



USAID
FROM THE AMERICAN PEOPLE

SENEGAL

SAHEL RESILIENCE LEARNING (SAREL)

RISE Midline Quantitative Survey Report

Final (Approved)

Revised June 2018

This document was prepared for the United States Agency for International Development.
It was prepared by The Mitchell Group, Inc. (TMG)

This document was prepared for the United States Agency for International Development, Contract No. AID-625-C-14-00002 Sahel Resilience Learning (SAREL) Project.

Prepared by:

The Mitchell Group, Inc. with the support of the *Centre d'Etudes Economiques et Sociales de l'Afrique de l'Ouest* (CESAO)

Principal contacts:

Steve Reid, Chief of Party, SAREL, Niamey, Niger, sreid@sarelproject.com
Jenkins Cooper, Vice President Operations, TMG, Inc., Washington, DC, jenkinsc@the-mitchellgroup.com

Implemented by:

The Mitchell Group, Inc.
1816 11th Street, NW
Washington, DC 20001
Tel: 202-745-1919

The Mitchell Group, Inc.
SAREL Project
behind ORTN
Quartier Issa Béri
Niamey, Niger

SAHEL RESILIENCE LEARNING PROJECT (SAREL)

RISE Midline Quantitative Survey Report

Final (Approved)

Revised June 2018

DISCLAIMER

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

Table of Contents

Table of Contents	i
List of Tables	iv
List of Figures	vii
List of Acronyms	x
Executive Summary	xii
I. Introduction	I
I.1. Overview of the RISE Program	3
I.1.1. Specific RISE Objectives	4
I.1.2. Coverage and Target Groups	6
I.2. Overview of the Midline Study	7
2. Methodology	9
2.1. Data Collection	9
2.1.1. Data Collection Objectives	9
2.1.2. Questionnaire Description	10
2.1.3. Sampling	11
2.1.4. Enumerator Training	13
2.1.5. Number of Households Covered	14
2.1.6. Sampling Weights	15
2.1.7. Difficulties Encountered during Data Collection	15
2.2. Exploitation of the Data Collected	16
2.2.1. Data Processing	16
2.2.2. Analytical Methodology for Statistical Analyses	17
2.2.3. Report Preparation	20
2.3. Methodological Notes and Limitations	20
2.3.1. Original Baseline Results vs. Recalculated Baseline Results	20
2.3.2. Limitations to the Evaluation Methodology	22
2.3.3. Limitations to the RISE Study Design	23
3. Household and Village Descriptions	24
3.1. Demographic Characteristics of Respondents	24
3.1.1. Structure of Respondents by Sex	24
3.1.2. Population Age Trends	24
3.1.3. Population Age Structure (Women/Men)	25
3.1.4. Relationship to Head of Household	25
3.1.5. Marital Status of Population Aged 12 or Over	26

3.2.	Household Characteristics	26
3.2.1.	Size and Composition of Households	26
3.2.2.	Characteristics of Heads of Household	27
3.2.3.	Literacy by Language	28
3.2.4.	Education Levels	29
3.3.	Home Features and Construction	29
3.3.1.	Main Housing Characteristics	29
3.3.2.	Building Materials for Dwelling Structures	30
3.3.3.	Main Housing Flooring Type	31
3.4.	Drinking Water Supply	31
3.5.	Types of Toilets Used by Households	33
3.6.	Livestock Headcount	33
3.7.	Farmlands	33
3.8.	Sources of Household Revenue	34
3.9.	Exposure to Shocks	35
3.9.1.	Exposure to Shocks over the Previous Twelve Months	36
3.9.2.	Types of Shocks Experienced over the Previous Twelve Months	36
3.9.3.	Perceived Impact of Shocks	38
3.9.4.	Shock Recovery and Coping	38
4.	Economic Well-Being / Livelihoods	42
4.1	Prevalence of Poverty (Indicator 4)	43
4.2.	Depth of Poverty (Indicator 1)	45
4.3.	Average Value of Household Assets (Indicator 3.a)	49
4.4.	Asset Ownership (Indicator 3.b)	51
4.5.	Non-Agricultural Sources of Household Income (Indicator 6)	52
4.6.	Propensity score matching for Livelihoods indicator	57
5.	Governance	58
5.1.	Communities with Evidence of Good Governance (Indicator 7)	59
5.2.	Communities with Adequate Capacity to Manage Climate Shocks (Indicator 8)	62
5.3.	Individual Engagement with Local Power Structures (Indicator 9)	64
6.	Health and Nutrition	67
6.1.	Prevalence of Moderate or Severe Hunger (Indicator 2)	69
6.2.	Global Acute Malnutrition (GAM) Rate (Indicator 10)	70
6.3.	Stunting Among Children Under 5 Years of Age (Indicator 11)	74
6.4.	Underweight among children under 5 (Indicator 12)	78
6.5.	Improved drinking water sources (Indicator 13)	80

6.6.	Soap-and-water hand washing stations (Indicator 14)	81
6.7.	Improved sanitation systems (Indicator 15)	83
6.8.	Household dietary diversity (Indicator 16)	87
6.9.	Minimum acceptable diet (MAD) among children 6-23 months of age (Indicator 17)	91
6.10.	Exclusive breastfeeding of children under 6 months of age (Indicator 18)	93
6.11.	Propensity score matching for health and nutrition indicators	95
7.	Cross-Cutting Components	96
7.1.	Women's empowerment in agriculture index (Indicator 5)	97
7.2.	Support for equal access for males and females (Indicator 19)	98
7.3.	Women reporting effective participation (Indicator 20)	100
8.	Summary of Demographic Correlates: Gender, Literacy, and Ethnicity of Household Heads	106
9.	Complementary Analysis Regarding Family Planning in the RISE Zone	108
10.	Lessons Learned and Recommendations	113
10.1.	Technical Lessons and Recommendations	113
10.2.	Technical Lessons Learned	113
10.3.	Recommendations Regarding the Technical Aspects	114
10.4.	Administrative Lessons and Recommendations	115
10.5.	Administrative Lessons Learned	115
10.6.	Recommendations Regarding Administrative Aspects	116
11.	Conclusion	118
	Appendix A. SAREL Methodological Guidelines for Measuring RISE Indicators	119
	Appendix B. WHO Height and Weight Standards	164
	Appendix C. Baseline Survey Questionnaires	183
	C1. Household Questionnaire	184
	C.2: Gender Questionnaire	253
	C.3: Household Food Consumption Survey & Child Anthropometry Questionnaire	267
	C.4: Village Questionnaire	299
	Appendix D. Midline Sample Villages	334
	Appendix E1. Scope of Work – Data Collection	341
	Appendix E2. Scope of Work Data Analysis	352

List of Tables

Table 2-1: Sampling Weights for Households and Villages in the RISE Zone	12
Table 3-1: Population Distribution by Sex	24
Table 3-2: Average and Median Age by Sex	24
Table 3-3: Relationship to Head of Household	25
Table 3-4: Marital Status of the Population	26
Table 3-5: Household Size	26
Table 3-6: Distribution of Heads of Households by Selected Characteristics and Sex	27
Table 3-7: Local Language Literacy	28
Table 3-8: Foreign Language Literacy	29
Table 3-9: Number of Rooms and the Overcrowding Rate	30
Table 3-10: Wall-Building Materials for Dwelling Structures	30
Table 3-11: Roof-Building Materials for the Main Housing	31
Table 3-12: Flooring Materials in Dwelling Structures	31
Table 3-13: Main Source of Households' Drinking Water Supply	32
Table 3-14: Average Water Collection Time in Minutes	32
Table 3-15: Average Number of Livestock Owned by Households	33
Table 3-16: Breakout of farmlands by type	33
Table 3-17: Average Area of Land Owned by Households	34
Table 3-18: Main Activities by Age Group	35
Table 3-19: Shock Distribution over the Previous Twelve Months (%)	36
Table 3-20: Shocks sustained over the previous 12 months in RISE zone (percentage)	37
Table 3-21: Perceived Impact by Type of Shock (%)	38
Table 3-22: Recovery by Type of Shock	38
Table 3-23: Strategies employed by surveyed households to cope with shocks in previous 12 months (as percentage of all strategies listed)	39
Table 4-1: T-test comparison between baseline and midline results by stratum for prevalence of poverty	44
Table 4-2: Depth of poverty by stratum	45
Table 4-3: T-test comparison between baseline and midline results by stratum for poverty depth	49
Table 4-4: Average value of household assets by stratum	50
Table 4-5: T-test comparison between baseline and midline results by stratum	50
Table 4-6: T-test comparison between baseline and midline results by stratum for number of household assets	51

Table 4-7: Proportion of households with income from non-agricultural sources by type and stratum	53

Table 4-8: T-test comparison between baseline and midline results by stratum for household income sources	56

Table 5-1: T-test comparison between baseline and midline results by stratum for evidence of good governance	61

Table 5-2: T-test comparison between baseline and midline results by stratum for adequate climate shock and risk management capacity	63

Table 5-3: T-test comparison between baseline and midline results by stratum	65

Table 6-1: T-test comparison between the baseline and midline results by stratum for moderate/severe hunger	69

Table 6-2: T-test comparison between the baseline and midline results by stratum for GAM	73

Table 6-3: T-test comparison between the baseline and midline results by stratum for stunting	77

Table 6-4: T-test comparison between the baseline and midline results by stratum for underweight	79

Table 6-5: T-test comparison between the baseline and midline results by stratum for improved drinking water sources	81

Table 6-6: T-test comparison between the baseline and midline results by stratum for hand washing station	82

Table 6-7: T-test comparison between the baseline and midline results by stratum for improved sanitation system	87

Table 6-8: Average household dietary diversity score by stratum	88

Table 6-9: T-test comparison between the baseline and midline results by stratum dietary diversity	90

Table 6-10: T-test comparison between the baseline and midline results by stratum for MAD	92

Table 6-11: T-test comparison between the baseline and midline results by stratum for exclusive breastfeeding	95

Table 6-12: Propensity score matching for the GAM, prevalence of stunting and prevalence of breastfeeding.	95

Table 7-1: Average village level WEA score by stratum and RISE zone of each country	98

Table 7-2: T-test comparison between baseline and midline results by stratum for WEA	98

Table 7-3: Proportion of households that agree that males and females should have equal access to social, political, and economic opportunities by household type	99

Table 7-4: T-test comparison between baseline and midline results by stratum for equal access	100

Table 7-5: Proportion of women with effective decision-making power, by activity type	102

Table 7-6: Proportion of women with effective decision-making power, by Strata and by Country related to Food production: crops primarily grown for household consumption	103

Table 7-7: Proportion of women with effective decision-making power, by Strata and by Country related to Cash crops: crops primarily grown for sale in markets	103

Table 7-8: Proportion of women with effective decision-making power, by Strata and by Country related to Livestock _____	103
Table 7-9: Proportion of women with effective decision-making power, by Strata and by Country related to Non-agricultural economic activities: small business, self-employment, purchase and sale _____	103
Table 7-10: Proportion of women with effective decision-making power, by Strata and by Country related to salaried employment: work in kind or monetary in agriculture and other paid work _____	104
Table 7-11 : Proportion of women with effective decision-making power, by Strata and by Country related to fishing and fish ponds _____	104
Table 7-12: T-test comparison between baseline and midline results by stratum _____	104
Table 9-1: Women’s awareness of methods a couple may use to delay or avoid pregnancy _____	108
Table 9-2: Women’s awareness of methods a couple may use to delay or avoid pregnancy _____	109
Table 9-3: Percentage of women taking actions/using methods to delay or avoid pregnancy _____	110
Table 9-4: Percentage of women taking actions/using methods to delay or avoid pregnancy _____	111

List of Figures

Figure 1-1: Map of the RISE Study Area	6
Figure 2-1: Sample of Villages included in RISE Midline Survey by Stratum	12
Figure 2-2: Hypothetical changes in a Difference-in-Difference Analysis	18
Figure 2-3: Hypothetical Difference-in-Differences Analysis	19
Figure 3-1: Population Age Structure	25
Figure 3-2: Heads of Household by Marital Status and Sex	28
Figure 3-3: Population's Educational Attainment by Sex	29
Figure 3-4: Structure of the Population Aged 12 and older by Main Activity	34
Figure 3-5: Main Activities by Age Group	35
Figure 4-1: Change in the prevalence of poverty from baseline to midline by stratum	45
Figure 4-2: Depth of poverty by RISE zone of each country	46
Figure 4-3: Depth of Poverty: Sex of Head of Household	47
Figure 4-4: Depth of Poverty: Marital Status of Head of Household	47
Figure 4-5: Depth of Poverty: Literacy Status of Head of Household	48
Figure 4-6: Depth of Poverty: Ethnicity of Head of Household	48
Figure 4-7: Change in the depth of poverty from baseline to midline by stratum	49
Figure 4-8: Average value of household assets by RISE zone of each country	50
Figure 4-9: Change in the average value of household assets from baseline to midline by stratum	51
Figure 4-10: Change in the number of household assets from baseline to midline by stratum	52
Figure 4-11: Proportion of households with income from non-agricultural sources by RISE zone of each country	54
Figure 4-12: Income from non-agricultural Sources: Sex of Head of Household	54
Figure 4-13: Income from non-agricultural Sources: Marital Status of Head of Household	55
Figure 4-14: Income from non-agricultural Sources: Literacy Status of Head of Household	55
Figure 4-15: Income from non-agricultural Sources: Ethnicity of Head of Household	56
Figure 4-16: Change in the non-agricultural sources of household income from baseline to midline by stratum	57
Figure 5-1: Proportion of villages with evidence of good governance by stratum	60
Figure 5-2: Proportion of villages with evidence of good governance by RISE zones in each country	61
Figure 5-3: Proportion of villages with evidence of good governance by stratum	62
Figure 5-4: Proportion of villages with adequate capacity to manage climate shocks and risks by stratum	62
Figure 5-5: Proportion of villages with adequate capacity to manage climate shocks and risks by RISE	

zone in each country _____	63
Figure 5-6: Proportion of villages with adequate capacity to manage climate shocks and risks by stratum from baseline to midline _____	64
Figure 5-7: Proportion of individuals who engage with a local power structure by RISE zone in each country _____	64
Figure 5-8: Proportion of individuals who engage with local power structures by stratum _____	65
Figure 6-1: Prevalence of moderate or severe hunger from baseline to midline by stratum _____	70
Figure 6-2: Proportion of acutely malnourished children under 5 by RISE zone of each country _____	71
Figure 6-3: Proportion of acutely malnourished Children under 5: Sex of the Child _____	71
Figure 6-4: Proportion of acutely malnourished Children under 5: Ethnicity of the Child _____	72
Figure 6-5: Proportion of acutely malnourished Children under 5: Marital Status of Head of Household _____	72
Figure 6-6: Proportion of acutely malnourished Children under 5: Literacy Status of Head of Household _____	73
Figure 6-7: Proportion of acutely malnourished children under 5 by stratum _____	74
Figure 6-8: Proportion of stunted children under 5 years of age by RISE zone of each country _____	75
Figure 6-9: Proportion of Stunted Children under 5 Years of Age: Sex of the Child _____	75
Figure 6-10: Proportion of Stunted Children under 5 Years of Age: Ethnicity of the Child _____	76
Figure 6-11: Proportion of Stunted Children under 5 Years of Age: Marital Status of Head of Household _____	76
Figure 6-12: Proportion of Stunted Children under 5 Years of Age: Literacy Status of Head of Household _____	77
Figure 6-13: Proportion of stunted children under 5 years of age by stratum _____	78
Figure 6-14: Proportion of underweight children under 5 years of age by RISE zone of each country _____	79
Figure 6-15: Proportion of underweight children under 5 years of age by stratum _____	80
Figure 6-16: Proportion of Households Using improved Drinking Water Sources by Stratum and by RISE Zone of each Country's Dimensions _____	80
Figure 6-17: Proportion of households using improved drinking water sources by stratum _____	81
Figure 6-18: Proportion of Households Using Soap and Water Hand Washing Station by Stratum and by RISE Zone of Each Country's Dimensions _____	82
Figure 6-19: Proportion of households using soap and water hand washing station by stratum _____	83
Figure 6-20: Proportion of households using an improved sanitation system by stratum and RISE zone of each country _____	84
Figure 6-21: Proportion of Households Using an Improved Sanitation System: Sex of Head of Household _____	85
Figure 6-22: Proportion of Households Using an Improved Sanitation System: Marital Status of Head	

of Household _____	85
Figure 6-23: Proportion of Households Using an Improved Sanitation System: Literary Status of Head of Household _____	86
Figure 6-24: Proportion of Households Using an Improved Sanitation System: Ethnicity of Head of Household _____	86
Figure 6-25: Proportion of households using an improved sanitation system by stratum _____	87
Figure 6-26: Average Household Dietary Diversity Score: Sex of Head of Household _____	89
Figure 6-27: Average Household Dietary Diversity Score: Marital Status of Head of Household _____	89
Figure 6-28: Average Household Dietary Diversity Score: Literacy Status of Head of Household _____	90
Figure 6-29: Average Household Dietary Diversity Score: Ethnicity of Head of Household _____	90
Figure 6-30: Average household dietary diversity score from baseline to midline by stratum _____	91
Figure 6-31: Proportion of children receiving a minimum acceptable diet (MAD) by RISE zone of each country _____	92
Figure 6-32: Proportion of children receiving a minimum acceptable diet (MAD) by stratum _____	93
Figure 6-33: Exclusive breastfeeding: count and proportion by stratum _____	94
Figure 6-34: Proportion of children receiving exclusive breastfeeding by RISE zone of each country _____	94
Figure 6-35: Proportion of children receiving exclusive breastfeeding by stratum _____	95
Figure 7-1: Average village level WEA score by stratum _____	98
Figure 7-2: Proportion of households that agree that males and females should have equal access to social, political, and economic opportunities by stratum _____	100
Figure 7-3: Proportion of women reporting effective participation in decision making by stratum _____	101
Figure 7-4: Proportion of women reporting effective participation in decisions by RISE zone in each country _____	101
Figure 7-5: Proportion of women reporting effective participation in decisions by stratum _____	105
Figure 9-1: Women's awareness of methods a couple may use to delay or avoid pregnancy (by strata)	109
Figure 9-2: Women's awareness of methods a couple may use to delay or avoid pregnancy (by country)	110
Figure 9-3: Percentage of women taking actions/using methods to delay or avoid pregnancy (by strata)	111
Figure 9-4: Percentage of women taking actions/using methods to delay or avoid pregnancy (by country) _____	112

List of Acronyms

CBSP	Community-Based Solution Provider
CESAO	West African Center for Social and Economic Research
CFW	Cash for Work
CPI	Consumer Price Index
DEFF	Design Effects
DFAP	Development Food Assistance Program
EICVM	Integrated Survey on Household Living Conditions
FCFA	Franc de la Communauté Française d'Afrique
FFP	Food for Peace
FFW	Food for Work
FMNR	Farmer-Managed Natural Regeneration
FY	Fiscal Year
GAM	Global Acute Malnutrition
GPI	Gender Parity Index
Ha	Hectare
HH	Household
HHH	Household Head
HHS	Household Hunger Scale
IMF	International Monetary Fund
INSD	Burkina Faso National Statistics and Demographic Institute
LCUs	Local Currency Units
IPs	Implementing Partners
Km	Kilometer
LCU	Local Currency Unit
MAD	Minimum Acceptable Diet
NGO	Non-Governmental Organization
OLS	Ordinary Least Squares
PGI	Poverty Gap Index
PPP	Purchasing Power Parity
PPS	Probability Proportional to Size
PMP	Performance Monitoring Plan
PRIME	Pastoralist Areas Resilience Improvement and Market Expansion
PS/NFSC	Permanent Secretariat for the National Food Security Council in Burkina Faso
PSUs	Primary Sampling Units

REGIS-AG	Resilience and Economic Growth in the Sahel - Accelerated Growth
REGIS-ER	Resilience and Economic Growth in the Sahel – Enhanced Resilience
RISE	Resilience in the Sahel Enhanced
SAREL	Sahel Resilience Learning Project
TLU	Total Livestock Unit
TMG	The Mitchell Group, Inc.
USAID	United States Agency for International Development
USG	United States Government
WEAI	Women’s Empowerment in Agriculture Index
WHO	World Health Organization

Executive Summary

The Resilience in the Sahel Enhanced (RISE) program aims to increase the resilience of chronically vulnerable people, households, villages, and systems in targeted agro-pastoral and marginal agriculture livelihood zones of Burkina Faso and Niger. The program has a duration of five years, from 2014 to 2019. This report describes the results of a quantitative midline survey conducted in 2017, using a probabilistic sampling methodology of approximately 2,500 households across 100 villages in three regions of Burkina Faso (Est, Centre Nord, and Sahel) and three regions of Niger (Zinder, Maradi, and Tillabery). The survey was funded by the United States Agency for International Development (USAID), commissioned by The Mitchell Group (TMG), and overseen by the SAREL project team. The *Centre d'Etudes Economiques et Sociales de l'Afrique de l'Ouest* (CESAO)—an African international association based in Burkina Faso that SAREL has worked with since 2014 to build its capacity to provide monitoring, evaluation, learning, and collaboration support services to resilience actors after the SAREL project ends—conducted the data collection and processing. SAREL carried out the survey and analysis in close coordination with TANGO International, which is tasked by USAID with conducting the complementary qualitative evaluations of RISE.

The RISE program includes Food for Peace (FFP) projects implemented by Catholic Relief Services, Mercy Corps, Save the Children, and ACDI/VOCA. It also includes the Resilience and Economic Growth in the Sahel – Enhanced Resilience (REGIS-ER) project, whose overall objective is to increase the resilience of chronically vulnerable populations in the agro-pastoral and marginal agricultural areas of Burkina Faso and Niger, and the Resilience and Economic Growth in the Sahel - Accelerated Growth (REGIS-AG) project, launched in FY 2014 and 2015, respectively.

The midline survey serves two purposes. First, it is intended to provide up-to-date population-based information for the RISE zone. Second, it allows for a comparison of outcomes from the baseline to the current midline point. Insofar as the same set of measures were used at baseline and midline, that comparison constitutes an estimation of the impact of RISE interventions to date, taking into account other possible changes, unrelated to RISE, that may have occurred over the same time period. The impact of RISE will not be fully apparent until at least the point of the final round of data collection; this midline survey should thus be seen as addressing the first purpose and providing preliminary evidence with respect to the impact of RISE.

In order to evaluate the impact of the RISE initiative, villages included in the data collection process were stratified into two zones: the High exposure zone constitutes villages that have received support from any of the FFP projects (PASAM-TAI, LAHIA, and Sawki in Niger, and Faso and ViM in Burkina Faso), or the REGIS projects. The Low exposure zone is the set of comparable villages from which data are collected but which are not receiving any of the above-listed RISE interventions. This constitutes a quasi-control set against which the impact of the RISE interventions in the High exposure zones can be compared. Difference-in-Differences analysis served as the principal methodological approach for evaluating the change

across Low and High exposure villages from the baseline to the midline period. The data structure also allows for complementary analyses using Propensity Score Matching, and, for the village-level data, panel analyses with country- or region-level fixed effects.¹ We intend to conduct matching analyses at the endline stage for those indicators with significant, or close to significant, difference-in-differences.

To collect the midline data, enumerators, controllers and supervisors were selected and trained. Enumeration teams worked across regions in the RISE area, simultaneously collecting data from Niger and Burkina Faso in a total of 37 High exposure villages and 63 Low exposure villages. Following the data collection, SAREL undertook data cleaning, coding, and analysis. This report describes the data collection process, the midline results obtained through this phase of data collection, and the comparative analyses from baseline to midline.

The report organizes outcomes around the three core components of the RISE program: Livelihoods, Governance, and Health and Nutrition. Under each component, specific impact indicators derived from the RISE Performance Management Plan (PMP) are included. In total, the report documents progress on a list of 21 performance measurement indicators. The report also includes Household and Village information, such as demographic data and exposure to shocks, as well as data and indicators relevant to the RISE program's cross-cutting objective of Gender Equality.

Data from the midline surveys indicate the following key results:

Living Conditions and Exposure to Shocks

The population under study is largely young, rural, and agricultural with low levels of education: the average age is 19; nearly 80 percent of surveyed households rely on agriculture as their principal livelihood; and approximately 90 percent of heads of households cannot read. On average, households spend 73 minutes per day fetching water, and nearly 80 percent have floors of dirt, clay, or sand. The RISE study area is also highly susceptible to shocks. Overall, 96 percent of households report experiencing a shock over the past twelve months, due to factors such as conflict, natural disaster, or a death.² Households in the region employ a number of different strategies to cope with those shocks: they sell animals, receive help or borrow from friends, reduce their food consumption, and deplete their savings, among other measures. However, almost half were unable to recover from those shocks to their pre-shock status.

Livelihoods

Close to two-thirds of respondents in the RISE zone live on less than \$1.90 per day. The

¹ At this midline stage, matching was not employed given the infrequent occurrence of statistically significant findings from the DiD analyses. We note this because we expect that such complementary analyses may be fruitful at the endline stage. Panel data is not available at the individual or household levels, but the inclusion of the same 100 communes makes such analyses possible for the village-level data.

² Categories of shock include natural disaster, socioeconomic, anthropogenic, psychosocial, and other. See Section 3 for more details.

depth of poverty increased slightly in the Low exposure zone but remained steady or perhaps improved slightly in the High exposure zone, but the difference-in-differences is not statistically significant. There has been no improvement in the prevalence of poverty to this point. Overall, poverty is notably worse in the Niger sample compared to the Burkina Faso sample. Asset ownership also trended slightly in the desired direction in the High exposure zone relative to the Low exposure zone, but the difference is not statistically significant. With respect to the diversification of livelihoods in the study region, nearly three-quarters of households (73.3%) earn some income from non-agricultural sources, and even greater proportions do in Niger. From baseline to midline, there has been a statistically significant improvement in livelihood diversification in the High exposure zone compared to the Low exposure zone.

Governance

In the Governance category, we measured the share of villages with effective governance, the share with adequate capacity to manage climate risks, and the proportion of individuals who engage with local power structures. Two findings are worth underscoring. First, the percentage of communities with evidence of good governance improved significantly in the High exposure areas from baseline to midline (47% to 81%, $p=.02$). The difference-in-differences comparing the relative change in the High exposure zone versus the Low exposure zone, furthermore, is positive and approaches conventional levels of statistical significance ($p=.08$). Second, the share of communities with adequate capacity to manage climate shocks improved significantly from baseline to midline, but a comparable change occurred in both the High and Low exposure areas, so the improvement cannot be attributed to RISE interventions. The proportion of respondents engaging with local authorities remained in the range of 13% in both the High and Low exposure zones from baseline to midline. There was no statistically significant change.

Health, Nutrition and Sanitation

Rates of moderate and severe hunger are lower in the High exposure zone, but that difference existed already at baseline, likely for unobserved confounding reasons since the assignment of communes to low and high exposure was randomized, and no improvement was observed. Global acute malnutrition rates actually decreased in the Low exposure zone but not in the High exposure zone; this could be a function of other donor activities overlapping with the RISE Low exposure area, climate and food variability that happened to affect the High and Low exposure zones in systematic ways, or other confounding factors. The share of children with stunted growth decreased in the High exposure zone from 50% down to 46%; no significant change occurred in the Low exposure zone, but the difference-in-differences is not statistically significant. Regarding clean drinking water, overall access improved slightly from 66% to 69%, though most of the gains occurred in the Low exposure zone and the change is not statistically significant. Households in the High exposure area are significantly more likely to have a soap-and-water handwashing station at the midline stage (7.8% vs. 1.8%), but there has been a drop overall since the baseline, and especially in the Low exposure area. Niger lags

far behind Burkina Faso in terms of improved sanitation, as only 11 percent of surveyed Nigerien households had an improved sanitation system. Household diets have not improved during the first two years of the RISE program, and while the proportion of children exclusively breastfed jumped from 36 percent to 45 percent in the High exposure zone, the change is not statistically significant.

Gender Equality

The RISE survey includes measures for a modified version of the Women's Empowerment in Agriculture Index (WEAI), addressing the domains of Production and Resources. From baseline to midline, we do not observe a notable improvement in this measure – the empowerment score is approximately 70 across the RISE zone (and is significantly higher in Niger than in Burkina Faso), but no statistically significant difference-in-differences is observed. Regarding attitudes about equal access for women to social, political, and economic opportunities, not quite half of the overall sample supports such equality (52% of women and 44% of men). There has actually been a statistically significant drop of approximately five percentage points in the WEAI score in both the High and Low exposure zones. The share of women who state that they participate effectively in decisions did not change in any statistically significant way from baseline to midline. We note that women in Niger in general have higher effective decision-making power, and in particular in the domain of livestock. Women in Burkina Faso have higher rates of effective decision-making regarding non-agricultural sources of income. We also include a complementary section on family planning (Section 9). The analyses suggest that familiarity with family planning methods is on the rise, but that behavioral changes lag behind.

Additional Factors that Correlate with Key Outcomes

We disaggregated outcomes according to a number of sociodemographic household-level factors to explore additional correlations. Female-headed households tend to be poorer and to have worse sanitation practices. They tend to have better health measures for their children (such as stunting and being underweight), despite the fact that they more often face moderate to severe hunger and lack dietary diversity to a greater degree. Households with a literate head of household are on average wealthier, more engaged with local power structures, and more sanitary. They also face less hunger and have more diverse diets. Outcomes frequently differ by the ethnicity of households, though with little in the way of systematic patterns. Mossi households tend to be better off and healthier, and Hausa households tend to be worse off. Fulani/Peul households are more likely to suffer from malnutrition. In terms of the marital status of household heads, monogamous and polygamous households do not differ in systematic ways. These sociodemographic features are discussed throughout the report and are summarized in Section 8.

Limitations and Challenges

Overall, the RISE program seems to be contributing to some modest improvements in the High versus Low exposure zones over the first two years of the program. Some challenges limit the program's effectiveness in other ways. First, the increase in violent extremist

activities and rhetoric in the region, which corresponds timewise almost exactly with the introduction of the RISE program, may undermine some of the enthusiasm for and effectiveness of the RISE activities, though measuring that impact is beyond the scope of this study. Further, activities organized by other donors may reinforce some of the larger objectives of the RISE program, but may also complicate the ability to determine precise estimates of the RISE program effects. Finally, climate change and population growth continue at a rapid pace in the Sahel, so the RISE activities are working against a rising tide of natural challenges. Climate and precipitation variability constitutes a particular challenge, as communities can be affected alternately by high and low levels of rainfall. This makes the RISE program doubly important, though it also becomes increasingly difficult to realize notable improvements in a difference-in-differences design since the entire RISE zone may be affected by important natural changes.

USAID has already begun responding to some of these challenges in the RISE zone with significant new investments in programs to promote family planning and combat violent extremism. RISE and Food for Peace performance evaluations have confirmed the importance of ensuring better integration of program interventions into national strategies and plans, building the capacity of decentralized local collectivities (regions and communes) to lead and coordinate development efforts, and strengthening inter-donor collaboration to address problems such as climate change whose dimensions exceed the resources and capacities of individual partners.

Regarding the midline survey itself, two important limitations are worth noting. First, to adequately track changes over time across a number of dimensions (such as program stratum, country, and gender), larger sample sizes are needed. As a result, improvement may have occurred on certain indicators but the results are not strong enough to attain statistical significance given the sample size. Second, the High and Low exposure zones were not stratified by country or region within countries, so some power is lost in conducting disaggregated analyses.

Lessons Applied, New Lessons Learned, and Recommendations

A number of lessons learned during the 2015 baseline study were addressed during the implementation of the midline survey with positive effects. These included:

- Begin the processes of administrative authorization and village awareness as early as possible.
- Select and train controllers separately from survey enumerators.
- Develop a guidebook and checklist for quality control personnel to ensure consistent data collection across locations.

New lessons were learned during the course of the midline survey, leading to a number of recommendations for subsequent data collection. Some of those recommendations are to:

- Revise the questionnaire to reduce its length and add clarity.

- Engage highly-skilled data consultants early and devote adequate time to data preparation prior to the planned analysis period.
- Involve the local data collection/processing partner in data analysis as part of capacity-building strategy for Sahelian institutions.
- Develop systematic methodologies for addressing missing and anomalous values.
- Consider the use of tablets during the next round of data collection, perhaps as a pilot and capacity building exercise.
- Consider engaging local security personnel to ensure safe movement and data collection by the enumeration team.
- Regarding Women's Empowerment and the WEAI score, consider calculating the scores by individual in the High versus Low exposure zones, as aggregations at the village level may mask some trends. Furthermore, consider coupling the WEAI score with analyses by sector, as women engaged in livestock raising and agriculture seem to have different levels of decision-making power.

Next Steps

The RISE program is designed to strengthen resilience among chronically vulnerable populations in the marginalized area that spans Burkina Faso and Niger. The midline survey provides empirical data that allows for an evaluation of improvements attributable to the RISE program (in High versus Low exposure zones) from the baseline period to the present, in the context of other unobserved factors that may affect the outcomes of interest. TANGO will exploit the quantitative survey results and also conduct a more in-depth, exploratory and open-ended community qualitative survey in a sub-set of the 100 villages selected for inclusion in the household and village quantitative survey. We anticipate that program activities will begin reaching a more mature status and will become more widely known by villages and households in the RISE zone over the remaining two years of the program. Next steps include the exploration of additional hypotheses that could shed important light on the effects of RISE beyond the listed indicators of interest. Furthermore, we anticipate transferring more capacity to SAREL's partner CESAO in advance of the endline survey and will work closely with CESAO to ensure a strong data collection plan to evaluate progress from midline to endline.

Summary of Midline RISE Indicator Outcomes

The following table summarizes the findings by indicator. Dark green indicates a statistically significant finding ($p < .05$). Light green indicates a trend in the desired direction that approaches conventional levels of statistical significance (p -values between .05 and .15). Dark red indicates a statistically significant finding in the wrong direction, while light red indicates a trend in the wrong direction that approaches statistical significance.

