diarrhoea.” *International Journal of Epidemiology*. Vol. 39 (suppl 1): i193–i205.

- United States Central Intelligence Agency (CIA). 2017. "The World Factbook: Niger." Available: <https://www.cia.gov/library/publications/the-world-factbook/geos/ng.html>.
- Comité Permanent Inter-états de Lutte Contre le Sécheresse dans le Sahel (CILSS). 2016. South Dakota: U.S. Geological Survey EROS.
- Crane, R.J.; Jones, K. D. J.; and Berkley, J.A. 2015. "Environmental Enteric Dysfunction: An Overview." *Food and Nutrition Bulletin*. 36(10). S76–S87.
- Daouda H., Galan P., Prual A., Sekou H., Hercberg S. 1991. "Iron status in Nigerian mothers and their newborns." *Int J Vitam Nutr Res* 61, 46–50.
- Debes, A.K. et al. 2013. "Time to Initiation of Breastfeeding and Neonatal Mortality and Morbidity: A Systematic Review." *BMC Public Health*. Vol. 13, Suppl 3, p. S19.
- Defrance D et al. 2017. "Consequences of Rapid Ice Sheet Melting on the Sahelian Population Vulnerability." Proceedings of the National Academy of Sciences, PNAS, 0 (2017). Available: <http://www.pnas.org/cgi/reprint/1619358114v1>.
- Dewey K.G. and Adu-Afarwuah S. 2008. "Systematic Review of the Efficacy and Effectiveness of complementary Feeding Interventions in Developing Countries." *Maternal and Child Nutrition*. Vol. 4, Suppl 1, pp. 24–85.
- Doka M and Monimart M. 2004. "Women's Access to Land: The De-feminisation of Agriculture in Southern Niger?" International Institute for Environment and Development, Issue Paper No. 128.
- ECOWAS (2017). Available: <http://www.ecowas.int/member-states/>.
- Endres K. 2015. *Livelihoods, Agriculture and Health Interventions in Action (LAHIA) Project Mid-Term Evaluation Report*. Rep. Washington: Save the Children U.S.
- European Civil Protection and Humanitarian Aid Operations (ECHO). 2015. *AGIR - Building resilience in the Sahel & West Africa*. Brussels: ECHO.
- Faye M. 2014. *Analyse Genre dans les Régions de Maradi et Zinder*. Washington D.C.: USAID.
- United Nations Food and Agricultural Organization (FAO). 2015. *Resilience Analysis in Niger*. Rome: FAO.
- FAO. 2016. *Cereal Supply and Demand Balance for Sub-Saharan African Countries: Situation as of November 2016*. Rome: FAO/GIEWS.
- United Nations Food and Agricultural Organization (FAO). 2016. *Cereal Supply and Demand Balance for Sub-Saharan African Countries: Situation as of November 2016*. Rome: FAO/GIEWS.
- FAO. 2017. FAOSTAT: Data. Available: <http://www.fao.org/faostat/>.
- Famine Early Warning Systems Network (FEWS NET). 2011. "Niger Livelihood Zones Map." Available: <http://www.fews.net/west-africa/niger/livelihood-zone-map/august-2011>.
- FEWS NET. 2012. *A Climate Trend Analysis of Niger*. Washington DC: FEWS NET.
- FEWS NET. 2014. *Niger Food Security Brief*. Washington DC: FEWS NET.
- FEWS NET. 2015. *Niger Food Security Outlook: October 2015 – March 2016*. Washington D.C.: FEWS NET.

