

BUILDING LIVELIHOODS ON THE FRONTLINES OF CLIMATE CHANGE

IDENTIFYING MARKET OPPORTUNITIES AND AGRICULTURAL VALUE
CHAINS IN THE SAHEL REGIONS OF NIGER, BURKINA FASO AND MALI

August

2014





This study was produced with funding from the UK Department for International Development (DFID) as part of the project development phase for Scaling Up Resilience for Over One Million people in the Niger River Basin of Niger, Burkina Faso, and Mali (SUR1M), one of 10 projects across the Sahel Region for which a Concept Note has been approved by the DFID-funded Building Resiliency and Adaptation to Climate Extremes and Disasters (BRACED) Programme. The SUR1M consortium is led by Catholic Relief Services, and brings together CAFOD (Catholic Agency for Overseas Development), *Caritas Développement* (CADEV) Niger, Catholic Organisation for Development and Solidarity (*Organisation Catholique pour le Développement et la Solidarité*) OCADES Burkina Faso, Caritas Mali, Farm Radio International (FRI), United Nations Development Programme (UNDP), Agrometeorology, Hydrology, Meteorology (AGRHYMET) Regional Centre, Research Programme on Climate Change, Agriculture and Food Security (CCAFS), and Tulane University.

Cover Photograph: Women from the village of Tourbey in western Niger stand with buckets used for carrying water from the village well. Tourbey, Ouallam department, Tillaberi region, Niger, 15 April 2014, Photographer: François Therrien for CRS

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TABLE OF CONTENTS

Executive Summary	1
Acronyms	5
1. Introduction	6
1.1 SUR1M Objectives	7
1.2 SUR1M Study Zone	8
1.3 Study Objectives	10
2. Study Methodology	11
2.1 Field Survey Instruments	11
2.2 Literature Review	11
2.3 Study Timeframe, Team, and Collection Protocol	12
3. Research Context	17
3.1 Regional Geography and Livelihoods	17
3.2 Overview of Field Study Sites	32
4. Key Findings	37
4.1 Market Opportunities Identification—Agricultural Crops	40
4.2 Market Opportunities Identification – Livestock	54
4.3 Market Opportunities Identification – Forestry	64
4.4 Analysis of Off-Farm Migration Opportunities	67
5. Recommendations	70
5.1 Crop, Livestock and Forest Market Opportunities	73
5.2 Investment Strategies Supporting Out Migration	76
Annexes	79
Annex 1. Literature Review	79
Annex 2. Field Research Team and Interpreters	79
Annex 3. Training Agenda	80
Annex 4. Matrix of KII data	89
Annex 5. Village Leader Survey – Summary Description	94
Annex 6. FGD Composition by Ethnicity and Livelihood	94

EXECUTIVE SUMMARY

Catholic Relief Services commissioned Tulane University's Disaster Resilience Leadership Academy to complete this report as part of a series of studies to inform new activities under CRS' Consortium SUR1M initiative. SUR1M is one of 10 projects across the Sahel Region provisionally approved by the UK's Department for International Development (DFID) funded Building Resiliency and Adaptation to Climate Extremes and Disasters (BRACED) umbrella program. The report assesses different market opportunities and examines priority crop, livestock, and forestry value chains for men and women. It identifies barriers to and opportunities for men and women's full participation or inclusion and offers strategies to overcome identified barriers.

Recommendations are proposed, based on a 45-day study in three targeted countries in the Sahel region that show a high vulnerability to food insecurity: Burkina Faso, Niger, and Mali. SURIM will leverage the results of this study to ensure that the market opportunities and value chains promoted in the program phase will offer opportunities for both men and women to participate. The study covers 20 villages in 16 communes in the Sahel Region of Burkina Faso, the Tillaberi Region of Niger, and the Gao Region of Mali, using key informant interviews (KII), focus group discussions (FGD), and a structured Village Leaders Survey (VLS).

KEY FINDINGS

A total of 347 participants attended 20 FGDs across the three study sites, of which women comprised 56.8 percent. A total of 27 key informant interviews (KII) were conducted, of which only one was a woman (3.7 percent).

Market Opportunities Identification – Agricultural Crops

Sesame is identified as the most frequently marketed crop in Burkina Faso and Niger, while participants in Mali exclusively grew vegetables for the market, due to their proximity to the Niger River and access to water. Groundnuts and cowpeas were also highly cited as market crops in both Burkina Faso and Niger. Among women, the most frequently grown market crops, in addition to vegetables, include sesame,

cowpeas, okra (gombo), and hibiscus. The principal crops grown by men are millet, sorghum, and cowpeas.

Crop sales generally take place during the harvest season; this is when there liquid assets are needed to manage debts that have been assumed during the lean hunger season – a time when food stocks are low. In the study sample, 50 percent of crop sales occurred during the harvest season, while 35 percent was sold in the dry season prior to the lean hunger period.

Value Chain Integration and Credit Access

There is very poor articulation amongst producers and service providers interviewed in the crop value chains, thus very weak vertical integration. This entails, most importantly, the universal absence of any formal or de jure contractual arrangements among producers, buyers, collectors, wholesalers, or other actors interviewed in the value chain. Credit provisioning or access, for borrowing or lending purposes, occurs almost exclusively in kind, in the form of crop payments, rather than cash. Micro-credit institutions are ubiquitously absent, thus, producers and value chain service providers rely on informal kin and non-kin networks to secure loans for economic transactions and business operations.

There is a widespread lack of knowledge and ability on how to obtain basic farm inputs, including improved seed, fertilizer, pesticides, farm implements, etc. Furthermore, producers do not have the agronomic training on technical/time sensitivity know-how on planting particular improved seed varieties, nor on growing conditions in terms of water, soil, and other biophysical requirements.

A lack of credit and financing business operations was consistently cited as the key constraint to improving business activity among crop wholesalers and collectors.

Market Opportunities Identification – Livestock

Intensive animal fattening is a primary commercial activity, with at least 84 percent of production sold in local markets. Poultry production (chickens) ranks high as a viable income earning activity among women, with 75 percent being sold. Customary grazing of sheep and goats as an income-generating activity (IGA) is fairly widespread, along with intensive feeding of sheep, goats and cows.

Structural barriers identified for crop value chains also cause challenges for livestock, small ruminant, and poultry value chains.

Recommendations

The underlying structural dimensions and intersecting segments of viable, functioning market systems must be addressed if interventions are to have a lasting effect. In order to build viable market opportunities in the region, the following structural pillars must be in place:

Agro-Input Supply

For viable crop and commodity markets to function efficiently, commercially viable micro-enterprises must be present; these include private sector and community-based producer groups, amongst others, and they should be capable of providing smallholders with a range of inputs.

Agricultural Extension and Training

New innovative models of agricultural extension and training have been piloted in many programs and should be considered for replication and scale up under SUR1M. These include community-based Lead/Master Farmer models, Farmer Field Schools, and agro-input dealers providing farmers with a range of products and services. Some examples of these products and services include agronomic training in the use of improved seed varieties, improved methods of soil and water conservation, and the use of agricultural water management technologies.

Market Information Systems

Farmers need access to timely pricing information, delivered through effective communication channels, including local radio, village market information kiosks, and cell phone technology. Resources should be mobilized to design new innovative instruments for the dissemination of market information to local producer groups.

Post-Harvest Management

Improved crop storage technology is notably absent throughout the communities visited. A well designed system of inventory credit and warehouse receipting ('warrantage'), tied to community cereal banks with improved storage facilities for warehousing crops, would enable producers to address multiple obstacles that they are confronting. Such obstacles include a lack of micro-credit and operating capital for farm production, lack of access to improved seed, fertilizer,

and pesticides, poor crop storage facilities, and a community grain reserve to buffer the most vulnerable through periods of acute scarcity of food supply.

Production Clusters

Smallholders should organize as production clusters or units within a larger region and build a critical mass or economy of scale, vastly improving their ability to organize themselves and leverage resources needed to collect, sort, grade, bulk, and transport crops to area markets.

Market opportunities for women include:

- Production of sesame, groundnuts, cowpeas, okra, hibiscus, and vegetables;
- Soap production;
- Horticultural crops using small-scale family drip irrigation kits.

Intensive fattening of cows, sheep, and goats should be expanded. Such efforts will need to be accompanied by supporting micro-credit institutions to support capital-intensive investments in feed supplements, forage, and veterinary care.

Fodder production on degraded lands (BDL) holds promise. Bourgou production in Mali may have potential for development. Sufficient land area may be a limiting factor and bourgou seeds would need to be made more accessible.

Feed supplements for livestock are in short supply and strong demand, particularly in the Sahel Region of Burkina Faso. Improved sourcing of the feed supplement is needed to increase production and should be further researched to identify market opportunities.

Markets for high value NTFPs appear to be underdeveloped and could potentially be expanded. Tree species with high market value include gum Arabic (acacia Senegal, acacia radiana), acacia nilotica (good fodder source for small ruminants in the dry season), and moringa (medicinal and nutritional value). Soap production from balanites is another market opportunity that could hold some potential.

ACRONYMS

BRACED	Building Resilience and Adaptation to Climate Extremes and Disasters
CBO	Community-based organisation
CRS	Catholic Relief Services
CVD	Conseil Villageois de Développement (Village Development Council)
DFID	Department for International Development
DRM	Disaster Risk Management
DRR	Disaster risk reduction
EWRG	Early Warning/Response Group
FEWS	Famine Early Warning System
FGD	Focus Group Discussion
(F)RA	(Field) Research Assistant
IGA	Income-generating activity
IPCC	Intergovernmental Panel on Climate Change
KII	Key Informant Interview
LC	Lead Consultant
MOI/AVC	Market Opportunities Identification/ Agriculture Value Chains
NGO	Non-governmental organization
NRM	Natural resource management
NTFP	Non-timber forest product
SILC	Savings and Internal Lending Communities
SUR1M	Scaling Up Resilience for One Million people in the Niger River Basin of Niger, Burkina Faso, and Mali
TU/DRLA	Tulane University Disaster Resilience Leadership Academy
USAID	United States Agency for International Development
USGS	U.S. Geological Survey
VLS	Village Leader Survey

1. INTRODUCTION

Catholic Relief Services commissioned Tulane University's Disaster Resilience Leadership Academy to complete this report as part of a series of studies to inform new activities under CRS' Consortium SUR1M initiative. SUR1M is one of 10 projects across the Sahel Region provisionally approved by the DFID-funded Building Resiliency and Adaptation to Climate Extremes and Disasters (BRACED) umbrella program. SUR1M is designed to reduce one million people's risk to droughts and floods in 30 communes in the Niger River Basin. Project interventions will focus on livelihoods and malnutrition, natural resource management (NRM) and climate adaptation, governance with DRR, women's participation and leadership in community level decision-making structures and bodies, and collective learning and evidence-based decision-making, positioning communes and villages to make behavioral and institutional changes.

The TU/DRLA research team hopes these findings will better empower communes and villages to make behavioral and institutional changes to increase their resilience to climatic changes. This will be evidenced by an uptake in new techniques and timesaving technologies, participation in Savings and Internal Lending Communities (SILC) and Early Warning/Response Groups (EWRG), strengthened market linkages, use of climate data for decision-making, improved nutrition, diversified and improved revenues, more equitable land usage and ownership, a sustainable natural resource base, and more secure assets.

In preparation for the full project implementation phase SUR1M has commissioned this study, Market Opportunities Identification and Agriculture Value Chains Study¹. Findings from this study will inform the possible range of diversified livelihood options for seasonal migrants (largely men), agro-pastoralists and pastoralists, differentiating among the distinct opportunities available to both men and women. The study identifies off-farm and out migration labor activities, crop and livestock farm strategies, and non-timber forest product (NTFP) opportunities. Appropriate interventions are identified to facilitate access to profitable markets, thereby increasing income of targeted groups. SUR1M

¹ This is the second of two SUR1M commissioned studies. The first is entitled *Economic and Technical Feasibility Analysis of Climate Change Adaptation Techniques with a Focus on Climate Smart Agriculture (CSA)*. This report on MOI/AVC serves as a companion study and, together with the climate change findings, is to be used in informing program design for SUR1M that is presently in a nascent phase.

will leverage the results of this study to ensure that the market opportunities and value chains promoted in the program phase will offer opportunities for both men and women to participate.

The findings of this report will inform the target communes' leaders and populations about the range of most appropriate technical options. The findings will take into account the agro-ecologies in the study zones, the market context (including existence of support services and expertise in the public and private sectors, suppliers of equipment, all materials required locally, in the region, and in country), and community priorities and needs. The recommendations proposed, based on a 45-day study in three targeted zones of high vulnerability to food insecurity in the West African Sahel, will support a consultative decision making process. This process will be undertaken by CRS and a consortium of program partners in order to support investments that will help build human and environmental resilience to the increasing deleterious effects of climate change. This study pays special attention to the most inclusive and appropriate practices to maximize both men and women's participation.

The SUR1M objectives and expected outcomes are outlined in the following sections.

1.1 SUR1M OBJECTIVES

CRS elaborated the following program objectives:

1. SUR1M will increase resilience to climate extremes by increasing disaster risk preparedness and climate change adaptation. It will scale impact by reinforcing the disaster risk management capacity of 30 communes through technical assistance, performance-based matching grants for DRR planning targeted at strengthening markets and natural resource management (NRM), and mass media campaigns. SUR1M will increase revenue opportunities and financial services while reducing malnutrition. Women's participation in early warning and savings groups will increase, as will integration of gender-responsive DRR. Finally, SUR1M will catalyze DRR and climate adaptation learning and build evidence of impact.
2. Target populations in Niger, Burkina Faso and Mali will increase resilience to climate extremes. SUR1M will work with communes and citizens to increase preparedness, strengthen mitigation

practices and build critical government and community assets to reduce existing vulnerabilities. Together, these efforts will create a culture of disaster risk management (DRM) that expands livelihoods, increases food security, reduces malnutrition, improves market and financial access, strengthens participatory governance and empowers women. Early adopters will see immediate resiliency gains, and after three years, SUR1M will benefit the entire population by strengthening the risk reduction system as a whole.

1.2 SUR1M STUDY ZONE

SUR1M operates in 30 communes in three contiguous zones across Burkina Faso, Niger and Mali (Map 1). These include:

- 10 communes in the Sahel Region of Burkina Faso (Seno, Yagha, Oudalan Provinces);
- 13 communes in the Tillaberi Region of Niger (Ouallam, Tillaberi, Tera Departments); and
- 7 communes in the Gao Region of Mali (Ansongo, Gao Circles).

These areas are relatively food insecure and highly vulnerable to climate variability and change, particularly episodes of drought and flooding. SUR1M will target 80 percent of the total population in these communes for a total of 614,125 inhabitants in Niger, 423,789 in Burkina Faso, and 174,514 in Mali.

Map 1: SUR1M Project Zone

Within this zone, CRS selected an opportunistic sample of communes and villages for this study. This includes eight villages in six communes in the Sahel Region of Burkina Faso, eight villages in six communes in Niger, and four villages in four communes in Mali.

SUR1M Communes

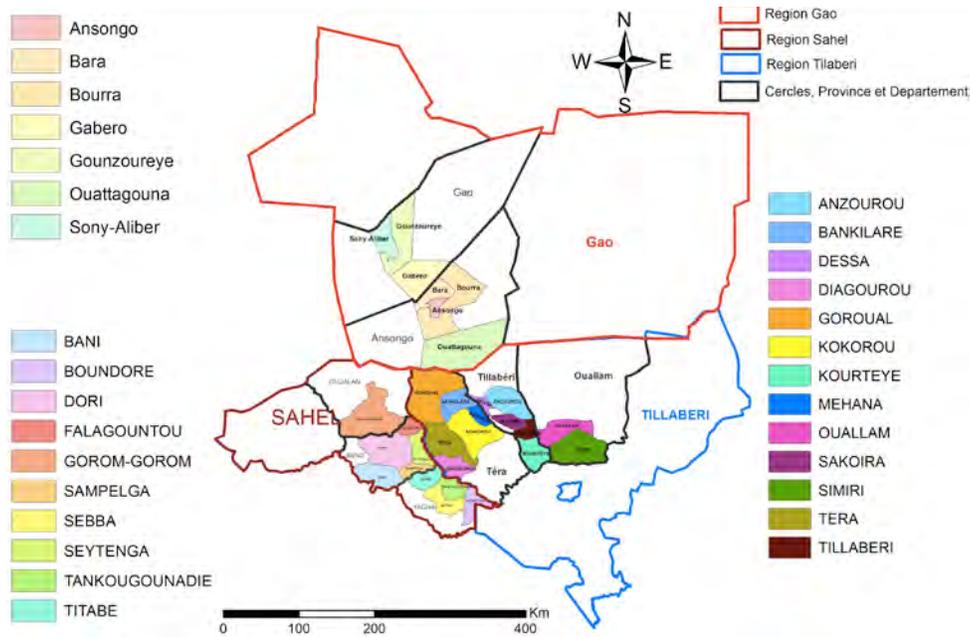


Table 1: Sample Study Sites

VILLAGE	COMMUNE	PROVINCE	CRITERIA	DISTANCE FROM DORI
Bani	Bani	Seno	Close to market	43km
Belgou	Falagountou	Seno	Close to river	45km
Titabe	Titabe	Yagha	Close to market	70km
Pagalaga	Bani	Seno	Far from market	57km
Yatakou	Seytenga	Seno	Far from market	42km
Bellare	Seytenga	Seno	Far from river	63km
Gatougou	Titabe/Sebba	Yagha	Close to river	91km
Balliata	Gorom-Gorom	Oudalan	Far from river	32km

Sahel Region, Burkina Faso

VILLAGE	COMMUNE	DEPARTMENT	CRITERIA	DISTANCE FROM DEPARTMENT CAPITAL
Zindigori	Tera	Tera	Close to market	10 Km
Mehana	Mehana	Tera	Close to market	90 Km
Sakoira	Sakoira	Tillaberi	Close to river	10 Km
Daiberi	Tillaberi	Tillaberi	Close to river	5 Km
Simiri	Simiri	Ouallam	Far from river	25 Km
Kabefo	Ouallam	Ouallam	Far from river	73 Km (from Niamey)
Hari Kirey	Ouallam	Ouallam	Far from market	50 Km
Kanda	Simiri	Ouallam	Far from market	36 Km

Tillaberi Region, Niger

VILLAGE	COMMUNE	DEPARTMENT	CRITERIA	DISTANCE FROM GAO
Karibandia	Soni-Ali-Ber	Gao	Far from market	55 Km
Ansongo	Ansongo	Ansongo	Close to market Far from river	1000 Km
Bara	Bara	Ansongo	Close to market Close to river	55 Km
Tacharane	Gounzoureye	Gao	Close to river	22 Km

Gao Region, Mali

1.3 STUDY OBJECTIVES

This study addresses two principal objectives outlined in the Teaming Agreement and Scope of Work:

1. Inform the possible range of diversified livelihood options for targeted segments (highly vulnerable, vulnerable but viable, and the market ready/market engaged) of seasonal migrants (largely men), agro-pastoralists, and pastoralists, identifying in-demand, off-farm labor skills, crops and livestock as well as non-timber forest product-based opportunities.
2. Facilitate the access of targeted segments to profitable markets by linking them with the actors of these products' value chains including different categories of buyers, service providers, and input suppliers, to increase their incomes.

This investigation will pay particular attention to the accessibility of different market opportunities and value chains to both men and women. The study will further identify barriers to and opportunities for men and women's full participation or inclusion and offer strategies as to how to overcome any barriers identified.

2. STUDY METHODOLOGY

This section provides an overview of the field methodology, including design of field survey instruments, training and pre-test of the field tools, and overview of the field schedule. Findings from this study are based on a triangulation of information from primary field data and an intensive review of the secondary literature, gleaned findings from various project and program reports provided by CRS, as well as government and research institutions. Additional studies relating to topical areas of this report were collated from an online search as well as reports and documents obtained by the LC and RA team members during the course of the study. A repository of all reports and studies relating to this report have been archived electronically in a SUR1M Dropbox folder by CRS.

2.1 FIELD SURVEY INSTRUMENTS

Collaborating with a team of research assistants and local interpreters, the TU/DRLA Research Team designed three data collection instruments for use in the target communities. Field instruments designed for primary data collection in each study region included:

1. **Key Informant Interview (KII)** – a key informant interview matrix guide sheet designed for interviewing relevant stakeholders (normally not exceeding 1-2 individuals maximum);
2. **Focus Group Discussion (FGD)** – a data matrix in Word, designed to complement the KII guide sheet, used to facilitate the FGD sessions for men and women;
3. **Village Leaders Survey (VLS)** – a structured informational questionnaire, carried out with the village chief and elders/leaders (approximately 5 per village), identifying basic features of history, demography, livelihoods, and infrastructure.. The VLS is designed as a 45 – 60 minute discussion and orientation to the village upon arrival in each community.

2.2 LITERATURE REVIEW

In addition to the pre-study literature review, an additional literature review took place to further compliment this study. Approximately 60 documents were scanned as possible background literature for this study, of which approximately 20 were reviewed in-depth and used to contribute to the findings of this report.

The literature fell into four general categories:

1. General background information on market opportunity interventions;
2. General background country/region specific information on livelihoods, agricultural practices, market access, etc.;
3. Specific information on market flows for the countries/regions covered in the study;
4. Specific information on markets that serve to triangulate or complement the information collected in the FGDs and KIs.

Literature referenced in this report is found in Annex 1 as a bibliography. It is in a matrix inventory format including studies, reports, and documents, relevant to this report.

2.3 STUDY TIMEFRAME, TEAM, AND COLLECTION PROTOCOL

This study comprises five methodological phases:

1. **Research design and preliminary literature review** – including development of an initial proposed budget and work plan, carried out in the US over a two week period (15-31 March);
2. **Field instrument design, training and pre-test** – carried out at the CRS main office in Ouagadougou, Burkina Faso (3-8 April);
3. **Field data collection** – across the three study zones (11 April – 18 May);
4. **Data analysis, synthesis and presentation** – includes data analysis, synthesis, and presentation of preliminary findings to CRS staff as a debrief conference call upon completion of each field data phase (24 April – Burkina Faso findings; 8 May – Niger findings; 28 May – Mali findings);
5. **Report write up** – presentation of data findings with recommendations in a preliminary draft report, with final draft version completed on 30 June².

² Due to delays in submission of the first report, the date for completion of the reports was extended from 15 to 30 June.

Activities for each phase are described here:

Research Design and Preliminary Literature Review

A budget and draft work plan was initiated (late February) prior to completion of a Teaming Agreement between CRS and TU/DRLA (effective 15 March). Multiple iterations of budget proposal were shared and vetted with CRS during this time, and the Lead Consultant submitted a preliminary work plan prior to international departure from the US on 30 March. Preliminary drafts of field instruments also were developed and vetted during this phase. A preliminary literature review by the project Research Assistant, based at TU/DRLA, also began during this period.

CRS recruited four host national Field Research Assistants (FRA), organized in two teams for each study (CCAT/CSA, MOI/AVC), through the main country office in Burkina Faso. For purposes of facilitating the study logistically, four Burkinabe RAs were recruited (see names in Annex 2). Subsequent to team selection, two interpreters were recruited in each country to assist the teams with field data collection (see names in same Annex).