Indicator	Baseline	Midline			P-value	DiD P-value
	Weighted estimates	Weighted estimates	Confidence Interval (95%)			
			Lower bound	Upper bound		
Indicator 1: Depth of Poverty (%)						
Overall Mean	25.4	26.1	22.8	29.4	0.72	
High Exposure Zone	27.8	25.9	20.9	30.9	0.48	0.14
Low Exposure Zone	23.0	26.2	22.0	30.5	0.15	
Indicator 2: HH with Moderate/Severe Hunger (%)						
<i>No Hunger</i> , Mean	87.0	85.6	82.9	88.3		
High Exposure Zone	91.2	88.7	85.3	92.1		
Low Exposure Zone	82.1	82.4	78.4	86.5		
<i>Moderate Hunger</i> , Mean	10.5	12.4	9.9	14.9		
High Exposure Zone	7.9	9.8	6.7	12.9		
Low Exposure Zone	13.1	15.0	11.2	18.7		
<i>Severe Hunger</i> , Mean	2.5	2.0	1.4	2.7		
High Exposure Zone	0.6	1.5	0.7	2.2		
Low Exposure Zone	4.4	2.6	1.6	3.6		
<i>Moderate/Severe Hunger</i> , Mean (combined)	12.9	14.4			0.39	
High Exposure Zone	8.5	11.3			0.18	0.42
Low Exposure Zone	17.5	17.6			0.97	
Indicator 3a: Average Value of HH Assets (in FCFA)						
Overall mean	786,207	836,192	642,584	1,029,800	0.37	
High Exposure Zone	650,066	758,749	454,425	1,063,073	0.27	0.28
Low Exposure Zone	928,394	915,619	680,911	1,150,327	0.81	
Indicator 3b: Asset Ownership (items)						
Overall Mean	49.7	49.0	42.7	55.2	0.81	
High Exposure Zone	44.5	46.5	36.6	56.3	0.51	0.28

Indicator	Baseline	Midline			P-value	DiD P-value
	Weighted estimates	Weighted estimates	Confidence Interval (95%)			
			Lower bound	Upper bound		
Low Exposure Zone	54.9	51.6	44.1	59.1	0.49	
Indicator 4: Prevalence of Poverty (%)						
Overall Mean	61.8	63.8	58.5	69.1	0.43	
High Exposure Zone	65.4	65.5	57.1	73.8	0.98	0.44
Low Exposure Zone	58.2	62.1	55.6	68.6	0.25	
Indicator 5: Women's Empowerment in Agriculture Index (Index score, out of 100)						
Overall Mean	66.9	70.6	66.2	75.1	0.05	
High Exposure Zone	69.4	69.7	63.5	75.9	0.91	0.12
Low Exposure Zone	65.1	71.3	65.2	77.4	0.02	
Indicator 6: HH with Income from Non-Agricultural Sources (%)						
Overall Mean	72.2	73.3	68.0	78.5	0.55	
High Exposure Zone	72.6	77.3	68.9	85.7	0.08	0.03
Low Exposure Zone	71.8	69.1	63.3	75.0	0.23	
Indicator 7: Communities with Evidence of Good Governance (%)						
Overall Mean	55.9	69.1	56.2	81.9	0.21	
High Exposure Zone	46.8	80.7	67.0	94.4	0.02	0.08
Low Exposure Zone	61.7	61.6	42.4	80.8	0.99	
Indicator 8: Communities with Adequate Capacity to Manage Climate Shocks (%)						
Overall Mean	25.6	55.1	40.1	70.1	0.01	
High Exposure Zone	41.7	72.8	55.7	90.0	0.04	0.90
Low Exposure Zone	15.2	43.7	21.2	66.2	0.05	
Indicator 9: Share of Individuals Engaging with Local Power Structures (%)						
Overall Mean	12.9	12.3	9.0	15.6	0.76	
High Exposure Zone	12.3	12.6	7.4	17.8	0.93	0.67
Low Exposure Zone	13.5	12.0	8.1	16.0	0.62	

Indicator	Baseline	Midline			P-value	DiD P-value
	Weighted estimates	Weighted estimates	Confidence Interval (95%)			
			Lower bound	Upper bound		
Indicator 10: Global Acute Malnutrition Rate (%)						
Overall Mean	17.4	15.9	14.1	17.6	0.16	
High Exposure Zone	15.7	15.7	13.1	18.4	1.00	0.15
Low Exposure Zone	19.1	16.0	13.8	18.3	0.05	
Indicator 11: Prevalence of Stunted Children Under 5 (%)						
Overall Mean	49.8	46.8	42.6	51.0	0.07	
High Exposure Zone	50.2	46.0	39.1	52.9	0.13	0.45
Low Exposure Zone	49.3	47.6	43.1	52.2	0.36	
Indicator 12: Prevalence of Underweight Children Under 5 (%)						
Overall Mean	39.2	36.0	32.8	39.2	0.02	
High Exposure Zone	37.4	35.9	30.7	41.0	0.49	0.23
Low Exposure Zone	41.0	36.1	32.4	39.9	0.01	
Indicator 13: Share of HH Using Improved Drinking Water Source (%)						
Overall Mean	66.4	68.9	61.2	76.6	0.23	
High Exposure Zone	67.8	68.2	54.9	81.5	0.89	0.31
Low Exposure Zone	64.9	69.6	62.1	77.2	0.10	
Indicator 14: Share of HH with Soap-and-Water Hand Washing Station (%)						
Overall Mean	7.0	4.8	2.4	7.2	0.15	
High Exposure Zone	9.6	7.8	3.0	12.6	0.54	0.79
Low Exposure Zone	4.4	1.8	0.5	3.2	0.04	
Indicator 15: Share of HH Using Improved Sanitation System (%)						
Overall Mean	18.9	19.4	12.9	26.0	0.78	
High Exposure Zone	21.6	24.3	12.7	35.9	0.42	0.79
Low Exposure Zone	16.2	14.5	9.5	19.4	0.31	
Indicator 16: Household Dietary Diversity (Score from 0-12)						

Indicator	Baseline	Midline			P-value	DiD P-value
	Weighted estimates	Weighted estimates	Confidence Interval (95%)			
			Lower bound	Upper bound		
Overall Mean	5.1	5.0	4.7	5.3	0.60	
High Exposure Zone	5.1	4.9	4.5	5.4	0.26	0.42
Low Exposure Zone	5.1	5.1	4.8	5.4	0.86	
Indicator 17: Share of Children Receiving Minimum Acceptable Diet (%)						
Overall Mean	6.3	5.7	2.9	8.4	0.78	
High Exposure Zone	7.2	6.2	1.6	10.8	0.80	0.87
Low Exposure Zone	5.3	5.0	2.4	7.7	0.86	
Indicator 18: Prevalence of Exclusive Breastfeeding Under 6 Months Old (%)						
Overall Mean	34.5	39.8	32.0	47.6	0.26	
High Exposure Zone	36.7	46.1	34.7	57.6	0.16	0.29
Low Exposure Zone	31.7	31.7	22.5	40.8	0.99	
Indicator 19: Proportion Supporting Equal Access for Males and Females (%)						
Overall Mean	51.7	44.8	37.7	51.9	0.00	
High Exposure Zone	52.7	46.5	33.7	59.3	0.04	0.74
Low Exposure Zone	50.6	43.1	37.6	48.6	0.02	
Indicator 20: Share of Women Reporting Effective Participation (%)						
Overall Mean	75.0	72.8	68.7	77.0	0.42	
High Exposure Zone	78.6	74.6	68.7	80.5	0.24	0.47
Low Exposure Zone	71.1	71.0	65.2	76.7	0.97	

Overall, we find few statistically significant impacts from the RISE interventions at this midpoint of the program. Of course, only two years have passed since the baseline, and the context is a complex one with numerous factors that could undermine or confound RISE effects. In presenting these results in the report, we share analyses for all indicators, whether or not the differences reach conventional levels of statistical significance. We do this for three reasons. First, doing so serves a broader interest in accumulating knowledge about the program effects, whether they be positive, negative, or negligible at the midpoint. Second, if we did not report information about indicators for which there is no statistically significant

finding, readers who specialize in particular omitted domains would learn nothing about the status of those areas. Third, we prefer to allow readers to evaluate the importance of program effects by considering both the substantive impact and the statistical significance of findings and making their own judgments. If we imposed conventional but arbitrary p-value cutoffs (such as .05) in determining what we report, readers would not have the opportunity to judge the substantive and statistical effects, and we would be unable to highlight circumstances in which a bigger sample size would likely shift statistical conclusions. The report is longer as a result, but also more thorough in a manner that should pay dividends upon the final evaluation of RISE. We do make an effort to streamline the presentation of results where the differences are not significant and where further analyses or figures would not provide fruitful information.

I. Introduction

Resilience in the Sahel Enhanced (RISE) is a USAID-funded program aimed at increasing the resilience of chronically vulnerable people, households, communities and systems in targeted agro-pastoral and marginal agriculture livelihood zones of Burkina Faso and Niger. RISE has a duration of five years, from 2014 to 2019. To track the ongoing impact of the RISE program, USAID funded a midline quantitative survey of approximately 2,500 households across 100 villages in 2017, which followed an initial baseline survey conducted in 2015. The midline survey was commissioned by The Mitchell Group (TMG) and overseen by the SAREL project team. The Centre d'Etudes Economiques et Sociales de l'Afrique de l'Ouest (CESAO), an African international association based in Burkina Faso that is slated to continue providing monitoring, evaluation, learning and collaboration support services to resilience actors after the SAREL project ends, conducted the survey, which covered three regions in Burkina Faso (Est, Centre Nord, and Sahel) and three in Niger (Zinder, Maradi, and Tillabery). SAREL carried out the baseline and midline surveys and analysis in close coordination with TANGO International, a firm with specialized expertise in resilience that has been tasked by USAID with conducting the complementary *qualitative* evaluations of RISE.

The activities that USAID supports to impact resilience in the region include Food for Peace projects implemented by Catholic Relief Services, Mercy Corps, Save the Children, and ACDI/VOCA. The program also includes the Resilience and Economic Growth in the Sahel – Enhanced Resilience (REGIS-ER) project, a facilitation-oriented project that aims to increase resilience through key livelihood, health, and local governance activities, and the Resilience and Economic Growth in the Sahel - Accelerated Growth (REGIS-AG) project, an export-oriented project that prioritizes value chain improvements. REGIS-ER and REGIS-AG were launched in FY 2014 and 2015, respectively, while Food for Peace activities were already underway at the start of RISE and were subsequently incorporated.

The aim of the study is to begin evaluating the impact of the RISE initiative over time by comparing survey results at the midline of the initiative to the results reported in the initial baseline survey. In order to properly catalog the impact of RISE while accounting for other potential factors that might affect resilience in the region, villages included in the data collection area were selected and stratified into two zones: the High exposure zone constitutes villages that receive support from any of the FFP projects (PASAM-TAI, LAHIA, and Sawki in Niger, and FASO and ViM in Burkina Faso), or the REGIS-ER and -AG projects. The Low exposure zone is the set of comparable villages from which data are collected but which are not receiving any of the above-listed RISE interventions. This constitutes what, in experimental language, would be referred to as a quasi “control” set against which the impact of the RISE initiative in the High exposure zone can be compared over time. Thus, at the midline, a difference-in-differences (DiD) analysis can be undertaken: the change over time in the High exposure villages can be compared to the change over time in Low exposure villages, and any systematic differences in the High vs. Low changes may be attributed to the RISE activities. In addition to testing a set of 21 key indicators related to the RISE objectives, the midline survey also provides data useful for tracking demographic and village characteristics,

reporting exposure to shocks, and testing additional causal hypotheses of interest.

To collect the RISE quantitative baseline data in 2015, SAREL contracted a Burkina Faso-based firm, IMC, which recruited and trained enumerators from the pool that exists in both Burkina Faso and Niger of persons who have acquired experience and skills conducting surveys for the national statistics services and diverse donor institutions. To lead data collection and processing for the midline evaluation SAREL tapped its principal Sahelian institutional partner, the West African Center for Social and Economic Studies (CESAO). CESAO carried out an extensive competitive recruitment process in Niger and Burkina Faso. Controllers and enumerators who had participated in the 2015 RISE baseline study and performed well were given priority, but all application dossiers were screened before candidates were invited to training. Controller candidates were interviewed by a panel in each country that included a representative of SAREL. Controllers completed a special five-day training, and those who were selected then assisted CESAO in conducting the full ten-day training program organized for enumerators. The latter were evaluated and selected based on their performance during the training, on a final written exam, and during a simulated data collection exercise in a local village. (Note that separate reports were submitted to USAID detailing all phases of the preparation and implementation of the RISE midline evaluation, including recruitment and training of survey personnel).

Enumeration teams worked across regions in the RISE area, simultaneously collecting data from Niger and Burkina Faso. Following the data collection, data cleaning, coding, and analysis were conducted. This report describes the data collection process, the midline results, and the impact of the RISE initiative at its midline.

I.1. Overview of the RISE Program

As noted, the objective of the RISE program is to enhance resilience among vulnerable populations in the Sahel region of Burkina Faso and Niger. USAID defines resilience as the capacity of affected people, households, communities, countries and systems to mitigate, adapt to, and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth. The reasons behind USAID's decision to invest in resilience enhancement in the Sahel include:

- The high human and financial costs of chronic humanitarian assistance
- The impediments that chronic vulnerability pose to economic growth
- The cyclical impact of weak economic growth on the capacity of individuals, households, communities and systems to mitigate, adapt to, and overcome shocks and stresses
- Evidence suggesting that investments in resilience can result in significant savings in humanitarian outlays, which typically are able to address only the effects of crisis instead of addressing their underlying causes in a preventative manner.

According to the theory of change that underpins USAID's RISE initiative, resilience in the Sahel can be better strengthened by sequencing, layering, and integrating humanitarian and development interventions, rather than employing humanitarian and development interventions in isolation. The assumption of this theory of change is that development interventions can reduce risks so as to offset the adverse impacts of humanitarian crises due to shocks and stresses. As households and communities become more adept at absorbing those shocks and stresses, adapting new livelihood approaches in response, and then transforming their livelihood options, they will develop resilience to withstand setbacks and to promote inclusive economic growth in the targeted Sahel zone.

The RISE zone was demarcated based on both quantitative and qualitative criteria, taking into account vulnerability, natural resource endowments, irrigation and horticultural land potential (i.e. gardening, arboriculture), accessibility, and human and property security (see map below). Communes and villages within the RISE zone were then selected with attention to those same factors, with beneficiary (High exposure) villages paired with similar non-beneficiary (Low exposure) villages in order to build evaluation concerns directly into the initial program design. The same set of 37 High exposure villages and 63 Low exposure villages were surveyed for the 2015 baseline and the 2017 midline evaluation.³ For household selection, however, a new sample of 25 households was drawn in each village for the midline survey using the same systematic approach applied during the baseline that gave each household an equal probability of being selected.

³ One Low exposure village in Niger's Tillabery region had to be replaced for the midline survey because of security concerns.

I.1.1. Specific RISE Objectives

In order to achieve the goal of increasing resilience among vulnerable populations in this part of the Sahel, several desired outcomes were identified and then grouped around three specific objectives or components:

Objective 1: Increased and Sustainable Economic Well-Being (Income, food access, assets, adaptive capacity)

To meet this objective, the RISE initiative seeks the following intermediate results among households and villages in the region:

- Diversified economic opportunities
- Intensified production and marketing
- Improved access to financial services
- Increase of market infrastructures

Objective 2: Strengthened Institutions and Governance

To promote stronger institutions and governance in such a way as to build resilience, RISE identified a number of intermediate results for local villages to achieve:

- Improved natural resource management
- Disaster risk management
- Strengthened conflict management systems
- Strengthened government and regional capacity and coordination

Objective 3: Improved Health and Nutrition Status

Improved health and nutrition supports resilience in numerous ways, for example, by minimizing medical expenses, enhancing prospects for educational success, and improving productivity. To attain this objective, the RISE initiative identified the following major intermediate results:

- Increased access to potable water
- Improved health and nutrition practices, particularly for mothers and children
- Improved family planning
- Better sanitation practices

RISE has set a number of expected results to be achieved over the course of the five years of interventions. Among them are that:

- 375,000 fewer people will require humanitarian assistance during a drought of 2011 magnitude.
- Global acute malnutrition (GAM) rates will be reduced from near 15% to below 10%

in targeted communes.

- Depth of poverty amongst poor households will be reduced by 20% in targeted communes (thus from approximately 22% to less than 17.5%).
- Prevalence of severely/moderately hungry households will be reduced by 20% in targeted communes (thus moving from approximately 28% to less than 22.5%).
- 237,500 vulnerable households will benefit directly from USG interventions (8 persons per household in average).

At the midline of the initiative, there are no set targets regarding intermediate impact. Instead, the purpose of the data collection and analysis is to determine the scope of change since the inception of the RISE program, which will enable USAID and its implementing partners to consider changes that may serve the broader five-year objectives.

1.1.2. Coverage and Target Groups

The map below provides an illustration of the RISE study area, which stretches across the southern part of Niger and the northern portion of Burkina Faso. The RISE zone includes three regions in Niger (Zinder, Maradi, and Tillabery) and three in Burkina Faso (Est, Centre-Nord, and Sahel). An obvious challenge in undertaking development and humanitarian activities in this region is that, by virtue of the high degree of vulnerability that households and villages face, numerous other donor activities may also be operating in the same area. The RISE design, which randomly assigns villages to Low or High exposure, mitigates this concern to some degree, since it would be unlikely that other programs assign their interventions and controls in the same localities. Nevertheless, this challenge persists across the Sahel and will only be overcome with full collaboration among donors.

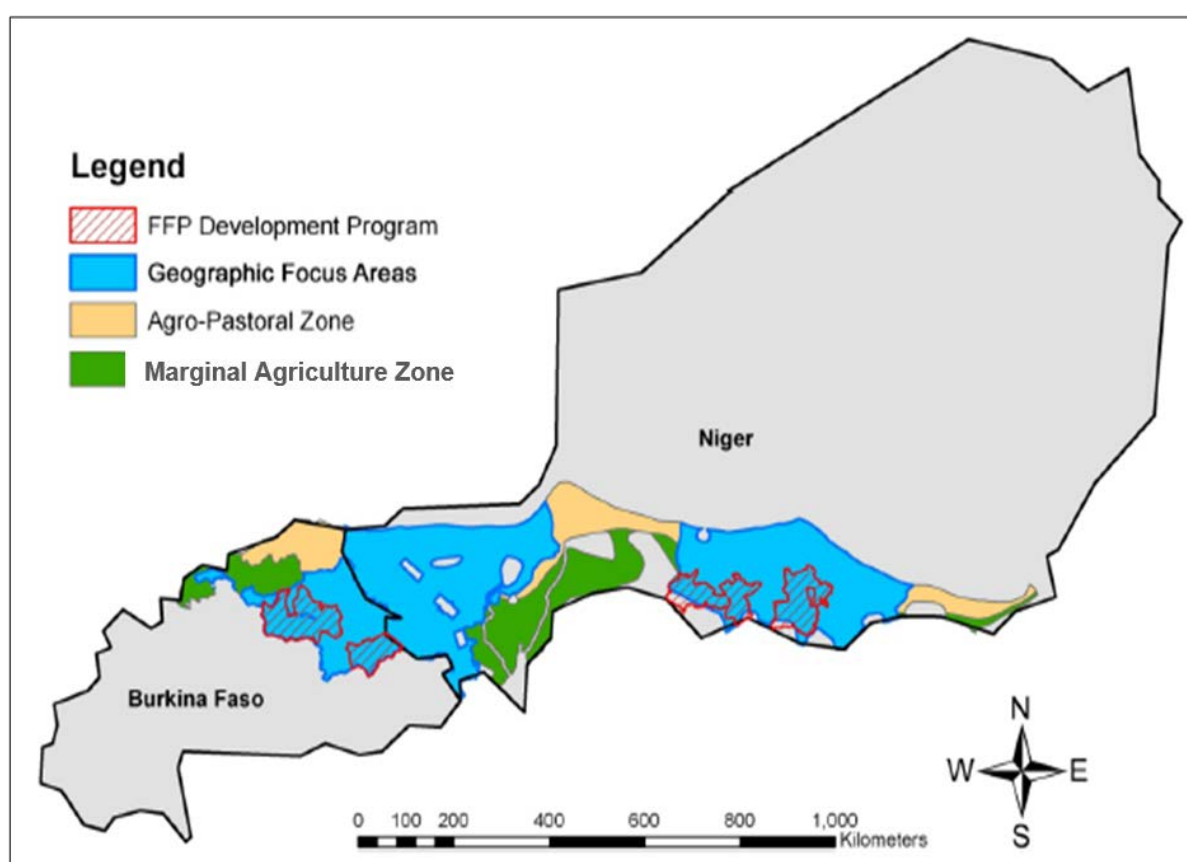


Figure 1-1: Map of the RISE Study Area

At the inception of RISE, it was determined that the assignment of interventions would be made across the entire zone rather than stratifying High and Low exposure zones by country or region.

Overview of the SAREL Project

Evaluating the impact of a complex, multi-country initiative with numerous implementing partners, activities, and objectives requires a dedicated project. The Sahel Resilience Learning (SAREL) Project was established for this purpose. SAREL is a five-year (2014-2019) project funded by USAID and implemented by The Mitchell Group (TMG), a US-based development

consulting firm, in collaboration with a consortium of partners.

The objective of the SAREL project is to provide monitoring, evaluation, collaboration and learning support to USAID's RISE Initiative. The SAREL Project is not a standalone intervention, but instead builds on and responds to the different resilience projects funded by USAID in the regions mentioned above.

The expected results of SAREL are: 1) to test, extend, and accelerate the adoption of proven technologies to build resilience and innovations already underway; 2) to develop, test, and catalyze widespread adoption of new models integrating humanitarian and development assistance; 3) to promote ownership, build the capacity of national and regional institutions, and coordinate humanitarian development interventions in the areas of influence; 4) to address gender issues critical to resilience and growth; and 5) to create a knowledge management database that will house the baseline assessment, routine monitoring data and impact assessments for REGIS-ER and REGIS-AG. The midline data and this report constitute two of the key contributions of SAREL to the evaluation of RISE and the resilience learning it aims to promote.

1.2. Overview of the Midline Study

The midline survey is a probabilistic household survey of approximately 2,500 households across 100 villages in the RISE zone. It includes four components: household data, village data, gender/women's data, and child anthropometric data, all of which are gathered at the individual level save the village data, which are collected from village representatives. Coming two years after the baseline survey, the intention of the midline survey is to provide village-, household, and individual-level data that determine the progress made by the RISE initiative to this point. These data will serve as a reflection point once the initiative is completed and the final data are collected, but they also allow SAREL to test hypotheses and evaluate impact at an intermediate stage, and they provide an opportunity for suggesting changes to RISE activities. The data collection focuses on a set of core results and impact indicators derived from the RISE Performance Management Plan (PMP) and supplemented by more specific indicators from the REGIS-ER Performance Management Plan. In total, 21 performance measurement indicators are featured in the midline survey report, which tracks changes on each since the baseline. The report also includes supplementary analyses of additional hypotheses tested using the midline data.

The key methodological design aspects of this population-based survey – including stratification procedures, sample size determination, and sampling protocols – were developed in close consultation with USAID and with the technical support of the *Institut Supérieur des Sciences de la Population (Université de Ouagadougou)* in November–December 2014. The same protocols employed for the baseline survey were maintained for the midline, in order to ensure consistency. Whereas data were drawn from the same villages, the data set does not constitute a panel since the same households were not re-surveyed from baseline to midline. That decision was based on the difficulty of ensuring participation from the same individuals and households two years later, given patterns of migration and other challenges common in the region. Only the village-level data can be treated as a panel.

Corresponding to the components of the survey noted above, the survey instruments include a household questionnaire and a village questionnaire. For practical purposes of organization and administration, the household questionnaire was divided into three “sub-questionnaires (household, gender, and food consumption and child anthropometry). The development of the RISE survey instruments drew extensively from questionnaires used in the USAID Ethiopia PRIME baseline study, though SAREL made numerous changes to reflect a different context. Minor changes were made for the midline survey in consultation with USAID, but the questionnaires otherwise remained identical in order to ensure comparability across survey waves.

USAID’s other RISE evaluation contractor, TANGO International, uses the quantitative household and village data collected and analyzed by SAREL, as well as the results of in-depth, exploratory and open-ended qualitative surveys that it conducts itself in a subset of sample villages, in providing analysis to USAID. Using data analysis methods to calculate household and village resilience capacities, TANGO has been able to identify factors that contribute substantially to building those capacities; explore linkages between resilience capacities, ability to recover from shocks, and household food security; and to begin to assess differences across intervention groups.

SAREL and TANGO coordinated in determining dates for conducting the midline quantitative and qualitative studies and in obtaining authorizations from relevant administrative authorities in Niger and Burkina Faso. Both TMG and TANGO used the same local organization, CESAO, for assistance in data collection, which provided advantages to TANGO (local contractor and personnel already intimately familiar with RISE, the evaluation process, and the sample communities) and to CESAO (capacity-building in qualitative survey processes).

2. Methodology

This section describes the methodology used for the midline data collection.

2.1. Data Collection

Data were collected concurrently in Burkina Faso and Niger from April 6 to May 4, 2017. Data were drawn from 100 villages, with a sample of 25 households per village, for a total of 2,500 households. The timing of the data collection mirrored the timing of the baseline survey in order to avoid seasonal changes that could affect the data.

SAREL and CESAIO jointly managed the preparations for data collection. Data collection teams consisted of one controller and two man/woman pairs of investigators. One area supervisor was responsible for each region, thus amounting to a total of six area supervisors; each of them oversaw the work of four enumeration teams. Area supervisors themselves were under the responsibility of two general supervisors, one in each country. The entire field data collection team fell under the supervision of a project coordinator. Regular and sustained coordination, supervision, collaboration, and quality control efforts undertaken by SAREL and CESAIO allowed for minor adjustments and corrections during the course of the data collection.

Apart from organizing enumeration teams, a series of steps were taken to facilitate data collection. Teams received logistical and financial resources for the operation kick-off, as well as questionnaire packets (for household, gender, food consumption/child anthropometry, and village questionnaires), manuals, enumeration sheets and sample selection sheets. Office supplies and other equipment such as scales, length boards, and flashlights were made available to the enumeration teams via their area supervisors. Building on lessons learned during the baseline survey, controllers and supervisors were trained ahead of the enumerators, so that they could participate themselves in the enumerator training.

One successful aspect of the baseline study was the commitment from local administrative authorities in ensuring robust participation. SAREL built on that experience by again dispatching CESAIO, several weeks in advance of the data collection, to provide information to governors, prefects, mayors, and customary leaders (cantons and village chiefs). Those missions also had the responsibility of raising awareness in the villages regarding the survey topics. This process helped to gain buy-in for the midline survey and created some initial contact with village members that facilitated the data collection activities. Because CESAIO has regional offices in both Burkina Faso and Niger, they have a familiarity with the terrain and key stakeholders that further helped prepare the groundwork for the surveys.

2.1.1. Data Collection Objectives

The objective of the data collection was to obtain quantitative data necessary for drawing rigorous comparisons over time since the conduct of the baseline survey in 2015 and across High and Low exposure zones. Those data reveal the impact of the RISE initiative at the midline, focusing primarily on measures related to the RISE performance measurement

indicators.

2.1.2. Questionnaire Description

Household Questionnaire

The Household Questionnaire, administered with the head of household or his/her household representative, was used to record data on all household members along with their demographic and socioeconomic characteristics: age, sex, relationship to the head of household, ethnicity, highest educational attainment, marital status, primary occupation, etc. The questionnaire also included measures of housing characteristics, shocks sustained by the household, assets, livestock, access to land and information, production, household expenditures and much more. The purpose of the Household Questionnaire was to capture household-level data relevant to the key indicators and related issues (such as shock exposure). In addition, this survey instrument provided the framework for identifying children under five years of age—from whom enumerators collected additional anthropometric data—and to identify women who would answer the Gender Questionnaire. The questionnaire remained almost identical to the baseline household questionnaire; one small change was an adjustment to the series of questions regarding the value of household assets, since the baseline formulation did not include a mechanism for valuing older assets.

Food Consumption and Child Anthropometry Questionnaire

This survey instrument was used to gather information on children under five years of age. Data on consumption and dietary diversity, hunger in households, anthropometry (i.e. child height and weight), nutritional status, and dietary practices were collected. It is important to note that the survey was conducted at the same time of year as the baseline, which controls for any potential seasonal differences in food consumption.

Gender Questionnaire

This questionnaire was used to measure the inclusion of women in agricultural sector growth and in household decision making. It was administered to the wives of the heads of households, presumed to be centrally involved in life of the household. In the event of a female-headed household, the head of household herself was surveyed. The survey instrument focused on women's participation in decision making, especially regarding production and income-generating activities. The questionnaire included measures used to evaluate the modified Women's Empowerment in Agriculture Index (WEAI) requested by USAID. This modified version of the WEAI includes two of the five standard dimensions (Production and Resources) and adjusts the shares that each contribute to the WEAI score as a result (see Annex). The survey also included a module on reproductive choices and family planning; while the key indicators do not focus on these issues, SAREL decided to maintain this module as a potentially valuable source of data for future analyses.

Village Questionnaire

This questionnaire served as framework for gathering data on the 100 villages where the household-level data collection took place. Village characteristics, village infrastructure and

services, village organization types, various governmental and NGO programs, shocks, climate shock management, land management, and village governance structures are among the categories of data captured through this instrument. Responses were obtained from small groups of village representatives and leaders. Because the data are village-level and the same villages were included in the baseline and the midline surveys, the village data can be considered a true panel (with observations from the same units in time 1 and time 2), despite the fact that the group of representatives providing answers in each village may have changed somewhat from the baseline to the midline.

2.1.3. Sampling

In order to effectively measure the impact of the RISE program interventions, the research design for the study included a satisfactory counterfactual, established at baseline. That is, intervention areas were compared to plausibly comparable areas that did not receive those interventions. To establish a counterfactual, SAREL used a quasi-experimental research method that matched intervention villages with similar control villages. Thus, as noted above, two strata were defined based on the degree of exposure (“High” or “Low”) to RISE interventions in Burkina Faso and Niger. Following USAID’s inclusion of FFP activities in RISE programming, SAREL and USAID made the determination to delineate the High exposure zone as all villages where (1) the REGIS-ER Project intervenes alone; (2) the REGIS-ER and FFP Projects jointly intervene; or (3) FFP intervenes alone. It should be noted that at the time the sample frame was defined (November 2014), REGIS-AG had not yet been launched. Since REGIS-AG initiated field activities in the second quarter of 2015, however, its approach has been to work with producer groups in villages where REGIS-ER (or one of the DFAP projects) already intervenes. The Low exposure zone consists of villages in the RISE intervention area which do not benefit from REGIS-ER or FFP interventions and will not do so over the five-year RISE implementation period (2014–2019). This stratum therefore serves as an implicit control area from which a sample of villages resembling the intervention villages as closely as possible in terms of socio-cultural, economic, and environmental characteristics was drawn.

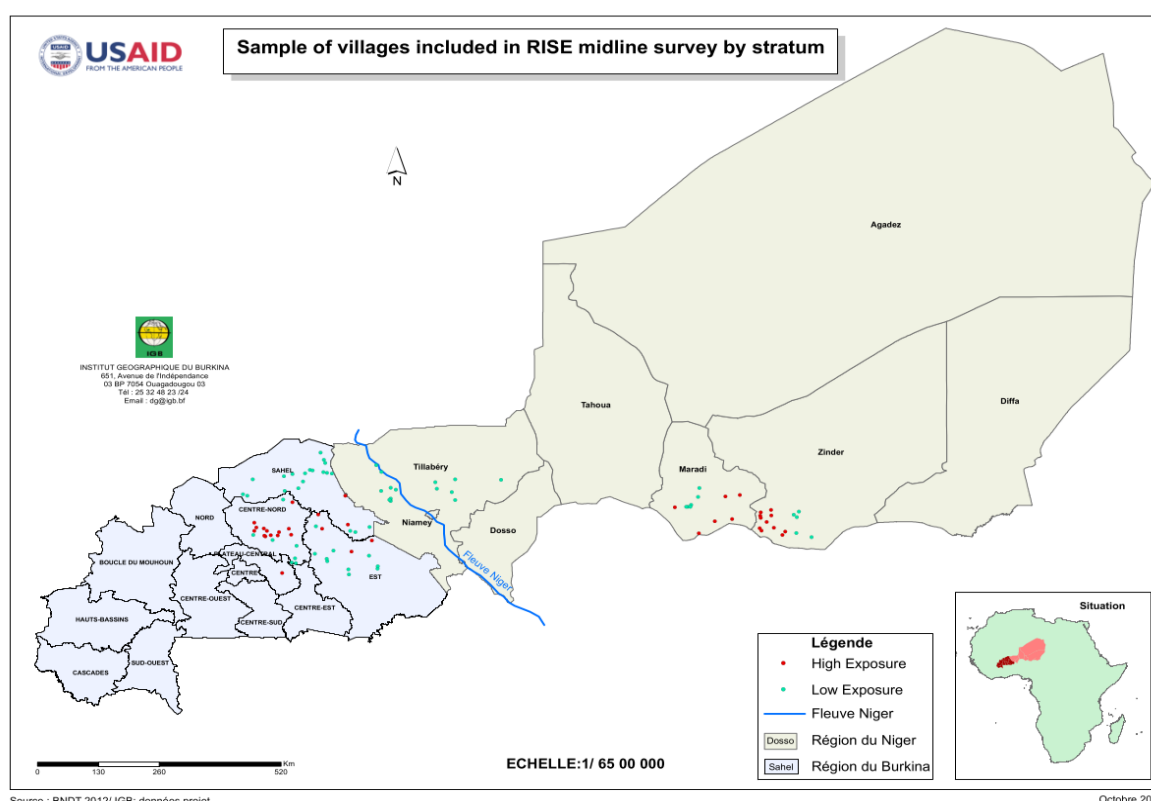


Figure 2-1: Sample of Villages included in RISE Midline Survey by Stratum

As mentioned above, the Midline survey employed a two-stage cluster design. At the first stage, a sample of villages was selected using a probability proportional to size (PPS) method. The frame of primary sampling units (PSUs) was composed of all the villages located in the RISE area across Burkina Faso and Niger. In this text, we will interchangeably use village and PSU. The estimated number of households was used as the estimated measure of size to calculate the probabilities of inclusion. The PSU frame was stratified following the distinction High versus Low as discussed previously. The total sample size of 100 PSUs was split into 63 PSUs for the High stratum and 37 for the Low stratum.

Table 2-1: Sampling Weights for Households and Villages in the RISE Zone

Strata	Population		Sample (Baseline)		Sample (Midline)
	Nb. Villages	Nb. of HHs	Nb. Villages	Nb. of HHs	Nb. of HHs
High	1,702	263,903	37	924	925
Low	2,658	276,441	63	1,569	1,567
Total	4,360	540,344	100	2,493	2,492

The selection of surveyed households was conducted by the field team. To achieve the desired sample size of 25 households per village, 28 were drawn from a list of households in each village, using systematic simple random selection (SRS) and allowing for three reserves, in the event that replacement was necessary. Using the replacements, it was possible to achieve 25 responding households in all communities but two. In those two communities, all available households—19 and 23, respectively—were surveyed. Note that the survey sample within High exposure areas was randomly selected; it did not intentionally target known household beneficiaries. The effect is that the estimates of impact should be conservative ones. As the approach taken did not allow for traditional calculation of response rates, non-responding

households were replaced using a backup sample. For the endline, replacement of households should be avoided. The original sample should be inflated to account for attrition due to non-response.

The selection of surveyed households took place in the field, based on the list of households in each surveyed village, after all households in the village were identified (using updated print lists). Since this is a population-based survey, not all households in RISE villages will have benefited directly from RISE programs, thus the need to randomly select from households in the villages. This being said, we assume that households that may not have directly benefited from RISE programs are likely to have indirectly benefited by virtue of proximity to their benefiting neighbors.

2.1.4. Enumerator Training

The preparation for midline data collection was conducted largely in keeping with the protocols used for the baseline. CESAO first shortlisted candidates in both countries for enumerator positions, based on a number of criteria defined in the methodology note, including the need for male-female pairs to administer questionnaires. A training phase followed from March 20 to 30, 2017, simultaneously in Niamey and Ouagadougou. In a departure from the baseline process, the controllers were trained prior to the enumerators, which gave them (as well as the six supervisors) an opportunity to build capacity and then assist with the training of the enumerators. CESAO assembled an experienced team of survey experts to lead the data collection effort. They served as the primary training facilitators in each country and were assisted by SAREL's M&E specialists. The training focused on participants' understanding and mastery not only of the data collection tools (questionnaires, manuals, and glossaries) but also of household sampling procedures and identification of other survey targets (for example, children under five years of age for the anthropometry modules). CESAO mobilized specialists to provide training on specific subjects, notably on taking anthropometric measurements and GPS readings, and on the use of "event calendars" as an aid in determining children's age.