- FEWS NET. 2016. *Niger Food Security Outlook Update: December 2016*. Washington D.C.: FEWS NET.
- FEWS NET. 2017a. *Perspectives sur la Sécurité Alimentaire (Février à Septembre 2017)*. Washington D.C.: FEWS NET.
- FEWS NET. 2017b. *Niger Key Message Update (May 2017): Des hausses atypiques des prix notés au début de la période de soudure*. Washington D.C.: FEWS NET.
- FEWS NET. 2017c. *Niger Price Bulletin (May 2017)*. Washington D.C.: FEWS NET.
- FEWS NET and NOAA. 2017. *Global Weather Hazards Summary (June 9-15, 2017)*. Washington D.C.: FEWS NET.
- Fink, G. et al. 2014. “Scaling-Up Access to Family Planning May Improve Linear Growth and Child Development in Low and Middle Income Countries.” *PLOS ONE*. Vol 9, No. 7, e102391.
- Frankenberger et al. 2013. *Feed the Future Learning Agenda Literature Review: Improving Resilience of Vulnerable Populations*. Washington D.C.: USAID.
- Government of Niger (GoN) et al. 2016. *Enquête Conjointe sur la Vulnérabilité à l'Insécurité Alimentaire des Ménages au Niger (ECVIAM)*. Niamey: GoN.
- GoN. 2011. *Enquete Nationale sur la Migration au Niger (ENAMI)*. Niamey: GON.
- GoN DNPGCCA. 2016. “African Risk Capacity (ARC), Republic of Niger, Operations Plan 2016-2017.” Available: [http://www.africanriskcapacity.org/wp-content/uploads/2017/03/OP\\_Pool3\\_Niger-Operational-Plan\\_EN.pdf](http://www.africanriskcapacity.org/wp-content/uploads/2017/03/OP_Pool3_Niger-Operational-Plan_EN.pdf).
- GoN and Haut Commissariat à l'Initiative 3N (HCI3N). 2015. *Niger's Resilience Priorities*. Niamey: GoN.
- GoN and Union Economique et Monétaire Ouest Africaine (UEMOA). 2013. *Rapport National de l'Enquête Cadre sur la Pêche Artisanale Continentale 2012*. Niamey: GoN.
- Grantham-McGregor, S. et al. 2007. “Developmental Potential in the First 5 Years for Children in Developing Countries.” *The Lancet*. Vol. 369, pp. 60–70.
- Helen Keller International. (2016, September 23. “*HKI Niger and the Lake Chad Crisis: Combating Malnutrition in a “Forgotten Emergency.”*” Retrieved from: <http://www.hki.org/media-room/news/hki-niger-and-lake-chad-crisis-combating-malnutrition-forgotten-emergency#.WPds4vkrLct/>
- Hoddinott, J. et al. 2008. “Effect of a Nutrition Intervention during Early Childhood on Economic Productivity in Guatemalan Adults.” *The Lancet*. Vol. 371, No. 9610, pp. 411–416.
- Horta, B.L. and Victora, C.G. 2013. *Long-Term Effects of Breastfeeding: A Series of Systematic Reviews*. Geneva: WHO.
- Hughes, O. 2014. *Literature Review of Land Tenure in Niger, Burkina Faso, and Mali: Context and Opportunities*. Baltimore: CRS.
- Humphrey, J. 2009. “Child Undernutrition, Tropical Enteropathy, Toilets, and Handwashing.” *The Lancet*. Vol. 374, pp. 1,032–35.
- Institut National de la Statistique (INS). 2016. *Etude Nationale d'Evaluation d'Indicateurs Socio-Economiques et Démographiques (ENISED)*. Niamey: INS.