Field Instrument Design, Training and Pre-Test

Upon arrival at the CRS main office in Ouagadougou, the Lead Consultant conducted an intensive training of the two field teams from 3-4 April³. Training entailed an overview of BRACED and SUR1M, study objectives, key concepts (e.g. livelihoods analysis and asset categories), and introduction to the field instruments (further described below). The content of the training session is found in Annex 3. Design of the field instruments was participatory, involving review, comments, and feedback from CRS staff in the study target countries, and from the RA teams. After multiple revisions, the field instruments were field tested in two villages on 7-8 April at Bourzanga (Kongoussi region), and Rimagouya (Kalsaka region), where CRS has a field presence. Substantial revisions were made with the field tools on 9-10 April, prior to departure for the first field visit in the Sahel Region on 11 April.

³ Due to inclement weather and a flight delay from the US, the training session, originally planned over a 5-day period, was truncated into 4 days.

Field Data Collection

The research teams traveled with the Lead Consultant (LC) to each study zone, with the exception of Gao, Mali, where the LC visited only CRS staff and relevant stakeholders in Bamako, due to high insecurity and travel restrictions for Americans in the region. Field visits were conducted in the Sahel Region of Burkina Faso from 12-19 April, the Tillaberi Region of Niger from 26 April – 3 May, and the Gao Region of Mali from 15-18 May. The teams resided in regional centers, departing each day to a village and returning to the regional centers in the late afternoon to continue data entry for the day's session. A total of 20 villages were surveyed (8 Burkina Faso, 8 Niger, 4 Mali), involving 1 focus group discussion (FGD) per village. A total of 20 FGD sessions were held in the 3 country regions, including 8 in Burkina Faso, 8 in Niger, and 4 in Mali ⁴.

The criteria required for participation in an FGD was active participation in a formal or informal structured farmer's producer group⁵. An FGD session rarely lasted more than two hours. FGDs were organized by gender, thus a men's and women's session was held in each community⁶. A total of 347 participants attended 20 FGDs across the three study sites, of which women comprised 56.8 percent, (N=197). There were approximately 21 women in each group, and 14 in the men's groups.

To complement and contextualize information being received in the FGDs, the MOI/AVC team conducted key informant interviews (KIIs) in the regions, as well as the capital cities in each country. In the Sahel Region, the LC attended the first two village FGD sessions to oversee quality control, and to assure that team facilitation of discussions was sufficient, generating the needed information for data analysis, and to observe the group dynamics of each session. The LC attended three village FGDs in Niger, and none in Mali (for reasons of security), thus totaling 5 villages out of 20.

Only one woman out of 27 (3.7percent) KII value chain service providers was interviewed. This suggests that men serve as the overwhelmingly majority of key small enterprise providers of agricultural products and

4 For reasons of high insecurity, the Mali field session was reduced from 8 to 4 days. In the first two countries, the team conducted only 1 FGD on Fridays, the Muslim day of prayer, and a half work day for the team.

5 Village representatives were contacted in advance and also asked to have a full representation of all *quartiers*, clans and religious groups in the community.

6 In the first field phase in Burkina Faso, FGDs were held in mixed groups of men and women with approximately the same numbers of men and women per group, ranging from 15-20 per FGD. In Niger and Mali, groups were segmented, alternating days between all men's and all women's groups.

services. This observation requires further in-depth investigation and a much larger, stratified sample size to verify the presence or notable absence of women as key actors in agricultural value chains.

Data Analysis, Synthesis and Presentation

Data collection and analysis for the MOI/AVC study was carried out using two principal field instruments: FGD thematic guide sheets and a structured KII questionnaire, organized in a matrix format. FGD sessions were conducted with local producers groups of farmers who were occasionally organized collectively in their livestock production activities as well. The overall objective of the FGD session was to identify current and new crops and other commodity value chains with high market potential. A list of at least 5 agricultural crops, as well as livestock and an occasional forestry-related commodity (e.g. NTFPs) were identified and prioritized according to level of market sales. Once the key crops, livestock, and other agricultural commodities were identified, this information was used by the RA team to guide a series of detailed KIIs with a mix of service providers in the value chains.

Topical content of the FGD on MOI/AVC included:

- **Producer group profiles** – In each FGD, information was collected on number of participants, gender, ethnicity, level of education, principal livelihood, and the level of organization of producer groups (formal, informal, mixed or segregated gender);
- **Market opportunities identification** – A list of at least 5 high priority crops/commodities with high market potential and criteria selection were listed. The inventory included information on agricultural crops and livestock and level of market sales, information on sales and market location, and trends in volume of sales over the past five years;
- **Technical feasibility of value chains** – This included data on production requirements or conditions (environmental, physical, economic, human, social), and constraints in production, storage, and marketing;
- **Off-farm income strategies** – This involved the collection of general information on seasonal and long term labor migration strategies and employment activities, and identification of opportunities to support off-farm income earning activities⁷.

⁷ Discussions focused primarily on outmigration patterns, however, some in migration was also documented in several of the sample communities visited.

A structured KII questionnaire, organized in a matrix format, was designed to supplement information obtained from producers in the FGDs, by looking at the range of actors in the various commodity value chains. The team interviewed key informants in the crop/commodity value chains, identifying information on supply, demand, profit margins, and overall technical and economic feasibility of the top commodities identified in the FGD sessions. A detailed questionnaire matrix of data collected in the KIIs is found in Annex 4. Some local, area markets were visited by the team, and KII data were obtained from value chain service providers (producers, rural collectors, traders, wholesalers, processors, retailers, agro-input dealers, etc.).

Data obtained in the FGDs and KIIs were entered each evening by the team into an electronic FGD matrix (Word software). Data were then analyzed and synthesized for each country debrief by entering both qualitative and quantitative information into an Excel spreadsheet.

Synthesis of this information was conducted over a 2-3 day period per country and involved a close collaboration of the LC with the MOI/AVC team members in the organization, review, and presentation of the findings. Dates of the debrief presentations per country region are noted above, and involved the presence of both the LC and the CSA team, with the exception of the final debrief on the Mali findings (presented by the LC after departure from Mali). Questions and feedback from CRS staff after each debrief session were shared with the LC and team members for further clarification and consideration in preparation for the next phase of country field investigation.

Report Write Up

The TU/DRLA research team scheduled the final phase of data synthesis and write up to be completed in two phases: 1) delivery of a draft report by 31 May, and 2) submission of a final report on 15 July. Dates for completion of the final report have been revised, with final submission on 30 July.

3. RESEARCH CONTEXT

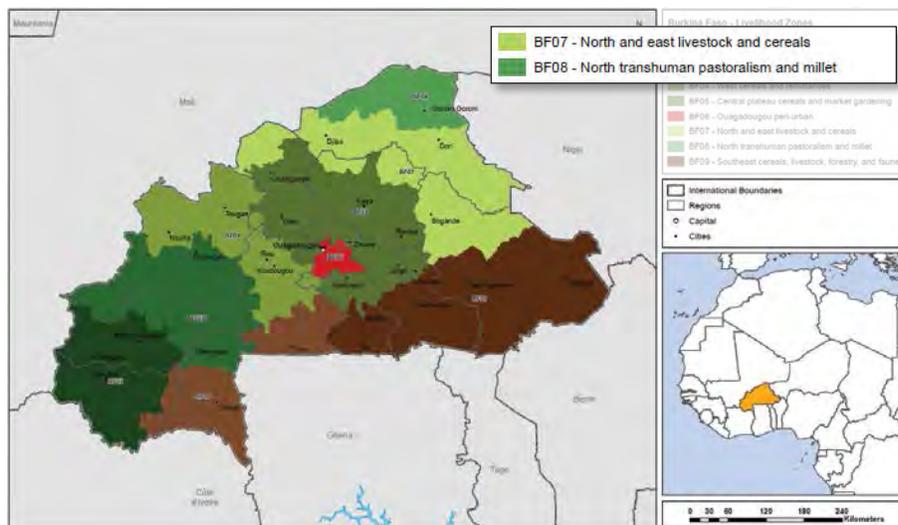
3.1 REGIONAL GEOGRAPHY AND LIVELIHOODS

This section presents an overview of the regional geography and livelihoods of the study areas, presented by study area. This summary draws mainly from the FEWSNET livelihood studies, which provide the most comprehensive general overview of the geography, climate, livelihoods and other pertinent information.

3.1.1 Burkina Faso

The study areas in Burkina Faso (Map 2) cover two identified FEWS livelihood zones; Zone 7 (North and East Livestock and Cereals) in Seno and Yagha Provinces, and Zone 8 (North Transhuman Pastoralism and Millet) in Oudalan Province.

Map 2: FEWS Livelihood Zones in the Study Area (Oudalan, Seno, Yagha Provinces), Burkina Faso



Source: FEWS livelihood zone map, Wikipedia maps of provinces

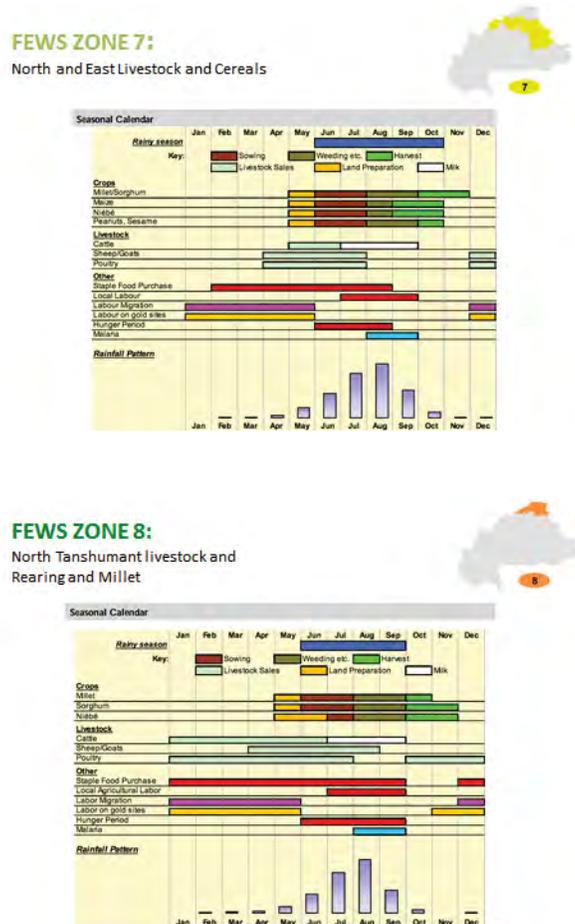
Agriculture and Climate

Zone 8, where Oudalan province is located, has the driest and most-unreliable rainfall in Burkina Faso, at less than 400mm/year. Yagha has slightly more abundant and reliable rainfall than Seno, although both are relatively dry areas (400-700 mm/year). Millet is grown in the

drier areas, and sorghum in the slightly wetter areas, particularly in Yagha. Water access, even for people, is problematic.

In both areas, the poorest households rely on small areas of cultivated land (1.5 to 2.5 ha) and few livestock (4-6 goats, 6-8 hens). More affluent households enjoy larger cultivated land holdings and greater numbers of livestock. Seasonal calendars for the two zones are provided below.

Figure 1: Seasonal Calendars for FEWS Livelihood Zones 7 and 8



Source: FEWS livelihood report, Burkina Faso

According to FEWS, soil erosion and increasing pressure on the country's natural resources are a problem throughout the country, while land clearance for farming increasingly threatens forest resources.

In the study areas (Zones 7 and 8), the FEWS report states:

Crop production in these zones is so limited by rainfall amount and distribution that in most years even the better-off cannot satisfy more than two-thirds of their food needs from their own harvest. This is particularly the case for the transhumant livestock zone (8) whereas in a small number of good rainfall years, zone 7 can produce a substantial food surplus, so that a shift from deficit to abundance is seen from one year to the next. (p. 12)

Livelihoods

Zones 7 and 8 are characterized by agriculture-related activities (selling of cereal crops, agricultural labor), as well as livestock sales. Livestock sales are more commonly the main source of cash for better-off households, while poorer households rely more on a variety of different sources of cash, including agricultural labor, labor migration, wood/charcoal/fodder sales, and in Zone 8, some sales of milk. Zone 8 tends to rely more on cattle, goats, sheep and other livestock than Zone 7.

Beyond agricultural/livestock livelihoods, FEWS identifies gold mining as an increasing source of income for poor and very poor households in Zone 7. Some of the villages visited in this zone participated in small-scale, local artisanal mining of gold, which was observed during the FGD sessions.

Food Sources

Food is primarily sourced through local subsistence production or by purchase. Zones 7 and 8 are characterized by being the most reliant on markets for their food in a normal year, despite the fact that they are two of the most isolated zones in the country in terms of market access. According to the FEWS NET study, the poorer households tend to source more of their food through purchase than their own crops, and the richest (better-off) households source more of their food from their own crops.

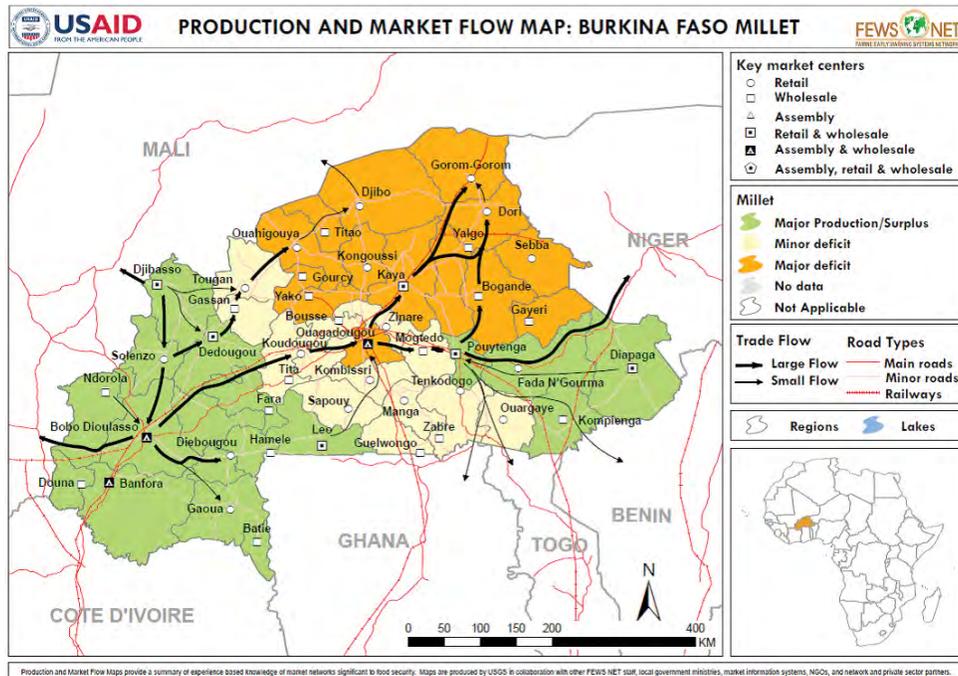
Markets

In both Zones 7 and 8, households depend heavily on the market for staple grain, and consequently increases in food prices greatly impact food security. Zone 8 in particular is marked by poor market access due to the isolation. Additionally, in Zone 8, staple food purchase for

the poor and very poor wealth group households continues for most of the year, making this zone the most affected by market price changes.

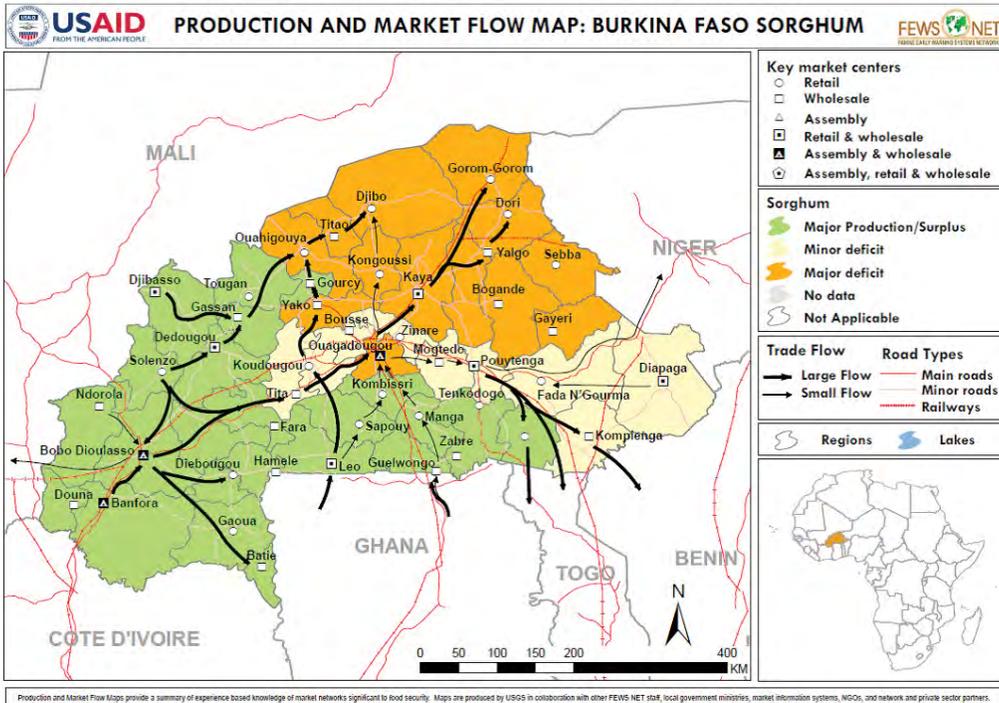
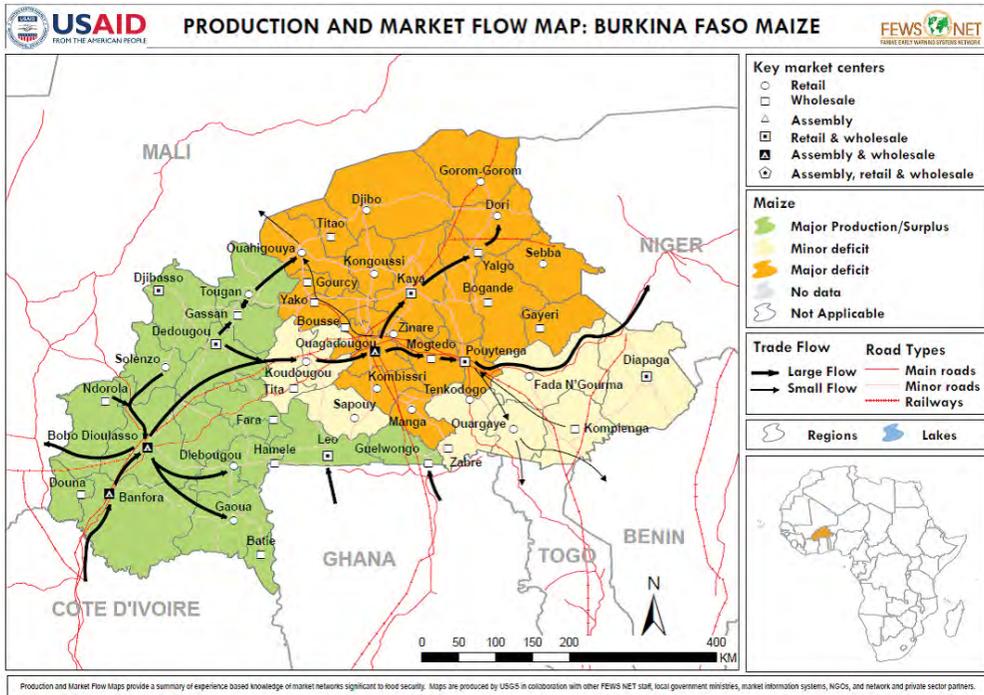
The following maps (from FEWSNET) show the production and market flow for maize, millet, and sorghum in Burkina Faso⁸. The areas of study are classified as a major deficit area for all three cereal crops. These cereals are primarily sourced from the southern areas of the country. Rather than passing through the vulnerable market of Djibo in the Sahelian zone, much of the sorghum, maize, and millet in the north passes through the largest market in Ouagadougou⁹.

Map 3. Production and Market Flows for Millet, Maize, and Sorghum, Burkina Faso.



8 http://www.fews.net/sites/default/files/documents/reports/bf_fullmap_maize_norm.pdf
http://www.fews.net/sites/default/files/documents/reports/bf_fullmap_millet_norm.pdf
http://www.fews.net/sites/default/files/documents/reports/bf_fullmap_sorghum_norm.pdf

9 FEWS Market Price Bulletin, March 2014 http://www.fews.net/sites/default/files/documents/reports/Burkinapercent20Faso_2014_03_PB_EN.pdf



3.1.2 Niger

The study area (Oullam, Tillaberi, Tera Departments) covers a large range of FEWS NET livelihood zones (Map 4). These zones include:

Zone 3 — Transhumant and Nomad Pastoralism

Found in the northern portion of all three departments

Zone 4 — Agro-pastoral belt

Found in the center area of all three departments

Zone 5 — Rain fed Millet and Sorghum belt

Found in the southern portion of all three departments

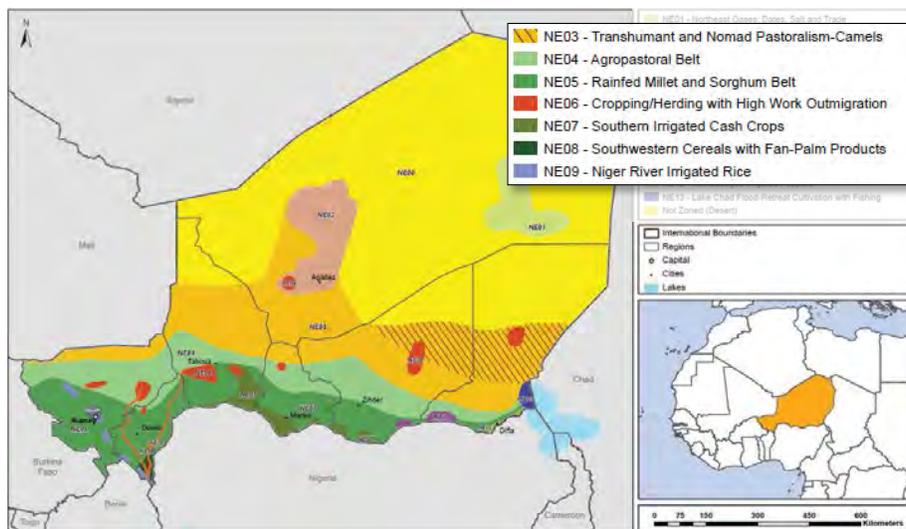
Zone 6 — Cropping/Herding with High Work Outmigration

Found in small areas in south central Tillaberi and Tera departments

Zone 9 — Niger River Irrigated Rice

Found only in Tera Department, along the Niger River

Map 4. FEWSNET Livelihoods Zones in the Study Area (Oullam, Tillaberi, Tera Departments), Niger



Source: FEWSNET Niger Livelihood Map

Agriculture and Climate

Zone 3

Zone 3 is the driest of the zones in the study area in Niger, and is covered primarily with sparse grass and bush. There is no major agriculture. This zone is most vulnerable to drought because of the potential for the loss of the only major livelihood source – livestock. However, FEWSNET states that the practice of pastoralism is in itself an adaptation to the arid environment and variation in rainfall.

Zone 4

This zone has 300-400 mm of rain per year, and high inter-annual variability of rainfall (greater than 20 percent). Locals and immigrants settled the pasturelands for cultivation, bringing many poor people to the area.

Zone 5

Zone 5 has higher rainfall than those to the north, between 400mm in the northern ranges of this zone to 600 mm/year or more in the southern reaches. Frequent irregular rainfall continues to effect harvests and pastures. Agriculture consists of millet, sorghum and cowpea production. Soil degradation is increasing.

Zone 6

Zone 6, found in just a few small areas, has varied average rainfalls, but can grow large amounts of grains in good years. Even still, it suffers large losses in bad rainfall years. The land is generally low in fertility. The production resource problems prompt more seasonal labor migration.