Trainers in Burkina Faso and Niger remained in regular contact throughout the training to exchange information and share observations and amendments. Typically, this exchange took place via internet or telephone, allowing for real time decisions on new instructions. Survey instruments and other necessary documents and tools were finalized through the process of training and collaboration, and enumerators were tested on sampling procedures and questionnaire comprehension prior to leaving the training.

Pilot Survey

Consistent with the pre-survey protocols used for the baseline data collection, a one-day pilot survey was conducted on March 29, 2017 in localities close to the capital cities of Ouagadougou, Burkina Faso and Niamey, Niger. Three villages were included in the pilot survey in Burkina Faso, selected to ensure the inclusion of villages where the three principal languages of the region (Mooré, Fulfuldé, and Gulmantchéma) are spoken. In Niger, the pilot survey was conducted in two villages, one Hausa-speaking and one Zarma-speaking.

Administrative officials of the villages selected for this exercise—including both mayors and traditional leaders—were first consulted to obtain their consent before the pilot survey took place. To ease the administrative burden of the pilot survey, enumerator candidates were divided based on their command of languages spoken by the villagers and were organized in pairs that included a male enumerator to administer the Household Questionnaire and a female enumerator to administer the Gender Questionnaire, on the understanding that both would ensure all anthropometric measurements.

Representatives of CESA O and the SAREL technical team provided supervision in both countries. All enumerator candidates had the opportunity to practice handling different data collection tools and survey instruments. At the end of the pilot survey, a debriefing session was held in each country to discuss lessons learned and strategies for effectively obtaining the survey data.

Final Selection of Field Staff

Shortlisted candidates took a written test after the training session and the pilot survey and a final list of selected enumerators was published. Thirty-six (36) candidates were selected to conduct the surveys in Burkina Faso, with an additional 16 kept on a list of alternates. In Niger, a team of 28 agents was assembled, with 5 alternates. In each country, the alternates served as a provision for potential replacements in case of staff withdrawals.

Six regional supervisors oversaw the data collection, each in one of the six regions of Burkina Faso or Niger. Below the level of supervisors, 16 controllers each supervised the work of two pairs of enumerators. Enumerators were divided into teams and then mixed-gender pairs based on the survey demands for different regions, as well as their knowledge of local languages and specific targeted areas. All staff reported to one of two Assistant Coordinators, one per country. Both Assistant Coordinators reported to the General Survey Coordinator.

In addition to the sampling and questionnaire training that the enumerators received, controllers and supervisors were trained in the management of field teams. They also undertook added instruction for the administration of the Village Questionnaire since that instrument involved data collection from village stakeholders rather than households.

Prior to the departure date of April 4, 2017, all survey personnel (supervisors, controllers, and enumerators) received the deployment plan detailing the villages to be surveyed and timetable. The roles, responsibilities and tasks for each team member were defined in instruction manuals that they received during training and used as references during data collection.

2.1.5. Number of Households Covered

2,492 out of the 2,500 sampled households responded to the survey, constituting a success rate of 99.7%. Missing observations are generally explained by the fact that in some villages, the number of listed households amounted to fewer than the predetermined sample size of 25 households per village. In other cases, enumerators identified randomly selected households and replacements (totaling 28) without reaching the desired number of 25

households. A second round of data collection to supplement missing data or rectify identification errors was necessary in some villages, particularly in Niger. The response rate was much higher than is often the case for household surveys largely due to the advance work of the CESAO information campaign teams. By establishing a relationship with local stakeholders, government actors, and community members, CESAO and SAREL were able to enlist the help of village leaders in publicizing the surveys, encouraging participation, and underscoring the importance of village members' input.

2.1.6. Sampling Weights

Sampling weights were calculated for each respondent and used in the statistical analysis to ensure that the results obtained from the sample “represented” the target population, i.e. the results were generalizable to the target population. It also allowed the calculation of correct measures of precision such as standard errors and confidence intervals.

For each respondent, the sampling weight was calculated to quantify the relative share of the population represented by the respondent. It allowed the extrapolation of the sample results to the target population. The sampling weights were calculated in steps. At the first step, the base weight was obtained as the inverse of the probability of selection. The subsequent steps in the sampling weight calculation were usually adjustments made to the base weights to ensure that the responding units were representative of the target population. One common adjustment was to correct for non-respondents. When some of the selected units do not participate in the survey, the remaining units may not represent the full target population unless their sampling weight is adjusted (usually inflated) to compensate for the loss of sample. When the non-response rate is high, efforts need to be taken to adjust the sampling weights so as to compensate for any response bias. For the RISE Midline survey, the response rate (after replacement) was very high; hence a simple rescaling of the base weights within the administrative division called “commune”. This is the non-response adjustment. It is necessary to redistribute the sampling weights of the households that did not respond to the participating households. Otherwise, there will be an under-representation of the target population. The adjustment should be done within a group (e.g. by village, or by commune, or by province, etc.). We chose commune to preserve the stability of the weights, to avoid given too much extra weight to few households. The adjustment procedure consisted in computing the adjustment factor within “commune” as the ratio of the sum of the sampling weights of all selected units and the sum of the sampling weights of the respondent units. At the second step, the sampling weights of the respondents were inflated by the adjustment factor.

2.1.7. Difficulties Encountered during Data Collection

Lessons learned during the baseline data collection greatly facilitated the process for the midline survey. Nevertheless, some difficulties persisted, and some new ones arose. While the enumeration teams were able to successfully carry out their duties and successfully collect the desired data, it is worth noting the challenges they encountered. They include:

- Difficulties, in isolated cases, of village leaders being reticent to offer administrative support or full cooperation. This was especially true in Forgui and Konkoara-Yarce in

the Centre-Nord region of Burkina Faso. In most instances, collaboration was ensured by municipal advisors who accompanied the survey teams.

- Difficulties getting to survey locations. Vehicle availability and breakdowns hampered the survey efforts in some cases. The teams overcame this challenge by walking long distances when necessary or using motorbikes.
- Difficulties remaining in regular communication with the team. Some enumerators found that the resources made available for calls were insufficient, and the networks were often unreliable. The team remedied this concern by providing phone allowances frequently and with minimal delay.
- Difficulties with equipment, such as GPS devices and scales. The number of questionnaires was never a problem, but if anything went wrong with a piece of equipment, this often slowed the work of the team. To address this concern, teams were encouraged to share equipment as necessary.
- Difficulties identifying households. Migration, the death of a household head, differently reported names, and errors in the establishment of household lists often led to difficulties in the sampling process.
- Difficulty of enumerators and survey participants understanding survey questions in a consistent manner. The problem did not arise for many questions, but there are always some questions that prove more complex in the field that even a pilot survey cannot reveal. This was especially true for questions regarding obtaining a loan (Q306), agricultural production of the household (Q705b), and livelihood activities (Q1206 to 1211). Gauging exposure to shocks was also more complicated and variable than anticipated. One issue, for example, concerned the determination of degrees of shock severity experienced by households. The questionnaire provided a scale to assess severity (None; Low impact; Moderate impact; High impact; Worst impact of all time), but it proved difficult to use because of challenges translating terms consistently across multiple local languages. To address different challenges that arose, the Assistant Coordinators undertook regular Skype calls to share information on how difficult questions were interpreted and to generate consistency in interpretations across the survey sites.

2.2. Exploitation of the Data Collected

Following the data collection phase in the field, the collected data was analyzed using a two-step process consisting of data processing and report writing.

2.2.1. Data Processing

Processing of data consisted of four principal components: a systematic, manual check of all completed questionnaires; data entry; quality control of data entered; and file cleaning.

Checking and Coding Completed Questionnaires

When questionnaires were brought back from the field, a team of enumerators and supervisors was established by CESAO to check the data. The goal was to prepare all

questionnaires for a systematic data entry process. During this work, the staff also coded some open-ended questions that could not be coded directly in the field. This allowed for a straightforward and efficient data entry process.

Data Entry and Quality Control

Data entry was carried out by approximately 20 staff members trained in the survey instruments, the input templates, and data entry protocols. Two Input Controllers, recruited and trained specifically for the task, supervised the organization and technical monitoring of the staff members' work. They were responsible for verifying the accuracy and completeness of the recorded data. Controllers brought the staff's attention to any entry errors they spotted so that corrections could be made efficiently before continuing the work. The Input Controllers themselves were supervised by CESAO's data processing specialist. The CESAO technical team ensured overall monitoring of the activity to meet the deadlines and guarantee proper functioning of logistics.

File Cleaning

Consistent with protocols employed for the baseline data entry, SAREL and CESAO again opted to conduct double manual entry of all data, meaning that the data from each questionnaire were entered twice, by two different data entry staff members. CESAO met this requirement, and in doing so was able to perform necessary minor data corrections at the entry stage; this can be considered a first level of file cleaning. While adding to the time and cost of data entry, the double entry process made the overall data cleaning task significantly easier.

Indicator and Difference-in-Difference Calculations

Once the cleaned data files were made available, CESAO and a team of statistical analysis experts calculated means for demographic variables, the desired indicators values, and the difference-in-differences from the baseline to midline across the High and Low exposure zones. In addition, the analysis team conducted a number of secondary analyses to explore hypotheses of potential interest to SAREL and USAID. It should be noted that the calculation of difference-in-differences required that the data files be identically formatted across the midline and baseline surveys. This required extensive effort, since minor differences in coding decisions would undermine the rigor of the Difference-in-Differences (DiD) analysis.

2.2.2. Analytical Methodology for Statistical Analyses

The principal statistical task of study was to analyze the SAREL midline sample in relation to the baseline sample. That included first developing a descriptive analysis and then conducting analyses that allow for comparisons over time and across zones while accounting for potential confounding factors. We relied primarily on Difference-in-Differences analyses.

Descriptive Analysis

The first set of analyses consisted of computing means with associated levels of precision. These statistics are disaggregated by stratum (High versus Low) and by RISE zone of each

country (Burkina Faso versus Niger).

While the descriptive statistics do not constitute an evaluation of RISE impact over time, they nevertheless provide insights into potential differences at the time of the midline study.

Difference-in-Differences (DiD)

Simple differences as discussed in the previous section show the cross-sectional situation at Midline. The changes over time are not reflected in these simple differences. To incorporate the time factor, the midline estimates were compared to the baseline results. The DiD methodology isolates the intervention effect over time by comparing the change from baseline to midline in the High exposure zone to the change over time in the Low exposure zone.

The two graphs in **Figure 2-2** below illustrate two situations. On the left, **Figure 2-2A** illustrates a hypothetical situation in which both the intervention or High zone (blue line) and the non-intervention or Low zone (red line) progress in a similar way between Baseline (2015) and Midline (2017). This suggests that there was no significant effect of the intervention even if progress was observed during the study period. In contrast, **Figure 2-2B** on the right shows a clearly sharper increase for the intervention zone (blue line) compared to the non-intervention zone (red line).

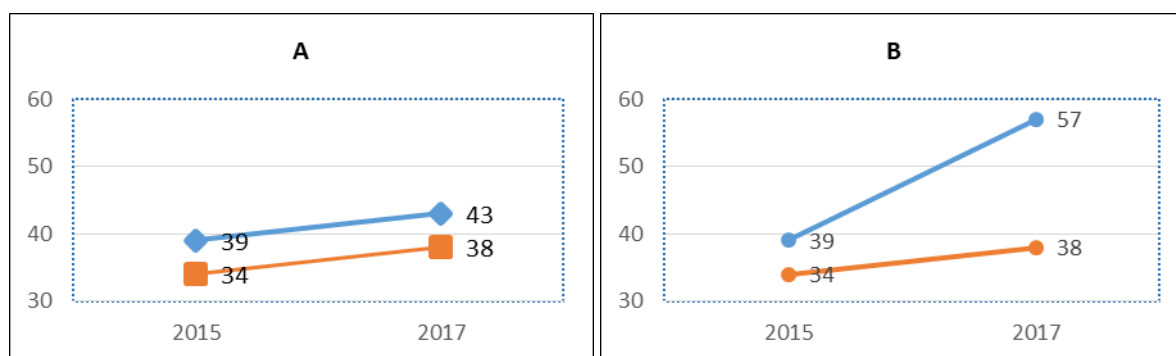


Figure 2-2: Hypothetical changes in a Difference-in-Difference Analysis

The DiD approach consists of subtracting the change in the Low zone (where no interventions took place) from the change in the High (intervention) zone in order to isolate the effects of the RISE activities after accounting for other potential reasons for change over time that would affect both the High and Low zones. An example follows in **Figure 2-3**.

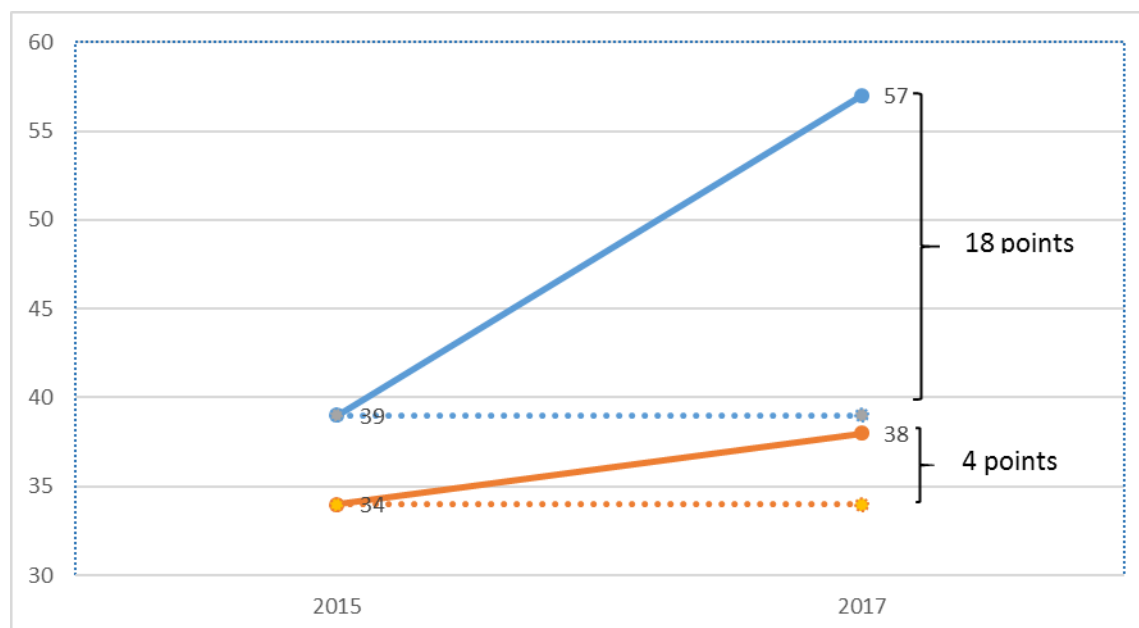


Figure 2-3: Hypothetical Difference-in-Differences Analysis

In the simple illustration above, the DiD estimated effect would be 14 points i.e. 18-4. Note that the difference between the Midline gap (57-38=19) and the Baseline gap (39-34=5) of 19 minus 5 also leads to the DiD estimate of 14 points.

In formal terms, the DiD is calculated in the following manner. Consider a variable of interest y . We can write conduct DiD calculations using the following model

$$y = \beta_0 + \beta_1 I(Int) + \beta_2 I(Midline) + \beta_{12} I(Int)I(Midline),$$

where $I(Int)$ is an indicator of the intervention zone (coded 1 for High) and $I(Midline)$ is an indicator of the survey wave (coded 1 for the midline survey and 0 for the baseline). The coefficients on those terms thus convey the impact solely of the zone and the survey wave, respectively. The interaction term conveys the DiD; under this model, the DiD estimate is

$$\hat{\beta}_{12} = (\bar{y}_{Int, Midline} - \bar{y}_{Int, Baseline}) - (\bar{y}_{No-int, Midline} - \bar{y}_{No-int, Baseline})$$

where $\bar{y}_{Int, Midline}$ is the average of the variable of interest in the High exposure zone at the midline, and similarly for $\bar{y}_{Int, Baseline}$ (mean for the High zone at the baseline), $\bar{y}_{No-int, Midline}$ (mean for the Low zone at the midline), and $\bar{y}_{No-int, Baseline}$ (mean for the Low zone at the baseline).

Propensity score matching

The DiD methodology described above identifies significant differences between the Low and High strata from baseline to midline. Unfortunately, because the survey is not a rigorous randomized control study, the DiD is not sufficient to attribute the identified changes to the RISE interventions. The propensity score matching (PSM) is a technique used in quasi-experimental studies such as the RISE survey. In quasi-experimental studies the treatment and control groups are not always comparable. The PSM is then used to correct the lack of comparability between the treatment and control groups before applying the comparison test.

One important aspect of the PSM methodology is the metric for deciding the similarity between the control and treatment samples. For the SAREL study, the nearest neighbor metric was used to match the High sample to the Low sample using a logistic regression. The person and household level characteristics used as predictors for the logistic regression were age, sex, marital status, literacy, and ethnicity of the head of the household. Note that age and sex apply to the child for the child-level indicators and to the head of household for the household-level indicators. Using the logistic regression model, a propensity score was calculated. Each element from the High sample was then matched to the nearest unit from the Low sample, i.e. the pair with the smallest propensity scores difference.

The matching methodology described in the previous paragraph was applied independently to the baseline and midline samples. The two matched samples (i.e. baseline and midline) were then combined and analyzed for detecting differences using the DiD technique.

As mentioned above, the PSM is a tool to help attribute possible differences to the RISE program. Unfortunately, very few indicators were significant. Hence, the PSM method was also applied to non-statistically significant differences with p-values up to about 0.30. The community-level indicators were not considered for the PSM analysis due to the sample size (i.e. only 100 villages in the study). Also, there were very few community-level characteristics to use for developing the logistic regression model.

2.2.3. Report Preparation

This Midline Study Report was developed through a series of steps. Initially, SAREL's data analysis experts developed an analysis plan. CESAIO then submitted the data to SAREL and the data analysis experts calculated the relevant statistics and differences. SAREL transmitted findings to USAID concerning the 21 key indicators and developed the text for the present, full draft report.

2.3. Methodological Notes and Limitations

2.3.1. Original Baseline Results vs. Recalculated Baseline Results

In attempting to reproduce the results reported for the baseline (see the September 2016 report), we were unable to replicate 10 of the 21 indicators with exact precision.

Several differences were observed, which required the following corrections and recalculations:

- The sampling weights were corrected for one village. The village had a total of 20 households and they were all included in the survey. The sampling weights in that village did not account for this special circumstance and were corrected. It was not always clear how to treat the missing values, and the algorithms for the key indicators did not in all cases provide guidelines on the treatment of missing values. For example, WEAI has many components (decision, autonomy, ownership, purchases, and credit), and all of the components should be combined to compute the composite index. It was not clear what decision should be taken when some component values of the modified WEAI are missing and the combined available component value falls below

the threshold. If the missing component values had been known, then the WEAI might have increased.

- The weights associated with the gender file were corrected for several women. When a head of household had more than one spouse, a Kish grid was used to randomly select one woman. Therefore, in those situations, an adjustment had to be made to the weighting for women in polygamous households to account for their selection. This was not done during the baseline analysis, so a recalculation of baseline sampling weights was done for the midline report to ensure comparability.
- The gender questionnaire should be applied only to women who are heads of household or to women married to the head of household. In 22 cases, women who did not fit these categories responded to the baseline gender questionnaire. These women should have been excluded when calculating the gender baseline results.
- Similarly, some children initially identified in the household survey were not available during the anthropometry measurements phase, but they were kept in the analysis file used at baseline. Given their significant number (211 children), they were removed from the analysis file and the weights of the remaining children adjusted to compensate for the removal of those 211 children (non-response adjustment).

The differences observed between the baseline indicator results and the recalculated values are provided below:

1. Minor differences in calculation were observed for the following indicators: indicator 3a - Average Value of HH Assets (FCFA (788,650 vs. 786,207 CFA); indicator 3b Asset Ownership (50.6 vs. 49.7 items); indicator 19 Proportion Supporting Equal Access for Males and Females (51.0% vs. 51.7%); and indicator 20 Share of Women Reporting Effective Participation (75.2% vs. 75.0%).
2. The women's empowerment in agriculture index (WEAI) changed from 68.0 (baseline report) to the recalculated value of 66.9. The sampling weights associated to some women in the baseline needed adjustment. In the case of multiple eligible women, a Kish grid was used to select one woman. In the baseline, the women sampling weight calculation did not reflect this fact and thus needed adjustment.
3. Evidence of good governance (indicator 7) changed: 62.1% (baseline report) vs 55.9% (recalculated). This is a village level indicator, and for the baseline report, the village weights were not included in the calculation of the indicator. Therefore, an unweighted proportion was presented while the recalculated value is weighted.
4. Villages with adequate capacities to manage climate shocks changed: 30.5% (baseline report) vs. 25.6% (recalculated). The reason for the discrepancy is exactly the same as for the previously discussed indicator 7, Communities with Evidence of Good Governance; that is, unweighted results were presented in the baseline report.
5. Stunting and underweight prevalence rates were changed: 42.5% and 33.5% (baseline report) vs. 49.8% and 39.2% (recalculated), respectively. There are two reasons for the changes: first, the adjustment of the sampling weights due to the missing and sick children and second, the age shift between the WHO heights/weights standards and

the SAREL coded child's age in months. The problem was that the WHO labels the first 30 days as one month old while the RISE survey coded it as 0 months of age. Unfortunately, this shift in the coding of the age was not immediately detected at the time of the baseline report. Note that these two issues were identified and resolved only after the preliminary midline results were communicated to USAID in August 2017. Hence, the results in this report are different from the ones provided to USAID earlier (In the August 2017 results, the recalculated results were equal to the baseline report results).

6. The minimum acceptable diet (MAD) also changed because of the missing and sick children mentioned in the previous point. The indicator changed from 5.7% (baseline report) to 6.3% (recalculated). Furthermore, for the same reason noted above, the value of MAD provided in August 2017 is different from the current recalculated value.

2.3.2. Limitations to the Evaluation Methodology

In employing a difference-in-differences approach, the evaluation team took considerable steps to account for the bias that often bedevils conventional observational studies, such as a secular change over time across the entire region or external interventions that overlap with the RISE activities. Nevertheless, the design of High and Low exposure zones coupled with DiD analyses is still only quasi-experimental, so it is worth noting some potential limitations. First, the differences over time in High and Low exposure zones can only capture changes since the baseline data were collected; if activities were already underway in the High zones, that could mask some of the impact of the activities (by reducing the difference in those zones between baseline and midline). Further, as noted earlier, interventions by other donors constitute a frequent concern in program evaluations in the Sahel. That problem is less severe if the assignment of interventions by other projects reaches some of the RISE High exposure zones and some of the Low exposure zones (which is likely the case). However, if a program covers a wide swath of the RISE zone, thus affecting most of both the High and Low areas, or if the external intervention happens to overlap largely with the RISE treatment and control zones, those external activities will again introduce bias and mask the true effects of the RISE initiative. Propensity Score Matching analyses of households in Low and High exposure zones on key observable characteristics may help to address these concerns upon collection of the endline data (though, in the absence of statistically significant differences in DiD analyses, matching exercises are unlikely to add new insights and were thus not employed at this midline stage). Finally, calculations of some indicators, such as household assets and the value of those assets (which also affect other poverty indicators) are subject to the recall of household respondents, which could vary non-randomly if, for example, respondents suspect greater assistance by reporting lower values. Such a pattern would likely be consistent across the High and Low exposure zones and thus not bias the impact analysis, but it would result in imprecise measurements. We do not otherwise have reason to suspect a strong presence of social desirability bias; while campaigns were conducted to encourage participation, any effects on social desirability bias in responses would be equal in expectation across the High and Low exposure zones.

2.3.3. Limitations to the RISE Study Design

The study had some limitations that can be addressed for the endline or for a redesign of the RISE study, if applicable. Some of the limitations are:

- The RISE survey was not optimally designed (e.g. in terms of sample size, going back to the same villages, allocating the same number of households per village, treating this as a quasi-RCT, designating the High vs Low areas, etc.) to detect differences over time. Principally, the large design effects (DEFF) for many key indicators demonstrate the low efficiency of the sample design. Further, the point estimates for many of the indicators have large uncertainties, as some indicators (e.g. depth of poverty) require much larger sample sizes in order to achieve a confidence interval of +/-5%, as shown in the statistical tables. In general, this suggests sample sizes not sufficiently large to ensure appropriate comparisons over time. The poverty indicators are especially complex and generally require a much larger sample to achieve equivalent precision. These challenging indicators, in terms of precision, should be kept in mind when redesigning the RISE study.
- Disaggregation is barely feasible when the factor has more than two levels, yet many of the key findings call for disaggregation not only by stratum but also by country, gender, etc. Sample sizes, in particular in the High stratum, should be increased.
- We only have 100 villages with which to evaluate village level indicators. Given the high variability in the village weights (a consequence of the PPS method), it would be helpful to increase the number of villages selected and/or to use a different method for selecting villages in order to obtain more precise primary sampling unit (PSU) weights. At the village level the probability of selection is proportional to the size of the village (PPS method). Since the size of the villages were different, the resulting weights using PPS were also different. When sampling weights are widely variable it negatively affects the precision of the associated estimates. Unfortunately, pursuing PSU-level and Household-level analyses will result in conflicting sampling design optimization. Hence, some balance and prioritization will be necessary between the two objectives.

3. Household and Village Descriptions

This chapter details some key household sociodemographic and economic characteristics that together create an overview of the living conditions of residents in the RISE study area. They are largely consistent with findings from the baseline survey, and with conventional wisdom of life in the Sahel: extreme poverty, large families, and very modest accommodations. Here, we present household sociodemographic and economic information, and we also provide data on the exposure to shocks that residents of the region face. In the course of addressing the results for each indicator later in the report, we also disaggregate the findings according to some of these sociodemographic characteristics, namely the sex of household heads, the marital status of household heads (monogamous, polygamous, etc.), the literacy of household heads, and the ethnicity of the household. After presenting data on all of the indicators, we summarize the correlations between these characteristics and the outcomes of interest.

3.1. Demographic Characteristics of Respondents

The demographic characteristics analyzed in this section include gender, age, marital status etc.

3.1.1. Structure of Respondents by Sex

Among the approximately 2,500 households included in the baseline survey were nearly 19,000 individuals. Consistent with expectations, **Table 3-1** indicates that just over half are female. Females, it should be noted, are the predominant target population for several of the RISE interventions.

Table 3-1: Population Distribution by Sex

	Headcount	Percentage (%)
Male	9,051	48.3
Female	9,688	51.7
Total	18,739	100.0

3.1.2. Population Age Trends

Overall, the average age of respondents was 19.8 and the median age was 13.5. This figure does not differ significantly across males and females (see **Table 3-2**). We note as we did in the baseline report that far over half of the population in the RISE study area has the status of minor, leaving responsibility for many people in the hands of heads of households, parents, and other adults.

Table 3-2: Average and Median Age by Sex

Sex	Age	
	Average	Median
Male	19.6	13
Female	20.0	14
Together	19.8	13.5

3.1.3. Population Age Structure (Women/Men)

The age pyramid in **Figure 3-1** provides additional information on the population by age and sex. It shows that, taken together, the bottom three age groups (0–5, 6–10, and 11–15 years-old) comprise fully 60% of the surveyed population.

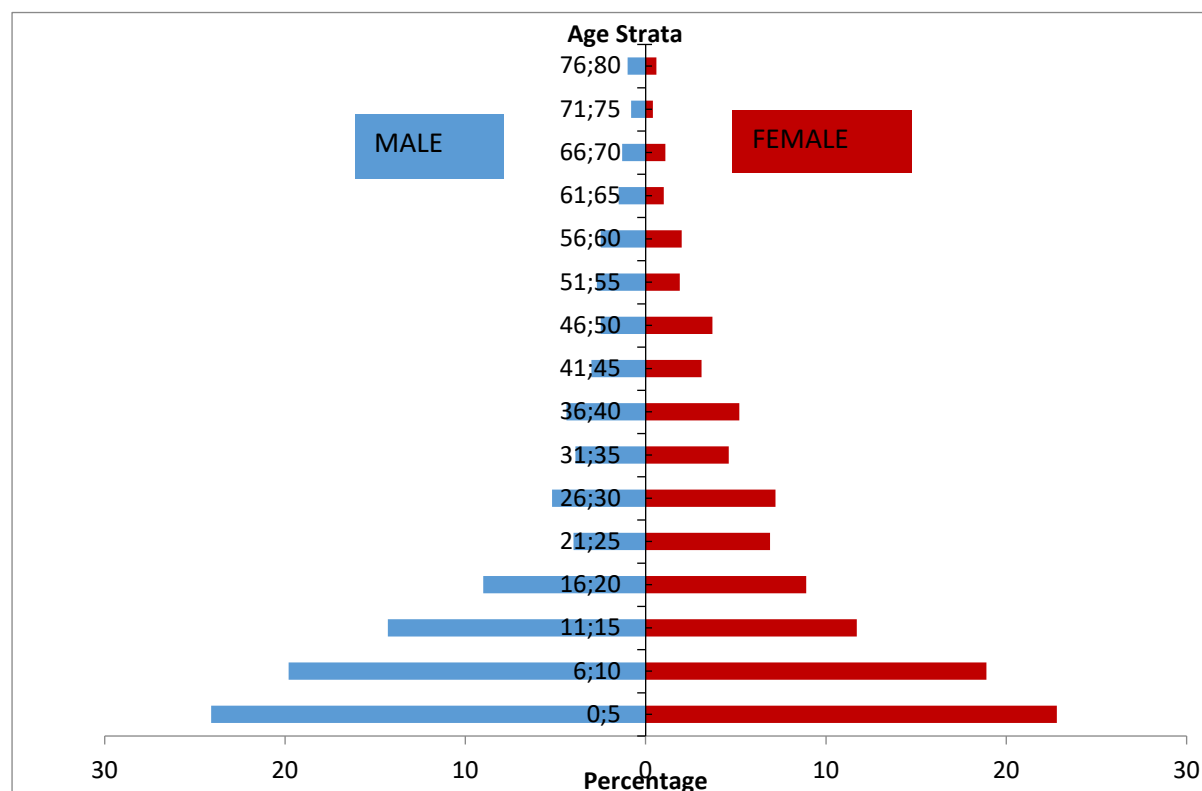


Figure 3-1: Population Age Structure

3.1.4. Relationship to Head of Household

Households consist of many types of people who maintain various relationships to the head of household. The sons and daughters of the heads of households account for about 52.4% of respondents, and spouses 16.0% (see **Table 3-3**).

Table 3-3: Relationship to Head of Household

Relationship to Head of Household	Percentage (%)
Household Head	13.4
Spouse (wife/husband)	16.0
Own son/daughter	52.4
Child from spouse's other marriage	0.2
Step-son/step-daughter	2.2
Grandson/granddaughter	7.0
Brother/sister	2.1
(Biological) parent father/mother	1.7
Step-father/step-mother	0.1

Relationship to Head of Household	Percentage (%)
Niece/nephew	3.0
Co-wife	0.1
House Help	0.0
Another household member	2.0
Total	100.0

3.1.5. Marital Status of Population Aged 12 or Over

As **Table 3-4** illustrates, the population aged 12 and over consists predominantly of married persons--62.0%, including 38.9% monogamous and 23.1% polygamous. 32.6% have never been married.

Table 3-4: Marital Status of the Population

Marital Status	Percentage (%)
Never got married	32.6
Married, monogamous	38.9
Married, polygamous	23.1
Cohabitation	0.1
Divorced/separated	1.1
Widow(er)	4.2
Total	100

3.2. Household Characteristics

3.2.1. Size and Composition of Households

Household sizes—measured as the number of people living under one budget and sharing the same meals who have been present for at least three months—are large in both countries. In Burkina Faso, households of 7-10 people are the most common, accounting for 32.6% of all households in the Burkina study region, followed by households with 4-6 people (25.1%). Those with over 10 people constitute 20.4% of households in Burkina Faso. In Niger, 33% of households have between 7 and 10 members, and an additional 16.6% have more than 10 members.

In the RISE area, more than half (59.4%) of all households have at least six people (see **Table 3-5**). It should be noted that household size does not differ by the sex of the head of household.

Table 3-5: Household Size

Indicator	Total	Country	
		Burkina Faso	Niger
Household Size	%	%	%
Less than 4 persons	23.4	21.9	25.3

4–6 persons	25.1	25.1	25.1
7–10 persons	32.8	32.6	33.1
More than 10 persons	18.7	20.4	16.6

3.2.2. Characteristics of Heads of Household

55.6% of household heads are aged between 25 and 49, whereas 41.2% are over 50. Heads of households aged under 25 account for less than 5% of all households in the study area. By sex, the proportion of heads of households aged under 25 is 2.8% for men and 6.1% for women. Furthermore, the results show a significant proportion of female heads of household aged 50 and older. They account for 58.3% of female heads of households, compared to 39.3% of male heads of household in this age group (see **Table 3-6**). The difference owes to a greater relative number of widows than widowers.

Throughout the RISE area, male heads of household were the most numerous (26.1%) in the Hausa ethnic group while female heads of household were most common among the Mossi ethnic group (32.2%). Regarding ethnicity more generally, **Table 3-6** indicates that Hausa households are the most numerous (25.6%) in the study area, followed by the Mossi (23.8%) and Fulani/Peul (19.6%).

The table also shows that a significant share of heads of household practice agriculture as their primary activity. Indeed, 77.2% of all respondents primarily practiced agriculture at the time of the survey. Trade (5.1%) and livestock (4.4%) are other common primary activities for heads of households. Based on the sex of the head of household, men outnumber women in agriculture (79.8% vs. 54.4%). It is also worth noting that female heads of household are more involved in trade compared to men.

Table 3-6: Distribution of Heads of Households by Selected Characteristics and Sex

Characteristics HH Head	Total	Sex of the Head of Household	
		Male	Female
Age			
<25 years old	3.2	2.8	6.1
25-49 years old	55.6	57.9	35.6
50 and older	41.2	39.3	58.3
Ethnic Group			
Mossi	23.9	22.9	32.2
Fulfuldé/Peul	19.6	20.0	15.8
Gourmantché	9.6	10.1	5.3
Songhaï/Sonraï	7.0	6.4	11.9
Touareg	1.3	1.4	0.7
Bella	7.6	7.4	10.0
Other ethnic groups	1.7	1.9	0.6
Haoussa	25.6	26.2	21.0
Djerma	3.6	3.7	2.6

Characteristics HH Head	Total	Sex of the Head of Household	
		Male	Female
Main Activity			
Agriculture	77.2	79.8	54.4
Livestock	4.4	4.6	2.4
Trade	5.1	4.5	10.4
N/A	4.5	2.5	22.1
Other activities	8.5	8.3	10.3
Unaccounted for	0.3	0.4	0.2

Overall, six in 10 heads of household are involved in monogamous unions, while 29.2% are in polygamous ones and 1.1% are single (never married). Divorced or separated females account for 5.1% of heads of household while the widowed female head of house represents 56.6%. It is exceedingly uncommon in the region to find households led by a partnered but non-married person. Figure 3.2 details the marital status of heads of household by gender.