- INS. 2017. “Statistiques par Secteur: Elevage.” Available: <http://www.stat-niger.org/statistique/index.php/publication/publications-de-l-ins/item/112-elevage>.
- INS and ICF International. 2013. *Enquête Démographique et de Santé et à Indicateurs Multiples du Niger 2012*. Calverton, Maryland, USA: INS and ICF International.
- INS and Macro International Inc. 2007. *Enquête Démographique et de Santé et à Indicateurs Multiples du Niger 2006*. Calverton, Maryland, USA: INS and Macro International Inc.
- INS, UNICEF, and World Food Programme. 2016. “Evaluation nationale de la situation nutritionnelle par la méthodologie SMART en République du Niger” (PowerPoint Presentation).
- INS and World Bank. 2013. *Profil et Déterminants de la Pauvreté au Niger en 2011*. Niamey: INS.
- International Federation of Red Cross and Red Crescent Societies. 2017. Available: <http://reliefweb.int/report/niger/niger-meningitis-epidemic-outbreak-mdrne017-emergency-plan-action-epoa>.
- International Organization for Migration (IOM). 2017a. *IOM Niger Overview: Migrant Resource and Response Mechanism*. Geneva: IOM.
- IOM. 2017b. *IOM Niger: Flow Monitoring Report (Report #2017-4)*. Geneva: IOM.
- IOM. 2017c. “IOM In Your Country: Niger.” Available: <https://www.iom.int/countries/niger>.
- IRIN (2014, February 27). “Niger’s “remarkable” progress in reducing child deaths.” Retrieved from: <http://www.irinnews.org/report/99710/nigers-remarkable-progress-reducing-child-deaths>.
- Karakochuk, C. 2016. “Iron Supplementation in Predominantly Iron-Replete Populations. Is there an emerging concern?” *Sight and Life*. Vol 3 (2).
- Lamberti, L.M. et al. 2011. “Breastfeeding and the Risk for Diarrhea Morbidity and Mortality.” *BMC Public Health*. Vol. 11, Suppl 3, p. S15.
- Land Info Worldwide Mapping. 2013. “Niger.” Available: <http://www.landinfo.com/GeoData%20Country%20pdfs/Niger.pdf>.
- Le Bissonais, A. 2010. “Accompagner l’Insertion Professionnelle des Jeunes au Niger: État des Lieux et Pistes d’Action. GRET.” Available: <http://www.gret.org/wp-content/uploads/09525.pdf>.
- Lin, A. et al. 2013. “Household Environmental Conditions Are Associated with Enteropathy and Impaired Growth in Rural Bangladesh.” *American Journal of Tropical Medicine and Hygiene*. Vol. 89, No. 1, pp. 130–137.
- Maalouf-Manasseh, Z; Oot, L; Sethuraman, K. 2015. *Giving Children the Best Start in Life: Integrating Nutrition and Early Childhood Development within the First 1,000 Days*. Washington, DC: FHI F60/FANTA.
- Mercy Corps. 2016. Sawki. *Non-Emergency Food Assistance Program Annual Results Report (ARR) FY16 – 2016*.
- Millennium Challenge Corporation (MCC). 2014. “Niger Constraints Analysis.” Available: [https://assets.mcc.gov/documents/Niger\\_CA\\_withCover.pdf](https://assets.mcc.gov/documents/Niger_CA_withCover.pdf).
- Ministry of Health and UNICEF. 2013. *National Strategy for the Prevention of Chronic Malnutrition “WADATA YARA.”*

- Office for the Coordination of Humanitarian Assistance (OCHA). *Niger – Diffa: Access, Insecurity and Population Movements (May 2017)*. Geneva: OCHA.
- Prüss-Üstün, A. and Corvalán, C. 2006. *Preventing Disease Through Healthy Environments. Towards an Estimate of the Environmental Burden of Disease*. Geneva: WHO.
- Réseau National des Chambres d’Agriculture du Niger (RECA). 2014a. *La Pêche au Niger: Extrait des Résultats de l’Enquête Réalisée en 2012*. Niamey: RECA.
- RECA and Fédération Nationale des Groupements de Pêcheurs du Niger (FNGPN). 2014. *Point de Situation de la Pisciculture Intensive ou Semi-Intensive le long du Fleuve Niger*. Niamey: RECA.
- Rah, J.H., et al. 2008. “Pregnancy and Lactation Hinder Growth and Nutritional Status of Adolescent Girls in Rural Bangladesh.” *Journal of Nutrition*. Vol. 138, No. 8, pp. 1505–1511.
- Reliefweb. 2017a. “Niger: Meningitis Outbreak - Mar 2017.” Available: <http://reliefweb.int/disaster/ep-2017-000037-ner-0>.
- Reliefweb. 2017b. “Niger: Cholera Outbreak - Oct 2014”. <http://reliefweb.int/disaster/ep-2014-000151-ner>
- Rollins, N.C. et al. 2016. “Lancet Breastfeeding Series: Why Invest, and What It Will Take to Improve Breastfeeding Practices in Less Than a Generation.” *The Lancet*. Vol. 387(10017), pp. 491–504.
- Save the Children. 2014. *State of the World’s Mother 2014: Saving Mothers and Children in Humanitarian Crisis*. Westport, CT: Save the Children.
- Save the Children. 2015. *State of the World’s Mothers Report 2015*. Fairfield, Connecticut: Save the Children.
- Save the Children. 2016. *LAHIA Non-Emergency Food Assistance Program Annual Results Report (ARR) FY16 – 2016*.
- SciDev.Net. 2016. “The Locust Invasions Devastating Niger.” Available: <http://www.scidev.net/global/agriculture/feature/locust-invasions-devastating-niger.html>.
- Sisa, Meredith. 2014. *Niger Food Security Brief. FEWS NET*. Washington D.C.: FEWS NET.
- Sobkoviak, R.M.; Yount, K.M.; and Halim, N. 2012. “Domestic Violence and Child Nutrition in Liberia.” *Social Science & Medicine*. Vol. 74, No. 2, pp. 103–11.
- Spears, D.; Ghosh, A.; and Cumming, O. 2013. “Open Defecation and Childhood Stunting in India: An Ecological Analysis of New Data from 112 Districts.” *PLOS ONE*. Vol. 8, No. 9, e73784.
- SPRING/DIGITAL GREEN. 2015. “SPRING/Digital Green Collaboration Progress Report.” Available at: <https://www.spring-nutrition.org/publications/reports/springdigital-green-collaboration-progress-report>.
- SPRING. “Testing a Responsive Feeding Indicator to Improve Early Childhood Nutrition in Niger.” Accessed March 20, 2017. Available at: <https://www.spring-nutrition.org/about-us/activities/testing-responsive-feeding-indicator-improve-early-childhood-nutrition-niger>
- United Nations Children’s Fund (UNICEF). 2012. *Qualitative study to identify solutions to local barriers to care-seeking and treatment for diarrhea malaria and pneumonia in select high burden countries. Report on findings from Niger*.