Zone 9

This zone tends to be more stable in terms of productivity and is less vulnerable to food insecurity than the other zones. The main crop is irrigated rice (mainly as a cash crop), along with tobacco, as well as sorghum for domestic production. Rice is not dependent on the local rainfall and so is less subject to inter-annual variability.

Livelihoods

Zone 3

Most households in zone 3 rely on livestock only as their main livelihood. This makes households more resistant to drought (as pastoralism is an adaptation to an arid environment) and the most vulnerable in the case of severe drought (as the loss of livestock is a difficult shock to reverse).

Zone 4

Households in Zone 4 rely on crop cultivation, small stock rearing, cowpea and firewood sales, and migrant labor. However, livestock ownership is more characteristic of wealthier households. In bad years of low rain, the poorer households lose their meager harvests and agricultural labor income, and do not have the buffer of livestock holdings. FEWSNET describes this as an 'imbalanced agropastoralism'.

Zone 5

Cattle and livestock are owned nearly exclusively by the wealthier half of the population. Poor people commonly rely on agricultural labor.

Zone 6

This zone has lower livestock holdings than the neighboring Zones 4 and 5, and has little income variation, making them vulnerable to climatic and market shocks. As the name of the zone implies, work outmigration is one of the common livelihood strategies, which is a consequence of production resource problems and subsequent high poverty, coupled with the relatively high risk of absence of rain.

Zone 9

Beyond the agricultural livelihoods (mainly cash crops), paid agricultural labor is more common in this area due to the labor-intensive nature of growing rice. This brings in money for all wealth groups. Fishing, in the Niger River, is also common. There is less livestock in this area as there is limited pastureland.

Food Sources

Though the FEWS NET report does not fully detail food sources, most of the staple foods are sourced through the markets, particularly among pastoralist households, making them vulnerable to staple food price fluctuations.

Markets

Markets are crucial in Zone 3 since grain must be purchased. Virtually all the grain comes from the south.

In zone 4, the main local livestock markets act as collection points for traders to take stock south.

In zone 5, prices are made more favorable by the demand of the Nigerian market, though this may be less true in the areas of study, which are found further from the Nigerian border.

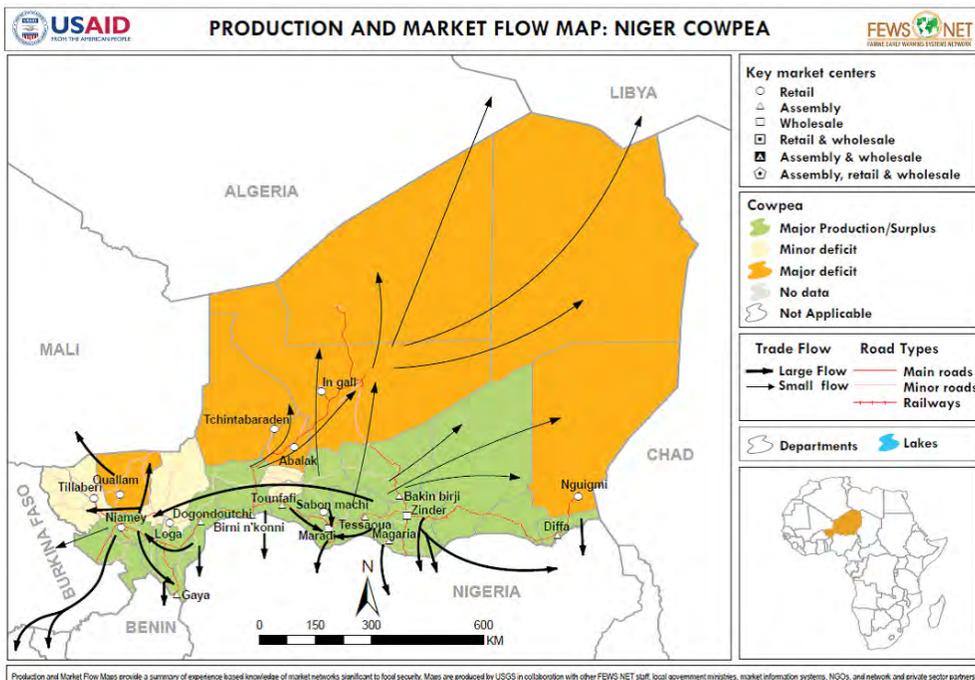
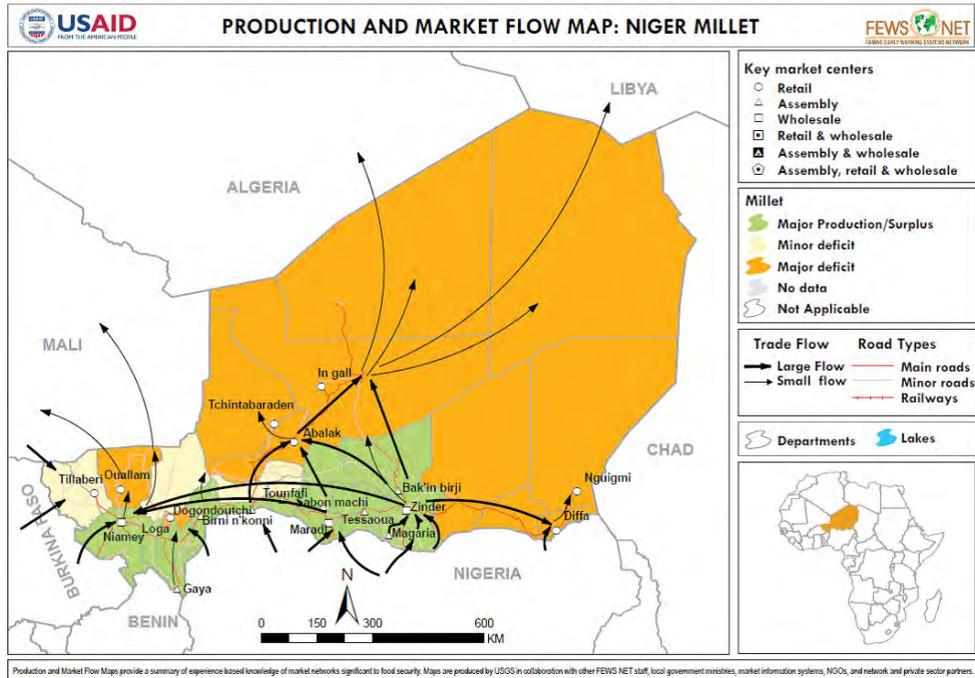
Zone 6 has experienced market disruption due to local conflict and price hikes. Households in this zone are less dependent on the local economy, but are more reliant on external income.

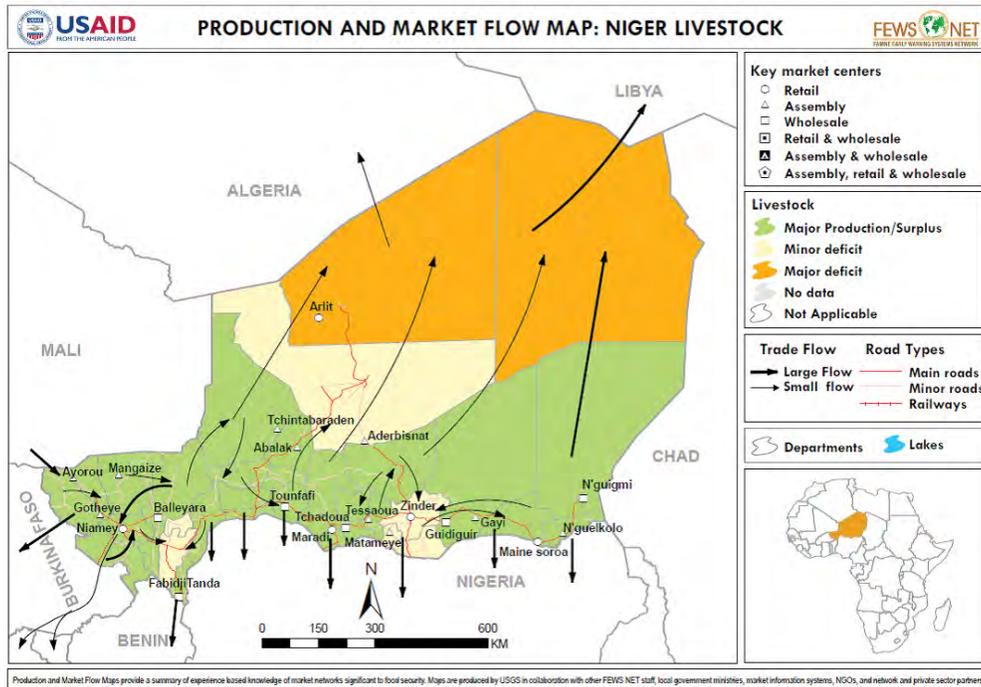
The maps below show the production and market flow for millet, cowpea, and livestock in Niger. The main markets in the area of study include Tillaberi, which is an urban center that supplies the surrounding areas, as well as Ouallam and Niamey. Niamey is the most important national and international trade center.¹⁰ The maps below¹¹ show the trade flows for millet, cowpea, and livestock in Niger. The departments of Tera, Tillaberi, and Oullam are considered to be in minor or major deficit of millet. Millet comes mainly through the market in Niamey, as well as cross-border from Mali and Burkina Faso. Some small flows of millet also pass through the area into Mali. The areas studied are also considered to be in minor or major deficit for cowpea. Most of the cowpea coming into the region passes through Niamey. There is a large flow of cowpea that passes through Ouallam into Mali as well. The studied areas are considered to be major producers/areas of surplus for livestock. There are major flows out of the area to Niamey as well as cross border into Burkina Faso, and minor trade flows between areas in the region. Livestock also comes in from Mali. The country overall is a large supplier of livestock to its southern neighbor, Nigeria.

10 FEWS Net Niger Price Bulletin, March 2014 http://www.fews.net/sites/default/files/documents/reports/Niger_2014_03_PB_EN.pdf

11 http://www.fews.net/sites/default/files/documents/reports/ne_fullmap_millet_norm.pdf
http://www.fews.net/sites/default/files/documents/reports/ne_fullmap_livestock_norm.pdf
http://www.fews.net/sites/default/files/documents/reports/ne_fullmap_cowpea_norm.pdf

Map 5. Production and Market Flows for Millet, Cowpea, and Livestock, Niger





3.1.3 Mali

The areas of study in Mali, the Ansongo and Gao Cercles, both contain three livelihood zones:

- Zone 2 Nomadic and Transhumant Pastoralism
 - Found to the north
- Zone 3 Fluvial Rice and Transhumant Livestock
 - Found alongj the Niger river
- Zone 4 Millet and Transhumant Livestock rearing
 - Found in the far southern areas.

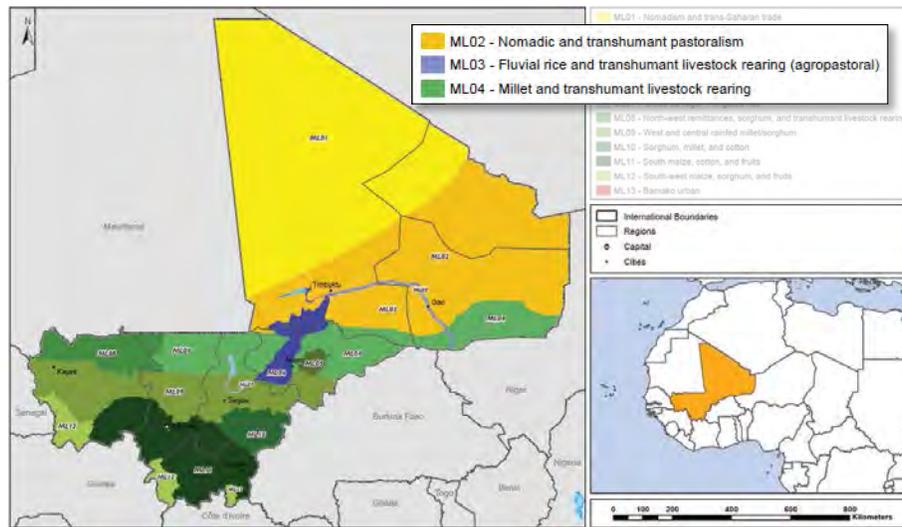
Agriculture and Climate

Zone 2 is characterized by a northern Sahelian ecology, with sparse grass in the near-desert areas. The hot period between March and June is the most difficult period. Rain-fed agriculture is not possible in this zone due to the rainfall under 200mm/year.

Zone 3 also experiences low rainfall (150-200mm/year). Therefore, agriculture is present only due to the river, allowing for the cultivation of rice, bourgou, and market gardening crops. Rice is the main crop, grown on the edge of the river.

Zone 4 has higher precipitation than the other zones in the study area (300-500mm/year). Millet and cowpeas are the main crops grown. The unreliable rainfall however means that agriculture is inconsistent, and so transhumant livestock rearing is also a common practice in the zone.

Map 6. FEWS NET Livelihood Zones in the Study Area (Ansongo and Gao Cercles), Mali



Source: FEWS Livelihood Zone Map

Livelihoods

Zone 2 is mainly dependent on livestock as agriculture is not possible. There is little wealth diversity, and most households are poor or very poor. Conflict has forced animal sales and unusual migration patterns, intensifying conflict between pastoralists and settled populations over water and crop damage. Very poor and poor households rely mainly on local labor for their cash sources, whereas the few middle and better off households rely on livestock sales.

Zone 3 is characterized mainly by livestock rearing (cattle, sheep, goats), and all wealth groups commonly migrate in search of labor for several months a year. Poor and very poor households source their cash from a variety of sources, including crop sales, agricultural labor, labor migration, and other activities. Middle and better off households source most of their cash from crop and livestock sales.

Zone 4 also relies mainly on livestock (cattle, goats, sheep, some camels), particularly as a cash income source for middle and better off households. Poor and very poor households source their cash from local agricultural labor (particularly the very poor households), other local labor, and very little from crop and livestock sales. Middle and better off households source most of their cash from crop and livestock sales, as well as labor migration and petty trade.

Food Sources

Across the different zones, poorer households tend to source their food mainly from purchase, with other sources (own production, payment-in-kind, wild foods, etc.) making up the rest. These households usually produce only one to three months of their own food needs. Middle and better off households source more of their food from their own production, followed by purchase, with more access to milk than the poorer groups.

Markets

In Zones 2 and 4, the main market transactions are the sale of livestock and the purchase of cereals. The terms of trade between livestock and grain, mainly millet, is an important determinant of how households in these zones fare.

Zone 3 is characterized by the sale of rice as well as livestock, with cattle often exported to markets in Nigeria and Ghana. This zone also has variable physical access to markets, depending on the rainy/dry season and flooding.

Maps below show the production and market flow for millet, rice, and livestock in Mali. The main market in Gao, as a food deficit area, receives millet from Mopti, Segou, and Sikasso markets¹². The market flow map on millet below indicates there is a minor market flow of millet that comes from the south, passes through Gao, and into Niger¹³.

The map on market flow for rice indicates that the area of Gao is only in minor deficit, while Ansongo is a major surplus producing area (due to the presence of rice in zone 3)¹⁴.

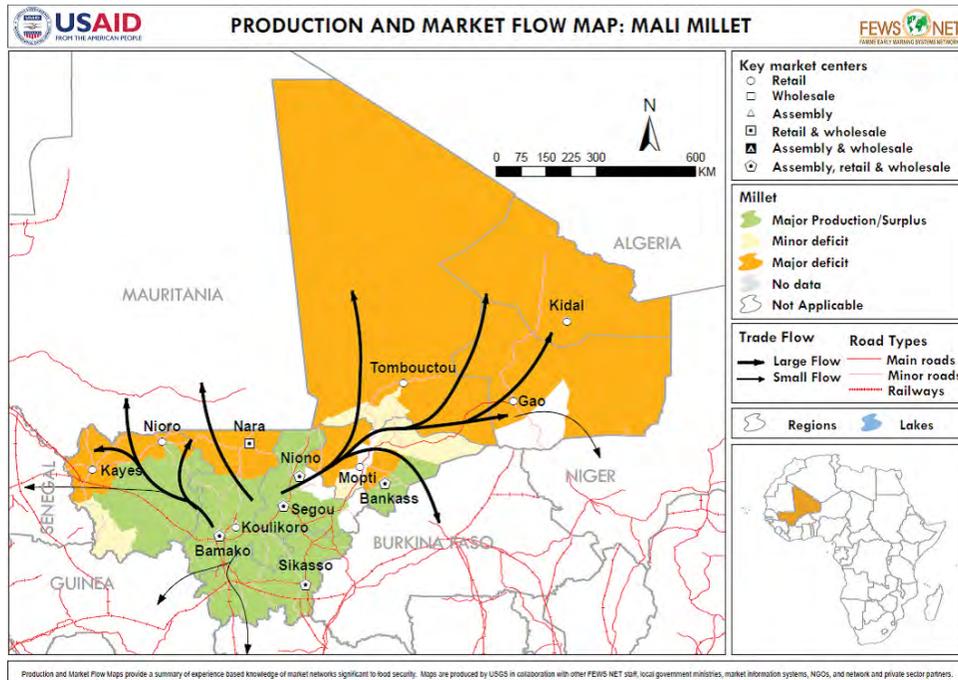
12 FEWS Net Mali Price Bulletin March 2014. http://www.fews.net/sites/default/files/documents/reports/Mali_2014_3_PB_EN.pdf

13 http://www.fews.net/sites/default/files/documents/reports/ml_fullmap_millet_norm.pdf

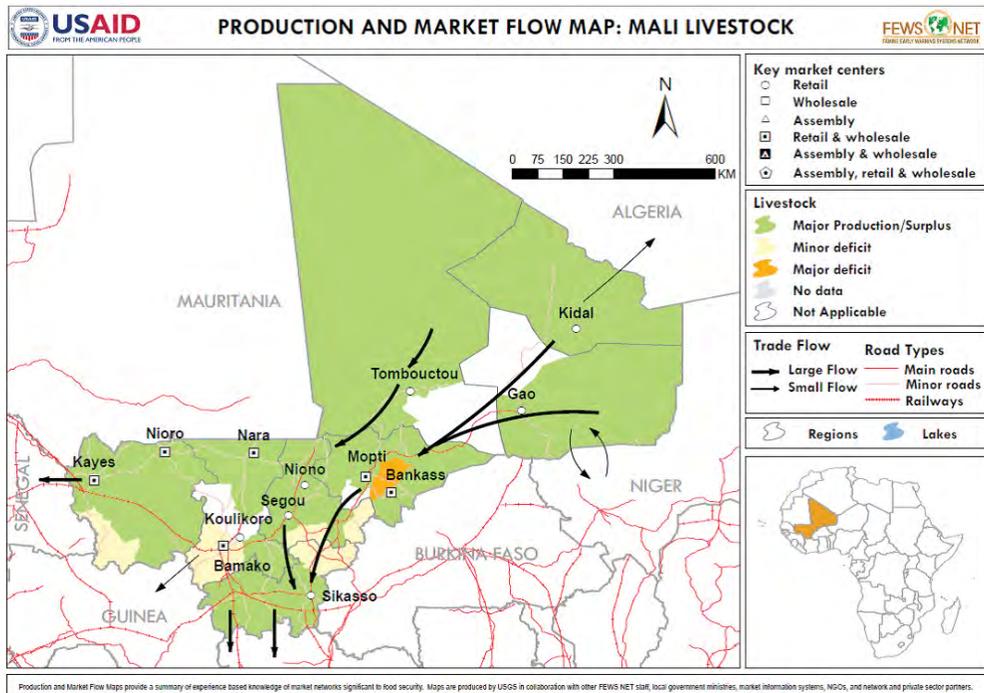
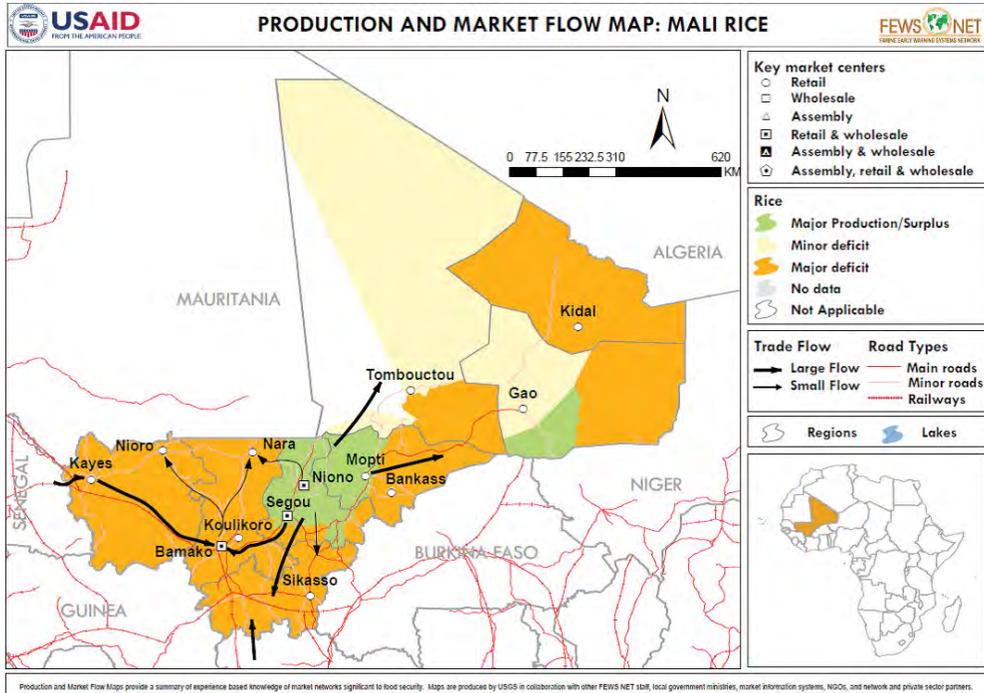
14 http://www.fews.net/sites/default/files/documents/reports/ml_fullmap_rice_norm.pdf

Finally, the map on market flow for livestock¹⁵ indicates that the area is a major producer of livestock. There is some small trade flow in both directions across the border with Niger, but the major market flow is toward the south.

Map 7. Production and Market Flows for Millet, Rice, and Livestock, Mali



¹⁵ http://www.fews.net/sites/default/files/documents/reports/ml_fullmap_livestock_norm.pdf



3.2 OVERVIEW OF FIELD STUDY SITES

A brief 45 minute to one hour discussion was held in each community with the village chief and 5-6 elders to gain a quick glimpse of the basic village characteristics such as history of settlement, demography, religious and ethnic composition, community infrastructure, and livelihood activities. The most pertinent observations are summarized here and provided in a matrix format in Annex 5.

3.2.1 Burkina Faso – Sahel Region

Villages range in population size, from slightly more than 300 inhabitants (Balliata) to nearly 6,000 (Bani). Population has grown over time amongst all the villages surveyed, with the exception of Balliata, where the number of inhabitants has declined due to lack of access to water.

Communities are composed predominantly of sedentarized FulBe (Peuhl) pastoralists who have become primarily agro-pastoralists, carrying out rainfed farming of pearl millet and sorghum. Other ethnic groups include the Bella (former slaves of the FulBe), Gourmantche, Mossi, Sonrai, and Gaobe (see Annex 6).

While rainfed agriculture is the principal livelihood, livestock production (cattle, sheep, goats) plays a key role in meeting daily consumptive and economic needs as a primary strategy of capital accumulation¹⁶. Petty commerce and small-scale artisanal gold mining play a secondary role in generating household income in the long, hot dry season after crops have been harvested.