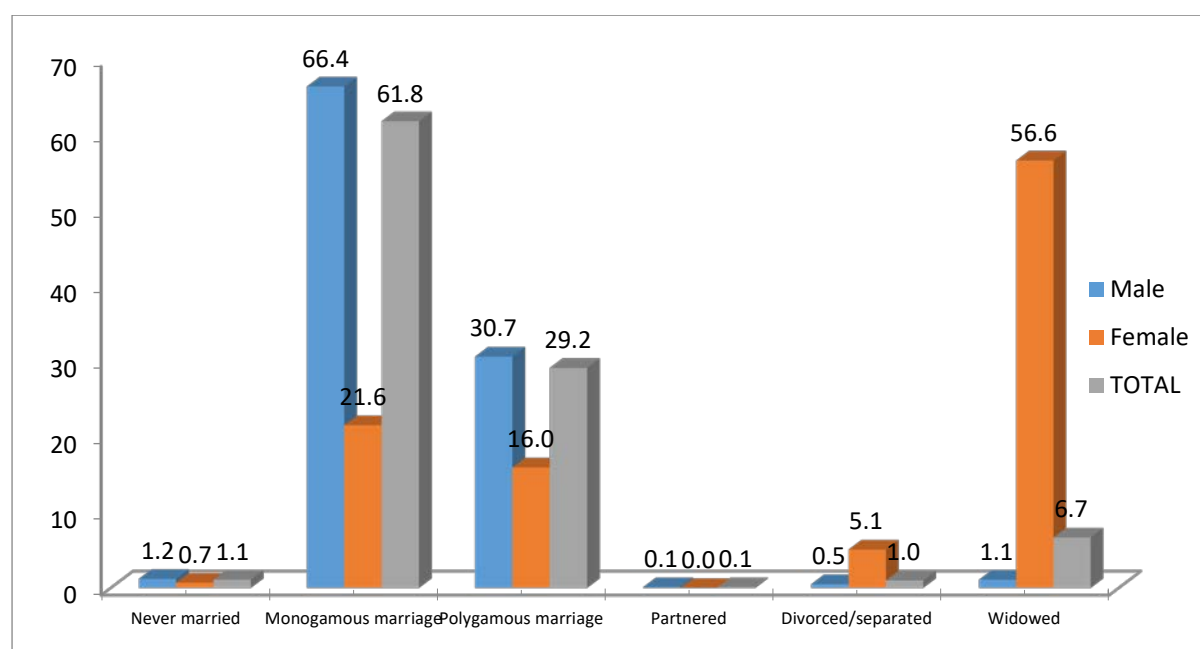


Figure 3-2: Heads of Household by Marital Status and Sex

3.2.3. Literacy by Language

Approximately 85% of the sampled population never attended school. Similarly, a very large share of the population surveyed (87.9%) is not literate in the local language (See **Table 3-7**).

Table 3-7: Local Language Literacy

Local Language Literate	Percentage (%)
Yes	7.1
No	92.9
Total	100.0

Regarding other languages, only French (8.6%) registered close to the rate of local language literacy. As **Table 3-8** illustrates, English and Arabic are read only marginally in the study region.

Table 3-8: Foreign Language Literacy

Foreign Language Literate	Percentage (%)
French	8.6
English	1.2
Arabic	5.2
Other	0.1
None	84.9
Total	100

3.2.4. Education Levels

Overall, 73.7% of individuals in the surveyed households never attended school. This rate is notably higher for females (78%) than for males (69%) (See **Figure 3-3**).

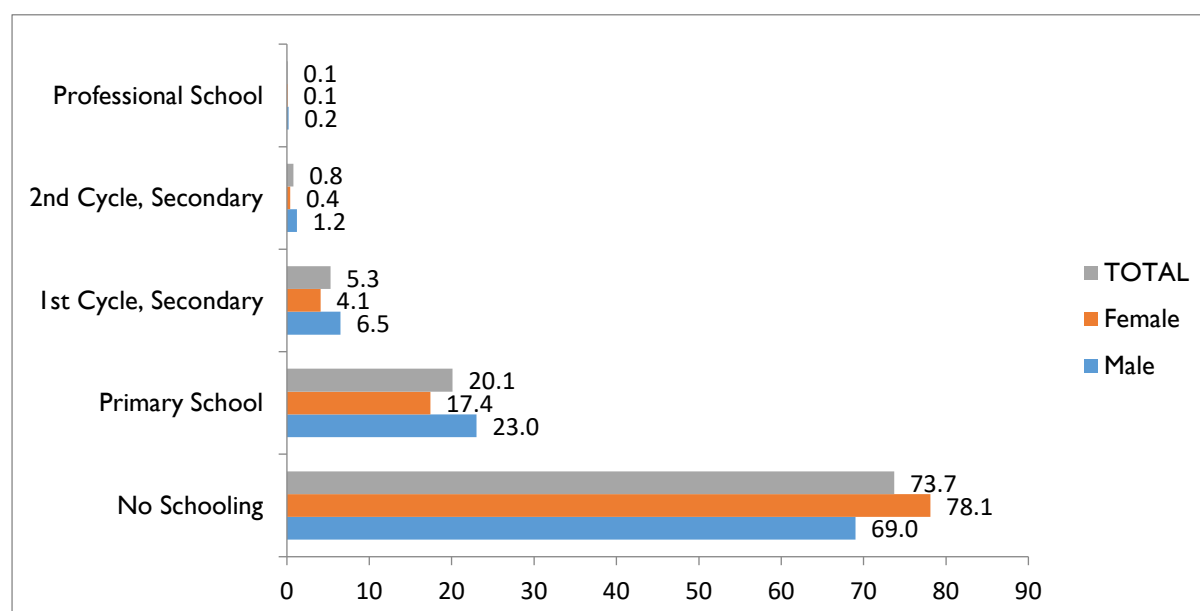


Figure 3-3: Population's Educational Attainment by Sex

3.3. Home Features and Construction

3.3.1. Main Housing Characteristics

A housing room is understood as an enclosed space in a home which is finished and habitable all year round.

The survey results show that surveyed households have 3.5 rooms on average. The size of homes varies according to the disaggregation factors outlined in **Table 3-9**.

Space is critical to the growth and health of an individual. Close physical proximity between individuals in a household is therefore not conducive to development and maintaining

cleanliness.

To measure this, the overload rate, i.e., the percentage of households with more than three people per room, was calculated. Across the sampled population, 60% of individuals live in an overload situation.

Table 3-9: Number of Rooms and the Overcrowding Rate

	Number of Housing Rooms			Overcrowding Rate
	Min	Max	Average	
Country				
Burkina Faso	1	8	3.3	0.6
Niger	1	8	3.8	0.7
Whole Area	1	8	3.5	0.6
Stratum				
High	1	8	3.6	0.7
Low	1	8	3.4	0.6
Sex of the Head of Household				
Male	1	8	3.5	0.6
Female	1	8	3.3	1.0
Marital Status of Household Head				
Never got married	1	7	3.2	1.4
Married, monogamous	1	8	3.6	0.7
Married, polygamous	1	8	3.4	0.4
Cohabitation	1	3	3.0	0.5
Divorced/separated	1	7	3.8	1.7
Widow(er)	1	8	3.2	0.9

3.3.2. Building Materials for Dwelling Structures

Living in insecure housing may have adverse effects on the health and productive capacity of individuals living in RISE area households. One way to measure the precariousness of dwelling structures is to account for the type of materials used in household construction.

The survey data indicates that approximately 80% of households surveyed have walls built of clay or mud brick. 11% have walls built of straw, and a very small percentage are constructed with sustainable and good quality materials (3% used cement/concrete and less than 1% used baked bricks). In **Table 3-10**, these figures are disaggregated by country.

Table 3-10: Wall-Building Materials for Dwelling Structures

Wall-Building Material	% of All Household Walls	RISE Zone of Burkina Faso	RISE Zone of Niger
Cement	3.3	5.5	0.7
Fired Brick	0.5	0.5	0.4

Clay/Mud Brick	79.9	83.4	75.5
Wood/Bamboo	3	0.9	5.6
Stone	0	0	0
Sheet Metal	0	0	0
Straw	11.3	8	15.4
Other	2	1.7	2.4
Total	100	100	100

As far as roof-building materials go, **Table 3-11** indicates that wood and earth (34%), straw (32.9%), and sheet metal (32.7%) are the most common forms of roofing in the RISE region. Most of the sheet metal roofs are found in Burkina Faso, whereas wood/earth and straw roofs are more common in Niger.

Table 3-11: Roof-Building Materials for the Main Housing

Roof-Building Material	% of All Household Roofs	RISE Zone of Burkina Faso	RISE Zone of Niger
Sheet Metal	32.7	54	6.3
Cement	0.2	0.3	0.2
Straw or Thatch	32.9	32.8	33
Wood and Earth	34	12.6	60.5
Total	100	100	100

3.3.3. Main Housing Flooring Type

Dirt floors with no quality material such as cement or tiling as a cover exacerbate the spread of germs and disease. The survey results show that only about one-fifth of households (22%) covered the floor of their dwelling with concrete/cement, and that almost all others use either clay (37%) or sand (40%). See **Table 3-12**.

Table 3-12: Flooring Materials in Dwelling Structures

Flooring Material	% of All Household Floors	RISE Zone of Burkina Faso	RISE Zone of Niger
Dirt/Clay	37.1	48.6	22.9
Cow Dung	0.3	0.5	0
Concrete/Cement	22.1	36.2	4.7
Sand	39.9	13.7	72.2
Other	0.6	1	0.2
Total	100	100	100

3.4. Drinking Water Supply

The importance of drinking water for the health and productivity of individuals is well established, and access to adequate supplies of clean water is of paramount importance to humans. The Household Questionnaire included questions regarding households' main source of water.

The survey results show that half of the surveyed households (48.8%) use boreholes/piped wells for their supply of drinking water, whereas only a small percentage use public or private taps. Results based on disaggregation variables are shown in **Table 3-13**.

Table 3-13: Main Source of Households' Drinking Water Supply

Source of Drinking Water	% of All Households
Surface Water	1.3
Protected Well	4.3
Uncovered Well with Drains	12.9
Traditional Well	16.9
Borehole/Tube Well	48.8
Public Tap	12.8
Own Indoor Tap	2.1
Shared Outdoor Tap	0.9
Bottled Water	0.1

Reducing distances and waiting time for fetching water reduce the workloads of household members (particularly women) and allow them to devote more time and energy to other important activities including childcare, education, and food production. From a question on the Household Questionnaire, the data indicates that, on average, households in the RISE zone spend 73 minutes per day to get the water they require. Note that this represents a decrease from the 82-minute average reported during the baseline survey. Water collection time in minutes are disaggregated by various factors in **Table 3-14**.

Table 3-14: Average Water Collection Time in Minutes

Household Characteristics	Average Water Collection Time (min)
Country	
Burkina Faso	84
Niger	60
Whole Area	73
Stratum	
High	65
Low	81
Sex of the Head of Household	
Male	71
Female	89
Marital Status of Household Head	
Never got married	42
Married, monogamous	72
Married, polygamous	76
Cohabitation	120
Divorced/separated	59

Household Characteristics	Average Water Collection Time (min)
Widow(er)	80

3.5. Types of Toilets Used by Households

The vast majority of households surveyed (about 80%) go to the toilet in non-improved sanitation facilities (typically either in the open or using latrines with no covers). Most others use slab-covered pit latrines, while less than 2% use other types of toilets.

3.6. Livestock Headcount

The most common animals kept as livestock in the RISE zone are cattle, sheep, goats and poultry. The average number of livestock per household in Burkina Faso is notably higher than in Niger: households in Burkina Faso reported owning an average of six cattle, six sheep, and five goats, compared to one head of cattle, two sheep, and three goats in Niger. **Table 3-15** shows livestock holdings in the RISE zone disaggregated by country and by High/Low strata.

Table 3-15: Average Number of Livestock Owned by Households

	Together	Country		Stratum	
		Burkina Faso	Niger	Low	High
Cattle	3	5	1	3	3
Sheep	4	5	2	4	4
Goats	5	6	3	5	5
Donkeys	1	1	0	1	0
Horses	0	0	0	0	0
Pigs	0	0	0	0	0
Camels-dromedaries	0	0	0	0	0
Rabbits	0	0	0	0	0
Hens	6	8	4	6	6
Guinea fowls	2	3	1	2	2
Turkeys	0	0	0	0	0
Ducks	0	0	0	0	0
Pigeons	1	1	1	1	1

3.7. Farmlands

Households have a range of possible uses for farmland (rain-fed agriculture, off-season farms, gardens, etc.) but rain-fed fields are by far the most common type of farmland across the RISE zone (97.4% in Burkina Faso, and 95% in Niger). See **Table 3-16**.

Table 3-16: Breakout of farmlands by type

Farm Types	Country		Total
	Burkina Faso	Niger	
Rain-fed farm	97.4	95	96.1
Off-season	1.0	2.9	2.0
Orchard	0.2	0.1	0.2

Hydro-agricultural Development	0.0	1.3	0.7
Garden	0.7	0.0	0.3
Rain-fed + off-season	0.6	0.6	0.6

The most common field size is 1-3 hectares, which 43% of households exploit. Approximately 46% of households possess between 3 and 10 hectares. Only 5% of households have more than 10 hectares, and 5% have one hectare or less. See **Table 3-17**.

Table 3-17: Average Area of Land Owned by Households

Field Size	Country		Total
	Burkina Faso	Niger	
0-1ha	4.5	6.1	5.2
1-3ha	46.4	38.2	42.7
3-5ha	26.6	24.5	25.7
5-10ha	18.0	24.2	20.8
10+ ha	4.4	7.0	5.6

3.8. Sources of Household Revenue

We noted earlier that a vast majority of heads of households rely on agriculture as their primary activity. Among all individuals above the age of 12 in the surveyed households, 59% do so. The majority of both men (67.8%) and women (50.4%) are farmers in the RISE zone.

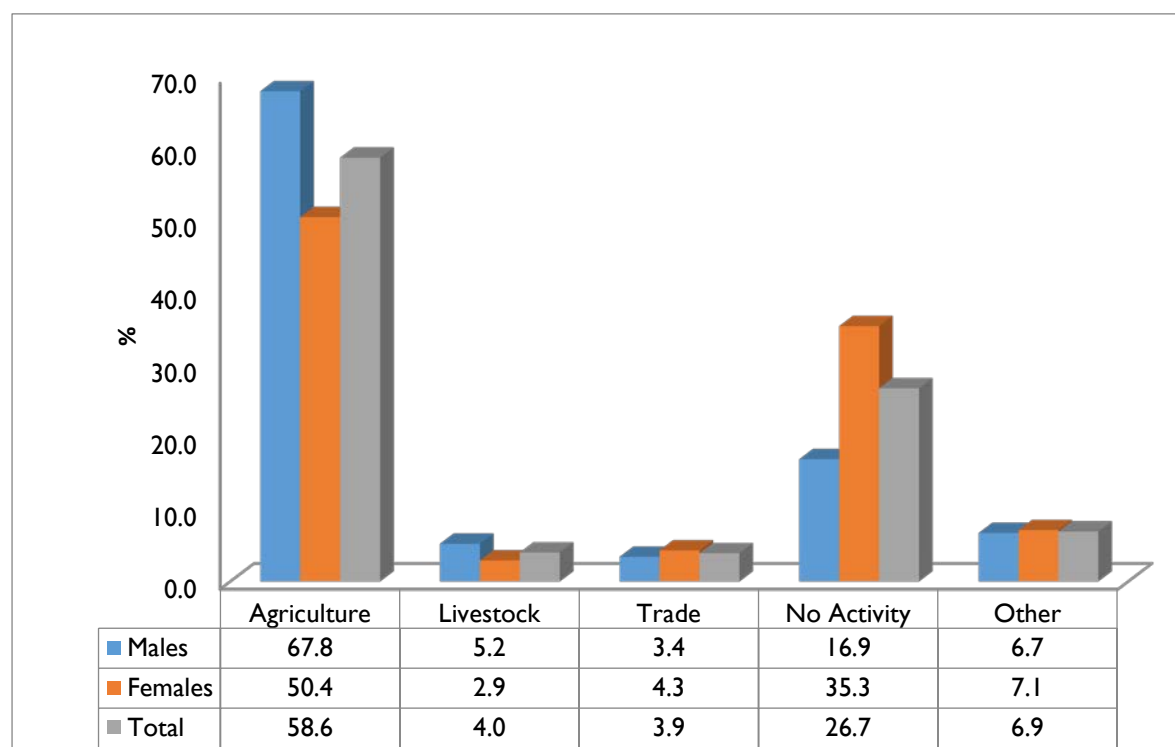


Figure 3-4: Structure of the Population Aged 12 and older by Main Activity

Breakout of Main Activities by Age Groups

Figure 3-5 and **Table 3-18** below disaggregate the main activities of RISE survey household members in both strata according to six age groups. Agriculture is the dominant occupation among all age groups between 19 and 65 years of age, averaging approximately 67% for groups between 28 and 65 years, and slightly less (60%) for the 19–27-year-old group.

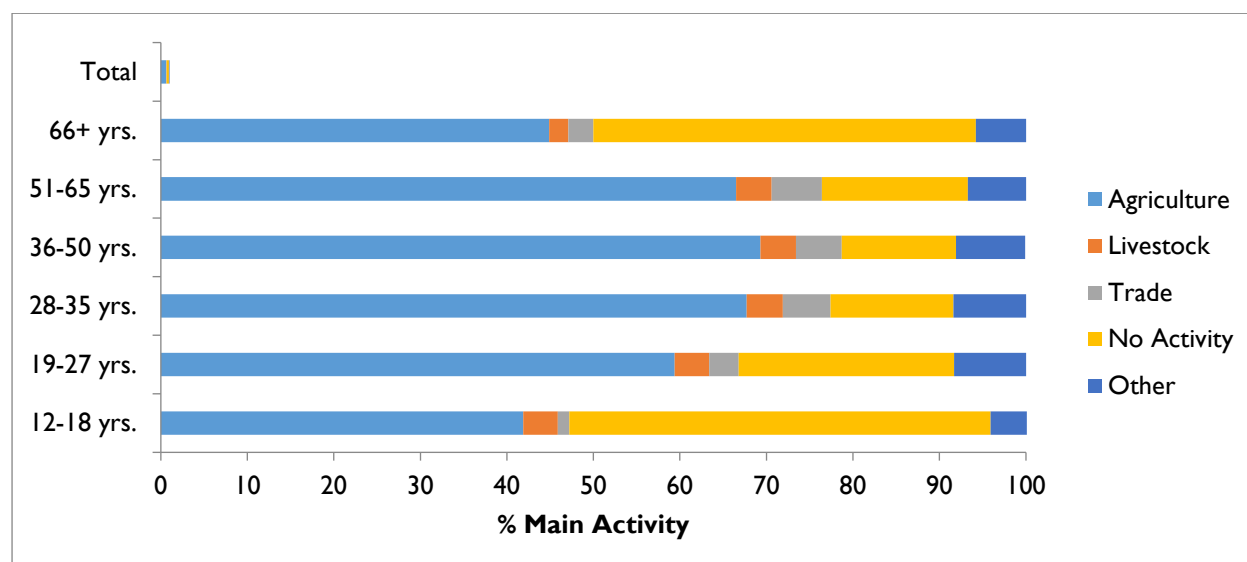


Figure 3-5: Main Activities by Age Group

Approximately half of household members in the 12-18-year-old group are economically active, most of them in agriculture (42%). “Inactive” members of this age cohort include children enrolled in school. Not surprisingly, economic activity drops sharply in the group aged 66 and older with slightly less than 20 percent still engaged in some activity, mainly agriculture (about 45%) and some livestock raising (2.2%) and trade (2.9%).

Table 3-18: Main Activities by Age Group

Main Activity	Age group						Total
	12-18 yrs.	19-27 yrs.	28-35 yrs.	36-50 yrs.	51-65 yrs.	66+ yrs.	
Agriculture	42	59.4	67.7	69.3	66.5	44.9	58.6
Livestock	4.0	4.0	4.2	4.1	4.1	2.2	4.0
Trade	1.3	3.4	5.5	5.3	5.8	2.9	3.9
No Activity	48.7	24.9	14.2	13.2	16.9	44.2	26.7
Other	4.2	8.3	8.4	8.0	6.7	5.8	6.9
Total	100	100	100	100	100	100	100

3.9. Exposure to Shocks

In this section, we provide information on shocks sustained by households in the RISE zone over the twelve months prior to the midline study, and we offer some comparative insights regarding exposure to shocks at this midline point compared to the baseline study.

3.9.1. Exposure to Shocks over the Previous Twelve Months

Nearly every household in the study reported experiencing shocks over the twelve months prior to the midline survey: 96% overall, including 94% of households in Burkina Faso and 98.4% of households in Niger, noted that they had been exposed to a shock during that period (see **Table 3-19**).

This is a particularly noteworthy finding, particularly because only about 65% of respondents had reported experiencing a shock during the twelve months prior to the baseline survey in 2015. The sharp uptick in shock exposure could be a function of a number of different factors. First is the possibility that the region simply faced more shocks than it had during the previous study period, perhaps due to worsening climate effects, perhaps due to the uptick in violent extremism in the region, or due to other factors. Second, it may be the case that residents of the region are increasingly cognizant of the concept of shocks and are more attuned to the impact of shocks on their own household conditions. This could be taken as a positive trend in reporting, perhaps as a function of RISE activities and others like them, rather than an adverse trend in actual shocks occurring in the region. Third, it may be that the survey enumerators themselves have a more refined understanding of shocks and thus posed the question in a slightly different way. The data we collected on types of shocks (see below) does not suggest that the period preceding the midline survey was particularly noteworthy in terms of shocks, (i.e. there was no striking jump in the share of households exposed to an insect invasion, drought or other major event), so our suspicion is that the latter two explanations may be contributing to this increase in shock exposure.

As **Table 3-19** also shows, there has not been an improvement in the High exposure zone versus the Low exposure zone in terms of exposure to shocks. In both strata, approximately 96 percent of households reported exposure to a shock during the previous twelve months.

Table 3-19: Shock Distribution over the Previous Twelve Months (%)

Stratum*	Country		Total
	Burkina Faso	Niger	
Low	95.6	97.3	96.3
High	92.2	99.4	95.7
Together	94.0	98.4	96.0

3.9.2. Types of Shocks Experienced over the Previous Twelve Months

Regarding types of shocks that households experience in the region, the most common form of shock was drought or too little rain, which has direct and immediate consequences for the many residents of the region who rely primarily on agriculture for their livelihood. About one-fifth of households reported this experience during the prior twelve months. Other common forms of shock experienced by households in the region were sharp increases in food prices (16.9% of households), disease and health expenses (10%), animal diseases (10%), insect invasions (9%), and excessive rains (6%). An additional 9% of households faced psychological shocks due to a death, emigration, or illness in the family. See **Table 3-20** for details. Note

that the figures report the distribution of shocks by type as reported by households, but many households could have experienced more than one type of shock. It is also important to note that most shocks are related to weather events either directly or indirectly (through the impact on prices, animals, etc.), which may have implications for the importance of RISE interventions that explicitly aim to offset adverse consequences due to weather.

Table 3-20: Shocks sustained over the previous 12 months in RISE zone (percentage)

Type of Shocks	High Exposure (%)	Low Exposure (%)	Total (%)
Natural disasters			
Excessive rains	5.3	6.5	5.9
Too little rain/drought	18.9	21.4	20.1
Massive insect invasion	8.7	9.0	8.8
Epizootic (animal disease outbreak)	9.9	9.3	9.6
Bush fires	0.2	0.2	0.2
Conflict-related shocks	0.4	0.7	0.6
Land conflicts	0.5	0.5	0.5
Conflicts between farmers and herders	0.0	0.2	0.1
Theft of assets/holdups (animals, crops, etc.)	3.7	3.3	3.5
Socioeconomic shocks			
Sharp food price increase	15.9	18.1	16.9
Unavailability of agricultural or livestock inputs	3.8	2.9	3.4
Drop in agricultural or livestock product demand	0.8	1.2	1.0
Disease/exceptional health-related expense	10.7	9.9	10.3
Debt repayment	3.4	2.4	2.9
Increase in price of agricultural or livestock inputs	3.3	2.1	2.7
Drop in price of agricultural or livestock products	0.5	1.6	1.0
Job loss by household member	0.2	0.5	0.4
Long-term unemployment	0.2	0.6	0.4
Abrupt end of assistance/regular support from outside the household	0.8	0.4	0.6
Sudden increase in household size (including birth: triplets etc.)	1.0	1.0	1.0
Anthropogenic Shocks			
Fire (house, fields)	0.7	0.4	0.5
Psychosocial Shocks			
Death of household member	4.2	3.2	3.8
Emigration of household member	1.2	1.3	1.2
Serious illness of household member	5.2	2.9	4.1
Other Shocks			

Type of Shocks	High Exposure (%)	Low Exposure (%)	Total (%)
Forced repatriation	0.3	0.2	0.2
Household dislocation	0.2	0.2	0.2

3.9.3. Perceived Impact of Shocks

Whereas climate and other natural shocks appear to be most ubiquitous, **Table 3-21** below indicates that some of the hardest felt shocks are actually anthropogenic (such as fires) and psychosocial (related to absence, loss, or illness of a household member). One-third of those who experienced an anthropogenic shock called this shock the worst of any they experienced. Further, approximately two-thirds of households called the psychosocial shocks they experienced either strong or the worst that they experienced.

Table 3-21: Perceived Impact by Type of Shock (%)

Shock Structure	None	Slight impact	Medium impact	Strong impact	Worst impact	Total
Natural Disaster	0.6	12.4	24.9	60.3	1.8	100
Conflicts	2.1	22.5	13.9	59.6	2.0	100
Socioeconomic	1.9	9.6	23.4	59.9	5.2	100
Anthropogenic	2.7	9.1	15.3	39.7	33.1	100
Psychosocial	3.9	10.8	17.8	61.7	5.8	100
Other	0.0	20.0	17.8	49.9	12.3	100
Total	1.5	11.3	23.4	60.1	3.8	100

3.9.4. Shock Recovery and Coping

The midline data suggest that shocks represent a serious setback for households, and that recovery varies greatly across shock type and household. As **Table 3-22** indicates, approximately half of all shocks (49.1%) leave households unable to recover. Worst are the anthropogenic shocks, but socioeconomic, natural, and psychosocial all leave at least half of households who experience them unable to recover. Just 19.8% of households reported that they recovered to the same level or better, which is a drop from the 23.3% of households reporting the same recovery in the baseline survey from 2015. Approximately one-third of households (31.1%) reported recovering somewhat but still being left worse off.

Table 3-22: Recovery by Type of Shock

Shock Type	Did not recover	Recovered some. but worse off	Recovered to same level	Recovered and better off	Unaffected
Natural Disaster	43.3	36.7	15.9	3.5	0.6
Conflicts	38.2	36.7	12.2	11.2	1.7
Socioeconomic	54.5	27.6	11.4	5.1	1.4
Anthropogenic	70.2	10.6	16.5	0.0	2.7
Psychosocial	50.8	18.3	17.8	9.1	4.0

Other	63.1	28.3	6.1	2.5	0.0
Total	49.0	31.1	13.8	4.8	1.2

Regarding strategies for coping in the face of shock, households in the Sahel have developed a number of mechanisms. As **Table 3-23** indicates, the most common coping strategy employed during the prior twelve months is to sell off animals; 81.2% of households in Burkina Faso and 66.9% of households in Niger adopted this approach. Other common coping strategies included reducing food rations—used by between one-quarter and one-third of households—and taking a loan with a friend. In fact, in Niger, 60% of households facing a shock sought a loan from a friend, whereas 25% did so in Burkina. Temporary migration is another common response to shock in Niger, where about one-third of households had members who chose this strategy. Migration is less common among Burkinabé (6.1%).

Some notable differences stand out across the High and Low exposure zones. Households in the High exposure zone are notably more likely to use their savings in response to shocks, especially in Burkina Faso (41.7% in the High zone versus 15.2% in the Low zone). Further, those in the High zone are less likely to sell off animals or take cattle in search of pasture in Burkina Faso. Those in the High exposure zones in both countries are less likely to obtain remittances from relatives in migration.

Table 3-23: Strategies employed by surveyed households to cope with shocks in previous 12 months (as percentage of all strategies listed)

Strategies	Burkina Faso (%)			Niger (%)		
	High	Low	Total	High	Low	Total
Take cattle in search of pasture	2.1	12.5	7.7	2.4	0.6	1.6
Sell animals	77.6	84.2	81.2	67.8	65.8	66.9
Slaughter cattle	2.3	4.2	3.3	2.4	1.0	1.8
Rent land	0.3	0.4	0.3	10.7	7.7	9.3
Migrate with several family members	2.1	9.6	6.1	34.1	34.8	34.4
Migrate with entire family	0.0	0.3	0.2	0.2	0.3	0.2
Send children to live with relatives	2.3	0.5	1.3	10.4	2.1	6.6
Withdraw children from school	1.6	0.8	1.2	1.0	0.1	0.7
Move into less expensive lodgings	0.0	0.0	0.0	0.3	0.0	0.2
Reduce food rations served	10.9	35.9	24.2	36.7	25.3	31.6
Take new. salaried work	6.6	2.1	4.2	2.7	2.3	2.5
Sell household goods	0.5	.7	0.6	21.6	8.3	15.6
Sell productive assets	0.0	0.1	0.4	1.8	1.7	1.8
Contract loan with NGO	0.6	0.4	0.5	2.4	2.0	2.2

Strategies	Burkina Faso (%)			Niger (%)		
	High	Low	Total	High	Low	Total
Contract bank loan	1.1	1.5	1.3	0.2	0.0	0.1
Contract loan with moneylender	5.6	14.2	10.1	3.0	5.9	4.3
Contract loan with friend	19.1	29.4	24.6	62.3	58.0	60.4
Send child to work to earn money	0.5	0.5	0.5	4.6	4.8	4.7
Receive money or food from a family member	25.2	22.1	23.6	25.1	28.8	26.8
Receive government food aid	0.4	4.6	2.6	1.2	1.8	1.5
Receive NGO food aid	2.0	2.0	2.0	6.6	1.0	4.1
Participate in CFW/FFW	2.8	0.5	1.6	8.4	0.7	4.9
Use savings	41.7	15.2	27.6	16.1	11.5	14.0
Obtain remittance from relative in migration	2.9	8.5	5.9	8.1	17.5	12.3
Consume a hardship product	0.4	2.1	1.3	5.4	2.3	4.0
Dig up termite hill for grain	0.0	0.0	0.1	0.2	0.1	0.2
Hunt. gather food products	0.4	2.3	1.5	4.3	13.2	8.4
Consume food reserves	2.6	6.0	4.4	28.3	16.4	22.9
Reduce number of meals	6.6	27.1	17.5	23.0	35.0	34.1
Other	5.0	10.7	8.1	28.5	25.3	27.1

We do not have information from respondents regarding distinct coping strategies that they use in response to particular types of shocks (i.e. what coping strategies they use in response to psychosocial shocks as opposed to socioeconomic shocks, for example). Because households frequently confront multiple, overlapping shocks, it may be difficult for them to parse their coping strategies in this way. Nevertheless, the data on responses to shock offers some interesting insights. First, shocks in precipitation, animal disease, insect invasions, and higher food prices are all integrally related and of serious consequence to households in the RISE zone. We also know from the data that selling animals is one of the most common coping strategies in the face of shocks. Doing so provides a number of immediate benefits for households, even if it entails longer-term costs: they gain some financial flexibility from the sales, they avert further losses if their animals are susceptible to disease or cannot acquire adequate food themselves, and they reduce their household labor costs at a time when their efforts may be needed in other areas. Thus, the fact that those weather-related shocks are high and that the selling of animals is a common shock response may well be related. The implications for programming are that, in the face of weather-related shocks, households need short-term financial flexibility, monitoring and protection of their animals' health, and

strategies to conserve their labor output for critical needs.

Other common responses to shock are reducing food intake, receiving aid from a friend, taking on a loan from a friend, and using savings. Given social norms that we observed during the course of the field study portion of the midline performance study—noting, for example, that families receiving cash transfers often shared those transfers with community members as a form of investment in informal insurance—it is likely that psychosocial and anthropogenic shocks would be more likely addressed through aid from others and perhaps personal restraint. Contracting loans with friends may be more common in the face of socioeconomic shocks, though we note again that these shocks are often related and overlapping.

4. Economic Well-Being / Livelihoods

To improve resilience in the Sahel, the RISE program is constructed around three central components, as well as a set of cross-cutting measures. The first component aims to achieve increased and sustainable well-being by improving incomes, food access, assets, and the capacity to adapt to changing conditions. To address this component, RISE seeks several intermediate results:

- Diversified economic opportunities
- Intensified production and marketing
- Improved access to financial services
- Increase of market infrastructures

One rationale for these intermediate results is that households and communities facing regular stresses and repeated shocks remain vulnerable if their revenue streams are tied solely to one endeavor, particularly a climate-dependent one, such as small-scale farming. Thus, generating new income streams serves as a form of risk protection. Further, intensifying production and marketing can increase income streams in most residents' principal livelihood domain, so that more resources can be set aside to address crises. Next, access to financial services gives households and communities a mechanism both for securing their savings and for obtaining loans; these two services both reduce risk and create new economic opportunities. Finally, as residents of the RISE zone develop strategies for reducing risk and raising revenues, an improved market infrastructure can provide trade opportunities so that households and communities can envision livelihood strategies that take them beyond subsistence. If these intermediate results are achieved, households and communities in the RISE zone should realize improved and sustainable wellbeing, which in turn should limit the need for repeated humanitarian assistance.

The main livelihood activities of the target population include the following: farming, livestock raising, gardening, small-scale trade, artisan-repair, etc. Because most of these livelihoods depend critically on adequate rain and soils, vulnerabilities due to climate or other catastrophic events are particularly high.

To address those vulnerabilities, improve livelihoods, and reduce the need for humanitarian assistance, the RISE Implementing Partners (IPs) are conducting a number of specific livelihood-related activities. They include: conservation agriculture and farmer managed natural regeneration (FMNR), market and home gardening, village based savings and loan programs, poultry and small ruminant rearing for nutrition and cash, training community-based solution providers (CBSP) who can provide services and inputs to producers and production groups, habbanayé (women receiving and raising small ruminants who, after 18 months, keep the offspring and pass the animals on to other vulnerable women), and access to credit in association with small enterprises and savings programs at the village level. In addition, some activities aim to address the livelihood and health components simultaneously, such as the promotion of bio-fortified seed in market gardens. Other interventions, such as bio-

reclamation of degraded lands/cash for assets development and securing of women's tenure rights for gardening, aim to address both the livelihood and governance components.

Specific indicators measured through the baseline and midline surveys that track progress toward the livelihood objectives include the following:

- Indicator 1: Depth of Poverty
- Indicator 3a: Average Value of Household Assets
- Indicator 3b: Asset Ownership
- Indicator 4: Prevalence of Poverty
- Indicator 6: Number of Households with Income from Non-Agricultural Sources

A few challenges arise in determining progress toward the livelihood goals from the baseline stage to the midline. First, the evaluation team discovered fairly notable cross-country differences in poverty in the Burkina Faso and Niger samples; far more households were categorized as extremely poor (as defined by the \$1.90 standard threshold) in Niger than in Burkina Faso. This poses a challenge in the sense that the RISE interventions were not stratified by country or region, so we have less leverage than may be necessary to evaluate how the intervention effects relate to this cross-border difference. Second, the value of assets proved particularly difficult to measure; respondents were not asked the value of older assets at baseline, and whereas the midline survey corrects for that, the measure depends on respondents to determine a current value for those older assets. Finally, the status of household migrants can obscure revenue and wealth measures, despite the efforts of enumerators to extract complete information on household livelihoods.