- UNICEF. 2017. “UNICEF Data: Drinking Water.” Available: <https://data.unicef.org/topic/water-and-sanitation/drinking-water/#>.
- UNICEF. 2014. *State of the World’s Children 2014: In Numbers. Every Child Counts*. New York: UNICEF.
- UNICEF/Coverage Monitoring Network/ACF International (2012) *The State of Global SAM Management Coverage 2012* (New York & London, August 2012).
- UNICEF. 2014. *UNICEF Annual Report 2014*. Niger.
- UNICEF. 2015. *UNICEF Annual Report 2015*. Niger.
- United Nations Development Programme (UNDP). “Gender Inequality Index.” Accessed February 27, 2017.
- United Nations High Commissioner for Refugees (UNHCR). *Niger Factsheet (April 2017)*. Geneva: UNHCR.
- United States Agency for International Development (USAID). 2010. *Niger Water and Sanitation Profile*. Available at: [http://pdf.usaid.gov/pdf\\_docs/Pnado937.pdf](http://pdf.usaid.gov/pdf_docs/Pnado937.pdf)
- USAID. 2014a. *Climate Change and Conflict in the Sahel: Findings from Niger and Burkina Faso*. Washington DC: USAID.
- USAID. 2014. *Baseline Study for the Title II Development Food Assistance Programs in Niger*.
- USAID. 2015a. *USAID Niger Fact Sheet: Enhancing Resilience*. Washington DC: USAID.
- USAID. 2015b. *USAID Niger Fact Sheet: FACT SHEET Resilience and Economic Growth in the Sahel – Enhanced Resilience (REGIS – ER)*. Washington DC: USAID.
- USAID. 2015c. *Resilience and Economic Growth in the Sahel – Accelerated Growth (REGIS – AG)*. Washington DC: USAID.
- USAID. 2015d. *Sahel Resilience Learning Project (SAREL)*. Washington DC: USAID.
- USAID. 2016. *Family Planning Assessment for the Resilience in the Sahel Enhance (RISE) Initiative*.
- United States Government (USG). 2016. *U.S. Government Global Food Security Strategy: FY2017-2021*. Washington DC: USG.
- van Haeften, R.; Anderson, M.A.; Caudill, H.; and Kilmartin, E. 2013. *Second Food Aid and Food Security Assessment (FAFSA-2)*. Washington, DC: FHI 360/FANTA.
- Victora, C.G.; Barros, F.C.; Horta, B.L.; and Lima, R.C. 2005. “Breastfeeding and School Achievement in Brazilian Adolescents.” *Acta Paediatrica*. Vol. 94, pp. 1656–1660.
- World Bank (WB). 2013a. *Agricultural Sector Risk Assessment in Niger: Moving from Crisis Response to Long-Term Risk Management*. Washington D.C.: World Bank.
- WB. 2013b. *Country Partnership Strategy for the Republic of Niger for the Period of FY13-FY16*. Washington D.C.: World Bank.
- WB. 2016. “International Development Association Project Paper on a Proposed Additional Grant in the Amount of SDR 16.3 Million (US\$22.5 Million Equivalent) and a Proposed Grant from the Adaptive



Social Protection Trust Fund in the Amount of US\$8.5 Million to the Republic of Niger for an Adaptive Social Safety Nets Project).” Washington D.C.: World Bank.