Livelihood strategies vary to some degree among men and women. Men farm primarily millet and sorghum, and commonly own cattle. Also, some men practice cattle fattening (embouche) as a key source of income generation. Women most frequently cultivate vegetables, gombo (oseille), cowpeas, groundnuts and sesame as their primary source of income, in addition to practicing fattening of sheep. Women, also, often sell cow's milk, although in very small quantities due to very low milk production. Additionally, some women raise and sell chickens, while a smaller number of women also engage in artisanal activities, such as weaving of mats and baskets.

¹⁶ One village, Yatakou, has no livestock activity due to the general poverty of the community, thus minimizing livelihood diversification and increasing overall vulnerability to various economic, climatic, political, or other shocks and stresses.

Islam is widespread in the region, with much smaller numbers of Christian and animist groups. Customary land tenure is practiced, in which founding lineages of the village chief and their descendants hold ownership to land. Caste structure is important in the region, and plays an important role in access and control over land. Three general tiers of social strata include a noble caste (generally founding families), and two groups of dependents or patron-clients of the nobles: an artisan caste, and a slave caste. In some communities, such as Belgou, weaver artisans and former slaves (Bella¹⁷) left their patron FulBe masters long ago to settle and access land as free holding farmers.

Infrastructure is very basic and limited in almost all villages visited. Primary schools were present in all eight villages, but few had a secondary school. Rural health clinics were found in only two communities. Potable water in the form of boreholes was present in all villages, although in many instances residents were dependent on one water source. This was due to the drying of water sources and progressive drop in water table levels, as well as the lack of maintenance and/or parts for borehole and hand-dug wells, which become inoperable over time.

Access to paved roads and markets is relatively remote and difficult, with only two villages having market infrastructure (weekly markets), and all communities (with the exception of Bani) at a distance of 25-70 kilometers from the nearest paved road. All villages have mobile phone coverage.

In terms of community infrastructure, only the larger community of Bani has a cereal bank. It is salient to note that cereal banks, which serve as an important institutional and infrastructural resource to buffer against severe food shortages during the lean hunger season (soudure) throughout the Sahel, are notably absent in the zone of study.

Seasonal and long term migration was characteristic of the villages surveyed. Seasonal migratory activities include some transhumance, artisanal mining, and petty commerce in larger towns, as well as some migration to the neighboring countries of Ivory Coast and Niger. Some in migration from outside was limited, but present, in villages with artisanal mining.

17 Bella are former (and even some still) slaves/captives of the peul.

3.2.2 Niger – Tillaberi Region

The data from Niger covers 7 of the 8 villages included in the study. No data from the village leader discussion was available in Harikir.

The villages included in the study range greatly in estimated population size, from 9,500 (Mehana) to 420 (Kabefo).

Communities consist of several different ethnic groups, most predominantly Sonrai (4 of 7 interviews), Peuhl (5 of 7), Germa (4 of 7), Bella (4 of 7), as Kourti (1 of 7), Haoussa (1 of 7), Mossa (1 of 7). All villages reported two or more principal ethnic groups, with the exception of Kabefo, which cited only Germa (Kabefo is also the smallest in terms of population). All villages cited Islam as the sole religion, with the exception of Simiri, which cited Christianity and Animism in addition to Islam.

Agriculture is the primary livelihood activity. The practice of raising livestock is a form of diversification of livelihoods, which is historically the case. Agriculture consists mainly of millet, sorghum, niebe, and rice. Other crops mentioned include sesame, okra, peanuts, and Oseille. Village leaders also described the livestock livelihood as consisting of mostly sheep and goats, with the mention of cows, fowl, and occasionally fishing. Three village leaders also cited small commerce as one of the main livelihoods in their villages.

When looking at the livelihood activities as practiced by men and women, men were most often cited as practicing the cereal/staple crop production (millet, sorghum, niebe) and livestock raising. Women most often were cited as involved in agriculture as well, but most often cash crops such as sesame, okra, peanuts, and vegetables, as well as occasional livestock activities (either jointly with men, or specifically the sheep, goats, and fowl).

In terms of infrastructure, one or more primary schools are found in all village, but only a few have a secondary school. Three villages have an Integrated Health Center (dispensary and maternal clinic), two only an dispensary, and two (Kabefo, Dayberi) had no health care facilities, though they mentioned that they made use of nearby Integrated Health Centers 2-3 km away in neighboring villages). Potable water (from boreholes or public taps) were present in all villages with the exception of Kabefo, which had only wells.

Distance to the nearest paved road varied greatly between villages. Dayberi, Sakoirra, Zintingori, and Simiry are all found on paved roads.

Kanda is about 12km from the nearest paved road, and the other villages were between 45 and 80 km from the nearest paved roads. The road access, however, did not correlate with the presence of a daily food market in the village, though all villages had a food and livestock market within (4 villages) or a maximum of 5km away from (3 villages) their village. However, only Mehana had a permanent market (of minor importance).

All villages have a cereal bank with the exceptions of Karikirey and Kabefo.

In terms of migration, only the village of Zidigori reported significant permanent migration to other regions in the country and to Lybia. All communities reported seasonal migration to other areas of the country and to several neighboring countries. Some minor in-migration was mentioned in a few villages.

3.2.3 Mali – Gao Region

Although 4 villages were included in data collection in Mali, the village chief discussion was not done in one village (Kareibandia). Some information is included for that village that was gathered in the male FGD, however.

The village populations are all relatively large, ranging from range from 5,000 to 13,000 people. In the three villages where the village leaders were interviewed, they indicated that the population is growing.

The villages all have the Sonrai (Songhai, Songharai) as one of their main ethnic groups. Tacharane has only one additional ethnic group, the Tamacheques. Kareibandia reports these two ethnic groups as well as the Bella and the Koroboro. Finally, Asongo reports the most diverse number of ethnic groups, with Songhai, Dherma, Bella, Mossi, Bambara, Arabe, Bozo, Dogon, Peuhl, and Haoussa. All villages cited Islam as the main (and only) religion.

All villages where data was collected report that the main livelihood activities are Agriculture and livestock, as well as small commerce (including transport, artisanship). The village leaders in Bara made the particular point that in addition to cultivating rice, they use to produced local varities of long-cycle sorghum, but the scarcity of rain and the extended dry periods have resulted in their abandoning sorghum cultivation. They also noted that around 5% of the population continues to grow maize in small quantities. The population of Bara

noted that the need improved, native seeds that are adapted to the ecology and conditions of the area, and that they'd like to produce millet as well to diversify their cereal cultivation.

While the village leaders all stated that there is no gender or age-specific livelihood activity, they all added that women tend to do more vegetable gardening (maraichere) than men.

In terms of infrastructure, all four villages have at least one primary school. The others have secondary schools (not reported for Kareibandia). In the tree villages where full data were collected, they all have either a health center or a Referral Health Center (CSR). Bara appears to have the best health infrastructure, with a community health center that consists of a dispensary, maternal clinic, and a pharmacy depot.

Electricity is rare in the villages, with only asongo reporting that there was thermic energy available every two days for 3 hours. In terms of water, all villages have multiple boreholes (forages), except for Kareibanda, whose partial data indicate there is no functioning borehold in the village.

The three villages where full data were collected are located directly on paved roads. They all have a weekly market in the village, although only Ansongo had a permanent market in the village.

Of the four villages, only Asongo and Tcharane report having mills. All villages have a cereal bank, except Kareibanda which reported no cereal bank.

Finally, when asked about credit institutions, none of the villages reported having any. The leaders in Asongo reported that there were only the informal credit structures, such as the traditional sharing women groups ('tontines'). Of interest, the village leaders interviewed in Tacharane indicated that although there were the informal credit groups (as in Asongo), the religion condemns credit, and so people don't make use of it.

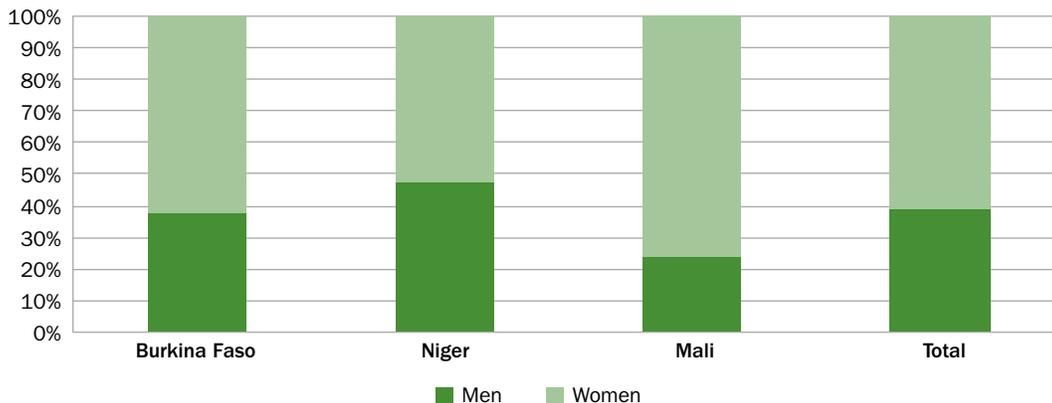
All three villages interviewed indicated that there is seasonal migration to the neighboring countries, consisting mainly of men roughly between 18 and 40 years of age. Most migration was in search of commercial or labor-related jobs.

4. KEY FINDINGS

Focus Group Discussion Participant Profiles

Women comprised the majority of participants across the three study sites (Figure 2), making up 56.8 percent of all participants (N=197). In Mali, they comprised 48 percent (N=26), while in Niger they were just above 50 percent (N=61), and in Burkina Faso, 63 percent (N=110)¹⁸. A comparison of the ethnic composition of the groups in each region is found in Table 2. Groups were most heterogeneous in Burkina Faso, with a total of six groups present, while they were largely homogeneous in Mali, where the Sonrai were prominent. The communities visited in Burkina Faso were predominantly FulBe, while in Niger they were primarily Sonrai and Zarma.

Figure 2. Percentage FGD Participation by Gender



¹⁸ As noted earlier, the first series of FGD sessions in Burkina Faso were conducted in mixed groups of men and women, with participant numbers often ranging from 20-30, and in one village, reaching 41. Gender segregated FGDs in Niger and Mali averaged around 15 participants per session.

Table 2. Ethnic Composition of FGD Participants

BANI	BELGOU	TITABE	PAGALAGA	YATAKOU	BELLARE	GATOUGOU	BALLIATA
FulBe	FulBe	FulBe	FulBe	FulBe	FulBe	FulBe	FulBe
Mossi	Bella	Bella	Gourmantché	Bella	Bella		Bella
Gourmantché		Mossi		Mossi			
Fulse		Gourmantché		Gourmantché			
		Haoussa					

Sahel Region, Burkina Faso

ZINDIGORI	MEHANA	KANDA	HARI KIREY	DAIBERI	SAKOIRA	SIMIRI	KABEFO
Sonrai	Sonrai	Zarma	Zarma	Bella	Sonrai	Zarma	Zarma
	FulBe						
	Bella						
	Haoussa						

Tillaberi Region, Niger

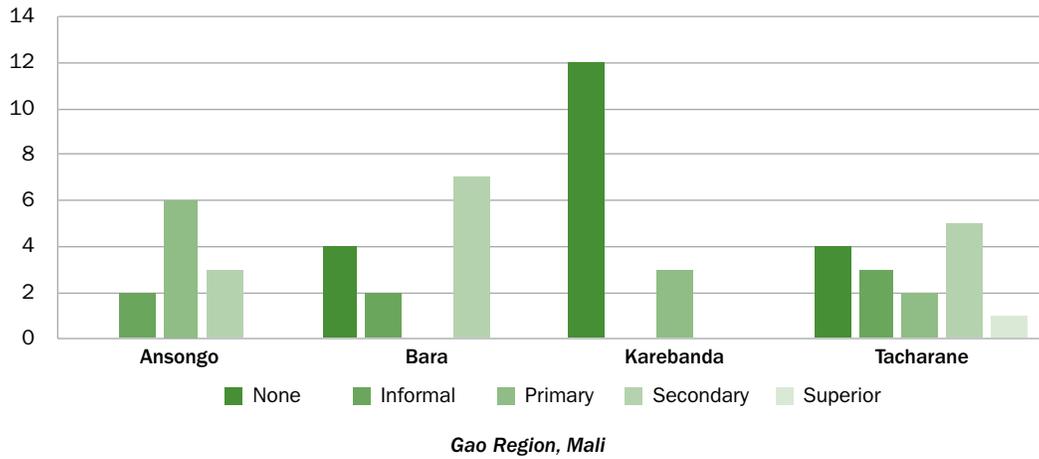
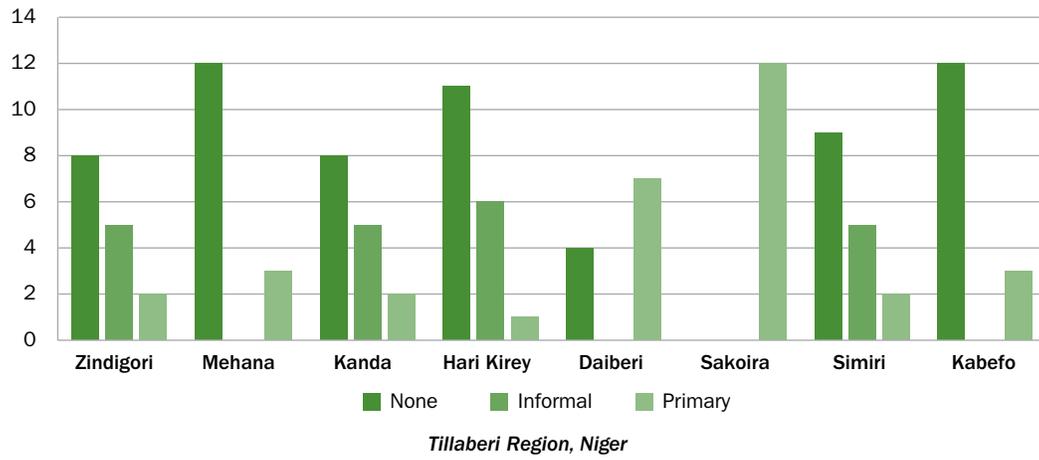
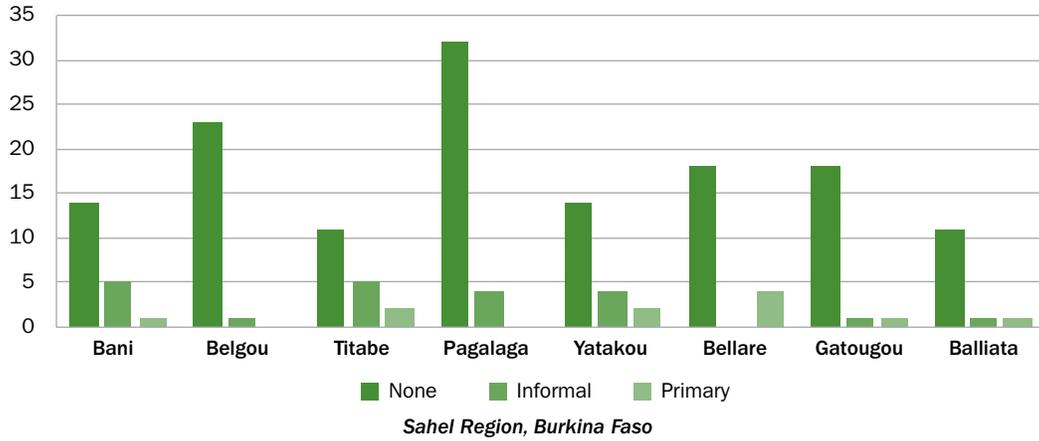
ANSONGO	BARA	KAREBANDA	TACHARANE
Sonrai	Sonrai	Sonrai	Sonrai
Bella			
Tuareg			

Gao Region, Mali

Composition of the groups by educational level in Figure 3 reveals low levels of scolarization in Burkina Faso, while primary school attendance was much greater in Niger. Interestingly, the Gao Region of Mali had the highest levels of both primary and secondary school enrollment, and in one village, an individual attending superior level classes¹⁹.

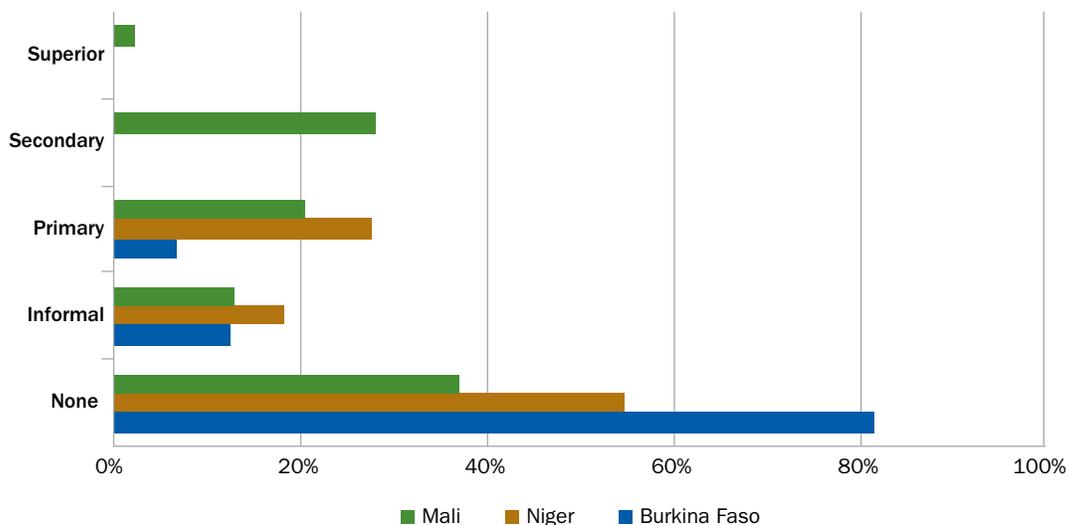
¹⁹ Perhaps an anomaly, this village had 11 of 15 women with some level of schooling, including informal education.

Figure 3. Educational Level of Focus Groups



A comparison of educational levels by percentage composition in the figures below illustrates the higher levels of school attendance by FGD participants in Niger and Mali²⁰.

Figure 4. Educational Level of Focus Groups by Percentage



4.1 MARKET OPPORTUNITIES IDENTIFICATION—AGRICULTURAL CROPS

This section identifies market opportunities based on information generated from FGD sessions in the study sample of 20 villages. Data were obtained on crops, livestock, and forest commodities, in particular non-timber forest products (NTFPs) with a market value. Participants were asked to identify the 5 most valuable commodities in terms of meeting the food security needs of the community. This included not only subsistence production, but more importantly, approximations on the percentage of the crop sold during the year. Advantages and constraints in the marketing of the identified crops and agricultural commodities were then identified.

A comparison of the most frequently marketed crops across the 3 study sites is presented in Figure 5. These dates are also listed by rank order in Table 3. Sesame is identified as the most frequently marketed crop

²⁰ These findings are consistent with those of the CSA report, and suggest that cultural factors such as ethnicity (eg., conservatism among the FulBe) may influence attitudes toward formal education, and particularly, domestic roles of women.

in Burkina Faso and Niger, while participants in Mali exclusively grew vegetables for the market, due to their proximity to the Niger River and access to water. Groundnuts and cowpeas were also highly cited as a market crop in both Burkina Faso and Niger. Among women, the most frequently grown market crops, in addition to vegetables, included sesame, cowpeas, okra (gumbo), and hibiscus. Slightly larger proportions of millet and sorghum were identified as a market crop in Burkina Faso. However, along with rice (in Niger, Mali), they are grown principally as subsistence crops, with a smaller proportion destined for markets²¹.

Table 3. Frequency of Market Crops Identified

BURKINA FASO		NIGER		MALI	
Crop	percent	Crop	percent	Crop	percent
Sesame	21	Sesame	21	Onions	20
Cowpeas	21	Groundnuts	16	Potatoes	15
Millet	18	Okra	16	Sweet Potatoes	15
Sorghum	15	Cowpeas	13	Okra	10
Groundnuts	12	Onions	8	Chili Pepper	10

The principal crops grown by men are millet, sorghum, and cowpeas. In the Niger sample, FGD participants note a gradual, progressive transformation of gender roles in cropping regimes in recent years; men assume greater production of cash crops, particularly sesame, while women shift more toward domestic cereal crops to assure subsistence household needs. Concerns were expressed among some women that such a transition could lead to increased food insecurity as men abandon their traditional roles of subsistence dryland farming in pursuit of more lucrative crops such as sesame. Sesame is a convenient cash crop, as it may be planted late with the rains and therefore does not conflict with timing and labor demand with conventional rain fed cereal crops. It also boosts household income for the purchase of livestock and other cereal crops as a buffer or adaptive response to increasing rainfall variability and climatic vicissitudes.

FGD participants were asked to estimate the proportion of the top five crops that are sold in an average year. Those figures, in percentage, are presented in Figure 6 for each study zone. In Burkina Faso and Niger, at least 70 percent of production is marketed (in an average year) for

21. In the Burkina Faso study sample, the village of Balliata engaged in no market sale of crops due to severe scarcity of water and very low production. In another village, Bani, all production discussed in the FGD was the propagation of improved seed varieties (sorghum, millet, sesame, cowpeas) for the national agricultural research center, INERA.

six crops. These include, in relative order of percentage marketed, groundnuts, sesame, onions, potatoes, okra, and cowpeas. Less than 50 percent of harvest is sold for the key cereal crops – millet, sorghum, and rice – which are cultivated primarily for household consumption.