Overview of results: in the Livelihoods category of indicators, two are statistically significant or approach statistical significance. First, depth of poverty decreased somewhat in the High exposure areas (from 27.8% to 25.9%), while it increased slightly in the Low exposure areas (from 23.0 to 26.2%). The difference-in-differences of approximately 5 percentage points approaches statistical significance, though it is short of conventional levels ($p=0.14$). Second, households with revenue from non-agricultural resources improved from 72.6% at baseline to 77.3% at midline in the High exposure areas, while dropping slightly in the Low exposure areas (from 71.8% to 69.1%). The improvement in the High exposure areas is close to conventional levels of statistical significance (0.08), and the difference-in-differences across the High and Low exposure areas is statistically significant at the 97% confidence level. In the results that follow, we place greater emphasis on these two findings, though we include results for each of the indicators.

4.1 Prevalence of Poverty (Indicator 4)

The prevalence of poverty indicates the proportion of individuals living under the poverty line. The poverty line used in this report is \$1.90 which reflects the current standard used by the World Bank since October 2015. For the baseline report, the poverty line used was \$1.25 to reflect the World Bank standards at the time. However, in light of the new standards, the

baseline poverty related indicators (prevalence and depth) are recalculated in this report to allow the comparison with the midline results.

The prevalence of poverty is calculated using the consumption expenditures rather than reported income. The consumption expenditures include food, non-food, and durable goods expenditures, excluding investments and using imputed rent values. Lodging expenditures information was not collected by the RISE baseline or midline survey given the infrequency of housing rentals and sales in the rural areas concerned. In order to determine an appropriate value for lodging expenditures, auxiliary information from the 2009-2010 Integrated Survey on Household Living Conditions (EICVM) conducted by *Institut National de la Statistique et de Démographie (INSD) du Burkina Faso* was used to estimate imputed rent of households, then the value was adjusted using the consumer price index (CPI). The resulting poverty line was adjusted using the World Bank's purchasing power parity (PPP) rates to convert the amount to the local currency, i.e. Franc CFA. More details on the determination of the poverty line and the related indicators can be found in Appendix A.

Using the World Bank poverty line of \$1.90, close to two-thirds or 63.8% of the RISE program area inhabitants live in poverty – that is, with less than 451.6 FCFA a day in Burkina Faso and less than 460.1 FCFA a day in Niger. There is no statistically significant difference in the prevalence of poverty between the High and Low exposure strata.

Comparison of Baseline and Midline

Table 4-1 shows no significant change between baseline and midline results in the RISE program zone. Similarly, there is no significant change within the strata. The prevalence of poverty remained unchanged in the High and Low zones. If the trend continues, however, the endline may show a significant increase of prevalence of poverty in the Low zone.

Table 4-1: T-test comparison between baseline and midline results by stratum for prevalence of poverty

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	65.4	65.5	0.1	0.98
Low	58.2	62.1	3.9	0.25
Total	61.8	63.8	2.0	0.43

Figure 4-1 is an illustration of the differences in the change of the prevalence of poverty between baseline and midline (even if it was not significant). One might ask if the rate of change is significantly different between the High zone and the Low zone. The p-value of the DiD statistics is 0.44 showing no difference in the rate of change for the midline compared to the baseline.

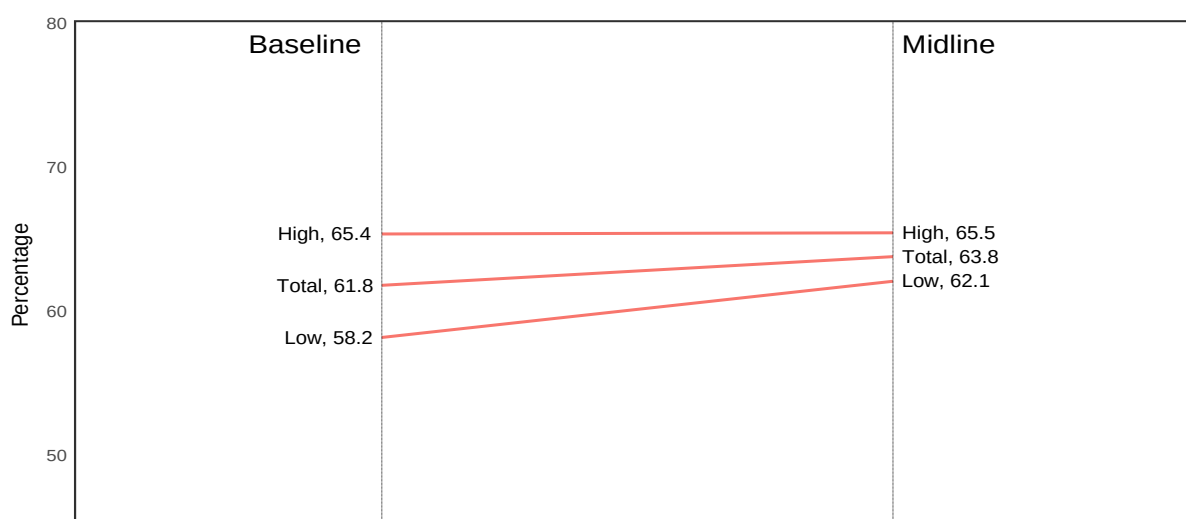


Figure 4-1: Change in the prevalence of poverty from baseline to midline by stratum

4.2. Depth of Poverty (Indicator 1)

The depth of poverty was calculated using \$1.90 as the poverty line. Also called the poverty gap, it is a measure of the intensity of poverty. This indicator is the average gap between the population's wealth and the poverty line. Hence, it gives an idea how far below the poverty line the population is. For instance, if two populations are compared, they may have the same proportion of people below the poverty line (same prevalence of poverty), but one population may show much lower average wealth compared to the other population. In such situation, the former population will have a greater depth of poverty.

The results suggest that, while there is change in the right direction, the RISE program has not, to this point, affected the depth of poverty in a statistically significant manner. The outcomes for the Low and High exposure areas at midline are very similar. The depth of poverty decreased slightly in the High exposure area while increasing somewhat in the Low exposure area, though the difference-in-difference of approximately 5 percentage points does not reach conventional levels of statistical significance ($p=0.14$).

Midline Findings

Table 4-2 shows very similar depth of poverty in the two strata. On average, the population's wealth is about 26% below the poverty line. In Burkina Faso, it is 21.8% (or about \$1.50 per day) and In Niger it is 31.7% (or about \$1.30 per day). Hence, there was no significant difference between the two strata in the depth of poverty.

Table 4-2: Depth of poverty by stratum

Stratum	Estimate	StdErr	LCI (95%)	UCI (95%)	DEFF
High	25.9	2.56	20.9	30.9	70.7
Low	26.2	2.18	22.0	30.5	76.6
Total	26.1	1.69	22.8	29.4	77.6

Key Socio-Demographic Disaggregation

The RISE zone of Niger shows much greater depth of poverty at 31.7% compared to 21.8% in the RISE zone of Burkina Faso. This difference of nearly 10% was highly significant with a p-value of 0.002. Combined with the previous results of the prevalence of poverty, the RISE zone of Niger is not only the area with the highest prevalence of poverty, but it also exhibits greater depth of poverty. The Niger poverty line adjusted for the World Bank's PPP was slightly higher, by 8.5 FCFA, than the equivalent poverty line in Burkina Faso. This higher prevalence and depth of poverty in Niger may be related to: 1) the lower availability of critical natural resources (i.e. rainfall, soil-fertility, water access) essential for traditional livelihoods in Niger, 2) Lower measures of human capital (i.e. lower educational and health outcomes) in Niger, and 3) stronger and more frequent climate shocks (i.e. droughts, higher rainfall variability) in Niger.

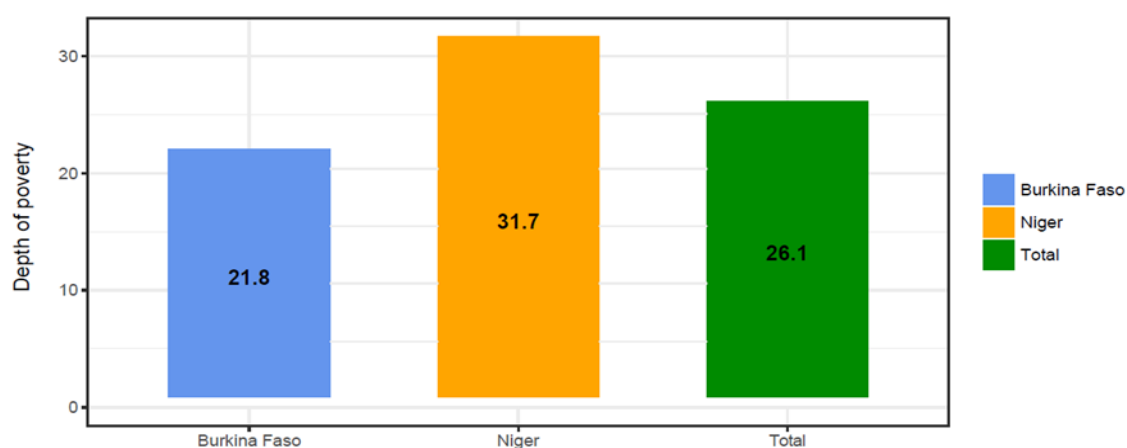


Figure 4-2: Depth of poverty by RISE zone of each country

Figures 4-3 to 4-6 show the depth of poverty disaggregated along several socio-demographic dimensions. There is not much difference between the households headed by a male versus those headed by a female (Figure 4-3).

Figure 4-4 shows that polygamous households have the greatest depth of poverty with 30.8%. The category “Other” has the lowest depth, but given its very small sample size (only 57 households), the estimates are not very reliable. The monogamous households have a depth of poverty of 22.6%.

Figure 4-5 reveals that when the head of household is not capable of reading or writing in any languages, national or foreign, then the household has higher chance of living in deeper poverty. The depth of poverty among households with a non-literate head of household is significantly higher with 27.6% – more than 7% greater than the literate category.

The Mossi ethnic group has the lowest depth of poverty with 18.4%; the Mossi ethnic group is also the one with the lowest prevalence of poverty. The highest depth of poverty is observed with the Songhai ethnic group with 35.1%. The following charts demonstrate the depth of poverty by several key socio-demographic dimensions.

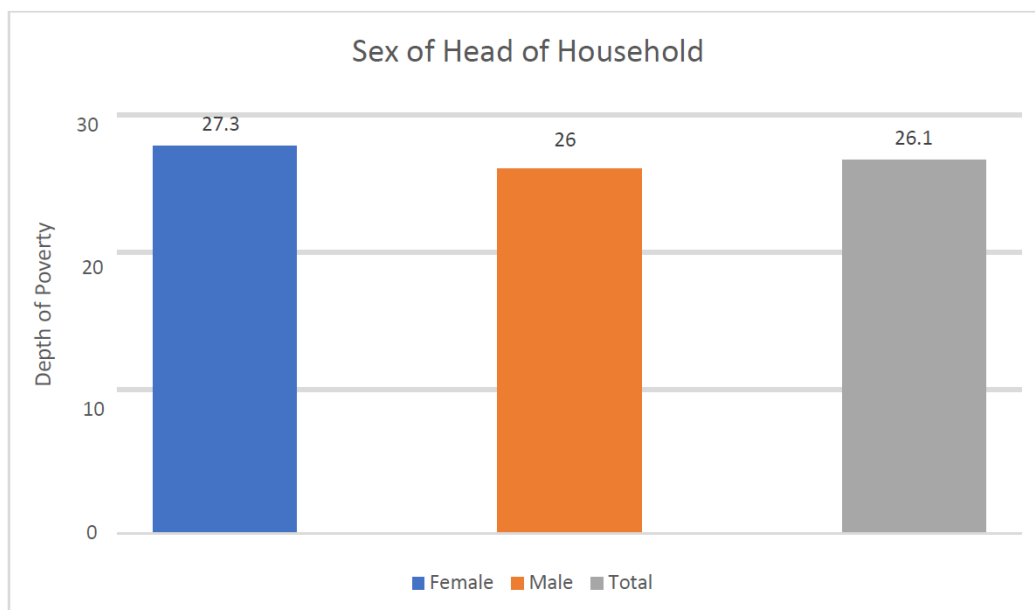


Figure 4-3: Depth of Poverty: Sex of Head of Household

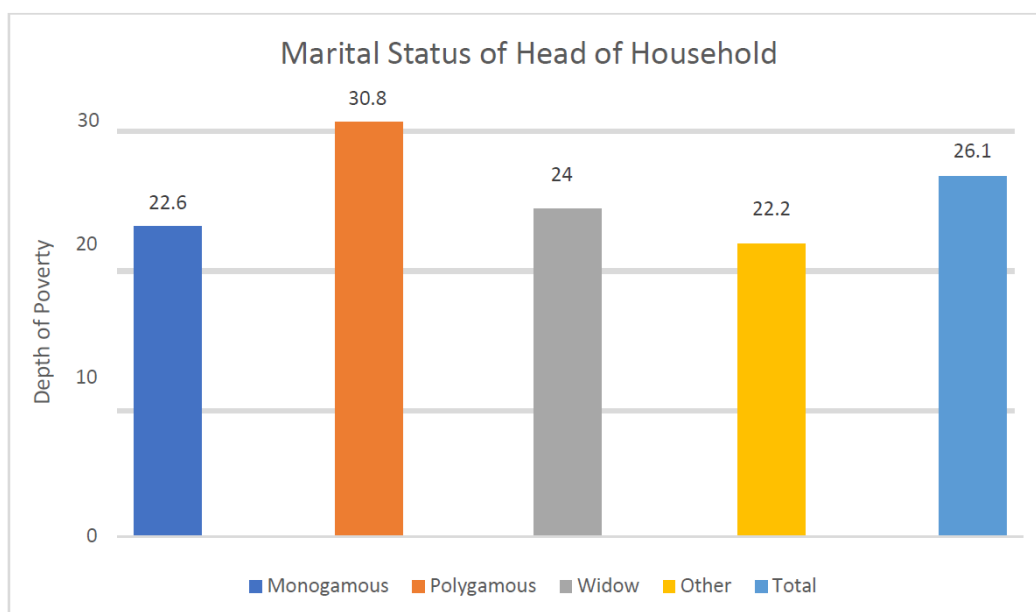


Figure 4-4: Depth of Poverty: Marital Status of Head of Household

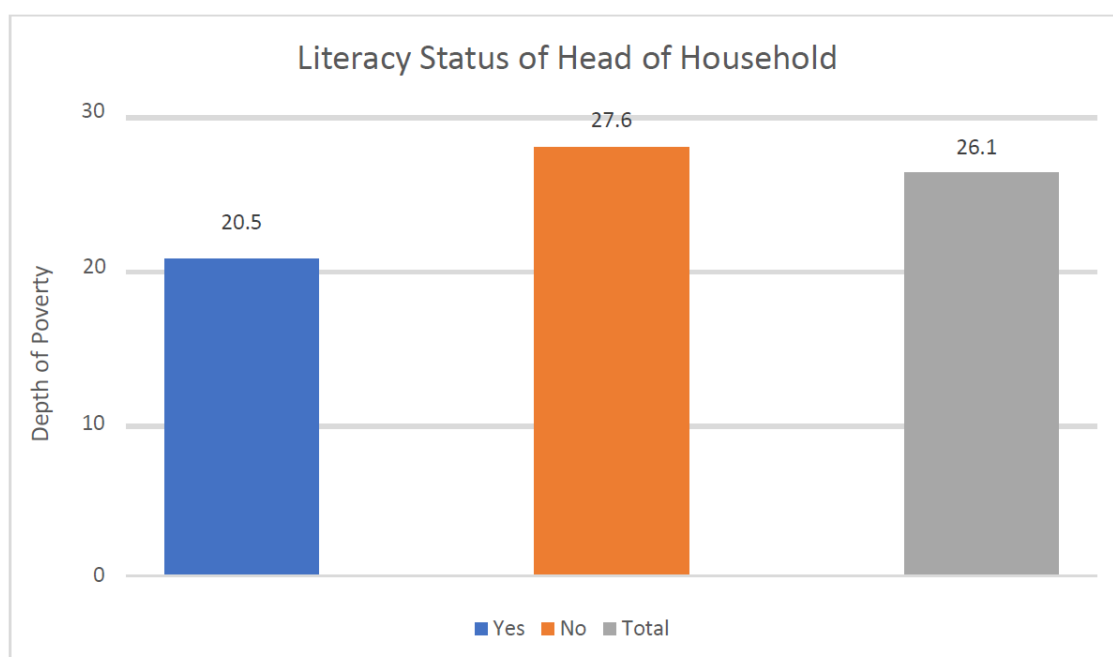


Figure 4-5: Depth of Poverty: Literacy Status of Head of Household

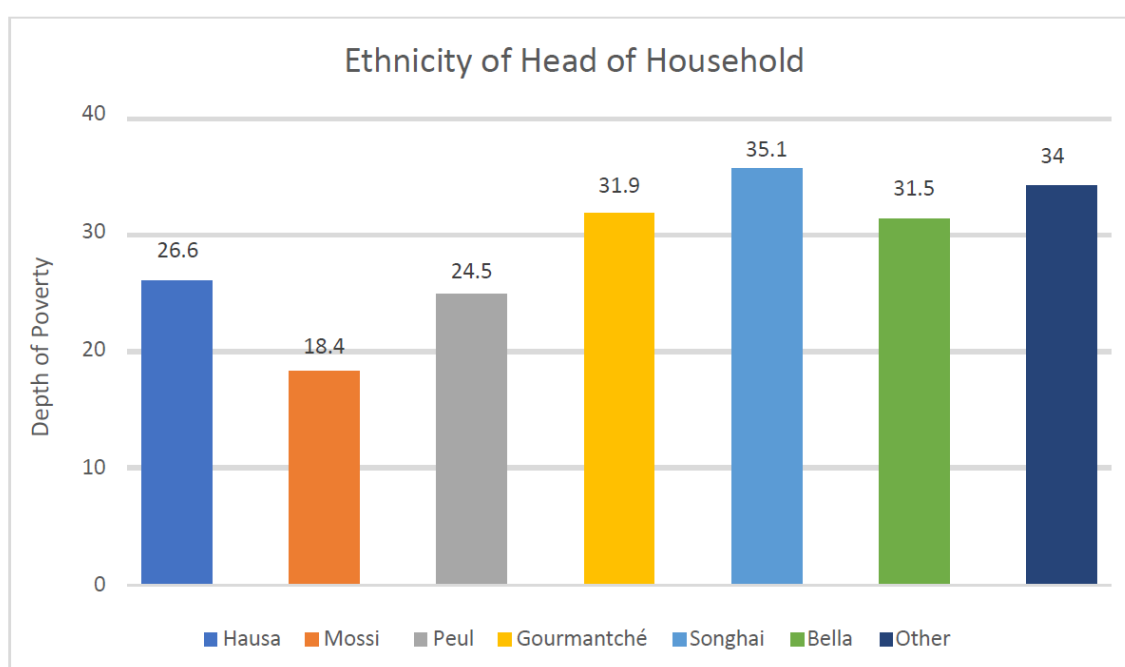


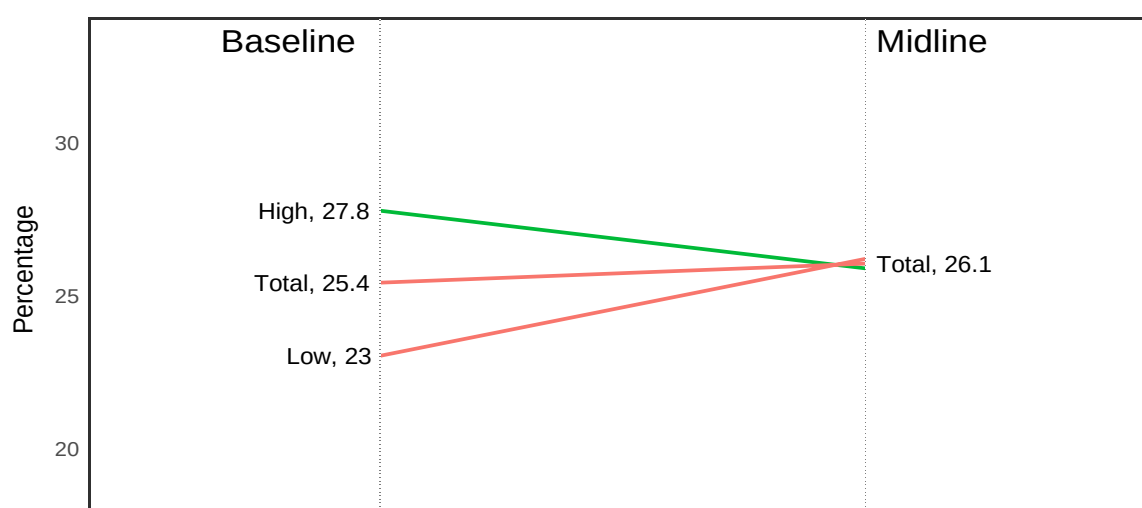
Figure 4-6: Depth of Poverty: Ethnicity of Head of Household

Table 4-3 shows no significant change between baseline and midline results in the RISE program zone. Similarly, there is no significant change within the strata. The results are trending in the desired direction, but acceleration and prioritization of the appropriate interventions to reduce poverty are needed in the High zone in order to see significant reduction of the depth of poverty by the endline impact evaluation.

Table 4-3: T-test comparison between baseline and midline results by stratum for poverty depth

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	27.8	25.9	-1.9	0.48
Low	23.0	26.2	3.2	0.15
Total	25.4	26.1	0.6	0.72

Figure 4-7 below is an illustration of the differences in the change of the depth of poverty between baseline and midline (even if it was not significant). Given that the depth of poverty is decreasing in the High stratum while increasing at the same time in the Low stratum (even if these changes are not significant), we may wonder if the High stratum is improving in depth of poverty due to the RISE initiatives. Unfortunately, the DiD shows a p-value of 0.14 which does not support the hypothesis of the High stratum doing better than the Low stratum in statistically significant terms. Nevertheless, the p-value is close to 10%. A more efficient sampling design (e.g. larger sample size, better allocation of the household sample across villages (i.e. not the same number of households per village)) would likely shed more light on whether a significant difference may exist or not.

*Figure 4-7: Change in the depth of poverty from baseline to midline by stratum*

4.3. Average Value of Household Assets (Indicator 3.a)

The average value of household assets is the average value of all the consumptive, productive and livestock assets held by a household. The value of the assets is determined by purchasing price or by market value evaluation from the owner when the asset was obtained outside a monetary transaction. The values in this section are presented in Franc CFA (FCFA).

To summarize the findings, the average value of household assets was lower to begin with in the High exposure villages compared to the Low exposure villages. Substantively, the results from baseline to midline trend in the desired direction, but the difference-in-differences is not statistically significant.

Midline Findings

As shown in **Table 4-4**, households in the Low stratum reported higher household assets value with an average of 915,619 FCFA compared to 758,749 FCFA. However, given the large confidence intervals, the difference is not statistically significant.

Table 4-4: Average value of household assets by stratum

Stratum	Estimate	StdErr	LCI (95%)	UCI (95%)	DEFF
High	758,749	155,270	454,425	1,063,073	6.5
Low	915,619	119,751	680,911	1,150,327	4.3
Total	836,192	98,781	642,584	1,029,800	5.6

Key Socio-Demographic Disaggregation

The average household assets value is much higher in the RISE zone of Burkina Faso. With an average value of about 1.27 million FCFA, the average value of household assets in the RISE zone of Burkina Faso is about 4 times higher than in the RISE zone of Niger.

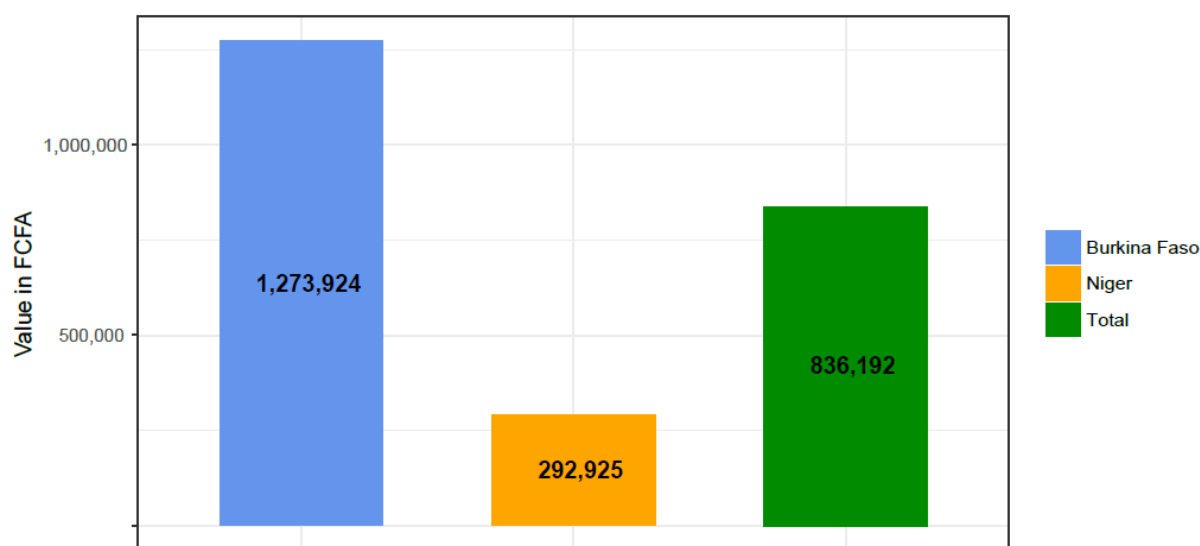


Figure 4-8: Average value of household assets by RISE zone of each country

Comparison of Baseline and Midline

Table 4-5 shows that none of the changes by stratum is statistically significant.

Table 4-5: T-test comparison between baseline and midline results by stratum

Stratum	Baseline Est. (FCFA)	Midline Est. (FCFA)	Difference (FCFA)	P-Value
High	650,066	758,749	108,684	0.27
Low	928,394	915,619	-12,775	0.81
Total	786,207	836,192	49,984	0.37

The DiD p-value associated with the figure below is 0.28, which confirms the observation from the previous table. That is, the positive trend in the High stratum and the negative or stagnating trend in the Low stratum, are not large enough to attribute any statistically significant effect to the interventions in the High stratum, despite movement in the desired

direction. The interventions have thus, to this point, not produced a statistically significant change.

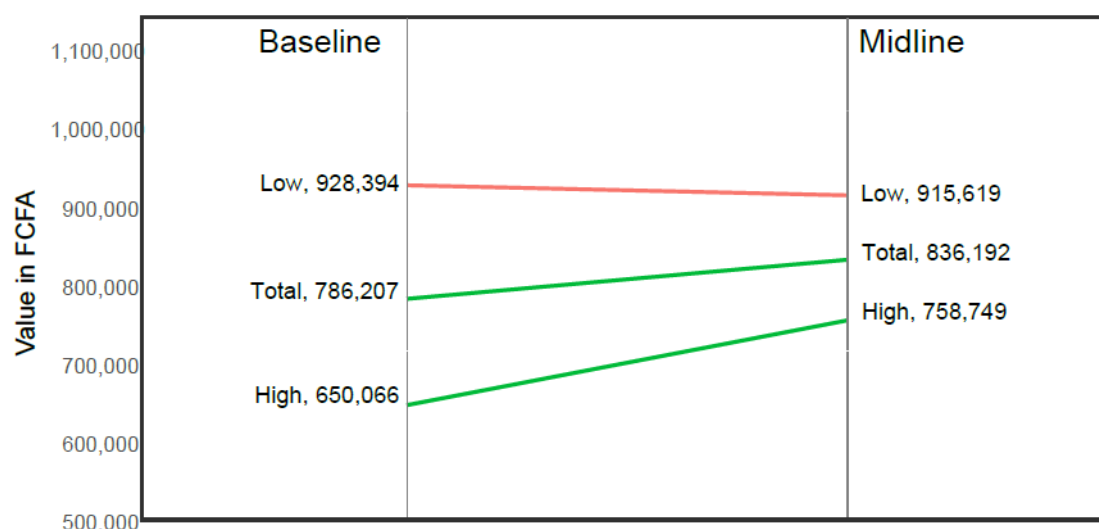


Figure 4-9: Change in the average value of household assets from baseline to midline by stratum

4.4. Asset Ownership (Indicator 3.b)

Asset ownership is the average number of assets owned by the household, related to consumption, production, and livestock. Counting assets can be problematic in the sense that one household may have fewer, but more valuable assets compared to another household. The indicator's usefulness comes in allowing us to track increases in the economic well-being of program beneficiaries through their acquisition of new assets. Unless families shift the type of assets they own, for example from more assets of little value to fewer assets of larger value, measuring the acquisition of new assets can reveal important information about the wellbeing of households. Some households, of course, may adopt exactly that approach as a form of building resilience. Thus, this indicator may be more informative when considered along with the average value of household assets (both of which USAID proposed).

At the midline point, though the results are trending in the desired direction, we find no statistically significant change in asset ownership in the High exposure areas compared to the Low exposure areas.

Comparison of Baseline and Midline

Table 4-6 shows that none of the changes by stratum is statistically significant.

Table 4-6: T-test comparison between baseline and midline results by stratum for number of household assets

Stratum	Baseline Est.	Midline Est.	Difference	P-Value
High	44.5	46.5	1.9	0.51
Low	54.9	51.6	-3.3	0.49
Total	49.7	49.0	-0.7	0.81

The DiD p-value associated with the figure below is 0.28 which confirms the observation from the previous table. That is, the positive trend in the High stratum and the negative or stagnating trend in the Low stratum are not large enough to attribute any statistically significant effect to the interventions in the High stratum.

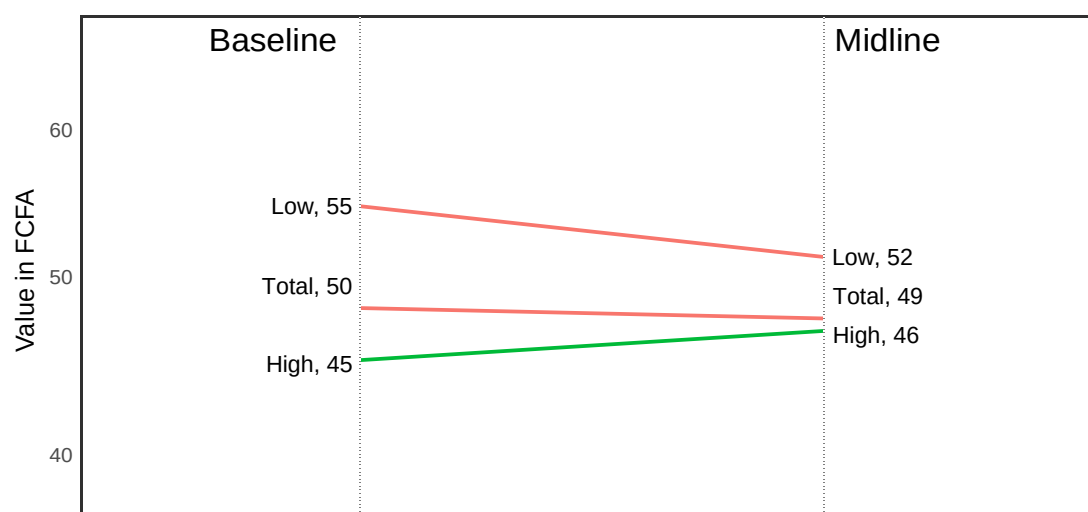


Figure 4-10: Change in the number of household assets from baseline to midline by stratum

4.5. Non-Agricultural Sources of Household Income (Indicator 6)

In the RISE zone, 77.3% of the heads of households are estimated to work primarily in agriculture. Therefore, agriculture is typically one of the main sources of revenue for those households. In that context, household income from non-agricultural sources may constitute a protection against economic shocks due to poor crop seasons, climate-related events, and swings in crop prices. The indicator in this section provides the share of households' income derived from non-agriculture sources. Three categories of sources are defined. In households with 10 percent or more of their overall income earned from non-agricultural sources, those sources are considered to constitute an important source of revenue for the household. If the household reports relying on any non-agricultural sources of income during times of stress, those non-agricultural sources of income are considered a critical source of revenue for the household. And lastly, if a household's non-agricultural income is derived from activities that take place only during the dry season or only during the wet season, the non-agricultural activities are considered a temporary source of revenue for the household.

Regarding revenue from non-agricultural sources, we find statistically significant improvements both from baseline to midline in the High exposure villages, and also in the difference-in-differences comparing the High exposure areas to the Low exposure areas.

Midline Findings

The majority of the households, that is 73.3%, earn income from non-agricultural sources. The difference of 8.1% between the High and Low strata is not significant.

Table 4-7: Proportion of households with income from non-agricultural sources by type and stratum

Stratum Estimate	(%)	StdErr (%)	LCI (95%)	UCI (95%)	DEFF
Any type					
High	77.3	4.28	68.9	85.7	9.7
Low	69.1	3.00	63.3	75.0	6.6
Total	73.3	2.69	68.0	78.5	9.2
Important					
High	76.7	4.38	68.1	85.3	9.9
Low	68.0	3.02	62.1	73.9	6.6
Total	72.4	2.74	67.0	77.8	9.4
Critical					
High	45.6	5.34	35.2	56.1	10.6
Low	29.7	2.74	24.3	35.0	5.7
Total	37.8	3.12	31.7	43.9	10.4
Temporary					
High	29.1	3.80	21.7	36.6	6.5
Low	34.9	2.87	29.3	40.5	5.7
Total	32.0	2.41	27.2	36.7	6.7

The income from non-agricultural sources is important for almost all the households with non- agricultural sources in the sense that it constitutes more than 10% of their overall income. In the RISE zone, 37.8% of the households earn critical income from non-agricultural sources. That proportion is much higher in the High stratum with 45.6% of the households while it is only 29.7% in the Low stratum. This difference of 16.0% is statistically significant with a p-value smaller than 0.001. Temporary income from non-agricultural sources is reported by 32.0% of the households and there is not significant difference between the High and Low strata.

Key Socio-Demographic Disaggregation

The proportion of households with income from non-agricultural sources is higher in the RISE zone of Niger (83.3%) compared to the RISE zone of Burkina Faso (65.2%). The difference of 18.1% is significant with a p-value smaller than 0.001.