WB. 2017. “World Bank Open Data.” Available: <http://data.worldbank.org/>.

World Food Programme (WFP). 2012. “Niger General Logistics Planning Map.” Available: <http://reliefweb.int/map/niger/niger-general-logistics-planning-map-26-april-2012>.

World Health Organization (WHO). 2007. “Vitamin and Mineral Nutrition Information System: Summary Tables and Maps on Iodine Status Worldwide.” Available at: [http://www.who.int/vmnis/database/iodine/iodine\\_data\\_status\\_summary/en/](http://www.who.int/vmnis/database/iodine/iodine_data_status_summary/en/).

WHO. 2009. *Global Prevalence of Vitamin A Deficiency in Populations at Risk 1995-2005*. WHO Global Database on Vitamin A Deficiency.

WHO. 2010. *Nutrition Landscape Information System (NLIS) Country Profile Indicators Interpretation Guide*. Geneva, Switzerland: WHO.

WHO. 2013. “Urinary iodine concentrations for determining iodine status deficiency in populations. Vitamin and Mineral Nutrition Information System.” Geneva: World Health Organization; (<http://www.who.int/nutrition/vmnis/indicators/urinaryiodine>, accessed [March 7, 2017]).

WHO. 2015. *Niger: WHO Statistical Profile*. Geneva: WHO.

WHO. 2016. *Adolescent contraceptive use. Data from L'Enquête Démographique Et De Santé Et À Indicateurs Multiples Du Niger (Edsn-Mics), 2012*.

WHO and UNDP. 2000. *The PHAST Initiative. Participatory Hygiene and Sanitation Transformation. A new approach to working with communities*.

WHO; UNICEF; and International Council for the Control of Iodine Deficiency Disorders. 2007. *Assessment of Iodine Deficiency Disorders and Monitoring Their Elimination*. 3rd ed. Geneva: WHO.

WHO, UNICEF, and USAID. 2015. *Improving Nutrition Outcomes with Better Water, Sanitation, and Hygiene: Practical Solutions for Policies and Programs*. Geneva: WHO.

Wuehler, S.E and Hassoumi, A.B. 2011. “Situational analysis of infant and young child nutrition policies and programmatic activities in Niger.” *Maternal and Child Nutrition*, 7 (Suppl. 1), pp. 133–156.

Ziaei, S.; Naved, R.T.; and Ekström, E.C. 2012. “Women’s Exposure to Intimate Partner Violence and Child Malnutrition: Findings from Demographic and Health Surveys in Bangladesh.” *Maternal & Child Nutrition*. Vol. 10, No. 3, pp. 347–59.