Figure 5. Frequency of Market Crops Identified

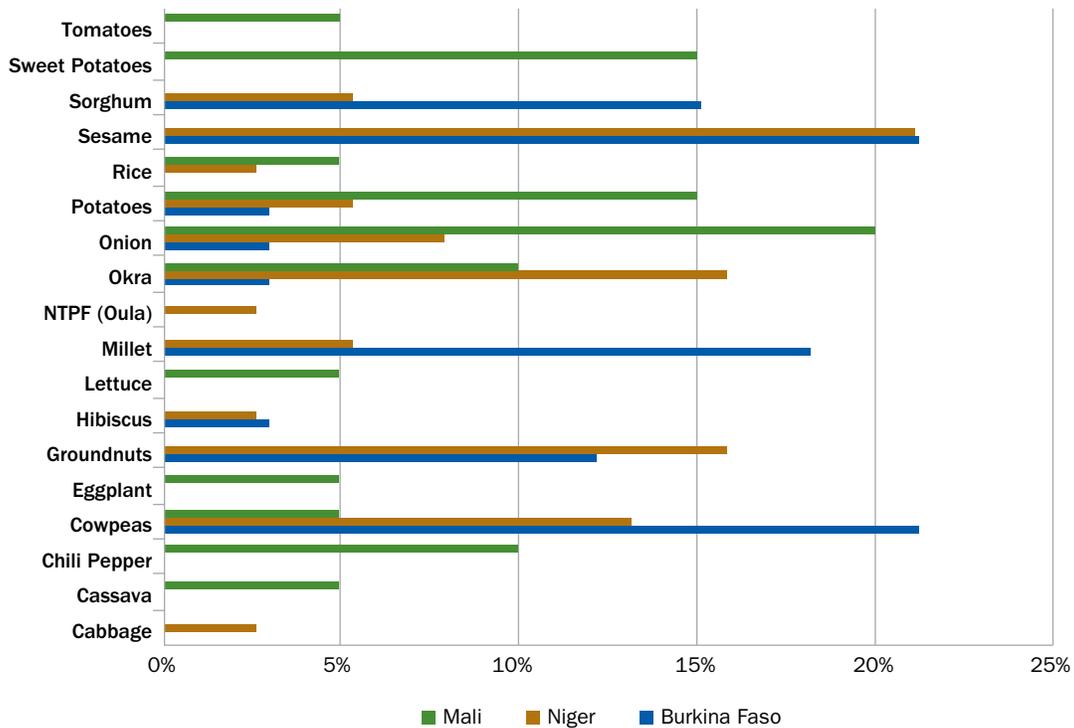
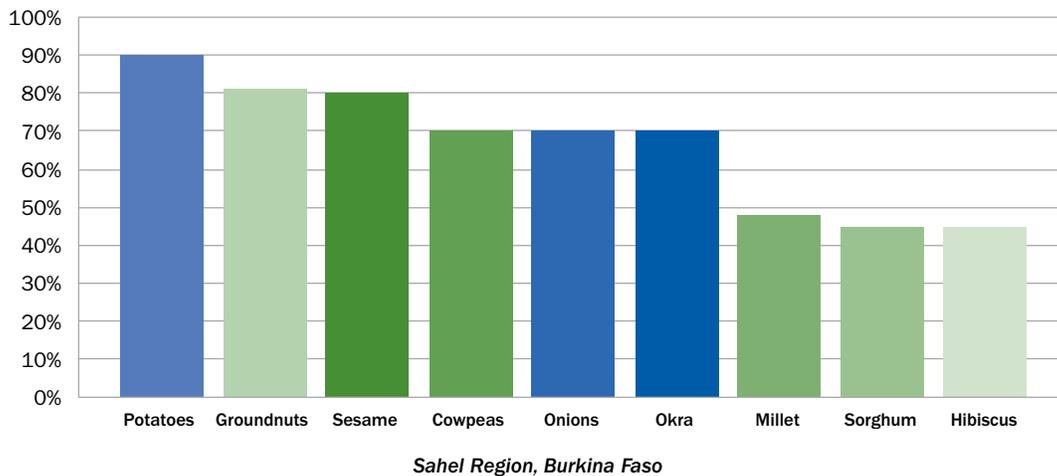
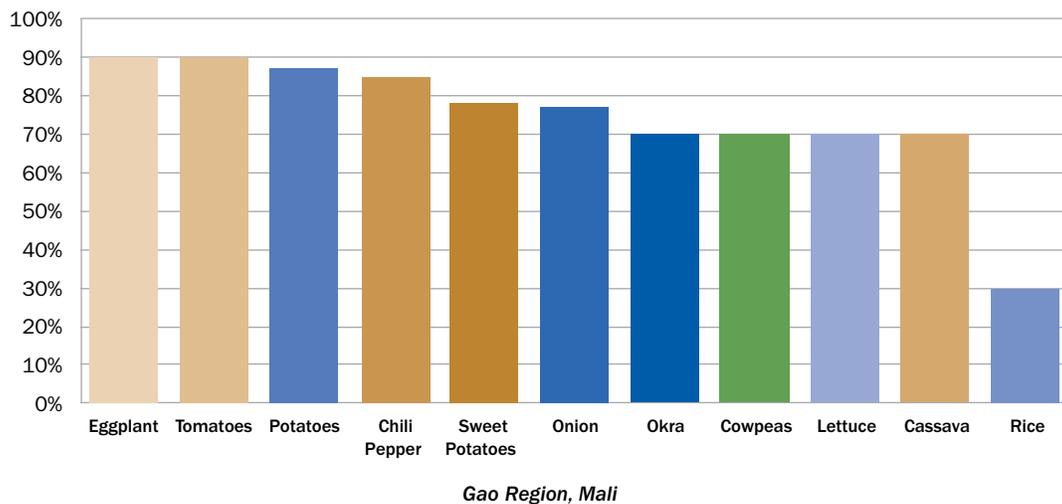
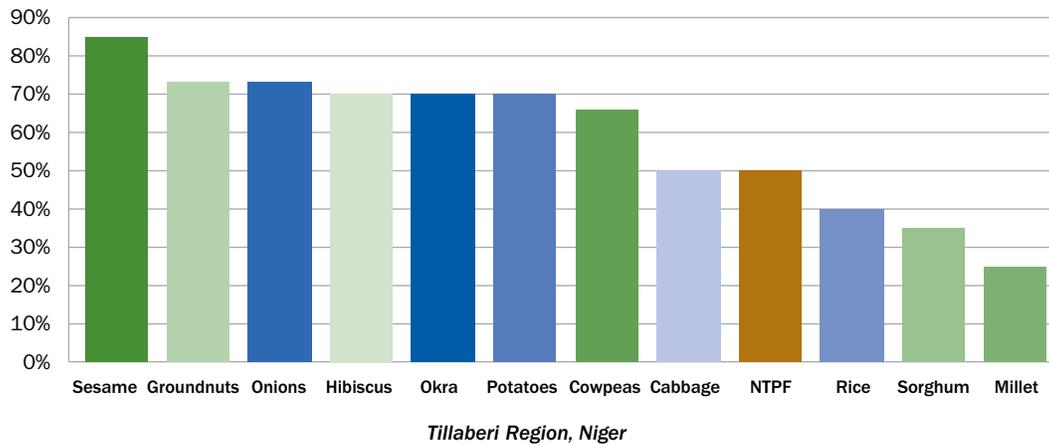


Figure 6. Percentage of Crop Harvest Sold



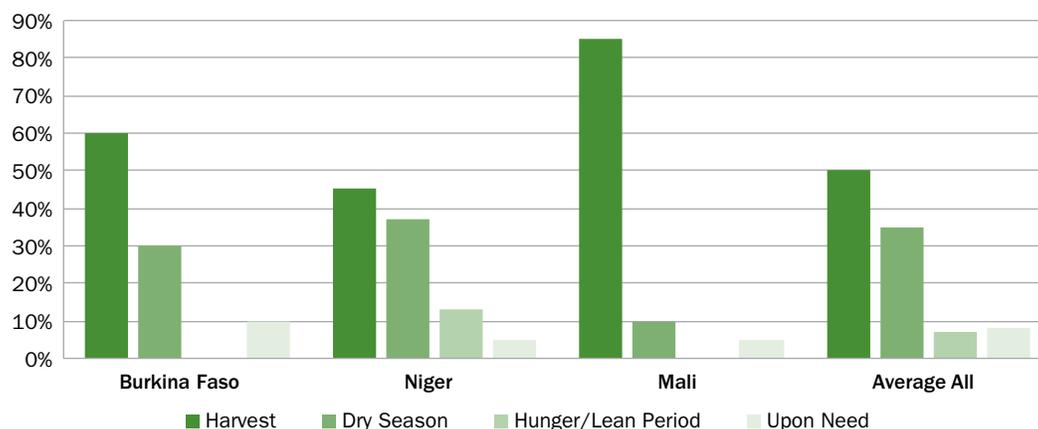


In Mali, virtually all vegetable crops are grown primarily as a cash crop (greater than 70 percent), while rice, is essentially a subsistence crop²².

As previously mentioned, crop sales generally take place during the harvest season in order to manage debts that have been assumed during the lean hunger season, when food stocks are low. In the study sample, 50 percent of crop sales occurred during the harvest season, with figures ranging from 45 percent in Niger to 85 percent in Mali (Figure 7). Sales during the dry season averaged about one-third (35 percent), while sales during the lean months of hunger were only 7 percent. This is due to the fact that food stocks are fully depleted, with little surplus available for market sale prior to the first rains and planting of crops.

²² This is quite possibly due to relatively low levels of rice output in the study region, limiting surplus production for the market.

Figure 7. Period of Crop Sales



The overall volume of crop sales has increased, on average, over the past five years across all three study sites. Increases in crop sales have ranged from 58 to 70 percent, while a drop in sales ranged from 27 to 37 percent. The overall increase is attributed to growing demand for market crops and increasing cash needs among households to meeting rising costs for food, education, health and other basic needs. Declines in production of market crops are attributed to growing climatic vagaries, particularly more erratic rainfall patterns, declining soil fertility, and pest disease and infestation of crops.

Small hold farmers in the majority of villages surveyed are organized in formal or informal groups or associations. These may be mixed gender groups of men and women, or single gender groups. For women, these generally involve production of cash crops, although some groups produce staple food crops as well.

Figures on producer groups are summarized in Table 4 in three categories: 1) agriculture, 2) livestock, and 3) forestry/environment²³. Producer groups were more frequent among women for agriculture and livestock production (N=22) than men (N=11). In the Mali sample, men organized two groups to manage tree crops and to promote NRM practices. Differences in gender-based communal structures are most evident in the Burkina Faso sample where women’s groups total 8, while only 1 agricultural group was identified among men. For livestock, women most frequently organize for intensive sheep and goat fattening production, while men organize for

²³ A small number of women were organized in collectives for petty commerce, tontines (rotating microcredit), and artisanal production of local handicrafts. A small number of fishermen were organized in one group, and one youth group was organized to carry out community public sanitation activities.

intensive cattle fattening. Mixed groups by gender are relatively common for agricultural and livestock activities.

Table 4. FGD Producer Groups

STUDY ZONE	AGRICULTURE			LIVESTOCK			FORESTRY/ ENVIRONMENT		
	Women	Men	Mixed	Women	Men	Mixed	Women	Men	Mixed
Burkina Faso	5	1	4	3	0	6	0	0	0
Niger	7	5	2	2	2	2	0	0	1
Mali	3	1	2	2	2	1	0	2	0
Total	15	7	8	7	4	9	0	2	1

4.1.1 Production Conditions and Constraints for Agricultural Crops

This section is based on information obtained during FGD sessions, and provides an overview of production conditions and major constraints faced by small hold farmers.

The matrices below (Table 5) summarize the key conditions and constraints identified. Responses concerning the general conditions for farming among men and women were organized by five livelihood asset categories: 1) environmental (natural assets), 2) physical, 3) economic (financial assets), 4) technical, and 5) social (human and social assets). Responses on constraints were organized by factors of production, market access, and post-harvest storage capacity.

Responses on farm production and barriers to enhanced productivity are relatively uniform across the three study regions, with some slight variance in Mali due to the producer emphasis on gardening and rice farming, rather than dry land cereal crops.

A summary of the key conditions faced by producers include:

- **Environmental** – conditions are marginally favorable, but increasing aridity, variable rainfall, and rising temperatures, are having a cumulative deleterious effect on overall crop productivity across all three regions in the study. These conditions are compounded by other production factors, including poor soils, inferior quality seed, and low inputs;
- **Physical/Economic** – the profound structural, chronic nature of poverty among smallholders across the study sites severely erodes their capacity to purchase or access basic factors inputs (land, labor, capital/micro-credit), physical infrastructure (farm

implements, storage, water supply, transport), and key production inputs (improved seed, fertilizer, pesticides) – all of which are necessary conditions for assuring food security and enhancing productive capacity;

- **Technical/Social** – technical knowledge and capacity in improved agricultural methods and sound stewardship of natural resources is severely limited by poor access to institutional resources, such as government extension services and programs, NGO/CBOs and civil society organizations, research institutions, private sector enterprises and investment opportunities. This is further exacerbated by the relative geographical isolation and dispersion of communities across the three study zones, making access and transaction costs among development stakeholders and service providers a major challenge;

Among the constraints identified, the most common factors constraining farm output include:

- **Production** – directly related to the production conditions noted above, production constraints are widespread and multi-sectorial, e.g. shortages of tools, pest predation, lack of financial resources (micro-credit), degraded status of natural resources (soil, water), shortages of family labor and access to land (women). In the case of Mali, the production constraints include weak capacity to invest in and manage water resource technologies essential for optimal horticultural and rice production;
- **Markets** – weak access to markets and virtually no capacity among producers to obtain fair farm gate prices for crops due to a host of factors, including price taking/monopoly²⁴ by local and regional buyers and collectors at harvest, marginal transport services and poor road infrastructure and market networks, and lack of market information on commodity prices and market location. In the case of Mali, these factors also include regional instability and insecurity undermining functional market operations, and seasonal production bottlenecks and oversupply of vegetables and horticultural produce to local markets;
- **Storage** – common to resource-poor small farm settings and factors identified above, producers have marginal post-harvest storage facilities and few financial, technical or human resources needed to invest in improved storage technology. In the study

24 Farmers repeatedly stated they had ZERO negotiating capacity with buyers, collectors .. 'take it or leave it...'

region, this includes access to, and the ability to purchase improved hermetic sacks to protect cereal crops from pest attacks (particularly cowpea), thus increasing post-harvest crop losses.

Table 5. Production Conditions and Constraints for Agricultural Crops

BURKINA FASO – SAHEL REGION					
PRODUCTION CONDITIONS			CONSTRAINTS		
Environmental	Physical / Economic	Technical / Social	Production	Markets	Storage
Conditions generally favorable, but climate variability and change posing increasing water stress in the region	Economic and physical conditions (tools, equipment, seed, fertilizer, land access, water management) insufficient, severely lacking	Technical skills, labor, and institutional resources exist but insufficient, significant need for local capacity building/training in improved NRM/agricultural methods, etc.	Shortage of tools, equipment (eg... plows) Pests and predators (plant disease, insects, birds, etc.) Lack of availability, financial access to improved seed, fertilizers	Low prices at harvest Access to markets Lack of information on crop prices in area markets Monopoly, arbitrary price setting by local collectors	Lack of availability, financial access to standard and improved sacks for crop storage Poor crop storage facilities No technical knowledge of storage/protection of cowpeas

NIGER – TILLABERI REGION					
PRODUCTION CONDITIONS			CONSTRAINTS		
Environmental	Physical / Economic	Technical / Social	Production	Markets	Storage
Variable rainfall and rising temperatures, heat, impeding growth cycle of crops	Economic and physical conditions (tools, equipment, seed, fertilizer, land access, water management) insufficient, severely lacking	Technical skills, labor, and institutional resources exist but insufficient, significant need for local capacity building/training in improved NRM/agricultural methods, etc.	Poor soil quality, and aridity, desiccation of crops Low production and use of manure Difficult access to land by women Shortage of field labor Difficult mastery/adoption of new technologies Water scarcity for gardening	Lack of transport (carts) for field tasks Poor roads to access markets	Poor quality sacks for crop storage in local markets Insect attacks

MALI – GAO REGION					
PRODUCTION CONDITIONS			CONSTRAINTS		
Environmental	Physical / Economic	Technical / Social	Production	Markets	Storage
Conditions generally favorable, but climate variability and change posing increasing water stress in the region	Economic and physical conditions (tools, equipment, seed, fertilizer, land access, water management) insufficient, severely lacking	Technical skills, labor, and institutional resources exist but insufficient, significant need for local capacity building/training in improved NRM/agricultural methods, etc.	Shortage of pumps, canalization, and sprinkling systems for gardens Lack of availability, financial access to improved seed, fertilizers for rice production Shortage of water (recession flooding) Insufficient irrigation land, degraded plots and dikes Lack of fencing for diversion of animals Siltation of water points and rice/garden plots	Poor market access due to political insecurity Poor sales due to surplus production bottlenecks	No technical knowledge of storage/protection of cowpeas Insect attacks Poor crop storage facilities

4.1.2 Analysis of Crop Value Chain Products and Services

Findings in this section draw from a total of 27 KIIs, carried out with a range of service providers in crop value chains. Information was collected primarily through interviews with collectors and wholesalers in the regional centers of Dori and Tillaberi, and a few interviews at the village level²⁵. A few individuals were interviewed in larger town markets, while no weekly village markets took place during the daily visits to the sample communities²⁶. Only one post-harvest processor (sesame) was interviewed. In general, there is very little or no post-harvest value addition of cereal crops, such as drying, canning, or packaging that takes place at the village, commune, or region level in the study zone.

Tables below provide data on crop collectors, wholesalers, and a processor. Detailed information was obtained on volume of purchase/sales market activity during the past year, business operating costs, revenues, and net gain, or profit. Additional contextual information was obtained on the sales period or season, location of market activity (village, commune, region), sales trend over the past five years (increase/decrease in sales volume, stable), and major constraints to business operations. Due to the detailed nature of the data collected, only the most salient observations, trends, or patterns gleaned from a relatively small sample of value chain actors is discussed here.

Value Chain Integration and Credit Access

There is very poor articulation among producers and service providers interviewed in the crop value chains thus very weak vertical integration. This entails, most importantly, the universal absence of any formal or de jure contractual arrangements among producers, buyers, collectors, wholesalers, or other actors interviewed in the value chain. For borrowing or lending purposes, credit provisioning or access occurs almost exclusively in kind, in the form of crop payments rather than cash. Aside from rotating tontines or micro-credit systems among women, micro-credit institutions are ubiquitously absent, thus, producers and value chain service providers rely on informal kin and non-kin networks to secure loans for economic transactions

25 Only one service provider was interviewed in the Mali sample due to limitations in mobility and transport as a result of general insecurity and risk throughout the Gao Region. Few buyers or sellers of field crops could be found to interview in the villages, which is indicative of the small population size and relative remoteness of the communities visited in the study sample.

26 The study sample site schedule was arranged to avoid visits to villages on their weekly market day in order to assure optimum availability and attendance of residents in the FGD sessions.

and business operations. Other than the rare formal contractual arrangement with an NGO (such as CRS) or a government office, those interviewed noted only informal arrangements for buying or selling products and services.

Producer Inputs – Improved Seed

Participants in FGD sessions repeatedly underscored the lack of knowledge and ability on how to obtain basic farm inputs, including seed, fertilizer, pesticides, and farm implements. Three major constraints were identified: 1) the absence of viable commercial or alternative channels for accessing farm inputs, most importantly improved seed varieties, at the community level; 2) high cost; and 3) lack of information on existing seed varieties. Regular use and access to improved seeds was only identified in one village in Burkina Faso (Bani). This was due to their selection as a community hub for seed propagation, distribution, and marketing through INERA. Unless provisioned through an NGO or specific government project, viable community-based agro-input service provision structures (private dealers, farm collectives, master/lead farmers, etc.) were non-existent in the study area.

Farmers consistently cited having limited or no knowledge on the use of improved varieties of sesame, cowpeas, and groundnuts. Seed varieties were identified and inventoried in the FGD sessions. A total of 3 improved varieties were identified for sesame, 3 for cowpeas, and 2 for groundnuts. In the Burkina study, one variety of millet was identified, but not accessible in the communities. Three local varieties of sorghum were identified. Interviewees had heard of improved varieties of okra and hibiscus, but had no access to information about them, nor where to obtain seed stocks. They also noted having no agronomic training on how or when to plant particular improved varieties, nor on growing conditions in terms of water, soil, and other biophysical requirements.

In Niger, of the 12 market crops identified in FGD sessions, participants had no knowledge of improved seed varieties for 55 percent of the crops. Improved varieties were identified in 5 villages for sesame, 3 villages for cowpeas, 2 villages for millet and sorghum, and 1 village for rice, groundnuts, onions, cabbage, and potatoes. Reasons cited by respondents for non-use of improved seed were lack of access (45 percent), lack of agronomic and technical knowledge on planting (47 percent), and high cost (8 percent).

Of the 11 crops (vegetables, legumes, rice) identified in the Mali study where smallholders undertook gardening and irrigated rice production, FGD participants cited use of improved seed for only three garden crops, i.e. onions, Irish potatoes, and eggplants. They also noted that improved seed for these vegetables was provisioned by commercial seed dealers from larger towns far from the Gao region, such as Sikasso. Thus, viable local channels of agro-input provisioning of improved seed and fertilizer were not evident in the Mali study sample.

Crop Buyers – Collectors and Wholesalers²⁷

Most crop sales occur during the harvest season and are often sold at the field, or transported to the village. They are then sold to buyers who often come from larger towns or the regional capitals of Dori, Tillaberi, and Gao. Farmers in FGD sessions stated that they had no personal knowledge of the collectors who purchase their crops, nor did they have the capacity to negotiate the price of their crops.

Collectors generally purchase from the farmers during the harvest period when prices are at their lowest, and then sell crops during the dry season as local food stocks are drawn down and prices rise. One collector at the village level had an annual sales volume of 5,700 kg from four crops: sorghum, millet, groundnuts, and cowpeas. The net profit earned was \$985, with 64 percent (\$626) earned from sorghum. Sorghum and groundnuts made up the large bulk of sales (5,000 kg), while sales volume in millet and cowpeas was much less (700 kg)²⁸. Local traders generally sell their crops in the smaller village markets, fetching their highest prices, as noted, at the peak of the lean hunger season when cereal stocks have been depleted. Thus, the most vulnerable households with low crop output remain in a chronic cycle of poverty and indebtedness as they are forced to sell crops or pay back loans from the previous year at harvest time; when prices peak at the height of the lean hunger season, they buy back crops to meet their subsistence needs.

Crop wholesalers were interviewed at the commune and region level. The marketing of cereal crops by the largest sellers at the regional level is a highly profitable enterprise. These cereal crops included maize, which is produced and purchased much further south and then transported and sold in the regions studied.

²⁷ All sales figures in this section are in US\$, using a recent exchange rate of 475 CFA = \$1.

²⁸ The reason for much lower sales volume of millet and cowpeas is not clear but may be due to a combination of relatively poor productivity of these crops, as well as low output sufficient only for meeting local subsistence needs.

In Burkina Faso, the most recent figures on annual sales volume of four wholesalers for sorghum, millet, maize and cowpeas averaged 1,716 tons, with a net gain of \$20,592. These crops are bought in Bobo Dioulasso and Ouagadougou and then sold in the Sahel Region capital of Dori in the dry season to maximize profit earnings. Sorghum made up just over 60 percent of total sales volume (1,040 tons), and nearly 60 percent of total net earnings, at \$12,042. Cowpeas, with a lower total sales volume of 15 percent, was a relatively positive net earner of revenue, at 27 percent of total net gain.

Profit earnings and the volume of sales for a commune-level wholesaler in Niger is considerably less, totaling 210 tons and a net profit of \$2,773. Sorghum and maize made up 86 percent of total sales volume. Net gain was highest for maize (\$1,588) and lowest for millet (\$100). In comparing total sales volume to net profit for cowpeas, they were relatively profitable, making up only 3 percent of total sales, but earning 28 percent of total net gain.

Net profits by a wholesaler at the region level in Tillaberi, Niger were exceptionally high, totaling \$587,684 from the sales of over 24,000 tons of millet, sorghum, maize, and rice. Millet and maize were the two largest earners of revenue, accounting for 90 percent of total sales volume. Millet accounted for 40 percent of sales volume, while earning nearly 50 percent of total profit. Thus, millet sales were proportionally the most profitable crop for the wholesaler at the regional level in Niger, while in Burkina Faso sorghum was more profitable among regional wholesalers interviewed.

Among all wholesalers and collectors interviewed, lack of credit and financing business operations was consistently cited as the key constraint to improving business activity.

Processing and Transformation

The President and founder of a women's association (Jam-Joodo) involved in sesame processing in Dori, Burkina Faso, was interviewed. The group of 30 women interviewed process and sell sesame oil, paste, soap, cakes, and croquettes. Sesame is purchased directly from women's producer groups throughout the Sahel Region with no formal contractual arrangements in place. There are no formal market contracts or arrangements with buyers of the transformed sesame products, and also no formal channels of credit provisioning.

Sesame oil processing made up over 71 percent (500 kg) of total sales, yet expenses exceeded revenues. Thus, sesame oil was not a commercially profitable activity for the group, along with processing of sesame paste. Soap production from sesame generated nearly all the group's profit, netting nearly 90 percent (\$1,383) of total net gain. Thus local soap production using sesame may be a promising artisanal activity and local income earning activity for potential scale up among women. Total profit of the sesame processing activities netted \$1,549.