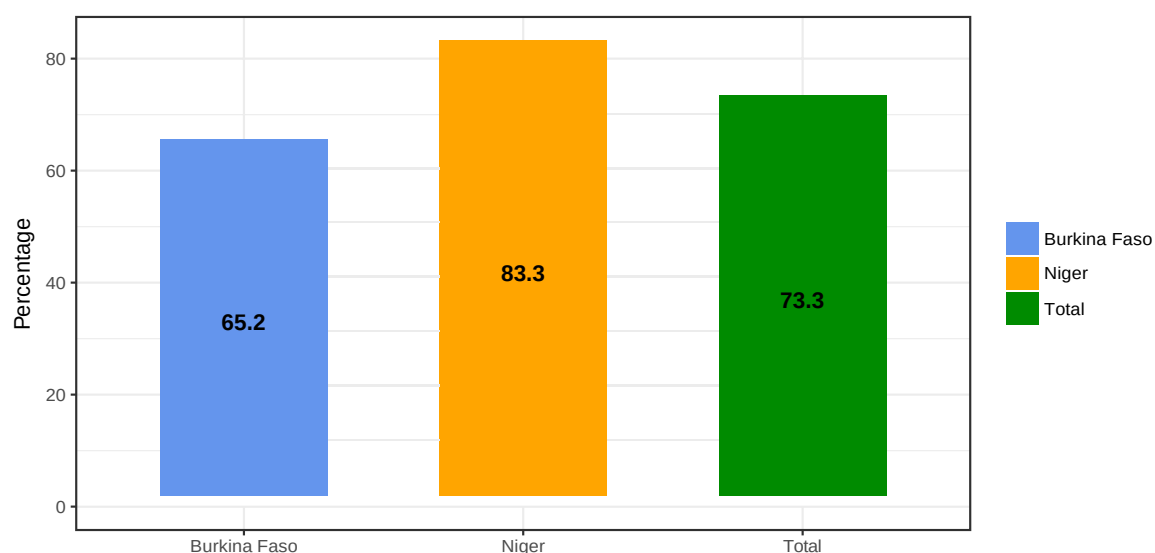


Figure 4-11: Proportion of households with income from non-agricultural sources by RISE zone of each country

Figures 4-12 to 4-15 show the proportion of households with income from non-agricultural sources by some key demographics. There is no significant difference when the indicator is disaggregated by sex or marital status or literacy of the head of household. However, the ethnicity disaggregation shows significant differences. The Gourmantché group has the lowest proportion of households with income from non-agricultural sources, while the Hausa group has the highest proportion with 88.4%.

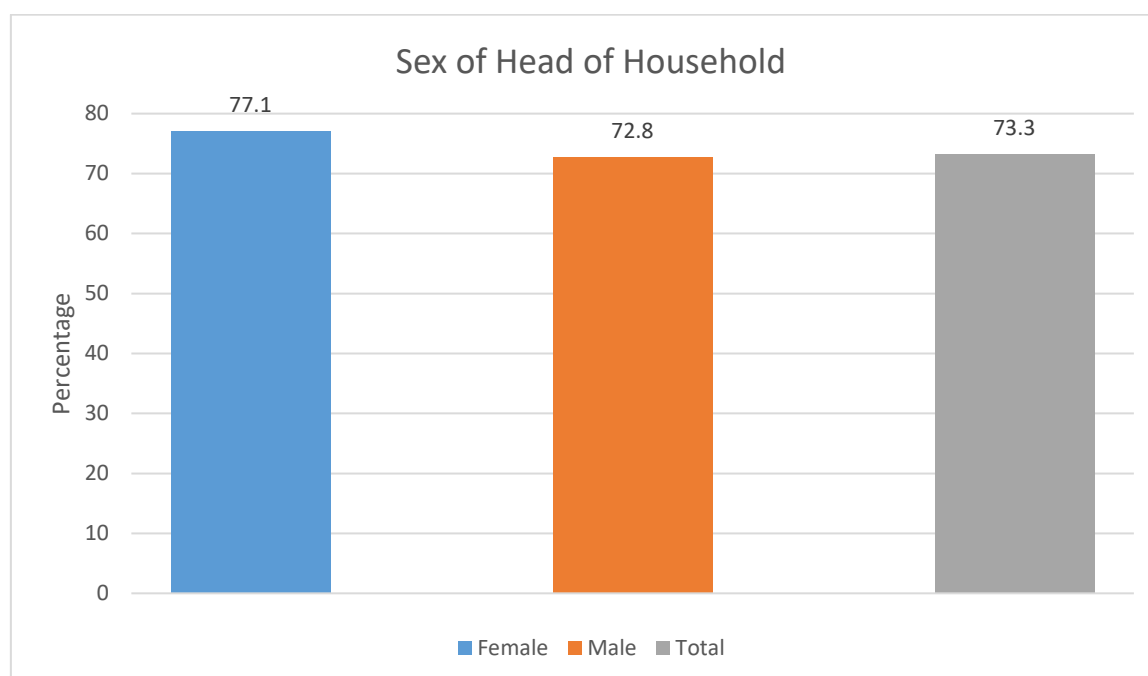


Figure 4-12: Proportion with income from non-agricultural Sources: Sex of Head of Household

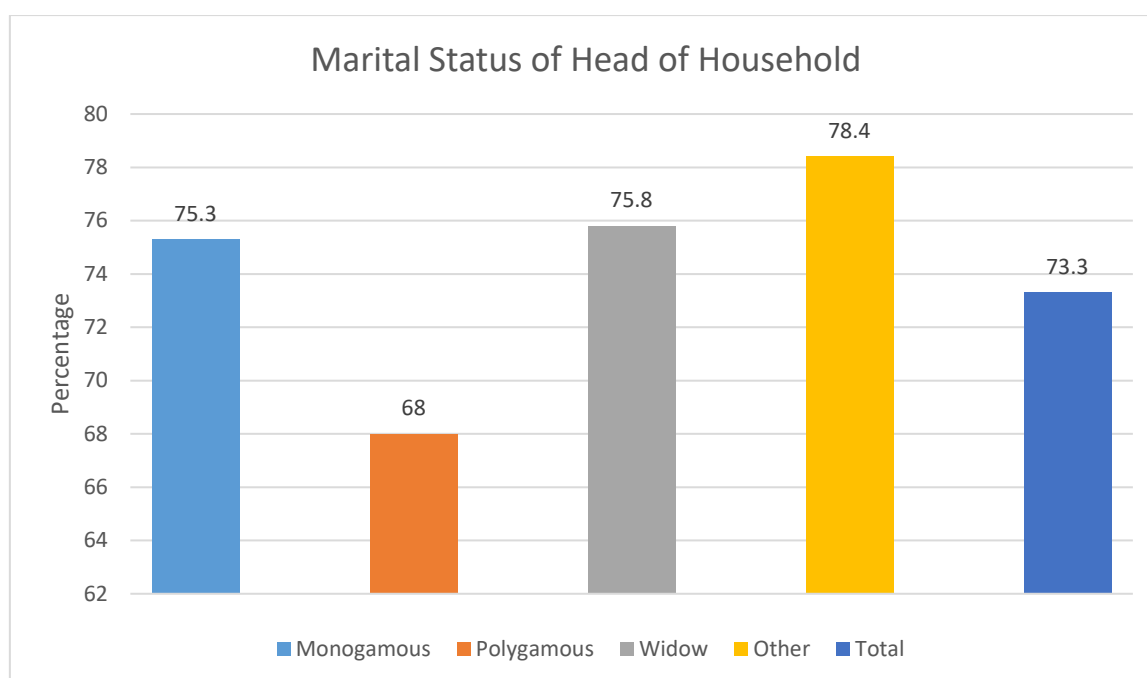


Figure 4-13: Proportion with income from non-agricultural Sources: Marital Status of Head of Household

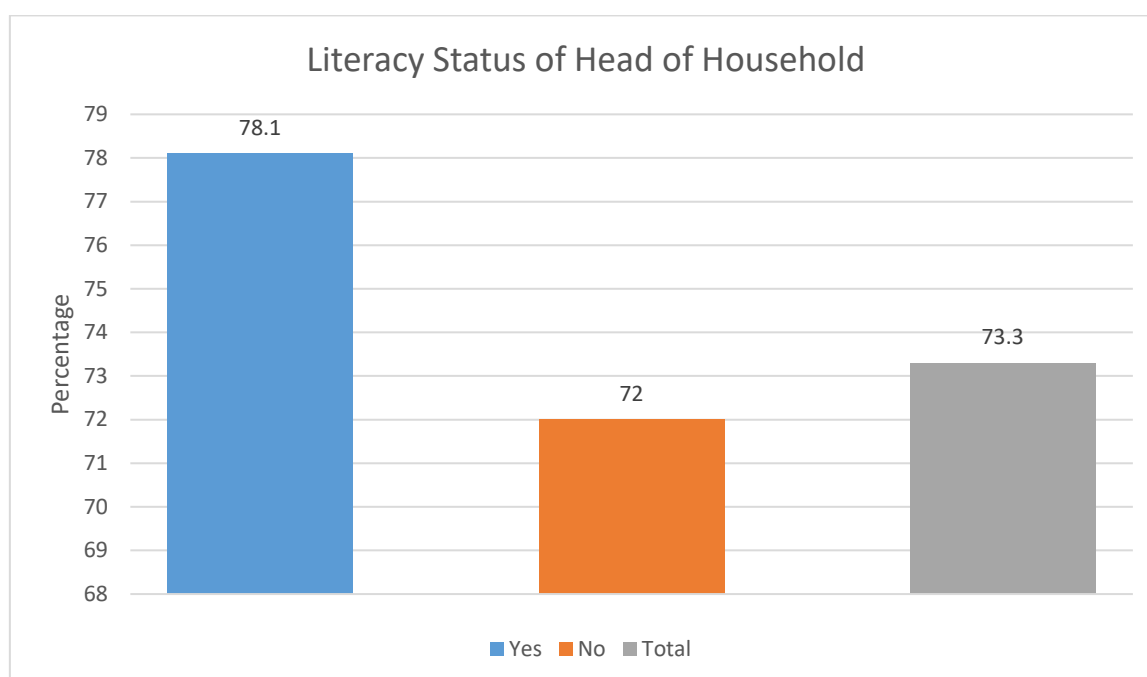


Figure 4-14: Proportion with income from non-agricultural Sources: Literacy Status of Head of Household

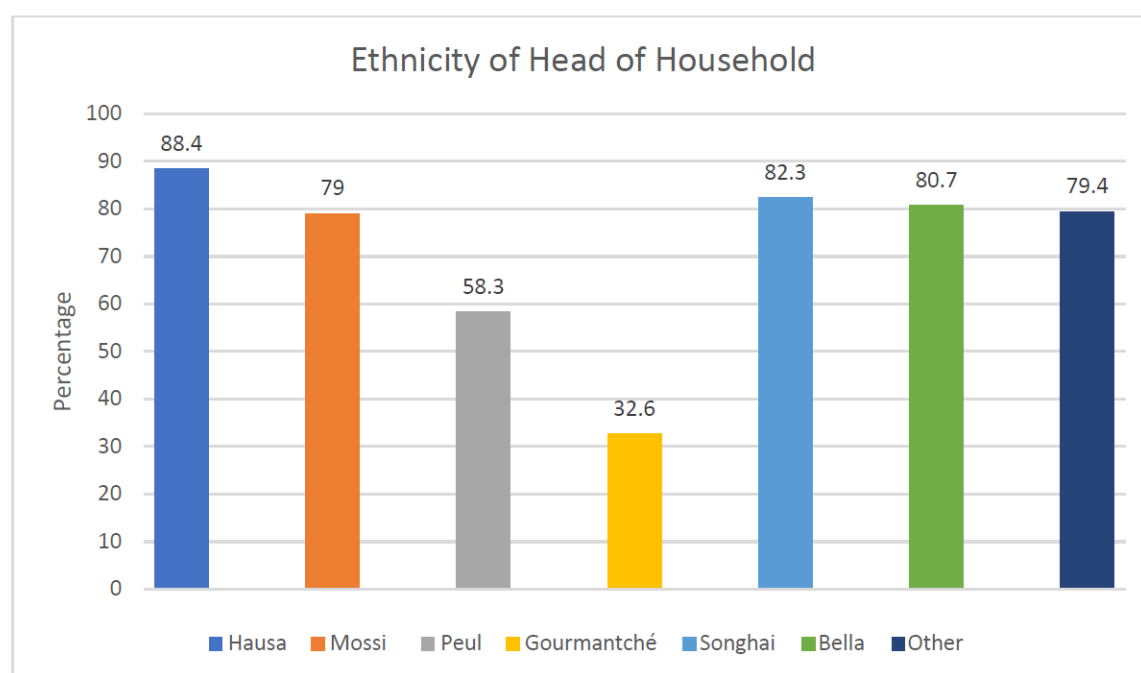


Figure 4-15: Proportion with income from non-agricultural Sources: Ethnicity of Head of Household

Comparison of Baseline and Midline

Table 4-8 (below) shows that none of the differences at the RISE zone and by stratum is statistically significant. However, the increase observed in the High zone is marginally significant, and a larger sample size might have shown a significant increase.

Table 4-8: T-test comparison between baseline and midline results by stratum for household income sources

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	72.6	77.3	4.6	0.08
Low	71.8	69.1	-2.7	0.23
Total	72.2	73.3	1.0	0.55

The DiD p-value associated with the figure below is 0.03, hence the increase in the High stratum is significantly different from the decrease in the Low stratum. The DiD suggests that the trend of the proportion of households with income from non-agricultural sources is different between the two strata. It is possible that the RISE programs are helping to diversify sources of income.

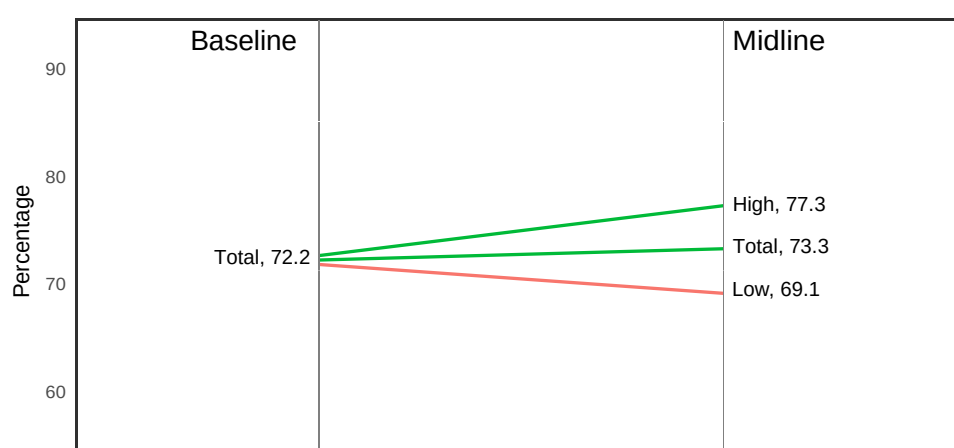


Figure 4-16: Change in the percentage of households obtaining income from non-agricultural sources from baseline to midline by stratum

4.6. Propensity score matching for Livelihoods indicator

Only four indicators i.e. depth of poverty, average value of household assets, asset ownership, and household with income from non-agricultural sources, were retained for the PSM analysis because their p-values were under 0.30. Each of the households in the High stratum with non-missing values (i.e. 923 for baseline and 924 for midline) for the predictors (i.e. age, sex, marital status, literacy, and ethnicity of the head of the household) was matched to the nearest household in the Low stratum. This procedure was conducted for both the baseline and midline samples. The DiD test was applied to the resulting combined sample.

Table 4-9 shows that the p-value of the test of difference increased for depth of poverty, average value of household assets and asset ownership while it diminished for income from non-agricultural sources. Based on the threshold of 0.05, the PSM analysis suggests that the RISE program was instrumental in increasing the proportion of households with non-agricultural sources of income.

Table 4-9: Propensity score matching for the depth of poverty, average value of household assets, asset ownership and income from non-agricultural sources

Indicator	DiD p-value	DiD p-value after PSM
Poverty depth	0.14	0.40
Average value of household assets	0.28	0.66
Asset ownership	0.28	0.60
Income from non-agricultural sources	0.03	0.01

5. Governance

The second RISE component aims to achieve Strengthened Institutions and Governance. In order to promote stronger institutions and governance in a manner that helps communities to build resilience, RISE has outlined a number of intermediate results:

- Improved natural resource management
- Disaster risk management
- Strengthened conflict management systems
- Strengthened government and regional capacity and coordination

The rationale for these intermediate results is that villages will first be able to make best use of the natural resources at their disposal, which should help to promote sustainability and offset some of the risks from climate and other type of catastrophic shocks. Next, as villages develop improved strategies for managing risk, households and key village stakeholders should have plans in place so that at least some aspects of crisis and disaster can be anticipated and their impact mitigated through timely early response actions. Since social conflict can compound the effects of climate and other forms of shock and stress, villages that are able to minimize and manage such tensions can maintain greater focus on averting natural crises. Finally, all of these aspects of village management—from natural resources to disaster to conflict—involve higher levels of government in one form or another. To avoid predation, miscommunication, or competing objectives, coordination and capacity building are critical at different levels of government.

Governance and natural resource management activities involve a number of different levels of government. At the national level, annual meetings occur with government agencies, such as 3N in Niger and the Permanent Secretariat for the National Food Security Council (PS/NFSC) in Burkina Faso, to ensure alignment with their respective policies and priorities. Ministries of Agriculture, Health, and Water are also involved in agreements. At the regional and departmental or provincial levels, RISE partners coordinate with administrative authorities and technical services in both countries. Prefects must approve commune-level land use plans, and district meetings are regularly attended by RISE staff and government health agents who support many project activities. Several RISE projects coordinate with departmental services to ensure that disaster planning at the commune level is consistent with the national disaster planning system. Finally, the commune level is the entry point for most RISE activities. Commune authorities orient IP staff to priority zones for intervention and help resolve questions about conflicts, resource use, NGOs or projects already working in the area, and security issues. Local technical services participate in RISE training sessions and sometimes supervise cascade training.

Specific activities related to improved governance include the following: developing commune-level and village-level natural resource plans to avoid conflict and bring more control to local groups; forming committees that can respond to disasters such as flood and drought; establishing conflict resolution committees; enabling women to gain access and secure rights

to land; increasing understanding of the causes and impacts of climate change and actions that can be taken to adapt to it. Some other activities jointly address both the governance and livelihood components. For example, conservation farming combined with natural regeneration of wide swaths of land farmed by groups or individuals targets both revenue generation and resource management. Sensitization of farmers on agricultural risks due to climate change aims to improve their adaptive capacity while also fortifying climate-related governance and management.

Specific indicators drawn from the baseline and midline surveys to track improvements in governance include the following, the details of which are described in the subsequent subsections:

- Indicator 7: Percentage of targeted communities with evidence of improved governance
- Indicator 8: Percentage of targeted communities with evidence of improved capacity to manage climate shocks and risks
- Indicator 9: Percentage of individuals who engage with local power structures to effect change

Two key challenges arise in the effort to improve governance and natural resource management in targeted RISE villages. First, collaboration imposes demands (or at least expectations) on government staff and agencies. Second, effective community management and governance requires that stakeholders and government actors involve other community members, delegate responsibility to them, and respond to their feedback.

Overview of Results: In the Governance category, two findings are worth underscoring up front. First, villages with evidence of good governance improved significantly in the High exposure areas from baseline to midline (47% to 81%, $p=.02$). The difference-in-differences is positive and approaches conventional levels of statistical significance ($p=.08$). Second, the share of villages with adequate capacity to manage climate shocks improved significantly from baseline to midline, but a comparable change occurred in both the High and Low exposure areas, so the improvement cannot be attributed to RISE interventions. There was no significant change in the share of individuals engaging with local power structures.

5.1. Communities with Evidence of Good Governance (Indicator 7)

Good governance at the village level includes the following components: natural resource management plans, conflict management systems, successful dispute mediation, and development plans (typically as part of a commune-level development plan). Villages that develop good governance in these domains are better prepared to navigate sudden changes that result from climate shocks.

In this section, a village is considered to have evidence of good governance when it has two of the following four elements: 1) natural resource management plans, 2) conflict management systems, 3) successful dispute mediation (meaning that at least half of the village-level disputes were resolved), and 4) a community development plans. Putting in place plans and mechanisms

is an important step, but successful application and use is more challenging. It should be noted that the indicator includes a measure of application of only one of the three plans/mechanisms - the one concerning conflict management.

Midline Findings

The total number of villages in the RISE zone is 4,360 as determined during the establishment of the sampling frame in 2014. The total number of villages in the High stratum is 1,702 while the corresponding number is 2,658 villages in the Low stratum. Therefore, 61.0% of the villages of the RISE zone are situated in the Low stratum.

The graph on the left side of **Figure 5-1** shows that an estimated 1,374 villages in the High stratum showed evidence of good governance while the corresponding estimate is 1,637 in the Low stratum.

The graph on the right side of **Figure 5-1** shows the distribution of villages according to their evidence of good governance status. The exterior ring represents the Low stratum while the interior ring shows data from the High stratum. The graph shows that 80.7% of the villages in the High stratum showed evidence of good governance compared to only 61.6% in the Low stratum. The difference of 19.1% is marginally significant with a p-value of 0.11. It is made much stronger by considering the status of High and Low exposure communes at the baseline stage, which we do below.

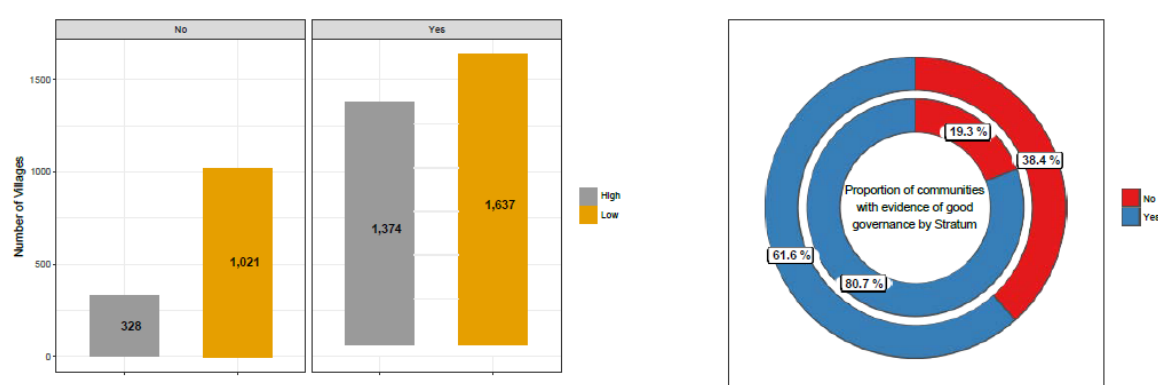


Figure 5-1: Proportion of villages with evidence of good governance by stratum

The total number of villages in the RISE zone of Burkina Faso is 1,232 while the corresponding number in the RISE zone Niger is 3,128 villages. Therefore, close to 72% of the villages of the RISE zone are situated in Niger.

The graph on the left side of **Figure 5-2** shows that an estimated 871 villages in the RISE zone of Burkina Faso showed evidence of good governance while the corresponding estimate is more than twice as large at 2,140 in the RISE zone of Niger.

The graph on the right side of **Figure 5-2** shows the distribution of villages according to their evidence of good governance status. The exterior ring represents the RISE zone of Niger while the interior ring shows data from the RISE zone of Burkina Faso. The graph shows that the proportion of villages with evidence of good governance is very similar in the two parts

of the RISE zones- Burkina Faso and Niger - at 70.7% and 68.4%, respectively. The difference is not statistically significant with a p-value of 0.85.

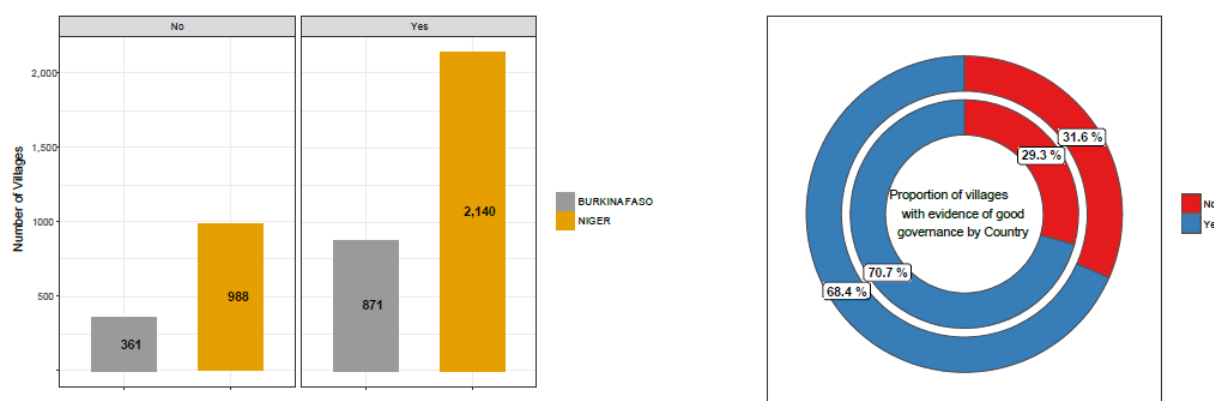


Figure 5-2: Proportion of villages with evidence of good governance by RISE zones in each country

Comparison of the Baseline and Midline

Table 5-1 shows that there was essentially no change in the Low stratum between the baseline and midline at about 62%. At the same time, a significant increase was observed in the High stratum going from 46.8% during the baseline to 80.7% for the midline. The p-value in the High stratum was 0.02.

Table 5-1: T-test comparison between baseline and midline results by stratum for evidence of good governance

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	46.8	80.7	34.0	0.02
Low	61.7	61.6	-0.1	0.99
Total	55.9	69.1	13.2	0.21

The figure below shows different change patterns in the High stratum compared to the Low stratum between the baseline and midline. The difference in trends is statistically significant under the current sampling design at a DiD confidence level of 0.08. This marginally statistically significant result is noteworthy given the sample size of just 100 communes, and a larger sample size could have shown more significant effects attributable to the RISE program.

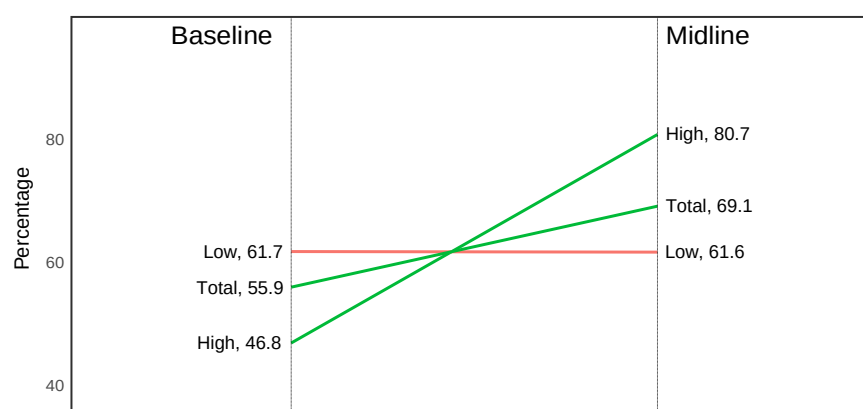


Figure 5-3: Proportion of villages with evidence of good governance by stratum

5.2. Communities with Adequate Capacity to Manage Climate Shocks (Indicator 8)

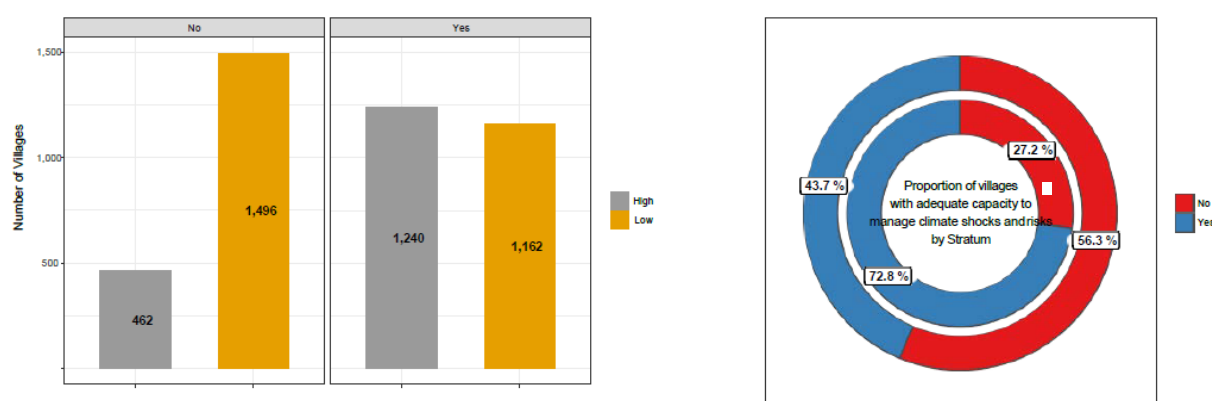
The capacity to manage climate shocks and risks helps villages to adapt to them with minimal disruption. Improved management capability with regard to climate shocks also refers to the ability of villages to take advantage of positive opportunities that may arise from climate change. Two criteria serve as the primary basis for the indicator: 1) level of village members' application of new techniques or practices for adapting to climate change, and 2) village members' own assessment of the efficacy of the adaptations.

Midline Findings

As determined during the establishment of the sampling frame in 2014, the total number of villages in the RISE zone is 4,360. One thousand seven hundred and two (1,702) of these villages are in the High stratum, while the corresponding number in the Low stratum is 2,658 villages, representing 61.0% of the total number of RISE zone villages.

The graph on the left side of **Figure 5-4** reveals that an estimated 1,240 villages in the High stratum showed evidence of adequate capacity to manage climate shocks while the equivalent estimate in the Low stratum is 1,162.

The graph on the right side of **Figure 5-4** shows the distribution of villages according to their capacity to manage climate shocks. The exterior ring represents the Low stratum while the interior ring shows data from the High stratum. The graph reveals that 72.8% of the villages in the High stratum have adequate capacities to manage climate shocks compared to only 43.7% in the Low stratum. The difference of 29.1% is statistically significant with a p-value of 0.046. This should not be interpreted as a success of RISE programming since this proportional difference between the High and Low stratum zones has existed since baseline. The DiD p-value of 0.90 is clearly not significant.

*Figure 5-4: Proportion of villages with adequate capacity to manage climate shocks and risks by stratum*

The total number of villages in the RISE zone of Burkina Faso is 1,232 while the corresponding number in the RISE zone of Niger is 3,128 villages. Therefore, close to 72% of the villages of the RISE zone are situated in Niger.

The graph on the left side of **Figure 5-5** reveals that an estimated 547 villages in the RISE zone of Burkina Faso showed evidence of adequate capacity to manage climate shocks and risks while the equivalent estimate in the RISE zone of Niger is more than three times as large at 1,854.

The graph on the right side of **Figure 5-5** shows the distribution of villages according to their evidence status on adequate capacity to manage climate shocks and risks. The exterior ring represents the RISE zone of Niger while the interior ring shows data from the RISE zone of Burkina Faso. The graph shows the proportion of villages with adequate climate shock and risk management capability in the two parts of the RISE zones - Burkina Faso and Niger - at 44.4% and 59.3%, respectively. The difference of 14.9% is not statistically significant with a p-value of 0.27.

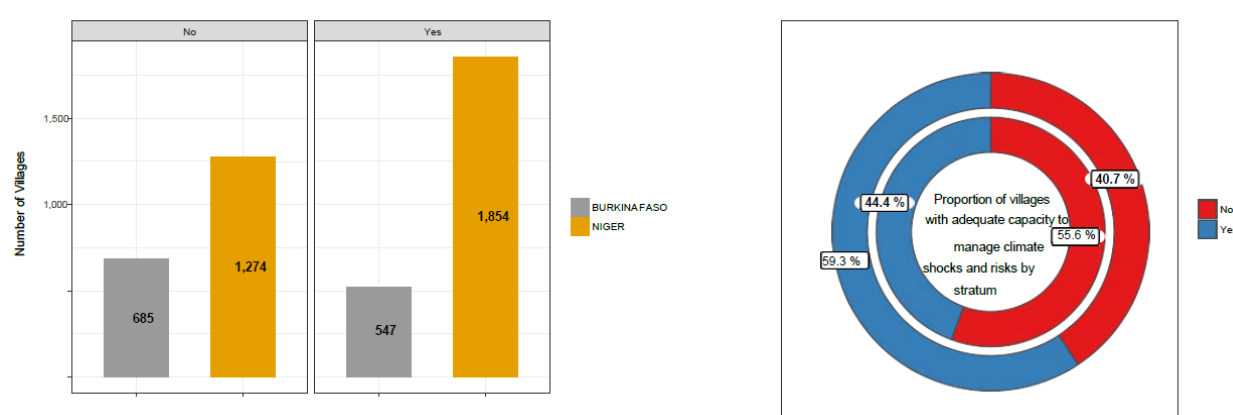


Figure 5-5: Proportion of villages with adequate capacity to manage climate shocks and risks by RISE zone in each country

Comparison of the Baseline and Midline

Table 5-2 shows that the increases in the High stratum and at the overall RISE zone are significant.

The increase in the Low stratum (0.05) is marginally significant. .

Table 5-2: T-test comparison between baseline and midline results by stratum for adequate climate shock and risk management capacity

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	41.7	72.8	31.1	0.04
Low	15.2	43.7	28.5	0.05
Total	25.6	55.1	29.5	0.01

The figure below clearly reveals similar change patterns in the High stratum compared to the Low stratum, between the baseline and midline, which is confirmed by the DiD test p-value of 0.90 which means that any change is unlikely attributable to RISE interventions.

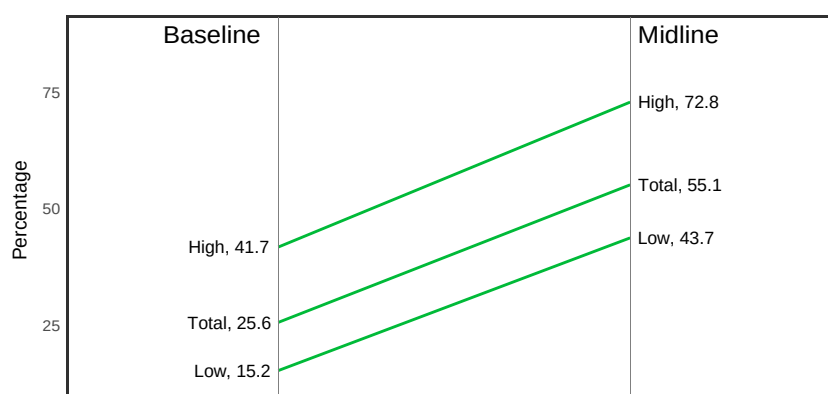


Figure 5-6: Proportion of villages with adequate capacity to manage climate shocks and risks by stratum from baseline to midline

5.3. Individual Engagement with Local Power Structures (Indicator 9)

When individuals engage with local power structures, their needs are more likely to take precedent over less critical government decisions. This helps to strengthen households' capacity for resilience, as government becomes aware of and thus more likely to address those household needs. This indicator measures the proportion of household heads who report engaging with local power structures during the past year.

The midline findings indicate a prevalence of individual engagement with local power structures at 12.3% in the RISE zone. The prevalence in the Low stratum and the High stratum is similar at 12.0% and 12.6%, respectively.

Key Socio-Demographic Disaggregation at Midline

The RISE zone of Niger has a higher proportion of individuals who engaged with a local power structure at 15.6% compared to 9.6% in the RISE zone of Burkina Faso. The difference of 6.0% was not statistically significant, barely missing the threshold, with a p-value of 0.06.