## APPENDIX 1. NUTRIENT CONTENT OF A 100 GRAM GARIN YAARA SACHET

### LA COMPOSITION NUTRITIONNELLE DE GARIN YAARA

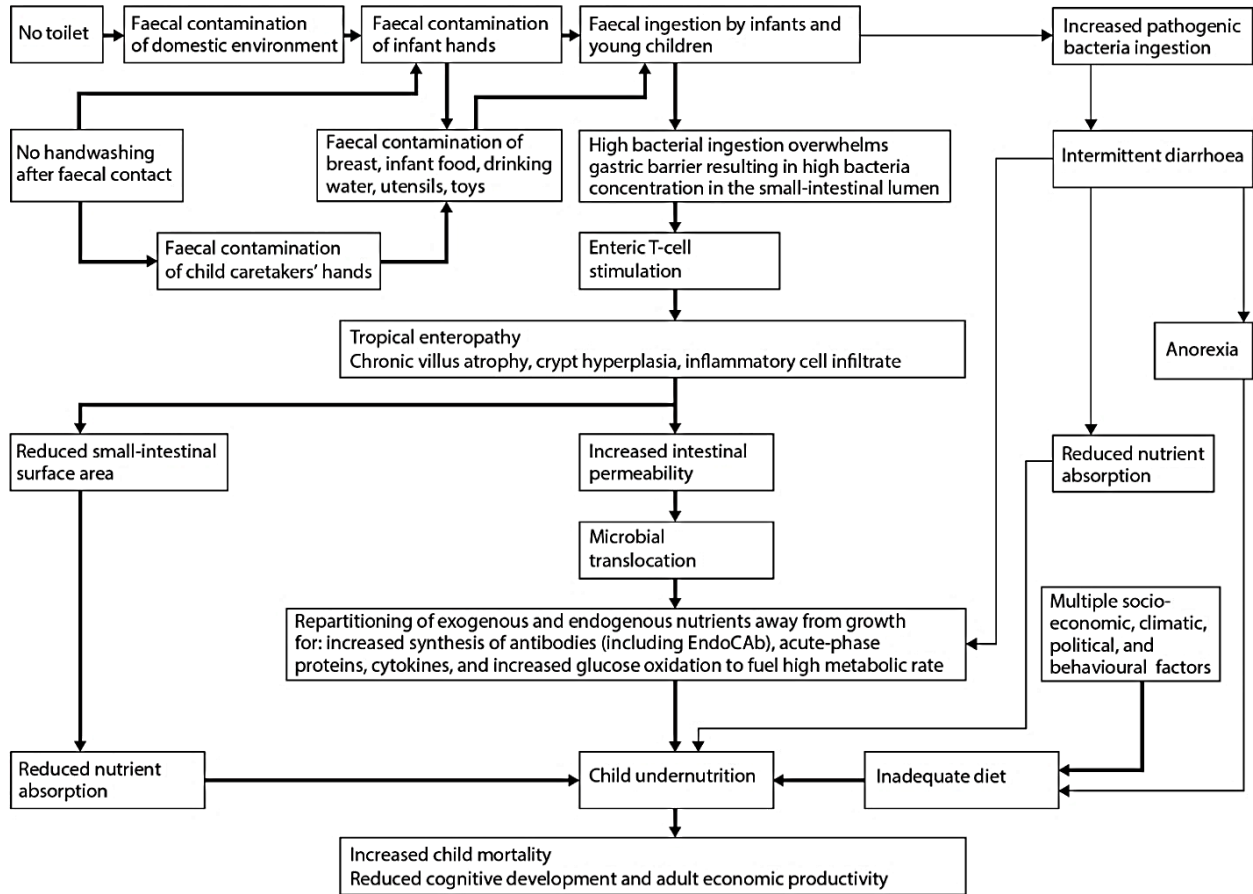
#### (POUR 100 G DE FARINE INFANTILE)

**Energie (kcal) 414,95    Lipides (g) 9,96    Protéines brutes (g) 16,44    Protéines digestibles (g) 13,15**

Sodium (mg)	317,84	Acide ascorbique (mg)	27,02
Potassium (mg)	406,73	Vitamine D (UI)	112,36
Calcium (mg)	273,53	Thiamine (µg)	399,13
Chlore (mg)	489,72	Riboflavine (µg)	372,83
Phosphore (mg)	338,56	Vitamine B6 (µg)	421,09
Fer (mg)	34,23	Nicotinamide (µg)	6569,22
Cuivre (µg)	609,14	Vitamine B12 (µg)	0,54
Magnésium (mg)	106,06	Acide folique (µg)	120,50
Iode (µg)	224,15	Acide pantothénique (µg)	681,72
Zinc (µg)	10748,10	Vitamine E (UI)	18,51
Manganèse (µg)	1508,37	Vitamine K1 (µg)	17,01
Sélénium (µg)	27,18	Biotine (µg)	8,09
Vitamine A (µg équ. rétinol)	522,59		

## APPENDIX 2. POSSIBLE PATHWAYS OF INFECTION LEADING TO CHILD UNDERNUTRITION AND MORTALITY

Poor water, sanitation, and hygiene access (e.g. lack of 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 3. 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 in-home 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, postpartum, 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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