Among the constraints to sesame processing, the President noted several limitations with business operations including:

- Inferior storage capacity
- Poor location for business operations (in her home)
- Lack of modern equipment and materials
- Lack of financing/credit for operating cost
- Poor market access
- Artisan production using manual labor and little technology.

Table 6. Crop Value Chain Service Providers

COLLECTOR – VILLAGE (1) – BURKINA FASO								
Crop	Annual Volume (kg)	Expenses (\$)	Revenue (\$)	Net Gain (\$)	Sales Period	Market Location	Sales Trend 5 Years	Constraints
Sorghum	3,000	\$1,033	\$1,658	\$626	Dry Season	Local Area	Increase	Lack of finance for operating costs
Millet	500	\$196	\$316	\$120				
Groundnuts	2,000	\$236	\$421	\$185				
Cowpeas	200	\$73	\$126	\$54				
Total	5,700	\$1,537	\$2,521	\$985				
WHOLESALER – REGION (4) – BURKINA FASO								
Crop	Annual Volume (tons)	Expenses (\$)	Revenue (\$)	Net Gain (\$)	Sales Period	Market Location	Sales Trend 5 Years	Constraints
Sorghum	1,040	\$371,116	\$383,158	\$12,042	Dry Season	Regional Center – Dori	Increase	Credit Access
Millet	260	\$120,968	\$123,158	\$2,189				
Maize	156	\$53,303	\$54,189	\$886				
Cowpea	260	\$240,842	\$246,316	\$5,474				
Total	1,716	\$786,229	\$806,821	\$20,592				
WHOLESALER – COMMUNE (1) – NIGER								
Crop	Annual Volume (tons)	Expenses (\$)	Revenue (\$)	Net Gain (\$)	Sales Period	Market Location	Sales Trend 5 Years	Constraints
Millet	24	\$13,794	\$13,895	\$100	Hunger Season	Local, Village	Increase	Lack of finance for operating costs
Sorghum	72	\$26,225	\$26,526	\$301				
Maize	108	\$39,338	\$40,926	\$1,588				
Cowpea	6	\$4,270	\$5,053	\$783				
Total	210	\$83,627	\$86,400	\$2,773				
WHOLESALER – REGION (1) – NIGER								
Crop	Annual Volume (tons)	Expenses (\$)	Revenue (\$)	Net Gain (\$)	Sales Period	Market Location	Sales Trend 5 Years	Constraints
Millet	9,600	\$4,772,084	\$5,052,632	\$280,547	Hunger Season	Regional Center – Tillaberi	Increase	Periodic weak demand
Sorghum	1,299	\$558,616	\$631,579	\$72,963				
Maize	12,000	\$6,344,053	\$6,568,421	\$224,368				
Rice	1,200	\$1,127,037	\$1,136,842	\$9,805				
Total	24,099	\$12,801,789	\$13,389,474	\$587,684				
SESAME PROCESSOR – REGION (WOMEN'S COOP) – BURKINA FASO								
Crop	Annual Volume (kg)	Expenses (\$)	Revenue (\$)	Net Gain (\$)	Sales Period	Market Location	Sales Trend 5 Years	Constraints
Oil	500	\$447	\$421	\$(26)	Year Round	Household	Increase	Poor location for business operations Lack of modern equipment and materials Lack of finance for operating costs Poor market access
Soap	-	\$196	\$1,579	\$1,383				
Paste	100	\$109	\$55	\$(54)				
Croquettes	50	\$61	\$158	\$97				
Total	700	\$1,585	\$3,134	\$1,549				

4.2 MARKET OPPORTUNITIES IDENTIFICATION – LIVESTOCK

Livestock and small animal rearing activities were also surveyed in the FGD sessions. This section summarizes findings from these discussions and presents them in a table below, accompanied by data presented in figures.

Table 7 provides a percentage rank order of the five most frequent animal market activities identified by FGD participants. In the case of Mali, an additional activity is listed due to the even distribution of activities listed by participants as well as the small sample size. Results show that while intensive animal fattening activities are a primary market activity, poultry production (chickens) ranks high as a viable income earning activity among women. Customary grazing of sheep and goats as an income-generating activity (IGA) is fairly widespread, along with intensive feeding of sheep, goats and cows.

Table 7. Frequency of Market Production of Animals

BURKINA FASO		NIGER		MALI	
Crop	%	Crop	%	Crop	%
Poultry	22.0	Sheep Fattening	21.4	Sheep	13.3
Goats	19.0	Goat Fattening	21.4	Goats	13.3
Sheep Fattening	19.0	Poultry	21.4	Poultry	13.3
Cow Fattening	19.0	Cow Fattening	14.3	Sheep Fattening	13.3
		Sheep	7.0	Cow Fattening	13.3
				Goat Fattening	13.3

When referring to primary market activities, customary cattle grazing, a principal livelihood activity throughout the West African Sahel, was not identified as frequently as other animal production strategies. While it remains a significant livelihood and serves as a key financial asset, providing a buffer during periods of extreme duress from climate or anthropogenic shocks, it does not show up among the top five market-based livestock management strategies across the three study sites²⁹. In the Gao Region of Mali, where individuals must rely largely on animal production due to the precarious nature of rainfall and dryland agriculture, it appears as the least frequent market activity (Figure 8). A plausible explanation may be the shift toward more mixed herd species

²⁹ A plausible explanation may be that FGD participants were largely farmers owning mostly small ruminants and few cattle, while transhumant FulBe and Tuareg pastoralists who manage large herds destined for area markets, were not present in the FGD sessions.

composition, particularly smaller ruminants, and less conventional grazing of cattle due to increasing heat and water scarcity in the region. Intensive animal fattening may also be on the rise, a well-documented strategy for boosting income and requiring less pastureland, which is also dwindling in supply over time in the most arid regions of the Sahel.

FGD participants provided an estimate of the percentage of animal production activities that were undertaken to generate income (Figure 9). Figures confirm that animals are raised primarily to generate income through both customary grazing and intensive animal fattening. With the exception of goats in the Burkina Faso study, intensive animal fattening is a primary commercial activity, with at least 84 percent of production sold in local markets. Customary grazing of sheep and goats is also an important revenue earning activity, while conventional cattle production as a key economic livelihood is noted only in the Mali study.

A few examples of poultry production for eggs (Burkina Faso), and rabbit husbandry (Niger) were also noted. At least 75 percent of poultry is marketed, with a small proportion of eggs sold in the Burkina sample (10 percent). Local consumption of milk is evident in lower market figures (6-40 percent) which may also be due to low dairy productivity.

Marketing of donkeys in the Burkina study is very low, as they have a greater domestic value for agricultural field tasks in transporting crops, fodder, and manure. In the Mali sample, bourgou grass has some commercial value as a feed source, with just over 50 percent of production sold in markets.

FGD participants were asked to identify the period of animal sales in local markets. On average, 30 percent of sales take place during major ceremonies and social occasions. Sales during periods of acute need were 32 percent, while 38 percent of sales occurred on a regular basis to meet daily cash flow needs (Figure 8).

Animal sales most often occurred in local markets, averaging nearly 60 percent of all sales, while sales in larger regional markets occurred about one-third of the time. Only in the Burkina study did individuals note animal sales occurring directly within the household.

On average, 78 percent of discussants noted an increase in animal sales over the past five years, while 17 percent noted a decline, and roughly five percent noting no change in the volume of sales.

Figure 8. Frequency of Market Production of Animals Identified

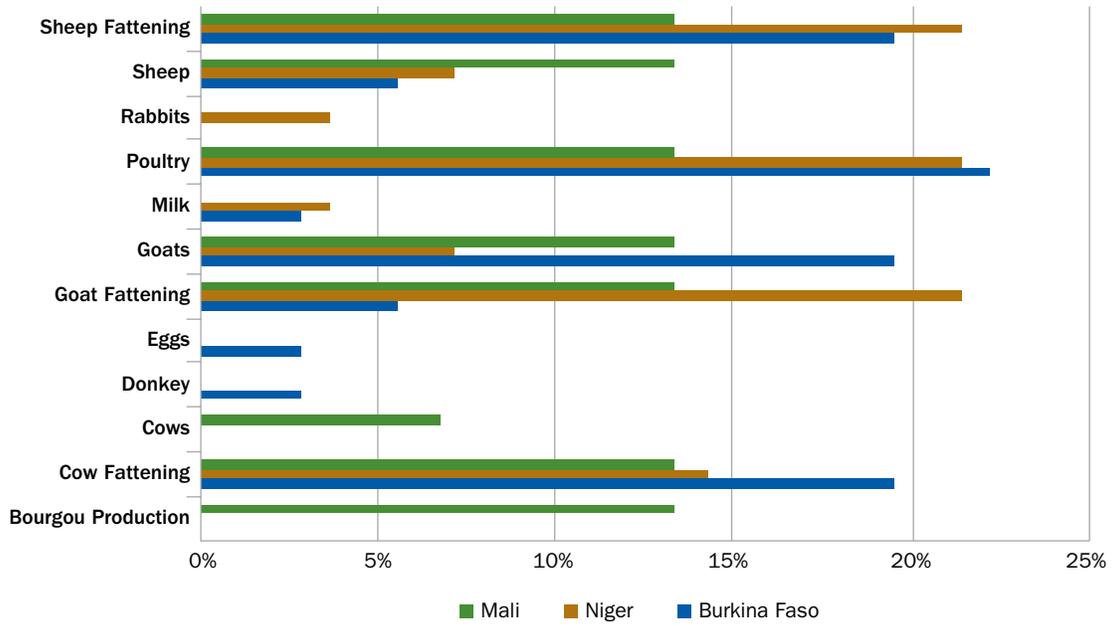
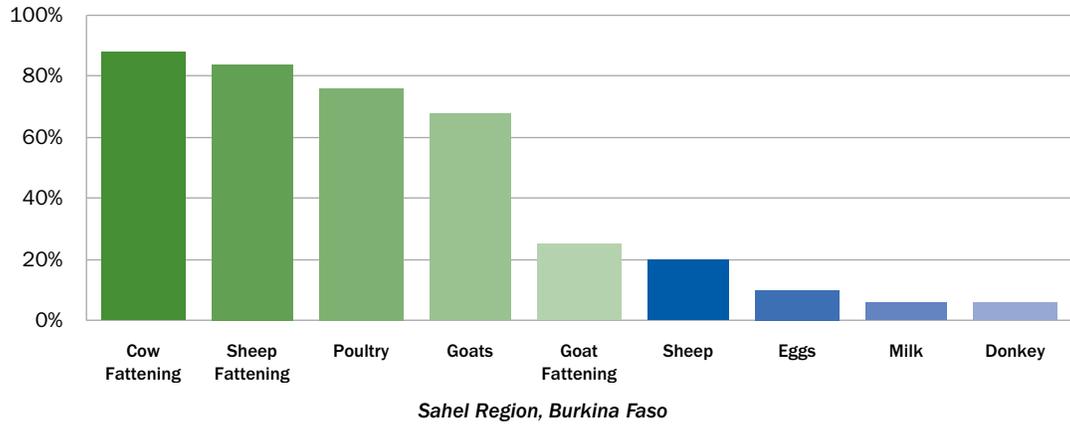
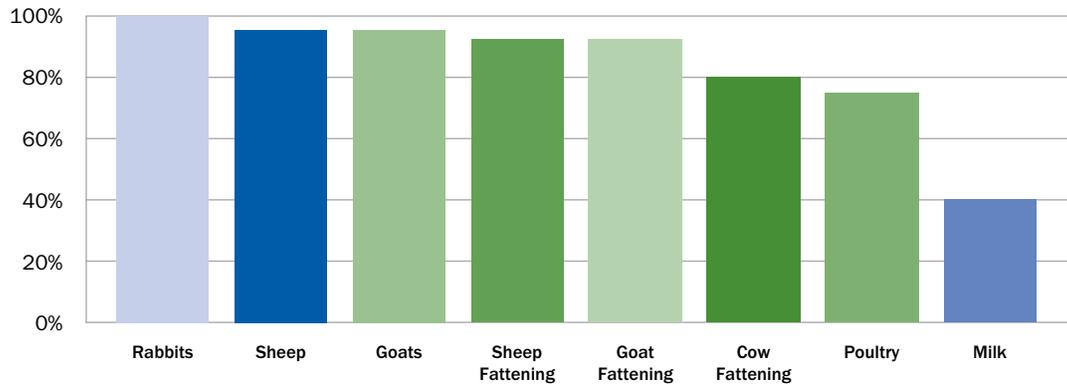
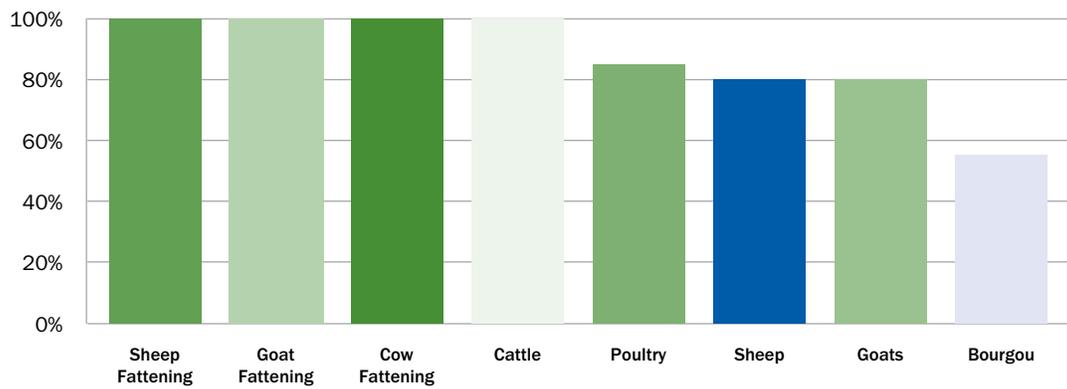


Figure 9. Percentage of Market Activity for Animals





Tillaberi Region, Niger



Gao Region, Mali

Table 8. Livestock Market Information

SAHEL REGION, BURKINA FASO									
Livestock, Poultry, Animals	%	Buyer	%	Sales Period	%	Market Sales	%	Sales Trend 5 Years	%
Cattle Fattening	88	Collectors	76	Ceremonies	20	Area Market	45	Increase	76
Sheep Fattening	84								
Poultry	76								
Goats	68	Retailers	21	Regularly	46	Village Market	25	Decrease	10
Goat Fattening	25								
Sheep	20								
Eggs	10	Individuals	2	Upon Need	34	Household	30	Stable	14
Milk	6								
Donkeys	6								

TILLABERI REGION, NIGER									
Livestock, Poultry, Animals	%	Buyer	%	Sales Period	%	Market Sales	%	Sales Trend 5 Years	%
Rabbit Fattening	100	Collectors	21	Ceremonies	13	Area Market	41	Increase	79
Sheep	95								
Goats	95								
Sheep Fattening	92	Retailers	75	Regularly	37	Village Market	59	Decrease	21
Goat Fattening	92								
Cattle Fattening	80								
Poultry	75	Individuals	4	Upon Need	50	Household	-	Stable	-
Milk	40								

GAO REGION, MALI									
Livestock, Poultry, Animals	%	Buyer	%	Sales Period	%	Market Sales	%	Sales Trend 5 Years	%
Sheep Fattening	100	Collectors	8	Ceremonies	56	Area Market	13	Increase	79
Goat Fattening	100								
Cattle Fattening	100								
Cows	100	Retailers	92	Regularly	31	Village Market	87	Decrease	21
Poultry	85								
Sheep	80								
Goats	80	Individuals	-	Upon Need	13	Household	-	Stable	-
Bourgou	55								

4.2.1 Production Conditions and Constraints for Livestock Markets

Many of the production conditions and constraints faced by agro-pastoralists in the three study regions are similar in nature to those discussed in Section 4.1.1 among smallholder farmers.

The matrices below in Table 9 provide a summary of the major production conditions and constraints faced by those raising livestock, small animals and poultry. Responses generated are organized and summarized by livelihood asset category below.

A summary of the key conditions livestock and animal producers face include:

- **Environmental** – conditions are not favorable for livestock and small animals, due to water scarcity, high temperatures and poor quality pasture and fodder sources. Heat stress is particularly problematic for chickens and poultry, and mortality due to extreme temperatures is not uncommon;
- **Physical/Economic** – economic and physical conditions are severely limiting, thus capital and micro-credit for investment in animals, fodder, and veterinary care are largely absent; distance to livestock markets is often far;
- **Technical/Social** – technical knowledge of livestock management and small animal husbandry exists but is insufficient; few villages in the study have received training or veterinary products and services from NGOs, CBOs, and government livestock agents; vaccination campaigns are infrequent and costs prohibitive for many pastoralists in the study regions.

Among the constraints in production, the most common include:

- **Production** – the persistence of diseases among small ruminants and poultry, particularly chickens; insufficient and poor quality fodder, and shortages in availability of feed supplements for animals; access to water and long distances to water points; and overall low productivity of local breeds of livestock and small animals. In Mali, bourgou production is hampered by unavailability of seed, arid conditions and limited water sources, and the scarcity of land and space for production.
- **Markets** – virtually all FGD participants highlighted the lack of market information on livestock prices and market location, and

limited capacity to negotiate price for the sale of animals. In Burkina Faso and Mali, insecurity and the theft of animals, and on occasion money, during the sale of animals on market days was noted.

Table 9. Production Conditions and Constraints for Livestock

BURKINA FASO – SAHEL REGION				
PRODUCTION CONDITIONS			CONSTRAINTS	
Environmental	Physical / Economic	Technical / Social	Production	Markets
Conditions not favorable for livestock and small animal husbandry; water scarcity, extreme heat, and poor quality fodder and pastureland	Economic and physical conditions insufficient, severely lacking	Technical skills, labor, and institutional resources exist but insufficient	Persistence of disease for small ruminants and poultry (chickens) Insufficient and poor quality forage/fiber for animals (pasture, feed supplements), water scarcity Low productivity of native species	Lack of information on livestock prices in area markets Low negotiating capacity in the market and low prices for animals Insecurity, theft of animals and money

NIGER – TILLABERI REGION				
PRODUCTION CONDITIONS			CONSTRAINTS	
Environmental	Physical / Economic	Technical / Social	Production	Markets
Conditions are insufficient for livestock and small animal husbandry; variable rainfall and high temperatures	Economic and physical conditions insufficient, severely lacking	Technical skills, labor, and institutional resources exist but insufficient	Low productivity of native species Persistence of disease for small ruminants and poultry (chickens) Insufficient and poor quality forage/fiber for animals (pasture, feed supplements), water scarcity Poor access to credit Poor access and high cost of veterinary services	Lack of information on livestock prices in area markets Low negotiating capacity in the market and low prices for animals

MALI – GAO REGION				
PRODUCTION CONDITIONS			CONSTRAINTS	
Environmental	Physical / Economic	Technical / Social	Production	Markets
Conditions sufficient for livestock and small animal husbandry	Economic and physical conditions insufficient, severely lacking	Technical skills, labor, and institutional resources exist but insufficient	Persistence of disease for small ruminants and poultry (chickens) Insufficient and poor quality forage/fiber for animals (pasture, feed supplements), water scarcity Lack of capital No availability of bourgou seed Water scarcity for bourgou production in the dry season Shortage of land for bourgou production	Lack of information on livestock prices in area markets Low negotiating capacity in the market and low prices for animals Insecurity, theft of animals

4.2.2 Analysis of Livestock Value Chain Products and Services

Findings in this section draw from a total of 27 KIIs of which there was only one woman. Service providers included buyers and sellers of sheep, goats, cattle, and poultry at the local commune level, and one buyer who also sold butchered animals in the regional market of Tillaberi, Niger. Analysis is limited to only 8 of the service providers interviewed in livestock and poultry value chains.

Table 10 provides a synopsis of the data obtained, mostly at the village level. Information includes figures on the volume of market activity (purchases or sales) during the past year, business operating costs, revenues, and net profit. Additional information includes analysis of the sales period or season, location of market activity (village, commune, region), sales trend over the past five years (increase/decrease in sales volume, stable), and major constraints to business operations.

Value Chain Integration and Credit Access

Livestock, small ruminant, and poultry value chains face the same kinds of structural barriers identified for the crop value chains. Aside from formal contracts to sell animals to institutions, such as NGOs and government agencies, buyers and sellers interviewed have no formal conditions in place with their clients to buy or sell animals. No cases of loans in the form of cash advances or reimbursements through formal micro-credit institutions were recorded. Thus, as in the case of crop marketing, there appears to be little or no vertical integration of key buyers, sellers, and processors in the livestock and small animal value chains. Individuals rely on family or friends to conduct business when in need of cash as an advance or to pay back debts.

Livestock Traders³⁰

Data was obtained during KIIs with 4 livestock traders at the commune level in Burkina Faso. Sales in the Sahel Region near the village of Titabe vary by season, with sheep being sold primarily during the rainy months and during festivities and religious holidays, most importantly Ramadan. Cattle and goats, on the other hand are sold mostly during the dry season. There has been a general trend of increasing sales volume over the past five years. Traders noted the scarcity of capital needed to finance livestock purchases and sales, and the poor quality of pens and corrals where the animals are kept.

³⁰ All sales figures in this section are in US\$, using a recent exchange rate of 475 CFA = \$1.

The traders averaged sales of 572 animals over the past year, with goats constituting 55 percent of total sales (N=312), while cattle made up only 9 percent (N=52), and sheep 36 percent (N=208). Sheep were the most profitable, generating 38 percent (\$1,971) of total profit, while margins for both cattle and goats were slightly less, at just over 31 percent (\$1,642). Overall profit for the traders on average was \$5,255.

Poultry Sellers

Women raise chickens and guinea fowl, and sell eggs in order to earn family income. Three women were interviewed who sold their poultry in village markets near Titabe in the Sahel Region of Burkina Faso. Chickens are most often sold during key ceremonies such as weddings, naming ceremonies, funerals, and religious holidays, while guinea fowl are sold throughout the year. Eggs are collected and sold in markets during the rainy season. Women noted the same problems of scarcity of capital needed for poultry raising and poor quality earthen clay shelters for housing chickens.

On average, 600 chickens and the same number of guinea fowl were sold during the year, and 900 eggs were sold during the 3-4 month rainy season. Eggs³¹ earn very small income (\$19) while chickens are the most profitable, earning nearly 80 percent of total net gains, while guinea fowl were much less profitable (circa 20percent). Women generated a reasonable profit from their poultry activities, with an average net profit of \$1,613.

Processing and Transformation

One trader who also sells butchered animals in the regional market of Tillaberi was interviewed to gain some perspective on the processing of animals for sale as butchered products in the market. Both live and butchered animals are sold daily on demand. Sales volume has risen steadily over the past five years. The trader has three freezers for meat storage, but noted that this was not sufficient for the volume of his business. He also noted no formal contractual arrangements with his clients, including no formal loans or access to credit through a bank or lending institution.

Butchered sheep represent the large portion of sales for the individual,

³¹ Average egg production per poultry producer (3 women) was estimated at 900 over 3-4 months, so 900 per producer.

making up 54 percent (N=2,520) of total market volume. Cattle make up the lowest volume of sales, at roughly 8 percent (N=144). However, butchered cows are the most profitable of all animals sold, constituting 65 percent (\$59,602) of total net gain. Butchered sheep earned significantly less, at 22 percent (\$20,269) of total profits. Live goats earned the least profit, at slightly under 1 percent (\$600). Total profit for the butchery and livestock sales were relatively high, at \$91,983.