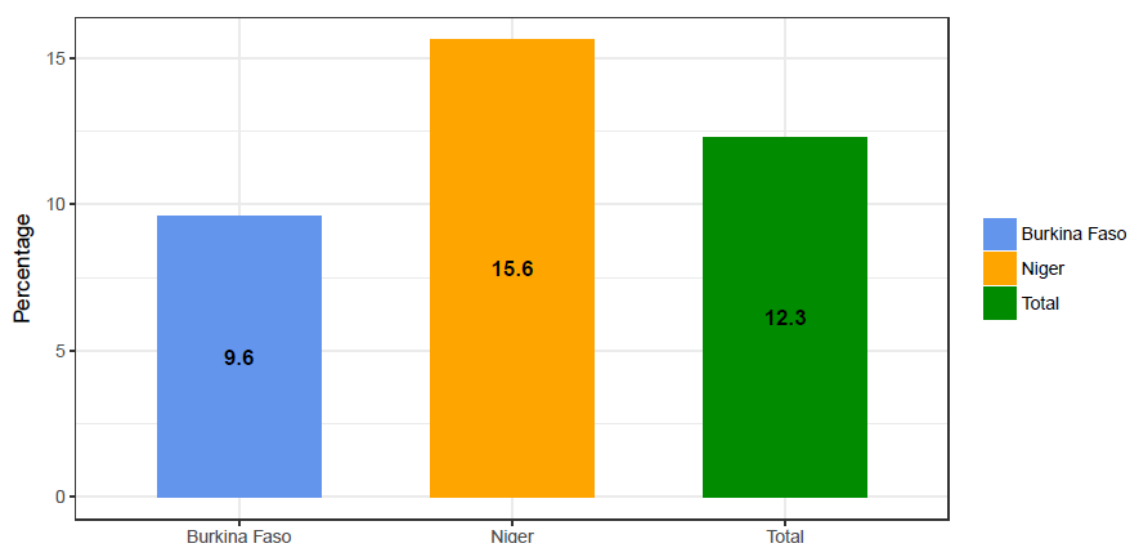


Figure 5-7: Proportion of individuals who engage with a local power structure by RISE zone in each country

Figure 5-7 shows the proportion of individuals who engaged with a local power structure along several socio-demographic dimensions. The households headed by a male have a much greater proportion of individuals who engaged with a local power structure at 13.2%, while the households headed by a female were at 4.3%. The difference of 8.9% is highly significant with a p-value smaller than 0.001.

Polygamous households have the highest proportion of individuals who engaged with local power structures at 14.3%. The category widow has the lowest proportion at 5.7%. Monogamous households have a proportion close to that of the overall RISE zone at 12.1%.

Households headed by a literate person have a higher proportion of individuals who engaged with a local power structure with 20.6%. The difference of 10.5% with households headed by a non-literate person is significant; the p-value is 0.001.

The Mossi ethnic group shows the lowest proportion of individuals who engaged with a local power structure at 2.9%; the second lowest group is the Songhai at 5.6%. The Gourmantché and Hausa have the highest proportions at 22.9% and 18.9%, respectively.

Comparison of the Baseline and Midline

Table 5-3 shows that none of the changes within strata or at the level of the overall RISE zone were significant.

Table 5-3: T-test comparison between baseline and midline results by stratum

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	12.3	12.6	0.2	0.93
Low	13.5	12.0	-1.5	0.62
Total	12.9	12.3	-0.6	0.76

The figure below shows that the different trends in the High stratum and in the Low stratum.

The intensity of the increase in the High stratum is not large enough, however, to confirm a trend different from the one in the Low stratum. The p-value of the DiD test is 0.67.

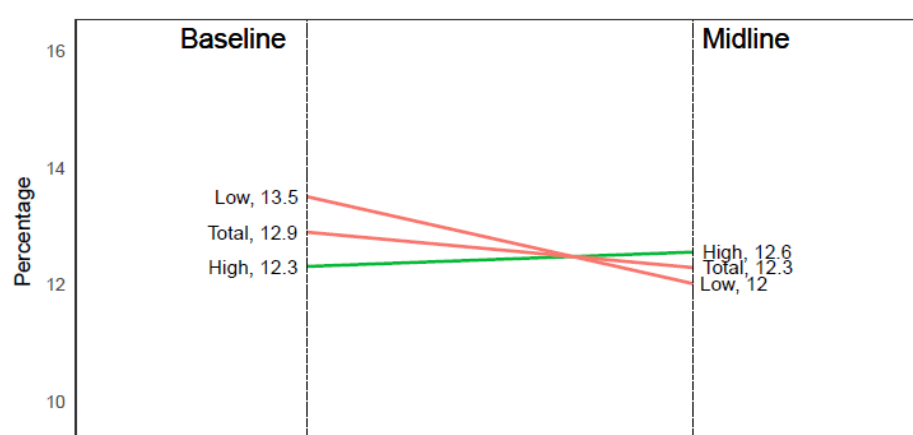


Figure 5-8: Proportion of individuals who engage with local power structures by stratum

To summarize the findings on Governance, we relied on three key indicators: evidence of

good governance, capacity to manage climate shocks, and engagement with local power structures. Regarding evidence for good governance, the findings suggest that progress attributable to RISE has occurred. 80.7 percent of High exposure villages versus just over 60 percent of Low exposure villages meet the requisite standards, whereas only 46 percent of High exposure villages did so at the baseline stage (again compared to approximately 60 percent in the Low exposure areas). The difference-in-differences approaches statistical significance at $p=.08$, and it should be noted that the sample size of 100 is small. We did not detect a significant difference in Burkina Faso compared to Niger. Regarding capacity to manage climate shocks, no change can be attributed to RISE at this point: the share of villages meeting the standard increased by approximately 30 percentage points in the High exposure areas (41.7% to 72.8%), but the same magnitude of change was observed in the Low exposure areas. Again, we did not detect a significant difference across the two countries. Finally, in terms of engaging with local power structures, we observed neither a change from baseline to midline nor a change in High exposure villages compared to Low exposure villages. The tendency to engage with local authorities is higher in Niger (15%) than Burkina Faso (9%), but not in a manner attributable to the RISE interventions, as the differences do not break along High and Low exposure lines.

The evidence indicates that work with community stakeholders to establish improved governing norms can generate positive results. The small sample size of villages limits the analytical strength for attributing statistical significance, but the results for evidence of good governance are encouraging.

6. Health and Nutrition

The third component of RISE aims to achieve Improved Health and Nutrition Status, and includes the following intermediate results:

- Increased access to potable water
- Improved health and nutrition practices, particularly for mothers and children
- Improved family planning
- Better sanitation practices

The rationale for these intermediate goals is first that clean, drinkable water is the starting point for good health, avoiding water-borne illness, and ensuring properly cleaned foods. Beyond access to potable water, households must have the information that allows them to develop good health and nutrition practices that they can sustain beyond the life of the RISE initiative. Next, sound family planning practices serves the health not just of mothers but also of the children they bear and raise. Finally, improved health and nutrition practices can be undermined by a lack of sanitation, so the RISE initiative seeks to couple sanitation improvements with health and nutrition learning.

The RISE initiative includes numerous activities aimed at improving health and nutrition in targeted villages and households. Family planning, health, and nutrition education activities are provided for both men and women. Training is provided on handwashing and sanitation. IPs promote awareness of the importance dietary diversity and enrichment. Through “safe spaces” activities, IPs raise the awareness of adolescent girls concerning health and nutritional issues. The REGIS-ER project also includes health-related “early response” actions and other crisis modifier activities that can be undertaken to mitigate impacts of shocks and the onset of humanitarian emergencies, as needed. Other activities link the health and livelihoods components: cultivation of moringa and fruit trees, for example, in women’s “oasis gardens” or in family fields can improve livelihoods while also addressing nutritional concerns. Other specific activities include the following:

- Mother-to-Mother groups
- Women’s home gardens
- Community-led total sanitation initiatives
- Village water supply development and rehabilitation
- Husband schools to promote family planning, increased consultation of health services for pre- and ante-natal care and childbirth, gender equality, etc.
- Safe spaces activities for adolescents to raise awareness of problems associated with early marriage and childbearing
- Production and use of community videos and radio programs to promote awareness and behavior change on health, nutrition, and sanitation practices

- Cooking demonstrations on use of locally-available products to enrich meals

Indicators measured using data from the baseline and midline surveys that track changes in health, nutrition, and sanitation include the following:

- Indicator 2: Prevalence of households with moderate or severe hunger
- Indicator 10: Global acute malnutrition (GAM)
- Indicator 11: Prevalence of stunted children under 5
- Indicator 12: Prevalence of underweight children under 5
- Indicator 13: Percentage of households using an improved drinking water source
- Indicator 14: Percentage of households with a dedicated soap-and-water handwashing station
- Indicator 15: Percentage of households using an improved sanitation facility
- Indicator 16: Dietary diversity score
- Indicator 17: Prevalence of children 6-23 months receiving a minimum acceptable diet (MAD)
- Indicator 18: Prevalence of exclusive breastfeeding of children under 6 months

The qualitative RISE midline performance assessment that SAREL conducted in February-March 2017 indicated that several health and nutrition activities, such as husband schools for men and safe spaces activities for adolescent girls were particularly effective from an anecdotal standpoint. A challenge in evaluating the impact of the health- and nutrition-related indicators, like many of the other indicators, is that progress may well take more than two years to develop. Furthermore, residents of the Sahel—particularly women—have been exposed to numerous initiatives and have received extensive information from many different donor activities dating back to the development of the United Nations’ Millennium Development Goals in the 1990s. As a result, gradual improvements across the region may mask some of the effect of the RISE activities. Nevertheless, continued efforts remain critical, and the quasi-experimental design of the RISE evaluation hopefully provides an opportunity to gauge the specific, added impact of RISE.

Overview of Results: At the midline stage, we find very little in terms of progress that can be attributed to the RISE interventions. Of the ten indicators associated with Health and Nutrition, none of the difference-in-differences are statistically significant. Global Acute Malnutrition actually trends in the wrong direction, as the rate remained stable in the High exposure areas while falling significantly in the Low exposure areas. The prevalence of stunted children under 5 trended in the desired direction in the High exposure areas, but the change did not reach conventional levels of statistical significance ($p=.13$), and the difference-in-differences showed no relative improvement. No other indicators approached statistically significant outcomes in the desired direction.

6.1. Prevalence of Moderate or Severe Hunger (Indicator 2)

This indicator measures the prevalence of households with hunger. Hunger is determined by asking household heads about the frequency of three events experienced by household members. Respondents are asked if in the last four weeks, there were days during which 1) there was no food at all in the house, 2) any member of the household went to bed hungry, or 3) any member of the household went all day and night without eating. Scores are ascribed to each answer based on the intensity of the event. The scores of the three questions are summed to produce the hunger score ranging from 0 to 6. More details on the calculation of the hunger score are provided in Appendix A.

The hunger scores are then categorized as no hunger for a score of 0 or 1, moderate for a score of 2 or 3, and severe for a score greater than 3. In the midline sample, only 52 households, representing 2% of the population, were classified as suffering from severe hunger. Therefore, in the analysis, the moderate and severe hunger categories are combined to form a moderate/severe category which allows disaggregation.

Midline Findings

The midline results indicate a prevalence of moderate/severe hunger at 14.4% in the RISE zone. The prevalence is higher in the Low stratum at 17.6% than it is in the High stratum with a prevalence of 11.3%. The resulting difference of 6.3% is statistically significant with a p-value of 0.02. The RISE zone of Burkina Faso and the RISE zone of Niger have very similar estimated prevalence of moderate/severe hunger with 14.6% and 14.2%, respectively.

Comparison of Baseline and Midline

Table 6-1 does not show a significant increase in the prevalence of moderate/severe hunger in either the High or Low strata between the baseline and the midline.

Table 6-1: T-test comparison between the baseline and midline results by stratum for moderate/severe hunger

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	8.5	11.3	2.8	0.18
Low	17.5	17.6	0.1	0.97
Total	12.9	14.4	1.4	0.39

Figure 6-1 shows the higher increase in moderate or severe hunger in the High stratum compared to the Low stratum and to the overall RISE zone. Nevertheless, the intensity of the change in the High stratum is not large enough to confirm a trend different than that observed in the Low stratum. The p-value of the DiD test is 0.42.

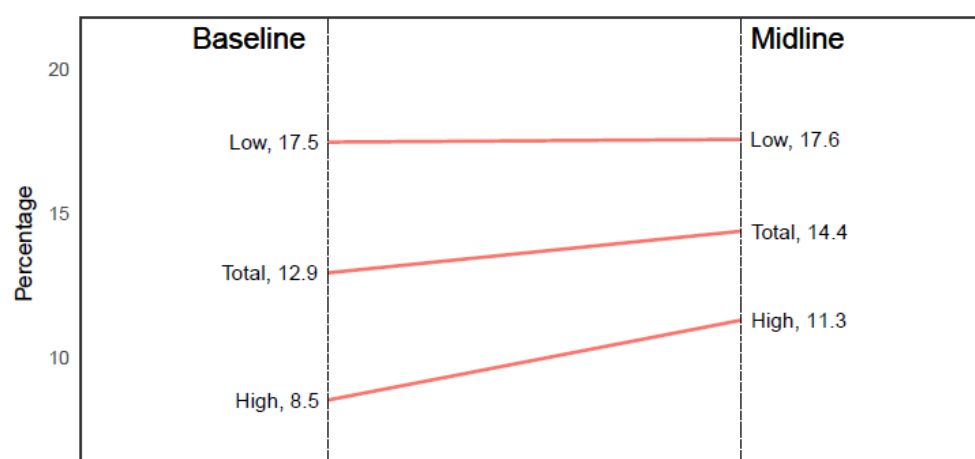


Figure 6-1: Prevalence of moderate or severe hunger from baseline to midline by stratum

6.2. Global Acute Malnutrition (GAM) Rate (Indicator 10)

This indicator measures the proportion of children under 5 years of age who are acutely malnourished based on a comparison of a child's weight to his/her height. The global acute malnutrition (GAM) indicator is a standard measure used globally to assess children's well-being. Both inadequate dietary intake and disease are the immediate causes of acute malnutrition.

In total, the estimated number of children under 5 in the RISE zone is 853,957. The population of children under 5 in the High stratum is estimated at 442,662 while the same population is estimated at 410,095 children in the Low stratum. Therefore, it is estimated that 51.8% of the children under 5 live in the High stratum.

The data used to derive the GAM indicator were not complete or reliable for 22 children. Hence, the information of those 22 children was not incorporated in the GAM analysis of this section.

Key Socio-Demographic Disaggregation

The proportion of acutely malnourished children under 5 years of age is greater in the RISE zone of Burkina Faso at 17.5% compared to 14% in the RISE zone of Niger. This difference of 3.5% is significant with a p-value of 0.049.

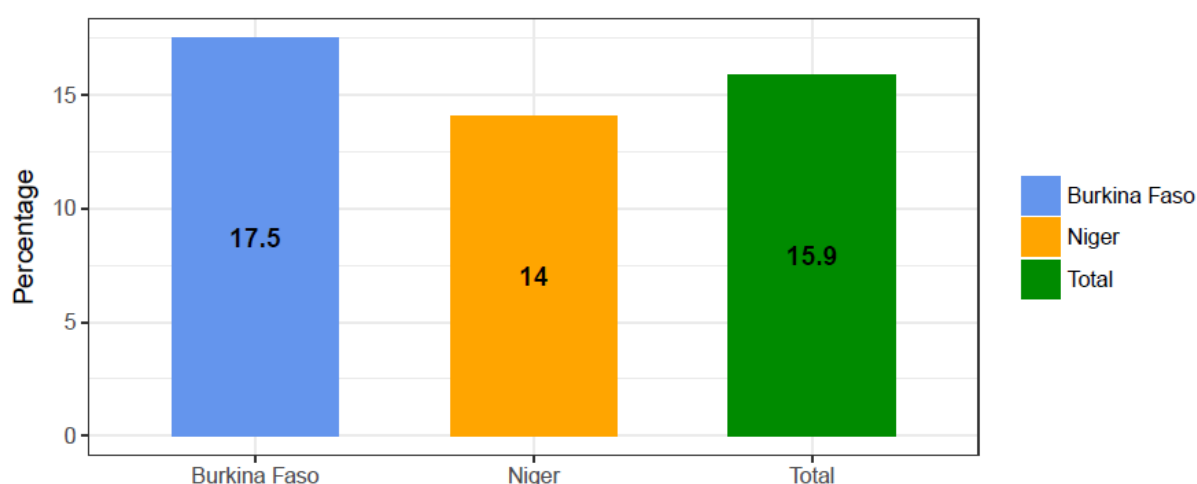


Figure 6-2: Proportion of acutely malnourished children under 5 by RISE zone of each country

Figures 6-3 to 6-6 show the proportion of acutely malnourished children under 5 years of age by some key demographics, notably the sex and ethnicity of the child as well as marital status and literacy status of the head of the household.

The prevalence of GAM is higher among boys with 18.2% compared to 13.7% for the girls. The difference of 4.5% is significant with a p-value smaller than 0.001. The children from the Songhai ethnic group have the lowest prevalence of GAM at 8.9% while the children belonging to the Peul ethnic group have the highest average rate of acute malnutrition at 22.8%. The other ethnic groups are somewhat similar at around 15% prevalence of GAM with the Gourmantché being a little higher at 17.5%. In terms of the marital status of the head of household, the three groups (i.e. monogamous, polygamous and widow) are not too different with GAM prevalence rates ranging from 13.2% to 16.8%. There is no significant difference of the prevalence of GAM by the literacy status of the head of household.

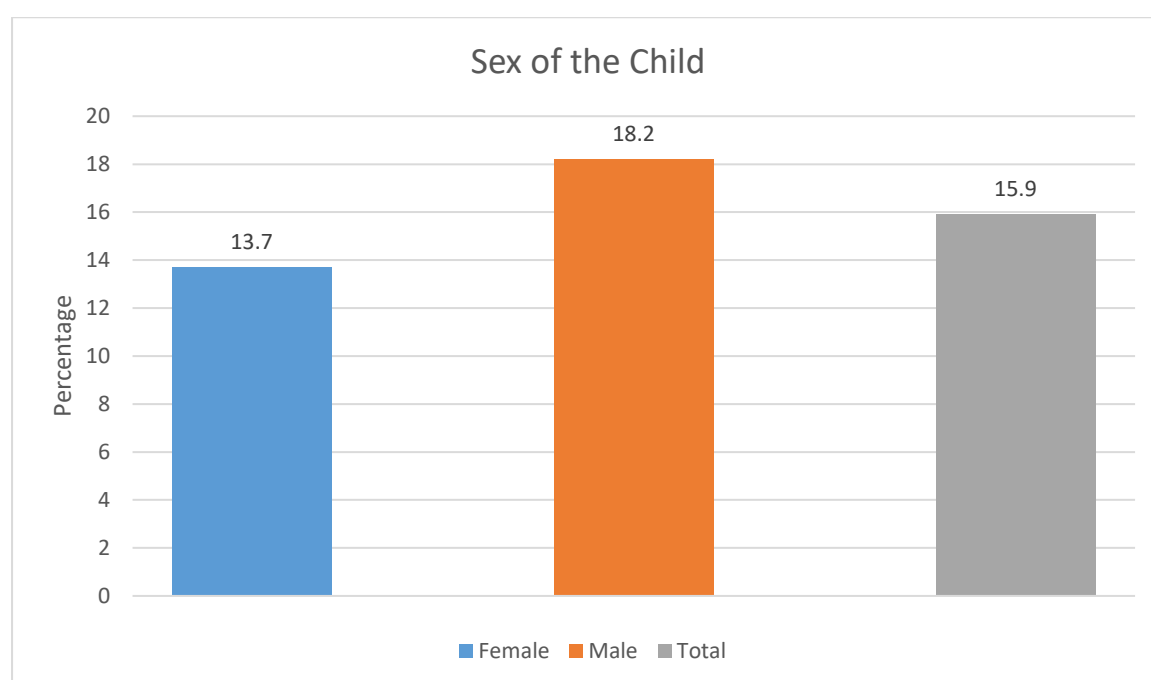


Figure 6-3: Proportion of acutely malnourished children under 5: Sex of the child

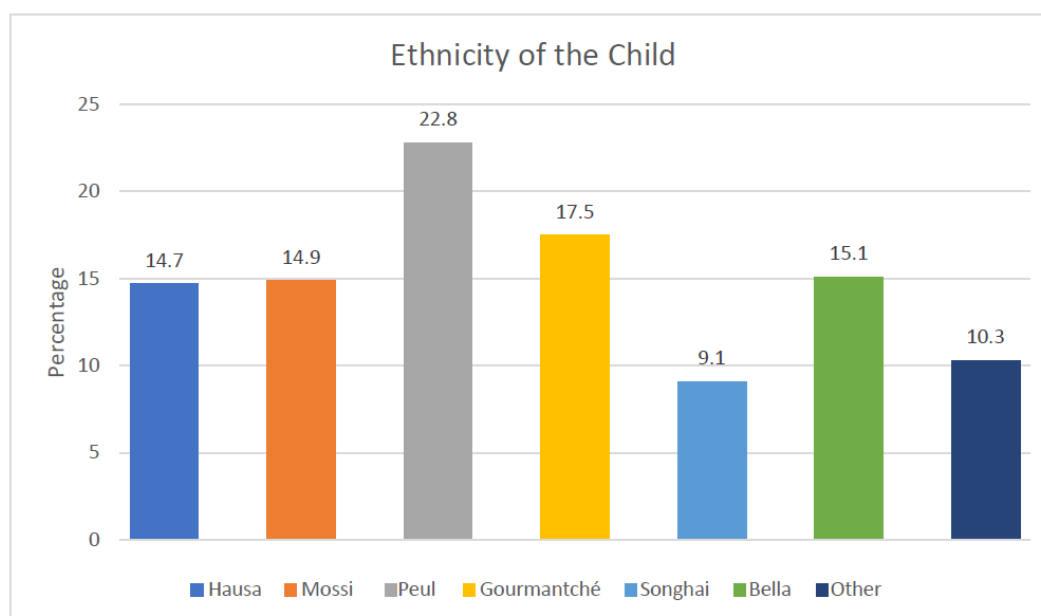


Figure 6-4: Proportion of acutely malnourished children under 5: Ethnicity of the child

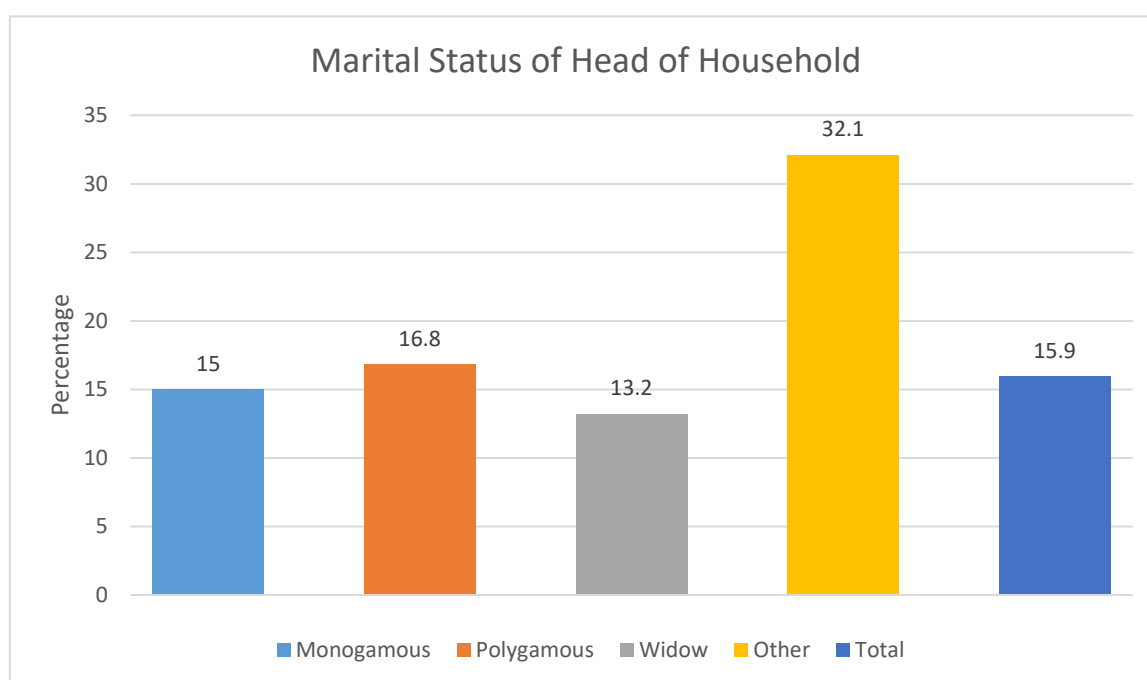


Figure 6-5: Proportion of acutely malnourished children under 5: Marital status of head of household

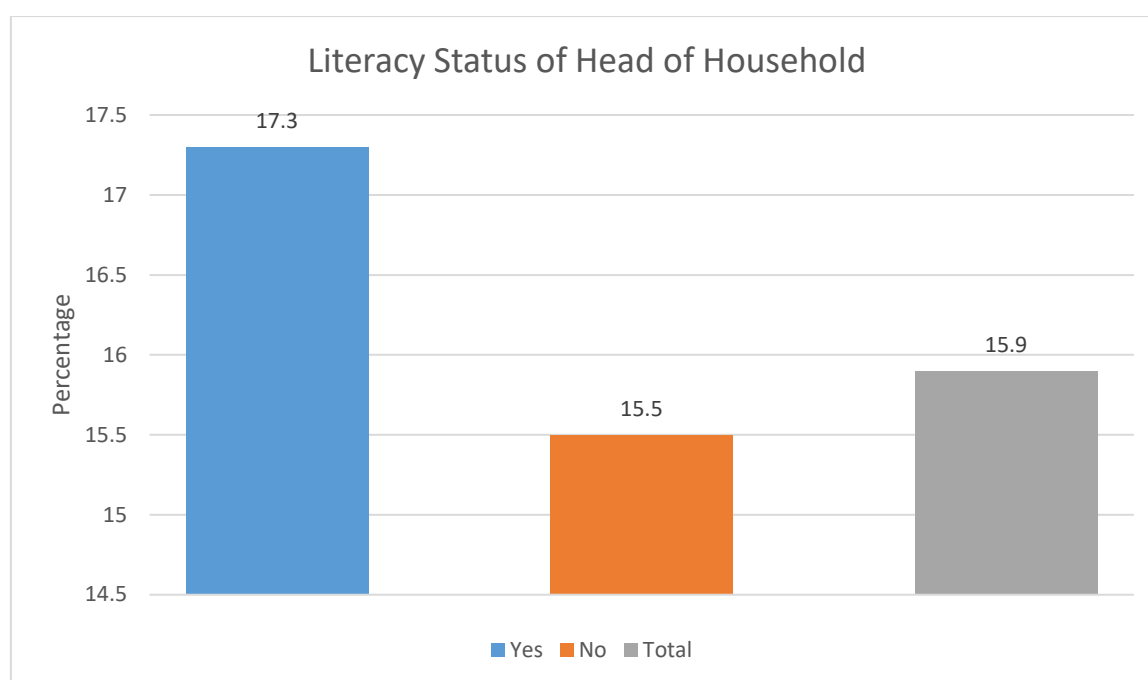


Figure 6-6: Proportion of acutely malnourished children under 5: Literacy status of head of household

Comparison of Baseline and Midline

Table 6-2 shows clearly that the reduction of the prevalence of GAM in the Low stratum was significant. However, there was essentially no change in the High stratum. The overall change in the RISE zone was not significant.

Table 6-2: T-test comparison between the baseline and midline results by stratum for GAM

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	15.7	15.7	0.0	1.00
Low	19.1	16.0	-3.1	0.05
Total	17.4	15.9	-1.5	0.16

Figure 6-7 shows the changes in each stratum and for the RISE zone between the baseline and midline. The reductions were only statistically significant in the Low stratum. While the changes were different between the two strata, they were not large enough to confidently attribute a stratum effect. Indeed, the DiD test resulted in a p-value of 0.15.

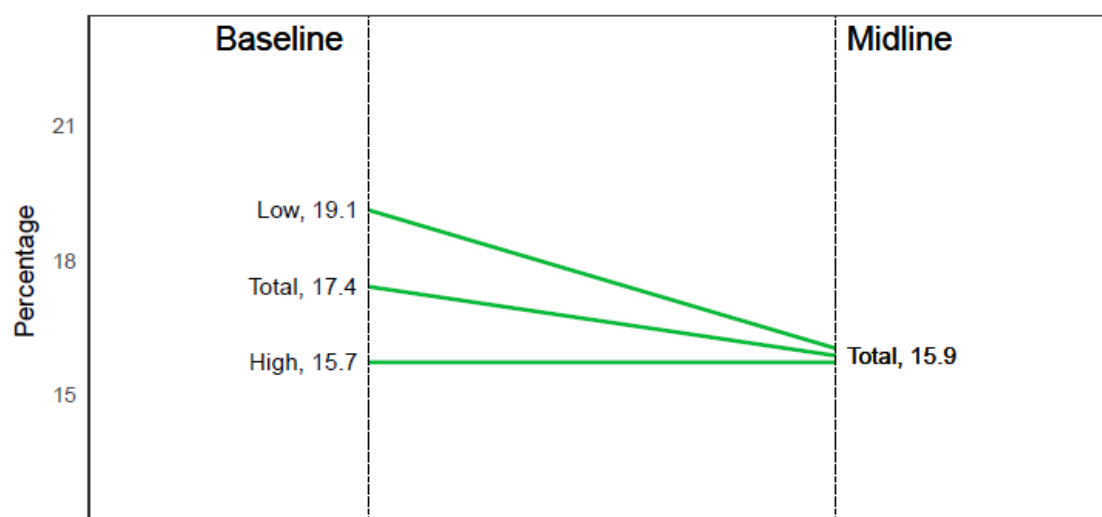


Figure 6-7: Proportion of acutely malnourished children under 5 from baseline to midline by stratum

6.3. Stunting Among Children Under 5 Years of Age (Indicator I I)

Stunted growth refers to low height-for-age, when a child is short for his/her age but not necessarily thin. The indicator measures the proportion of children under 5 years of age in the RISE study zone who are categorized as moderately or severely stunted.

In total, the estimated number of children under 5 in the RISE zone is 853,957. The population of children under 5 in the High stratum is estimated at 442,662 while the same population is estimated at 410,095 children in the Low stratum. Therefore, it is estimated that 51.8% of the children under 5 live in the High stratum.

The data used to derive the stunting indicator were not complete or reliable for 5 children. Hence, the information of those 5 children was not incorporated in the stunting analysis of this section.

Key Socio-Demographic Disaggregation

The proportion of stunted children under 5 years of age is much higher in the RISE zone of Niger at 59.7%. There is a 24.1% difference in the proportion of stunted children between the RISE zone of Niger and the RISE zone of Burkina Faso. That difference is strongly significant with a p-value smaller than 0.001.

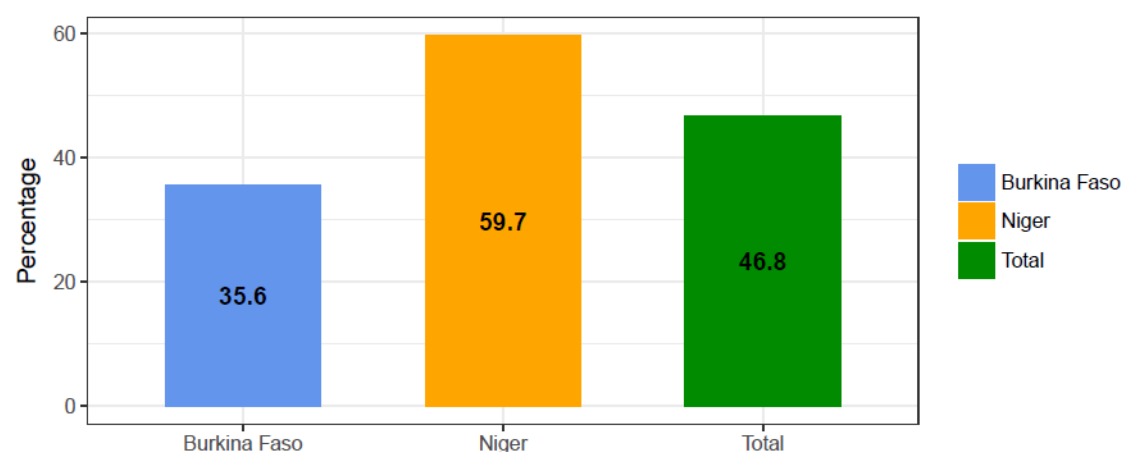


Figure 6-8: Proportion of stunted children under 5 years of age by RISE zone of each country

Figure 6-8 shows the proportion of stunted children under 5 years of age by some key demographics. The key demographics considered are sex and ethnicity of the child as well as marital status and literacy status of the head of the household.

The prevalence of stunting is higher among boys at 52.1%, compared to girls at 41.7%. The difference of 10.4% is highly significant with a p-value smaller than 0.001. The children from the Mossi ethnic group have the lowest prevalence of stunting at 25.7% while the Hausa children are stunted at the highest average of 63.9%. In terms of the marital status of the head of household, the three groups (i.e. monogamous, polygamous and widow) have somewhat similar prevalence of stunting ranging from 41% to 48.3% among their children under 5 years of age. There is no difference in the prevalence of stunting by the literacy status of the head of household.