Table 10. Livestock/Animal Product/Poultry Value Chain Service Providers

LIVESTOCK TRADERS – COMMUNE (4) – BURKINA FASO								
Crop	Annual Volume (N head)	Expenses (\$)	Revenue (\$)	Net Gain (\$)	Sales Period	Market Location	Sales Trend 5 Years	Constraints
Sheep	208	\$9,962	\$11,823	\$1,971	Rainy Season	Titabe and neighboring villages	Increase	Lack of finance for operating costs Poor quality pens, corrals
Goats	312	\$13,301	\$14,779	\$1,642	Dry Season			
Cows	52	\$11,057	\$12,589	\$1,642				
Total	572	\$34,320	\$39,192	\$5,255				

POULTRY SELLERS – COMMUNE (3) – BURKINA FASO								
Crop	Annual Volume (N)	Expenses (\$)	Revenue (\$)	Net Gain (\$)	Sales Period	Market Location	Sales Trend 5 Years	Constraints
Chickens	600	\$2,058	\$3,335	\$1,277	Ceremonies	Titabe and neighboring villages	Increase	Lack of finance for operating costs Poor quality pens, coupes
Guinea Fowl	600	\$3,321	\$3,638	\$317	Year Round			
Eggs	900	\$114	\$133	\$19	Rainy Season			
Total	2,100	\$5,493	\$7,105	\$1,613				

LIVESTOCK TRADER/BUTCHER – REGION (1) – NIGER								
Crop	Annual Volume (N head)	Expenses (\$)	Revenue (\$)	Net Gain (\$)	Sales Period	Market Location	Sales Trend 5 Years	Constraints
Sheep – hoof	360	\$61,526	\$64,421	\$2,896	Daily, on demand	Regional Center – Tillaberi	Increase	Insufficient cold storage
Cows – hoof	144	\$94,185	\$97,011	\$2,826				
Goats – hoof	216	\$16,452	\$17,053	\$600				
Sheep – butchered	2,520	\$430,679	\$450,947	\$20,269				
Cows – butchered	720	\$470,925	\$530,526	\$59,602				
Goats – butchered	720	\$62,419	\$68,211	\$5,791				
Total	4,680	\$1,136,185	\$1,228,168	\$91,983				

4.3 MARKET OPPORTUNITIES IDENTIFICATION – FORESTRY

FGD participants across the three study sites did not identify tree crops or NTFPs as one of the five most important market crops in their communities. Thus, the identification of potential forestry-related market opportunities and promising tree crops or NTFPs is very limited in this report.

In the Niger sample, discussants noted that leaves, fruits, seeds and seed pods of some tree species are collected and used by women for making sauces, as well as serving as dry season forage for sheep and goats. In the Burkina Faso study, limited information was obtained from one collector of gum Arabic and a nursery grower of several tree species with high market value. These included:

- Acacia Senegal – valued in producing gum Arabic
- Acacia radiana – valued in producing comprotome (used in chewing gum, confectionaries in Nigeria)
 - Acacia nilotica – valued for live fencing and wind breaks, also provides seed pods as nutrient-rich forage for sheep and goats
 - Moringa – multi-purpose tree with high nutrient and medicinal value
 - Neem – medicinal and pesticidal use

4.3.1 Analysis of Forestry Value Chain Products and Services

Only two individuals provided information on the commercial operations of two NTFP businesses: a collector of gum Arabic in Dori, Burkina Faso, and a tree nursery grower, also in Dori. Figures on the profitability of their business operations are provided in Table 11 and are summarized below.

NTFP Collector – Gum Arabic

The collector of gum Arabic that was interviewed had organized a grower's union in the Sahel Region, buying gum Arabic, comprotome (used in chewing gum, confectionaires), and gum Arabic powder from smallhold producers³². Sales occur during the dry season, from

³² The union is made up of 13 producer groups, with approximately 35 members per group. Both men and women are members, although the groups are predominantly women. There are also 16 women employed full time during 8 months a year, who do sorting and grading of the gum. They are paid \$126 (60,000 CFA) per month. The union has storage facilities in Dori whose costs are covered by a local development project.

December through May. Sales volume has increased over the past five years. Constraints include a shortage of operating capital, difficulties with transport, and low productivity of ageing trees.

Comprotome makes up 53 percent of annual sales volume (310,000 kg), against 37 percent (215,000 kg) for gum Arabic . Comprotome generates 52 percent of overall profit (\$146,284), while gum Arabic earns 44 percent (\$122,021). Gum Arabic powder makes up the remaining small percentage of overall sales volume (10 percent) and profits (4 percent). The collection and sale of gum and related products appears to be a highly profitable business for the collector, who had a net profit of \$280,305.

Tree Nursery Owner

A tree nursery owner was also interviewed in Dori where he grows several tree varieties (neem, acacia Senegal, acacia nilotica, moringa proleptique) and sells some imported plants. Sales occur during the rainy season at his nursery in Dori. Sales volume has increased over the past five years. The key constraints with his nursery include the shortage of operating capital, scarcity of land and water for growing trees, and a lack of hand tools for propagation of trees.

Moringa represents 29 percent of sales volume (7,500 trees) and acacia Senegal accounts for slightly less at 24 percent (6,250 trees). Figures were not available on the profit earnings for each tree variety. Overall, tree production netted the owner \$2,433 per year.

Table 11. Tree Crop Value Chain Service Providers

COLLECTOR, GUM ARABIC – REGION (GROWER'S UNION) – BURKINA FASO								
Crop	Annual Volume (kg)	Expenses (\$)	Revenue (\$)	Net Gain (\$)	Sales Period	Market Location	Sales Trend 5 Years	Constraints
Gum Arabic	215,000	\$37,587	\$497,895	\$122,021	December – May	Regional Center – Dori	Increase	Lack of finance for operating costs Transport Aging Trees
Comprotome	310,000	\$147,400	\$293,684	\$146,284				
Gum Arabic Powder	60,000	\$19,579	\$31,579	\$12,000				
Total	585,000	\$204,566	\$823,158	\$280,305				

GROWER, TREE NURSERY – REGION (1) – BURKINA FASO								
Crop	Annual Volume (N)	Expenses (\$)	Revenue (\$)	Net Gain (\$)	Sales Period	Market Location	Sales Trend 5 Years	Constraints
Neem	1,000	\$98	\$632	\$1,517	Rainy Season	Regional Center – Dori	Increase	Lack of finance for operating costs Scarcity of land with water supply Shortage of hand tools
Acacia Senegal	6,250	\$98	\$1,053					
Acacia Nilotica	5,750	\$98	\$211					
Moringa	7,500	\$98	\$42					
Proleptique	5,500	\$98	\$168					
Imported Plants	300	\$98	\$1,579	\$916				
Total	26,300	\$588	\$3,684	\$2,433				

4.4 ANALYSIS OF OFF-FARM MIGRATION OPPORTUNITIES

This section provides an overview of off-farm income earning strategies among seasonal migrants in the study zone. Due to the absence of migrants during the site visits, information on migration was obtained by FGD participants who had either migrated at an earlier point in time, or who currently had children who were away as seasonal or long-term migrants.

Migration strategies are primarily of short duration, occurring during the dry season in order to obtain cash to invest in crop production for the upcoming rainy season. Long term out migration from the study areas of Burkina Faso and Niger is declining, while it is beginning to increase in the Gao Region of Mali due to political unrest and insecurity. Therefore, discussions focused almost entirely on short term migration strategies, activities undertaken, and difficulties encountered among migrants. Observations here are summarized from data in Table 12 below.

As cropping seasons end with the final harvest, young men ranging primarily from 15-30 years of age, depart in search of seasonal wage labor or petty commercial activities both in the larger towns within each country as well as further south to the coastal countries, primarily the Ivory Coast, Ghana, and Nigeria.

Out migration occurs primarily in the dry season throughout the three study zones. Young men are prompted to depart, largely in search of short term wage earning opportunities. In the Sahel Region of Burkina Faso, their principal employment activities included butchery, petty commerce, gold mining within the region, and some transhumant pastoralism. Local artisanal mining was observed during the site visits and it is increasingly becoming the primary wage earning activity among young men during the dry season. Thus, more men are opting to engage in local mining activities rather than migrate further south to neighboring countries, as revenues from local gold mining are becoming more lucrative than other activities in distant localities. Women are not engaging in seasonal wage labor among those communities in the Sahel Region study sample.

In the Tillaberi Region of Niger, migration occurs primarily in the dry season, involving both men and women. Women return during the rainy season to provide family labor in the fields and to undertake their

own cropping activities. Some men remain off the farm throughout the entire crop season in order to earn money, which is sent back as family remittances. This occurs among males in the same household or extended family, who take turns annually, migrating out in search of wage labor in a rotating household system. Women generally find employment seasonally as household domestic laborers in the larger towns and cities such as Niamey, while also finding work as field laborers in rice producing areas of Téra Department. Men often migrate further distances to the coastal countries of Nigeria, Ivory Coast, Ghana, Benin, and Togo. Some migration north to Libya was also documented. Wage labor opportunities include petty commerce, butchering, dockers, firewood and fodder sales, house guards, and artisanal gold mining in the towns of Komabanga, Namaro, and Téra.

In the Gao Region of Mali, migration is seasonal, involving only men. The recent political conflict and instability in the region has triggered more out migration from the region to other regional towns in the country, as well as toward coastal countries; some migration to neighboring Niger and Burkina Faso was noted as well. FGD discussants also underscored increasing climate variability and greater vagaries in water availability for farming and livestock as an additional push factor that is accelerating migration out of the region. Men engage in short term, informal sector wage earning activities similar to those noted in Niger.

A host of constraints encountered during seasonal out migration were identified in the group sessions. In Burkina Faso, these included illness, lack of access rights or security to landholdings for farming, and cultural barriers such as language or religious affiliation. In Niger, these included poor access or shortages of housing, illness and poor dietary conditions, violence (mostly against women), language barriers, lack of vocational skills and training, and difficulties in obtaining identity cards as temporary residents in Nigeria and Ivory Coast. Constraints identified during the Mali group discussions were virtually the same, in addition to theft and vandalism, which is a notable problem in northern Mali during return trips home.

Strategies to better support seasonal migrants, both at home and in the receiving countries, will be proposed in the Recommendations section.

Table 12. Summary of Regional Migration Data

SAHEL REGION, BURKINA FASO						
Migration Pattern	Age Range	Gender	Reason for Departure	Principal Destinations	Principal Activities	Constraints
Seasonal	17-40	Men only	Employment/ income Grazing/ pasture for livestock	Interior of country Subregion	Butchery Petty Commerce Gold Mining Transhumant Pastoralism	Illness No land ownership or tenure rights Cultural
Permanent/ Long Term						

TILLABERI REGION, NIGER						
Migration Pattern	Age Range	Gender	Reason for Departure	Principal Destinations	Principal Activities	Constraints
Seasonal	15-30	Men Women	Employment/ Income Revenue for approaching crop season Drought conditions	Niamey Komabanga (near Téra) Nigeria Ivory Coast Ghana Benin Togo Libya	Men: Petty Commerce Buchery Docker Firewood Sales Fodder Sales House Guard Gold Mining (Komabanga, Namaro, Téra) Women: Domestic Labor Rice Farming	Housing shortages Illness, poor diet/ nutrition Violence (mostly against women) Language barriers Lack of vocational skills Lack of documentation (identity cards required in Nigeria, Ivory Coast)
Permanent/ Long Term						

GAO REGION, MALI						
Migration Pattern	Age Range	Gender	Reason for Departure	Principal Destinations	Principal Activities	Constraints
Seasonal	15-30	Men	Political conflict, insecurity Lack of employment opportunities in the dry season Revenue for approaching crop season Poor crop production due to variable rainfall	Interior regional towns (Gao, Bamako, Mopti, Kidal) Niger Nigeria Ivory Coast Ghana Benin Togo Burkina Faso	Men: Petty Commerce Docker Firewood Sales Fodder Sales House Guard Unskilled Labor	Housing shortages Illness, poor nutrition Language barriers Lack of vocational skills Lack of documentation (required identity cards in Nigeria, Ivory Coast) Theft, vandalism during return trips home
Permanent/ Long Term						

5. RECOMMENDATIONS

As one of two studies carried out under SUR1M, recommendations proposed from the findings of this study closely overlap with those found in a companion study on climate smart agriculture, also submitted to CRS. Therefore, this section will be more cursory in nature, supporting the findings of the initial study. Recommendations here will be specific to the value chain analyses in this report for crops, livestock, and a limited number of forestry products.

In order for agricultural markets to expand in those regions targeted under SUR1M and the focus of this report, a comprehensive set of activities will need to be undertaken in a well-coordinated and integrated fashion. Individual, one-off activities that do not address the underlying structural dimensions and intersecting segments of viable, functioning market systems will be doomed to failure. Any one weak link in a commodity value chain will affect the performance of all nodes in the chain, from input to on-farm to output segments of product and service provision. Therefore, a few general features of those key structural pillars that must be supported to build viable market opportunities in a region of relative food insecurity and high vulnerability include the following:

Input Node

- **Agro-Input Supply** – a range of well harmonized groups of actors, including government, civil society (NGO/CBOs), and private sector enterprises with well-defined roles and functions must be present. In terms of input supply, this includes commercially viable micro-enterprises (including private sector, community-based producer groups, etc.) capable of provisioning smallholders with a range of inputs – from appropriately packaged and priced improved seed varieties, to low-cost affordable technologies (particularly agricultural water management technologies such as individual/household scale drip irrigation garden kits), fertilizer packages (micro-dosage applications), and micro-credit systems.

On-Farm Node

- **Agricultural Extension and Training** – new innovative models of agricultural extension and training have been piloted in many

programs and should be considered for replication and scale up under SUR1M³³. These include community-based Lead/Master Farmer models, in which innovative, progressive farmers serve as the knowledge management hub in the community, providing a package of products and services including agronomic training in the use of improved seed varieties, improved methods of soil and water conservation, and use of agricultural water management technologies. Such innovators may operate as a micro-scale enterprise operation, or as part of a community-based farm association with membership fees, an operational micro-credit facility, etc. The Farmer Field School model is another alternative strategy to build agronomic knowledge and technical farming capacity in the community.

- **Market Information Systems** – smallholders interviewed consistently note their inability to negotiate the sales price of crops and their lack of access to market information (prices and locations). To correct this structural deficiency, producers need access to timely market information, delivered through effective communication channels, including local radio, village market information kiosks, and cell phones. Considerable experimentation has been undertaken in the development of commercially viable market information systems, particularly in Mali³⁴. Drawing upon experience in the region, resources should be mobilized to design new innovative instruments for the dissemination of market information to local producer groups. Information alone is necessary but insufficient, and will need to be well integrated with other functioning components of viable commodity value chain and market system proposed in the recommendation section.
- **Post-Harvest Management** –crop storage technology is rudimentary and underdeveloped, largely due to the lack of capital resources and technical knowledge of improved storage systems. FGD discussants frequently cited pest infestation and inferior storage technology as a key aspect of crop loss

33 One such repository of innovation in agricultural extensions services is the Marketing Extension and Advisory Services (MEAS) cooperative agreement, implemented through the University of California, Davis under funding by USAID. Experience and innovation with agronomic models of service delivery should be harnessed for potential replication under SUR1M.

34 Michigan State University has had a sustained presence in Mali building innovative market information systems over the past decade. Promising practices and knowledge gained from MSU's considerable investment in smallholder market development and market information systems should be gleaned and applied under SUR1M.

and food shortages. Combined with the absence of micro-credit facilities, and lack of access to seed, fertilizer, and pesticides, improved crop storage technology is notably absent throughout the communities visited. A well designed system of inventory credit and warehouse receipting ('warrantage') tied to a system of community cereal banks with improved storage facilities for warehousing of produce would enable farmers to address multiple obstacles that they are confronting, e.g. lack of micro-credit and operating capital; poor access to improved seed, fertilizer, and pesticides; poor crop storage facilities; and absence of community grain reserve to buffer the most vulnerable through periods of acute scarcity of food supply. The warrantage system also provides an opportunity for producers to escape the chronic debt trap of selling off their harvest at the nadir of the market crop cycle and buying back at the peak, thus moving them further into a spiral of increasing poverty and indebtedness. In relation to improved storage technology, improved hermetic sacks for cowpea and other grain produce are one relatively low cost option that could significantly reduce post-harvest crop losses during storage.

Output Node

- **Production Clusters** – as noted, vertical integration of producers with input dealers, collectors, wholesalers, processors, transporters and other actors in the value chain is essentially absent. A first step at improving alignment with other service providers is to improve the linkage of producers to downstream markets. This begins at the farm gate, where smallholders are severely constrained in terms of their ability to identify market opportunities and negotiate the sale of their produce. In a context of weak market integration, smallholders should organize as production clusters or units within a larger region and build a critical mass or economy of scale, vastly improving their ability to organize themselves and leverage resources needed to collect, sort, grade, bulk, and transport crops to markets.

5.1 CROP, LIVESTOCK AND FOREST MARKET OPPORTUNITIES

The general recommendations above are supported by the following value chains proposals:

Crop Value Chains

Study findings show no consistent trends in the identification of opportunities to promote particular crop markets based on profit margins among a range of value chain actors. Sorghum was identified as the most profitable cereal crop among village level collectors and regional wholesalers in Burkina Faso. However, in Niger, cowpea is the most profitable for commune level wholesalers and millet for regional level wholesalers.

Market Opportunities for Women

Among the crops cited in the FGD sessions as primary market crops, sesame, groundnuts, and cowpeas were identified the most frequently. These are not necessarily gender specific crops, although women noted these crops as primary market crops in discussion sessions. Other crops that women grow to earn income include okra, hibiscus, and vegetables. Trends on sales volume were increasing over time for almost all crops. As the only proxy for demand, one can assume that initiatives to increase market output of all the crops noted above would be advantageous in boosting the economic status and prosperity of women.

Figures on processing of sesame residues for a local, artisanal soap from the women's cooperative in Dori suggest that soap production holds promise as a potential revenue generating activity for some women³⁵.

Off Season Market Opportunities

Garden vegetables are in short supply in local markets in the dry season as surface or shallow water sources are depleted. Extending garden production late into the dry season through the use of small-scale family drip irrigation technology undertaken in close proximity to family compounds rather than in farm fields some distance away

35 Information on soap production using *balanites aegyptiaca* by a local NGO in Dori shows promising results. More research on local soap production as an income generating activity among women using sesame, balanites, or other crops, trees, or plants should be explored as a market investment opportunity for women.

should be further explored. A more detailed description of drip irrigation technology is presented in the companion report on climate smart agriculture technologies.

Livestock Value Chains

Intensive Animal Fattening

Findings on intensive fattening of cows, sheep, and goats demonstrate that such activities can provide reasonable income for households if sufficient fodder and feed supplements are available throughout the period of fattening of animals. Goats and sheep are generally fattened over a 3-4 month period, while cattle are generally held longer, over 6 months. Intensive fattening of cows, sheep, and goats should be expanded. Such efforts will need to be accompanied by supporting micro-credit institutions to support capital intensive investments in feed supplements, forage, and veterinary care. Without effective credit provision, most smallholders cannot absorb the high operating costs to invest in intensive animal fattening as an income generating activity on a sustained basis. A fund should be established in the form of a micro-credit loan for both men and women to undertake intensive animal fattening. Men commonly raise cattle while women raise sheep and goats. However, other projects have demonstrated very positive results of women investing in dairy herd production through intensive fattening.

Poultry and Rabbit Husbandry

Findings on poultry production for women indicate that raising of chickens can be a profitable activity. Some limited production of guinea fowl and selling of eggs generated less income but may have potential for increased production. Poultry are not well adapted to heat stress in the region and susceptible to diseases. Therefore, improved shelter for housing chickens and access to medicines or vaccines are needed to make poultry production a profitable enterprise. Races of chickens that are better suited to high temperatures should be explored.

Rabbit production in a remote village in the Niger study was undertaken as a market strategy, earning income for some women. Investments in smaller animals such as poultry and rabbits requires less capital than goats, sheep or cows and if managed well, could be a reasonable small revenue generator for many women. More market analysis is needed to determine if demand for rabbit as a food source has any cultural or other limitations.

Forage Production and Feed Supplements

Fodder production holds promise and has been proposed in the CSA study. In Mali, about 50 percent of bourgou production was sold in local markets and may have potential for development. Sufficient land area may be a limiting factor and bourgou seed would need to be made more accessible.

Feed supplements for livestock are in short supply and strong demand exists, particularly in the Sahel Region of Burkina Faso. Improved sourcing of the feed supplement is needed and should be further researched to identify market opportunities to increase production.

Water Points

The watering of animals is a major limitation as water sources become scarce due to increasing aridity in the region. The construction of small ponds (boulis) that store water after rains well into the dry season would be a cost effective investment in supporting viable crops and herds in the region.

Veterinary Services

Veterinary services are costly and difficult to access due to the remote location of many villages in the region. Improved access and the timely provisioning of vaccines, medicines and feed supplements should be further studied to find viable solutions.

NTFP Value Chains

Markets for high value NTFPs appear to be underdeveloped and could potentially be expanded. Gum Arabic production (acacia Senegal, acacia radiana) in the study was limited to the northern communes in the Sahel Region of Burkina Faso, but profits for a collector's union were promising. Other tree species, such as acacia nilotica, provide a good fodder source for small ruminants in the dry season, and moringa has proven medicinal and nutritional value. Soap production from balanites is another market opportunity that could hold some potential in the remote villages of this study.

5.2 INVESTMENT STRATEGIES SUPPORTING OUT MIGRATION

Several interventions are proposed to both create opportunities for employment in the sending communities of migrants as well as improve seasonal wage labor opportunities and living conditions in the receiving communities.

Migration Retention Strategies

In order to create employment opportunities for both men and women in their home communities, significant investments in vocational training and small business development will be needed. Due to growing climatic variability in the region, economic returns from investments in dry land farming, livestock production and NTFP market sales will become increasingly precarious and difficult to meet the consumption needs of a rising population. Unless the underlying structural dimensions of poverty and weak market systems are addressed in the recommendations section above, investments to retain labor for farm production activities may have very limited impact. A strategy promoting more climate 'neutral' income earning opportunities based on artisanal crafts, trade, and small-scale commercial activities may prove more viable as a revenue generator for young men and women in the region. Such activities might include handicrafts production (baskets, mats, leather crafts, etc.) that could be marketed in larger regional towns and the urban capitals of Ouagadougou, Niamey, and Bamako, possibly targeting local and international tourism markets. Sewing and weaving as vocational activities should be given consideration, along with wood carving and wood working, jewelry and blacksmithing, and similar craft related vocational activities.

Some success with local soap production among women in the region is one example of artisanal product development that can be integrated with sesame production or the promotion of NTFP activities, to be undertaken on biodegraded lands. The creation of new products with potential high market value could be promoted as an economic stimulus activity that also address the need for environmental sustainability and improved stewardship of natural resources in the region. While dependent on natural climatic conditions in the region, creating value addition through local processing and transformation of native plants and crops that may hold potential high market value should be explored. Producer groups or cooperatives of women, men, or mixed groups could be

organized and supported to grow and market some of the following value added products:

- Hibiscus – cultivation, drying, processing, and packaging of hibiscus as a health product (teas, sweetened juices);
- Sesame – cultivation, drying, processing, and packaging of sesame derivatives (oil, paste, cakes, soap, etc.)
- Medicinal plants – cultivation, drying, processing, and packaging of locally available native plants that have medicinal or health value, to be transformed as teas, infusions (e.g. neem as insecticide and as medicine for several diseases including malaria), and infant formula (baobab powder, moringa).

Production of horticultural crops such as herbs, medicinal plants, okra, and hibiscus could be introduced with low-cost family garden drip irrigation technology that would enable household-based garden cultivation of some of the crops noted above with potential high market value.

Further market research will be needed to identify high value niche crops that could be grown and processed locally, for marketing in larger towns where strong demand for such products is demonstrated.

In some instances, technology investments may prove useful in improving the living conditions of many. In Mali, for example, the regional conflict has had a profound impact on basic access to products and services, such as ice making and refrigeration, which are no longer available. With such extreme heat in the Gao Region, the installation of solar panels for making ice to conserve fish, meat, and dairy products, as well as cold potable drinking water would greatly assist many who currently endure extreme heat conditions with minimal or no access to cold water³⁶.

Farm-based artisanal as well as crop-based product development will need functional micro-credit mechanisms and vocational training services in small business development and the creation of incubator activities in order to strengthen the proposed interventions above.

³⁶ The cost of ice in Gao has increased from 25 CFA to 200 CFA since the regional conflict began, thus making it unaffordable for many.

Services and Vocational Training Opportunities to Support Seasonal Migrant Laborers

Several interventions are proposed to better support the living conditions and wage earning opportunities among male and female migrants in their receiving countries. Among these include:

- Micro-credit and small business training – a micro-credit fund could assist migrants in establishing small businesses or accessing operating capital that is needed to build inventory and manage petty commerce activities. Training in small business management, book keeping, and other basic skills needed to operate a business in the formal or informal sector could help migrants improve their income earnings;
- ID documentation – migrants need assistance in facilitating their entry with supporting ID documentation into some countries, such as Nigeria and Ivory Coast. Support is needed in working more closely with embassies and government officials in neighboring countries to assure more efficient access to permits and formal documents that are required to verify identity and eligibility for short term, seasonal employment;
- Migrant association social services – if not yet organized, migrant associations based in the receiving countries should be established to serve as a resource for improved access to social services, such as affordable housing, health care, legal advisory services, cultural/language/ educational training, and other related services. Such networks may already exist by informal community or kin-based affiliations. However, formalizing such groups with membership fees could prove invaluable in improving access to many basic social services, as well providing a social safety net during times of emergency, such as violence to women, theft and assault, accidental injury or death, funeral costs, weddings and naming ceremonies, etc.

ANNEXES

ANNEX 1. LITERATURE REVIEW

Please see attached Excel document, “Annex 1 – BRACED Literature Review” for full details.

ANNEX 2. FIELD RESEARCH TEAM AND INTERPRETERS

TEAM	RESEARCH ASSISTANT
CCAT/CSA	HIEN, Gaston NEYA, Tiga
MOI/AVC	KARAMBIRI, Mawa PALE, Remy
Team	Interpreters Burkina Faso
CCAT/CSA	DIALLO, Hamadou
MOI/AVC	DICKO, Hamidou
Team	Interpreters Niger
CCAT/CSA	YAYE, Oumar
MOI/AVC	ADAMOU, Salamatou
Team	Interpreters Mali
CCAT/CSA	TIDIANI, Boubacar
MOI/AVC	AG ALITINY, Sidi Elmoctare

ANNEX 3. TRAINING AGENDA

SUR1M AGENDA FORMATION

**Stratégies d'Adaptation aux Changements Climatiques – Agriculture
Intelligente face au Climat**

**Climate Change Adaptation Techniques (CCAT)/Climate Smart
Agriculture (CSA)**

**L'Identification d'Opportunités de Marchés et d'Analyse des Chaines
de Valeurs Porteuses**

**Market Opportunities Identification (MOI)/Agricultural Value Chains
(AVC)**

Ouagadougou, Burkina Faso

3-8 April 2014

JOUR 1 – CCAT/CSA

JEUDI, 3 AVRIL

Matin

I. Introduction à l'étude

1. Introductions et l'esprit d'équipe
2. Objectifs de SUR1M
3. Programme de terrain
4. Logistique

II. Aperçu de la méthodologie

1. Revue de la littérature secondaire
2. Collecte de données primaires – 3 outils (Enquête du Village (EV), Interview des Informateurs Clés (IIC), Discussion Thématique de Groupe (DTG))
3. Protocole d'analyse des données
4. Facilitation, l'interview, et l'observation
5. Présentation de l'étude aux participants et déclaration d'éthique

JEUDI, 3 AVRIL

Après-midi

III. Introduction à l'outil 1: EV et l'outil 2 : CCAT/CSA IIC (KII)

1. But
2. Sélection de groupe
3. Examen, l'analyse, la révision de l'outil
4. Entrée de données
5. L'analyse des données

JOUR 2 – CCAT/CSA

VENDREDI, 4 AVRIL

Matin

IV. Introduction à l'outil 3: CCAT/CSA DTG (FGD)

1. But
2. Sélection de groupe
3. Examen, l'analyse, la révision de l'outil
4. Entrée de données
5. L'analyse des données

VENDREDI, 4 AVRIL

Après-midi

V. Introduction à l'outil 3: CCAT/CSA DTG (FGD)

1. Continuation a la revision complète de l'outil
2. Discussion
3. Q & A

JOUR 3 – MOI/AVC

SAMEDI, 5 AVRIL

Matin

VI. Introduction à l'outil 4: MOI/AVC FGD

1. But
2. Sélection de groupe
3. Examen, l'analyse, la révision de l'outil
4. Entrée de données
5. L'analyse des données

SAMEDI, 5 AVRIL

Après-midi

VII. Introduction à l'outil 4: MOI/AVC FGD

1. Continuation a la revision complète de l'outil
2. Discussion
3. Q & A

JOUR 4 – MOI/AVC

DIMANCHE, 6 Avril

Matin

VIII. Introduction à l'outil 5 : MOI/AVC KII

1. But
2. Sélection de groupe
3. Examen, l'analyse, la révision de l'outil
4. Entrée de données
5. L'analyse des données

DIMANCHE, 6 Avril

Après-midi

IX. Introduction à l'outil 5 : MOI/AVC KII

1. Continuation a la revision complète de l'outil
2. Discussion
3. Q & A

FERMETURE

DAY 1 – CCAT/CSA

1. Introduction à l'étude

Session I.1: Introductions et l'esprit d'équipe

- Introduction personnelle brève
- Nom d'état, ville natale et de district
- Occupation actuelle et l'expérience en recherche.
- Citer au cours des cinq dernières années comment un événement climatique a affecté votre vie ou la vie de votre communauté, et comment vous avez adapté.

Session I.2: Objectives of SUR1M

SUR1M

- Un projet approuvé dans le context de BRACED – l'Initiative Renforcement de la Résilience et Adaptation aux Phénomènes Climatiques Extrêmes et aux Catastrophes – financée par le DFID. SUR1M vise à réduire le risque d'exposition d'un million de personnes à la sécheresse et aux inondations dans 30 communes situées dans le bassin du fleuve Niger.
- Deux Volets :

- 1. CCAT/CSA** – Analyse de **faisabilité économique et technique** (y compris l'analyse des **coûts et des avantages**) d'adaptation aux changements climatiques en mettant l'accent sur l'agriculture intelligente face au climat pour informer les dirigeants et les populations des communes cibles sur les diverses options techniques les plus appropriées en tenant compte de leurs **zones agro-écologiques**, du **contexte** (notamment l'existence de services de soutien et l'expertise dans les secteurs public et privé, les fournisseurs d'équipements, de tout le matériel requis au niveau local/régional/national ou non), de la **demande et des besoins**, afin de soutenir leur processus de prise de décision concernant les investissements relatifs, la mise en œuvre, ainsi que l'utilisation et la gestion durables. L'analyse permettra de tenir compte des

pratiques les plus inclusives et les plus appropriées pour augmenter au maximum la participation des hommes et des femmes.

2. **MOI/AVC** – une étude sur deux étapes :

- **MOI** – l'identification des opportunités de marché
- **AVC** – l'analyse des chaînes de valeur pour documenter les éventuelles options de moyens de subsistance diversifiés pour les :
 - **groupes segmentés (très vulnérables, vulnérables mais viables et commercialisables/orientés vers le marché) ;**
 - **des migrants saisonniers** (dont la plupart sont des hommes) ;
 - des **agriculteurs-éleveurs** et des **éleveurs**, en identifiant les compétences professionnelles demandées, non agricoles et les opportunités dans les domaines de l'élevage et des produits forestiers non ligneux, et
 - faciliter leur accès aux marchés rentables en les mettant en relation avec les acteurs des chaînes de valeur de ces produits, notamment les différentes catégories **d'acheteurs, les acteurs de soutien, les fournisseurs d'intrants, etc.**, afin d'accroître leurs revenus.
- Couverture Géographique des Programmes
 - SUR1M intervient actuellement dans 30 communes – au Niger (13 communes) : Dépts d'Ouallam, de Tillabéri et de Tera, région de Tillabéri ; au Burkina Faso : Seno (10 communes), provinces de Yagha et Oudalan, région du Sahel ; au Mali (7 communes) : cercles d'Ansongo et de Gao, région de Gao. Celles-ci ont été identifiées comme étant les plus exposées aux sécheresses et aux inondations. Dans ces communes, 80percent de la population totale sont ciblés : Niger : 640.000 ; Burkina Faso : 228.800 ; Mali : 131.200.

Session I.3: Programme de Terrain

- Formation – 3-6 avril
- Pre-test – 7-8 avril
- Recherche au terrain BF – 12-19 avril
- Restitution de l'étude BF – 24 avril
- Recherche au terrain Niger – 26 avril -3 mai

- Restitution de l'étude Niger – 8 mai
- Recherche au terrain Mali – 11-18 mai
- Termination d'étude pour l'équipe – 19 mai

OUTPUT	DUE DATE
Review of existing relevant literature for the categories of target populations <i>and</i> the 3 target sites in Niger, Burkina and Mali	17-20 March 2014
Finalize the methodology and tools and the planning per country with the assistants	21-22; 24-29 March
Travel to BF	30-31 March
CRS Planning meeting (skype with team)	1 April
Training: Feasibility of Climate Change Adaptation Techniques	2-3 April
Training Prep	4 April
Training: MOI/VC	5-6 April
Pre-test CSA	7 April
Pre-test MOI/VC	8 April
Tool revisions with teams	9 April
Printing: JM to Ouaga KII	10 April
Travel to site	11 April
FG/KIIs Sites 1-8 BF	12-19 April
Travel to Niamey from BF field sites	20 April
Meet with CRS Niger	21 April
Debrief prep CSA	22 April
Debrief prep AVC	23 April
CRS BF Debrief with Core team via skype in Niamey A draft report and a PowerPoint presentation on methodology including a gender and barrier analysis, key findings and recommendations are sent to PM and SWA RTA Ag. (Provide soft copies), followed by a presentation to the Core Team (<i>via Skype is if face to face presentation is not feasible</i>)	24 April
Travel to site Niger/ KII in Niamey	25 April
FG/KIIs Sites 1-8 Niger	April 26- May 3
Travel back to Niamey	May 4
KII in Niamey	May 5
Debrief prep CSA	May 6
Debrief prep AVC	May 7
CRS Debrief Niger with Core team via skype in Niamey A draft report and a PowerPoint presentation on methodology including a gender and barrier analysis, key findings and recommendations are sent to PM and SWA RTA Ag. (Provide soft copies), followed by a presentation to the Core Team (<i>via Skype is if face to face presentation is not feasible</i>)	May 8

Travel to Bamako (JM)	May 9
Field Team travel to Mali site	May 10
JM meet with CRS	May 10
FG/KIIs Sites 1-8 ML	May 11-18
KIIs in Bamako (JM)	May 11
Debrief CSA	May 12
Debrief AVC	May 13
CRS debrief Mali with Core team via skype A draft report and a PowerPoint presentation on methodology including a gender and barrier analysis, key findings and recommendations are sent to PM and SWA RTA Ag. (Provide soft copies), followed by a presentation to the Core Team (<i>via Skype is if face to face presentation is not feasible</i>)	May 14
JM Travel to Dakar	May 15-16
RAs Travel to Gao to home (NE, BF, ML)	May 19
Draft writing	May 20-30
Submit draft to CRS	May 31
CRS Review	1-7 June
CRS submits comments	8 June
Final draft revisions	9-14 June
Final draft submitted to CRS	15 June

Session I.4: Logistiques

- CRS – gestion de contrats (logement, per diem, transport, etc.)
- Laptops
- Communication – téléphone
- Autres

2. Aperçu de la méthodologie

II.1 Revue de la littérature secondaire

II.2 Collecte de données primaires

Collecte des données primaires se fondera principalement sur l'observation qualitative impliquant trois instruments de données:

- 1. Enquête du Village (EV)** – une enquête structurée initiale de chefs de village (environ 5 par village) identifier les caractéristiques démographiques, économiques et historiques de base de la communauté, ne doit pas dépasser 30 minutes pour chaque communauté visitée par les deux groupes d'étude.
- 2. Interview des Informateurs Clés (IIC/KII)** – avec les parties prenantes impliquant des individus (à ne pas dépasser 2-3 personnes)

3. **Discussion Thématique de Groupe (DTG/FGD)** – impliquant des groupes distincts d’hommes et de femmes
 - CCAT/CSA – 16 discussions de groupe par pays, organisées selon le sexe (les discussions de groupe de 8 femmes, 8 hommes FGD), seront réalisées dans huit communautés dans chaque pays.
 - MOI/AVC – 8 focus group discussions per country, with: 1) agricultural/agro-pastoral producer associations, or groups of agriculturalists; 2) pastoral associations, or groups of pastoralists; and 3) seasonal migrants.
4. **Village Survey Questionnaire** – an initial structured survey of village leaders (approximately 5 per village) identifying basic demographic, economic, and historical features of the community, not to exceed 30 minutes for each community visited by both study teams.
6. Collecte de données primaires – 3 outils (Enquête du Village (EV), Interview des Informateurs Clés (IIC), Discussion Thématique de Groupe (DTG))
7. Protocole d’analyse des données
8. Facilitation, l’interview, et l’observation
9. Présentation de l’étude aux participants et déclaration d’éthique

II.3 Data Analysis Protocol

- Daily data entry and synthesis of observations in FGD and KII data matrix sheets, working together in 2 teams (CCAT/CSA, MOI/AVC)
- Submission of data sheets to the TLC end of each day (email) or flashdrive
- Preparation of preliminary findings with TLC for country debriefings

II.4 Facilitation, Interviewing, and Observation

- Discussion on facilitation methodology, establishing rapport, building trust among respondents
- Tip sheet for FGDs:
 - Sit at the same level and as part of the circle of participants
 - Do not write down peoples’ names
 - Agree on how the facilitator and note taker will communicate

prior to the session

- The note taker writes – not the facilitator
- Never tell someone that their response was not correct or reject their response
- Foster discussion by helping the participants to understand the context and help them “tell a story” about their experience or the information they want to share
- Never dominate the discussion
- Don’t keep the participants waiting – arrive prepared and on time
- Do not forget to ask at the end of session if they have anything else they want to say or if they have questions of the facilitator
- Interviewing – KIIIs

Session II.5: Introduction of Study to Participants and Ethics Statement Study Statement

Greetings. We are here representing two organizations, Catholic Relief Services (CRS) and Tulane University, to undertake a study to learn about your farming and herding practices in the region. This study will help CRS develop future programs for agriculture and livestock management in the country. CRS is an NGO working in the Sahel region. Tulane University is located in the US and is a partner assisting CRS with this study.

This study does not assure or promise any direct funding to the community. However, it will help CRS and its partners plan activities across the country that we hope will be beneficial and improve the quality of life for many communities in this region.

What are the study procedures?

We will be asking you about questions related to climate and/or markets in your community and the types of problems you and people in your community are facing. The research is taking place in your community as well as other communities in Burkina Faso, Mali and Niger.

We want to be sure you know that any information you give is confidential. We will not be asking or sharing any personal information about you, such as your name, with government or other authorities. We wish to respect and protect your personal rights and assure any information we receive is used in a positive way to benefit your lives and others in this region. Therefore, we will not record your names in our notes during this discussion.

If you decide at any time that you do not wish to participate in this study, you are welcome to leave. There are no penalties or consequences of any kind if you decide that you do not want to participate. Also, you do not have to answer any question that you do not want to answer.

This interview and discussion should take around 2 hours of your time. Do you have any questions before we begin? If not, we will now begin the session.

THURSDAY, APRIL 3

Afternoon

III. Introduction to Field Tool 1: CCAT/CSA KII

3.1 Purpose

3.2 Group selection

3.3 Review, Analysis, Revision of Tool

Final data review

Data analysis

ANNEX 4. MATRIX OF KII DATA

Demander les questions pertinentes aux vendeurs, intermédiaires, collecteurs, grossistes, transformateurs, exportateurs, détaillants

Catégorie d'acteur :

Nom d'entreprise /acteur :

Adresse physique (localité):

Tel:

Ancienneté dans l'activité :

Personnel : Hors famille _____ Membre de la famille _____

Saisonniers _____ Permanent _____

Nombre total de membres (si Association):

Hommes _____ Femmes _____ Jeunes _____

I. CONTRIBUTION ECONOMIQUE DES PRODUITS AGRICOLES ET FORESTIERS AUX REVENUS TOTAUX DE L'ENTREPRISE

1.1. Le compte d'exploitation

Citez par ordre d'importance les cinq produits agricoles ou forestiers qui vous apportent le plus d'argents

N°	Produits vendus classé	Cirière de contributions économique (forte demande, proximité, monopole de fait)	Compte d'exploitation											
			Qté ann acheté	Prix d'Achat /Invest	Transport et manutention	Emballage et conditionnement	Frais de Stockage	Impôts et taxe	Autres charge	Charge totale	Quantité annuelle des ventes	Prix unitaire de vente	Recette totale	Bénéfice
1														
2														
3														
4														
5														

1.1 Analyse des conditions de vente

N°	Produits vendus classé	Période de forte vente (saison de pluies, saison sèche, fêtes, toute l'année)	Evolution des ventes (hausse, baisse, stable)	Evolution des prix (hausse, baisse, stable)	Raisons des évolutions (demande, proximité, etc.)
1					
2					
3					
4					
5					

1.2 Identification des partenaires de l'acteur

- 1.3.1 Quels sont les fournisseurs de l'agent : (producteurs gros ou petit, groupements de producteurs, collecteurs, grossistes, transformateurs, etc.)
- 1.3.2 Quelles sont les principales zones d'approvisionnement...
- 1.3.3 A qui vous vendez (clients)
- 1.3.4 Quels sont vos lieux de vente (bord champ, domicile, marché domestique ou environnant, région/district, etc.)
- 1.3.5 Quels sont les exigences des clients (qualité, prix, emballage, etc.)
- 1.3.6 Enregistrez-vous des méventes des produits (oui/non)
- 1.3.7 Si oui, quelles sont les pistes de solutions envisagées
- 1.3.9 Si non, pourquoi ? (disponibilité de IMC, coût du crédit ou taux d'intérêt, conditions de crédit, etc)

1.3 Intégration verticale (typologie de coopération)

- 1.3.1 Quel type de relation d'affaire entretenez-vous ?
 - 1. Fournisseur** : contrat (formel ou non)
 - 2. Avance/crédit (espèce ou en produit)
 - 3. Facilitation d'approvisionnement (livraison)
 - 5. Client** : contrat (formel ou non)
 - 5. Avance/crédit (espèce ou en produit)
 - 6. Facilitation de vente

1.3.2 Bénéficiez-vous d'autres services et appui dans votre activité

1. Infrastructure de stockage (magasin) (oui/non)
2. Type d'infrastructure (location, communautaire, autres)
3. Disponibilité (suffisant, insuffisant)
4. Appui-conseil et accompagnement technique (Oui/Non)
5. Lesquels
6. Disponibilité (suffisant, insuffisant)
7. Autres (Oui/Non)
8. Préciser
9. Disponibilité (suffisant, insuffisant)

1.5 Contraintes

II. CONTRIBUTION ECONOMIQUE DES PRODUITS ANIMAUX AUX REVENUS TOTAUX DE L'ENTREPRISE

2.1 Le compte d'exploitation

Citez par ordre d'importance les cinq produits agricoles qui vous apportent le plus d'argent

N°	Produits vendus classé	Cirière de contributions économique (forte demande, proximité, monopole de fait)	Compte d'exploitation											
			Qté ann acheté	Prix d'Achat /Invest	Transport et manutention	Emballage et conditionnement	Frais de Stockage	Impôts et taxe	Autres charge	Charge totale	Quantité annuelle des ventes	Prix unitaire de vente	Recette totale	Bénéfice
1														
2														
3														
4														
5														

2.2 Analyse des conditions de vente

N°	Produits vendus classé	Période de forte vente (saison de pluies, saison sèche, fêtes, toute l'année)	Evolution des ventes (hausse, baisse, stable)	Evolution des prix (hausse, baisse, stable)	Raisons des évolutions (demande, proximité, etc.)
1					
2					
3					
4					
5					

2.3 Identification des partenaires de l'acteur

- 2.3.1 Quels sont les fournisseurs de l'agent : (producteurs, collecteurs, grossistes, transformateurs, etc.)
- 2.3.2 Quelles sont les principales zones d'approvisionnement
- 2.3.3 A qui vous vendez (clients)...
- 2.3.4 Quels sont vos lieux de vente (bord champ, domicile, marché domestique ou environnant, région/district, etc.).....
- 2.3.5 Quels sont les exigences des clients (qualité, prix, emballage, etc.)
- 2.3.6 Enregistrez-vous des méventes des produits (oui/non)
- 2.3.7 Si oui, quelles sont les pistes de solutions envisagées
- 2.3.8 Avez-vous la possibilité d'accéder aux crédits pour financer votre activité ? (oui/non)...
- 2.3.9 Si non, pourquoi ? (disponibilité de IMC, coût du crédit ou taux d'intérêt, conditions de crédit, etc ...)

2.4 Intégration verticale (typologie de coopération)

- 2.4.1 Quel type de relation d'affaire entretenez-vous ?
 1. Fournisseur : contrat (formel ou non)
 2. Avance/crédit (espèce ou en produit)
 3. Facilitation d'approvisionnement (livraison)

4. Client : contrat (formel ou non)

5. Avance/crédit (espèce ou en produit)

6. Facilitation de vente

2.4.2 Bénéficiez-vous d'autres services et appui dans votre activité

1. Infrastructure de stockage (magasin) (oui/non)

2. Type d'infrastructure (location, communautaire, autres)

3. Disponibilité (suffisant, insuffisant)

4. Appui-conseil et accompagnement technique (Oui/Non)

5. Lesquels

6. Disponibilité (suffisant, insuffisant)

7. Autres (Oui/Non)

8. Préciser

9. Disponibilité (suffisant, insuffisant)

2.5 Contraintes

ANNEX 5. VILLAGE LEADER SURVEY – SUMMARY DESCRIPTION

Please see attached Excel document, “Annex 5 – BRACED Village Leader Survey” for full description.

ANNEX 6. FGD COMPOSITION BY ETHNICITY AND LIVELIHOOD

Burkina Faso

ETHNICITY	BANI	BELGOU	TITABE	PAGALAGA	YATAKOU	BELLARE	GATOUGOU	BALLIATA
	Peuhl							
	Mossi	Bella	Bella	Gourmantché	Gourmantché	Bella	Bella	Bella
	Sonrai	Gaobè	Mossi	Bella	Mossi	Gourmantché		Gourmantché
			Gourmantché					
Livelihoods	Agro-pastoral							
			Commerce		Gold mining		Commerce	Commerce
							Gold mining	

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