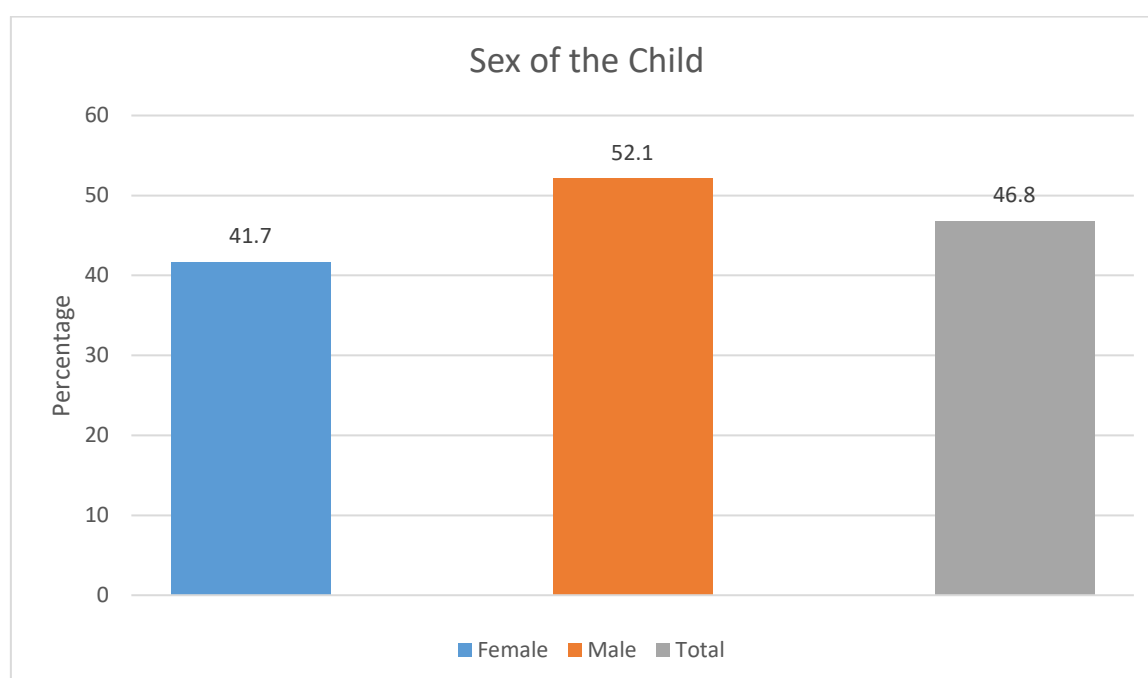


Figure 6-9: Proportion of Stunted Children under 5 Years of Age: Sex of the Child

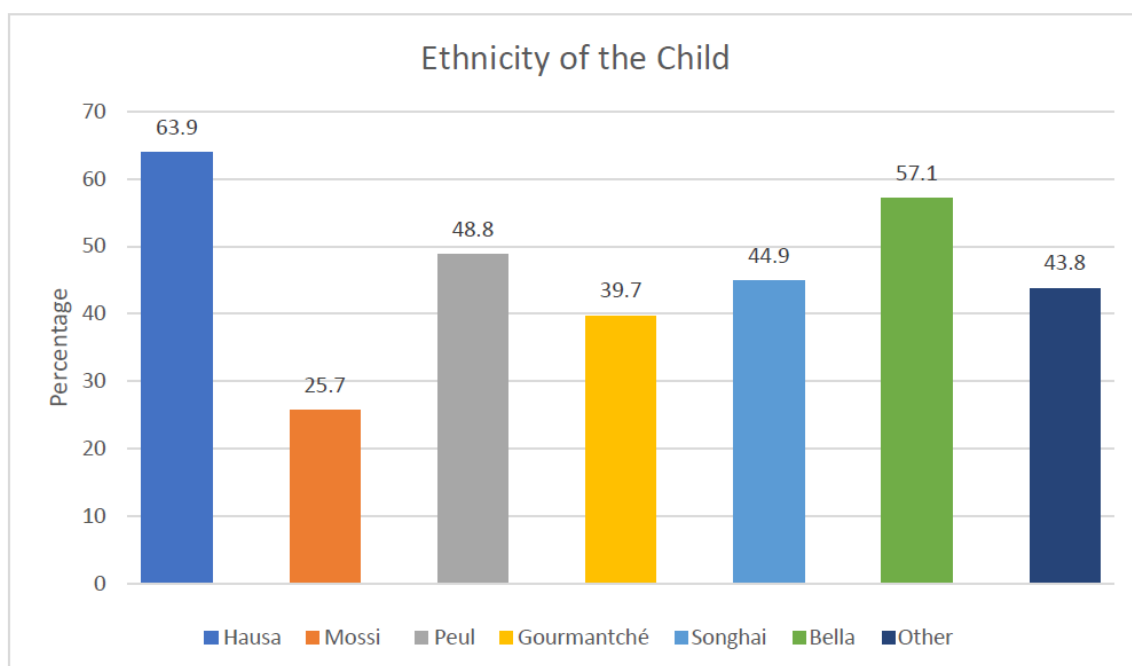


Figure 6-10: Proportion of Stunted Children under 5 Years of Age: Ethnicity of the Child

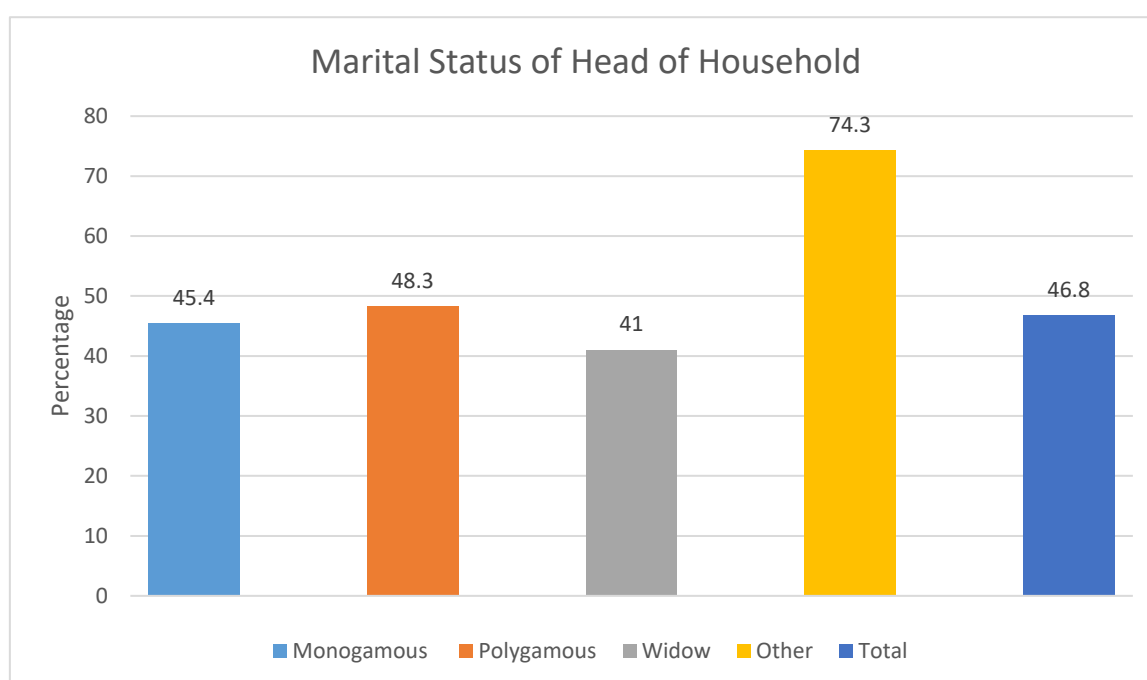


Figure 6-11: Proportion of Stunted Children under 5 Years of Age: Marital Status of Head of Household

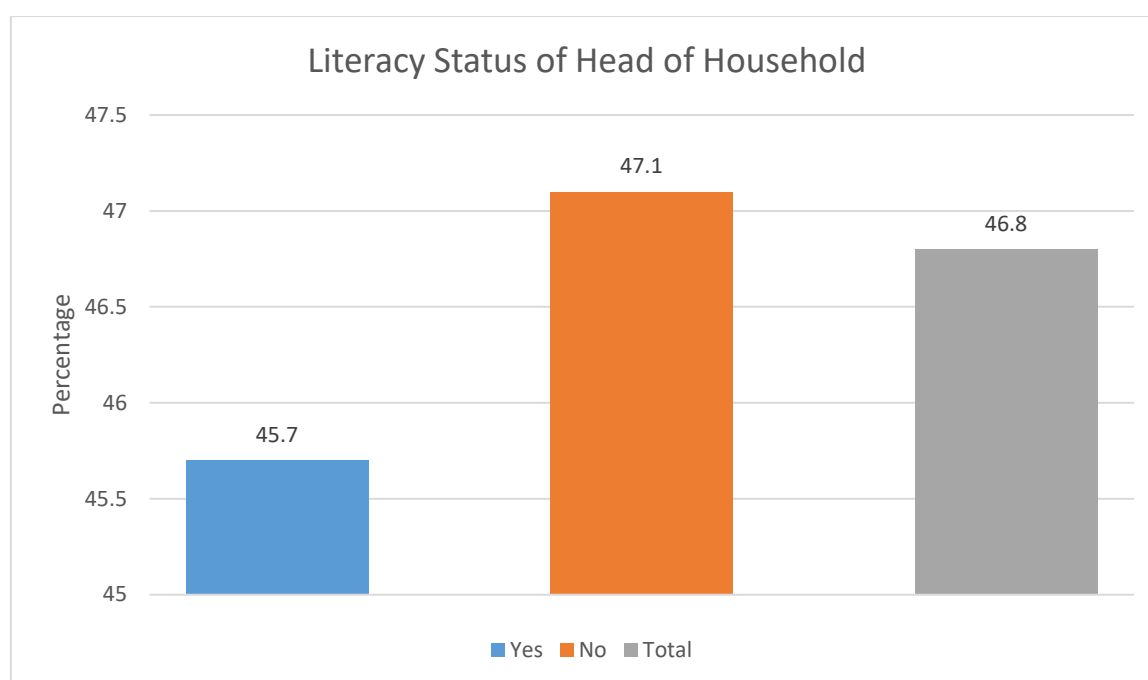


Figure 6-12: Proportion of Stunted Children under 5 Years of Age: Literacy Status of Head of Household

Comparison of Baseline and Midline

Table 6-3 shows that although, the overall RISE zone's decrease in stunting was marginally significant (p-value 0.07), none of the differences observed at the level of the RISE zone or by stratum are statistically significant. Nonetheless, it can be noticed that the reduction in the High stratum is much larger at 4.2% compared to the reduction of 1.7% in the Low stratum.

Table 6-3: T-test comparison between the baseline and midline results by stratum for stunting

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	50.2	46.0	-4.2	0.13
Low	49.3	47.6	-1.7	0.36
Total	49.8	46.8	-3.0	0.07

Figure 6-13 shows similar change patterns in the High and Low strata between the baseline and midline, however the scale was somewhat larger in the High stratum. The DiD test p-value at 0.45 supports the conclusion of similar trends in the High and Low strata. Larger sample sizes in particular in the High stratum could have produced different DiD test results.

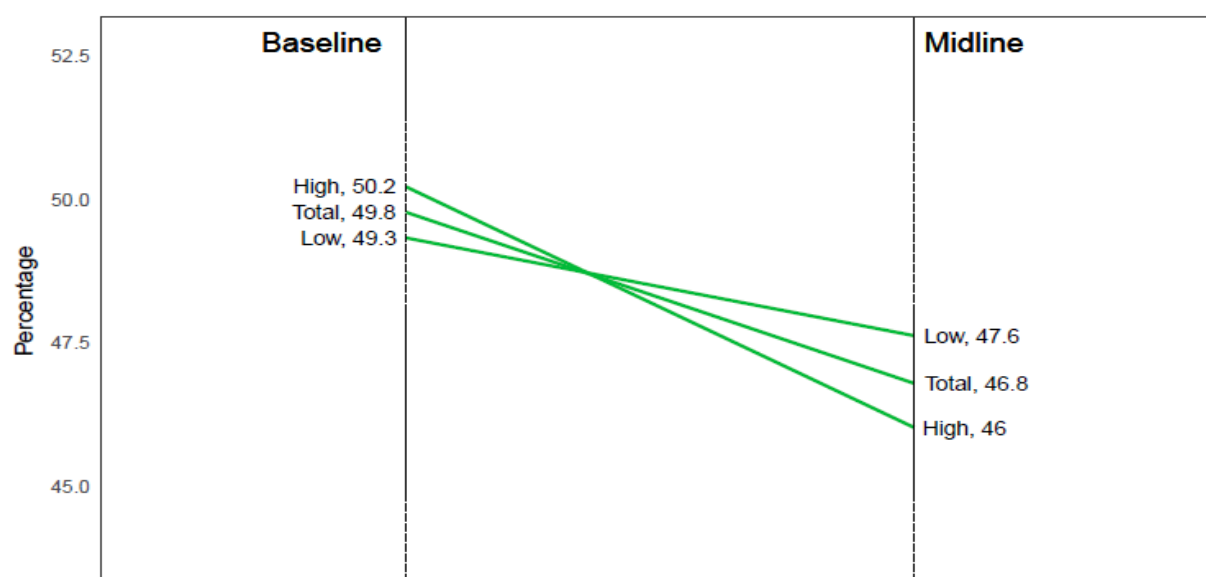


Figure 6-13: Proportion of stunted children under 5 years of age from baseline to midline by stratum

6.4. Underweight among children under 5 (Indicator 12)

Underweight status indicates that a child does not weigh as much as he/she should, based on age. The indicator measures the proportion of children under 5 years of age in the RISE study zone who fall significantly below the global average of the weight standardized score.

In total, the estimated number of children under 5 in the RISE zone is 853,957. The population of children under 5 in the High stratum is estimated at 442,662 while the same population is estimated at 410,095 children in the Low stratum. Therefore, it is estimated that 51.8% of the children under 5 live in the High stratum.

At the midline, there is no meaningful difference in the distribution of underweight children in the High stratum compared to the Low stratum at about 36% of underweight children.

Key Socio-Demographic Disaggregation

The proportion of underweight children under 5 years of age is much higher in the RISE zone of Niger at 43.4%. There is a 13.9% difference in the proportion of underweight children between the RISE zone of Niger and the RISE zone of Burkina Faso. That difference is strongly significant with a p-value smaller than 0.001.

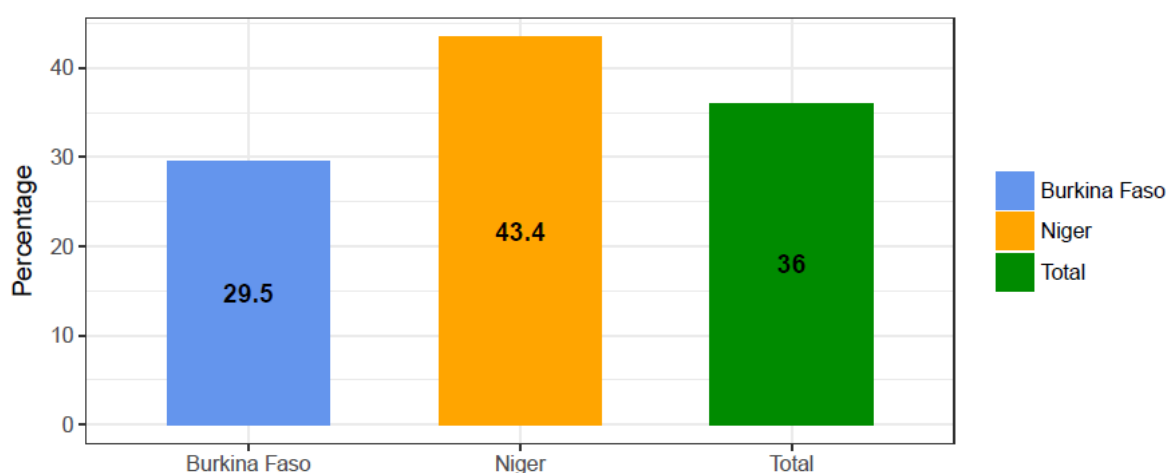


Figure 6-14: Proportion of underweight children under 5 years of age by RISE zone of each country

We also report the proportion of underweight children by some key demographics. The key demographics considered are sex and ethnicity of the child as well as marital status and literacy status of the head of the household.

The prevalence of underweight children is higher among boys with 39%. The difference of 5.9% is significant with a p-value of 0.01. The children from the Mossi ethnic group have the lowest prevalence of underweight at 22.2% while the Hausa children are underweight at the highest average of 45.5%. The Bella and Peul have very similar prevalence rates of underweight at 44.2% and 41.4%, respectively. In terms of the marital status of the head of household, the three groups (i.e. monogamous, polygamous and widow) have similar prevalence of underweight around 36%. There is no difference in the prevalence of underweight children according to the literacy status of the head of household.

Comparison of Baseline and Midline

Table 6-4 shows that the change in the proportion of underweight children under 5 is statistically significant in the Low stratum but not in the High stratum. The total change in the RISE zone (reduction of 3.1%) suggests overall improvement, with a p-value of 0.02, though the improvement is driven largely by the Low exposure areas where RISE activities are not operating.

Table 6-4: T-test comparison between the baseline and midline results by stratum for underweight

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	37.4	35.9	-1.5	0.49
Low	41.0	36.1	-4.8	0.01
Total	39.2	36.0	-3.1	0.02

Figure 6-15 shows the change in the Low stratum and the stagnation in the High stratum between the baseline and midline. The DiD test is not significant with a p-value of 0.23 suggesting that the difference in behavior of the indicator in the High stratum compared to the Low stratum was not large enough to confidently conclude that the Low stratum did better than the High stratum.

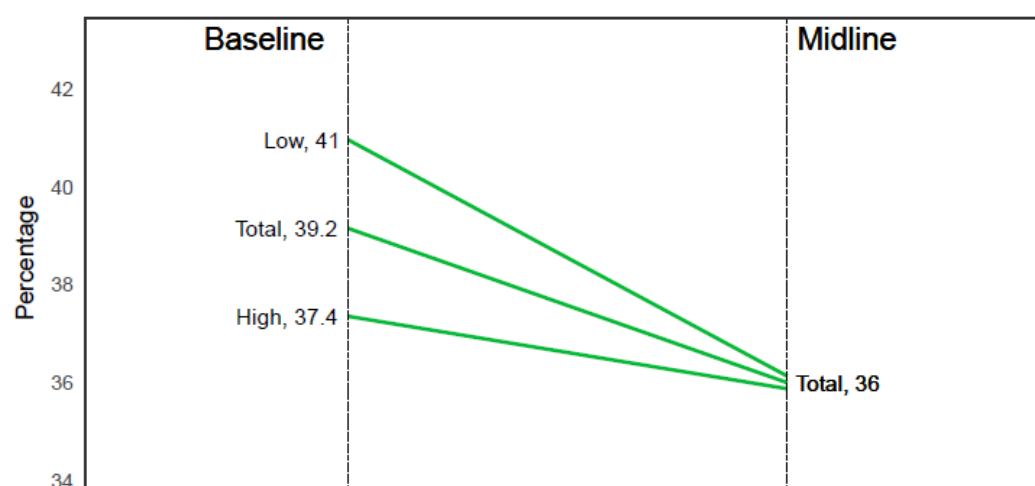


Figure 6-15: Proportion of underweight children under 5 years of age from baseline to midline by stratum

6.5. Improved drinking water sources (Indicator I3)

This indicator measures the share of households that use an improved source of drinking water. Improved sources include: protected well, borehole/tube well, public fountain/tap, own indoor tap, shared outdoor tap, and bottled water. These sources are protected from outside contamination, especially fecal matter.

The graph on the left side of **Figure 6-16** shows the distribution of the households according to presence of improved drinking water sources. The exterior ring represents the Low stratum while the interior ring shows data from the High stratum. The graph shows that there is not much difference in the proportion of households using improved drinking water sources in the High stratum compared to the Low stratum at 68.2% and 69.6%, respectively. The difference is not statistically different.

The graph on the right side of **Figure 6-16** shows that the RISE zone of Burkina Faso has a much higher prevalence of improved drinking water sources at 84% which is almost 34% higher than the RISE zone of Niger. This difference is strongly significant with a p-value smaller than 0.001.

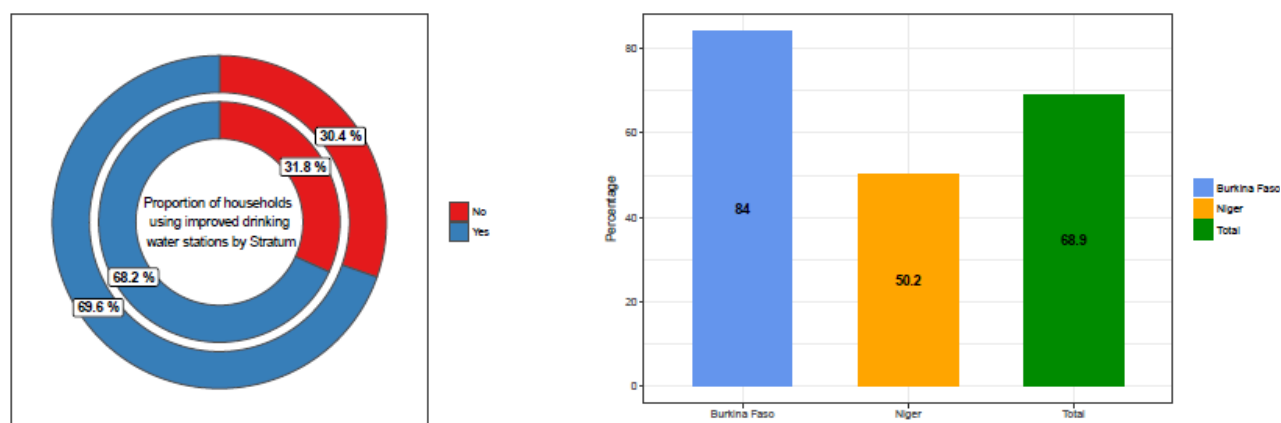


Figure 6-16: Proportion of Households Using improved Drinking Water Sources by Stratum and by RISE Zone of each

Country's Dimensions

Comparison of Baseline and Midline

Table 6-5 shows that neither the increases within stratum nor the increase at the RISE zone level are statistically significant.

Table 6-5: T-test comparison between the baseline and midline results by stratum for improved drinking water sources

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	67.8	68.2	0.4	0.89
Low	64.9	69.6	4.7	0.10
Total	66.4	68.9	2.5	0.23

Figure 6-17 shows the changes in each stratum and for the RISE zone between the baseline and midline. The changes were not significant and similarly the DiD test is not significant with a p-value of 0.31.

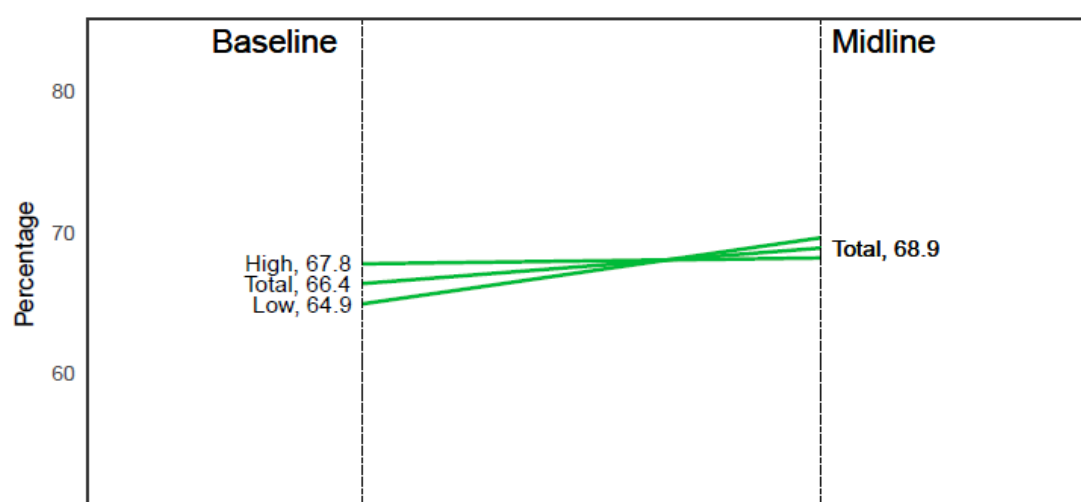


Figure 6-17: Proportion of households using improved drinking water sources from baseline to midline by stratum

6.6. Soap-and-water hand washing stations (Indicator I4)

This indicator measures the share of households using a hand-washing station with soap and water. A hand-washing station with soap and water is a critical tool for minimizing contamination of foods. Avoiding subsequent illnesses from contamination constitutes an important step in building resilience at the household level.

The graph on the left side of **Figure 6-18** shows the distribution of households according to presence of hand-washing stations with soap and water. The exterior ring represents the Low stratum while the interior ring shows data from the High stratum. The graph shows that the proportion of households using a hand-washing station with soap and water is much smaller in the Low stratum at 1.8% compared to a proportion of 7.8% in the High stratum. The difference of 6% is statistically significant at 0.02.

The graph on the right side of **Figure 6-18** shows that the RISE zone of Burkina Faso has a much lower proportion of households using a hand-washing station with soap and water at 0.6%. Note that the proportion of 0.6% corresponds to only 11 households in the sample. In the RISE zone of Niger, about 10.2% of the households have a hand-washing station with soap and water. The difference between the two RISE zone is highly statistically significant with a p-value smaller than 0.001.

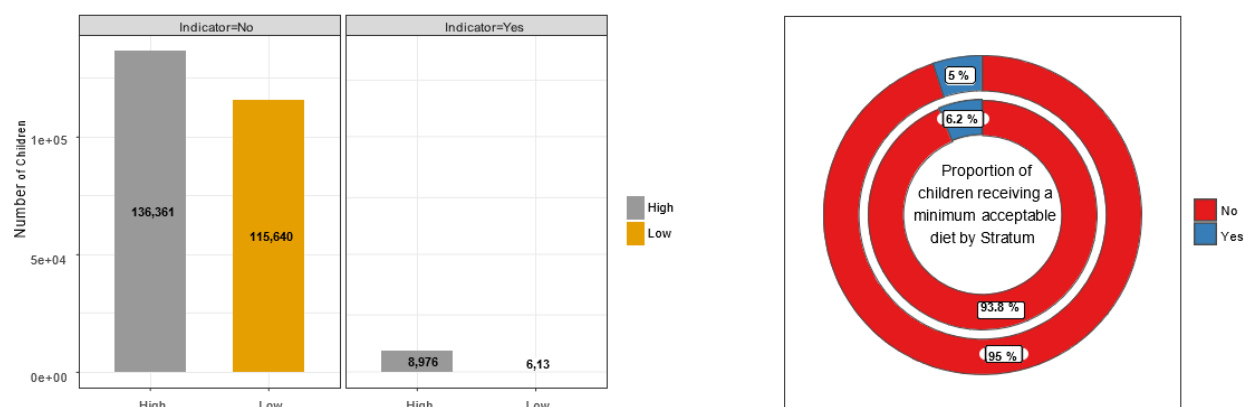


Figure 6-18: Proportion of Households Using Soap and Water Hand Washing Station by Stratum and by RISE Zone of Each Country's Dimensions

Comparison of Baseline and Midline

Table 6-6 shows that the reduction in the High stratum was not significant while the reduction in the Low stratum was significant.

Table 6-6: T-test comparison between the baseline and midline results by stratum for hand washing station

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	9.6	7.8	-1.8	0.54
Low	4.4	1.8	-2.6	0.04
Total	7.0	4.8	-2.3	0.15

The figure below shows the changes in each stratum and for the RISE zone between the baseline and midline.

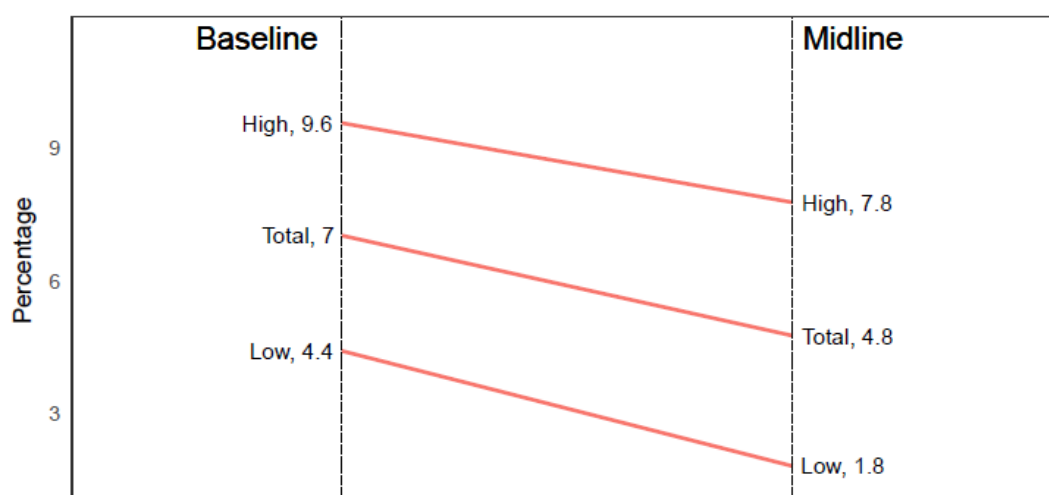


Figure 6-19: Proportion of households using soap and water hand washing station from baseline to midline by stratum

6.7. Improved sanitation systems (Indicator I5)

This indicator measures the share of households using an improved sanitation system. The presence of a sanitary facility for human waste dramatically reduces contamination and exposure to illness, thereby helping to avert unnecessary expenditures and reduced productivity at the household level. In these ways, improved sanitation systems strengthen resilience.

The graph on the left side of **Figure 6-20** shows the distribution of the households according to presence of an improved sanitation system. The exterior ring represents the Low stratum while the interior ring shows data from the High stratum. The graph shows that the proportion of households using an improved sanitation system is much smaller in the Low stratum at 14.5% compared to a proportion of 24.3% in the High stratum. The difference of 9.8% is not statistically significant ($p=0.13$).

The graph on the right side of **Figure 6-20** shows that the RISE zone of Burkina Faso has a much higher proportion of households using an improved sanitation system at 26.5%. In the RISE zone of Niger, about 10.8% of the households have an improved sanitation system. The difference between the two parts of the RISE zone is statistically significant with a p-value of 0.01.

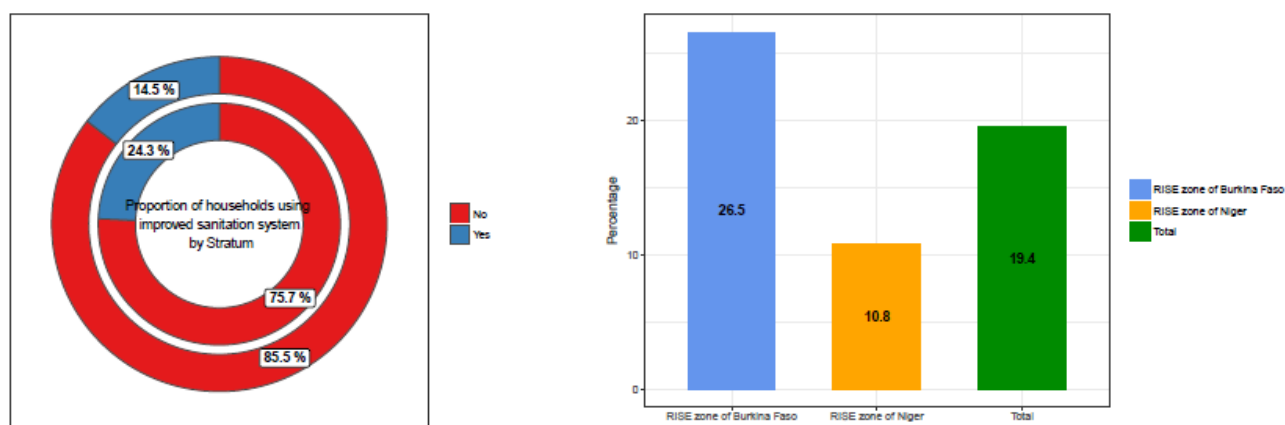


Figure 6-20: Proportion of households using an improved sanitation system by stratum and RISE zone of each country

Key Socio-Demographic Disaggregation

Figure 6-21 shows the proportion of households using an improved sanitation system by some key demographics. The difference of 7.0% observed between the households headed by a male and those headed by a female is not statistically significant with a p-value of 0.06.

The three main categories of marital status, i.e. monogamous, polygamous, and widow, have similar proportion of households using an improved sanitation system. The values are not significantly different and are close to the overall RISE zone proportion of 19.4%.

The average proportion of households headed by a literate person using an improved sanitation system is at 29.7% and is higher than the average proportion in the remaining households. The difference is about 13.0% and is statistically significant with a p-value smaller than 0.001.

The Mossi ethnic group has the highest average proportion at 36.9% followed by the Gourmantché at 29.1%. The Bella group has the lowest proportion at 5.4%.

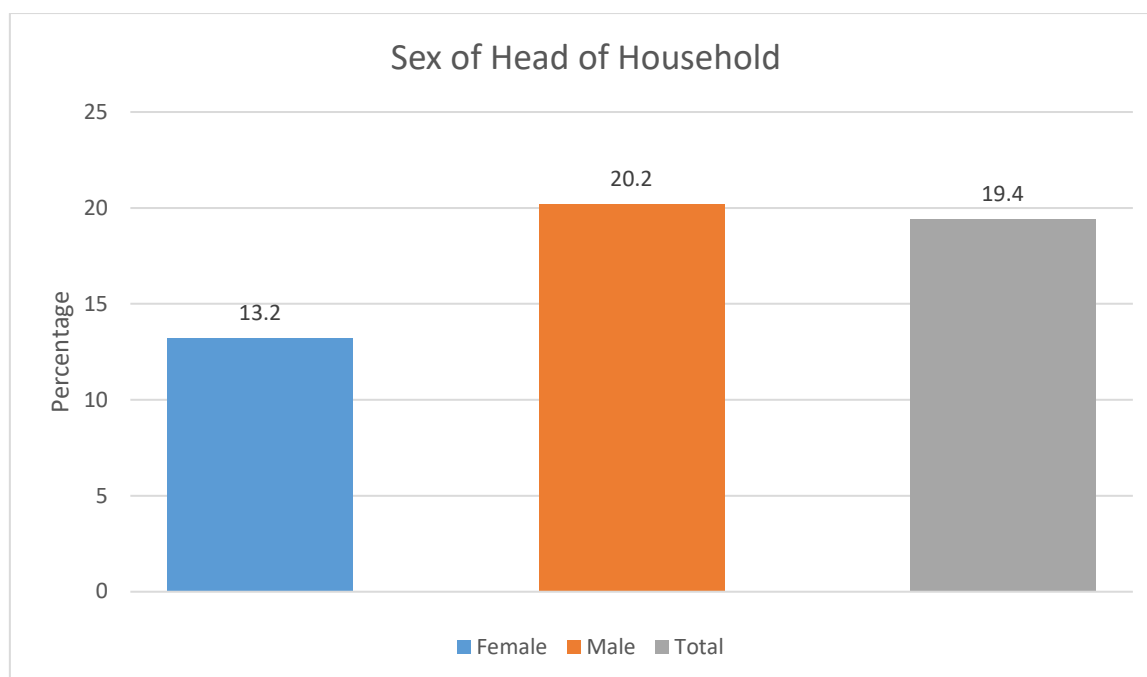


Figure 6-21: Proportion of households using an improved sanitation system: Sex of head of household

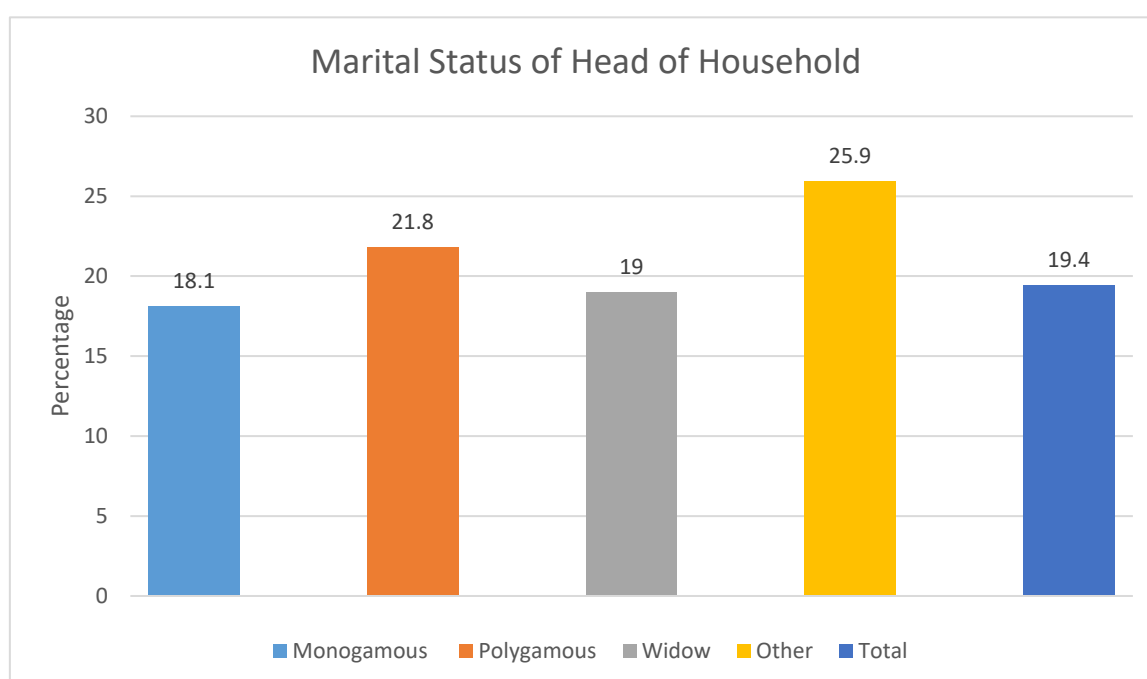


Figure 6-22: Proportion of households using an improved sanitation system: Marital status of head of household

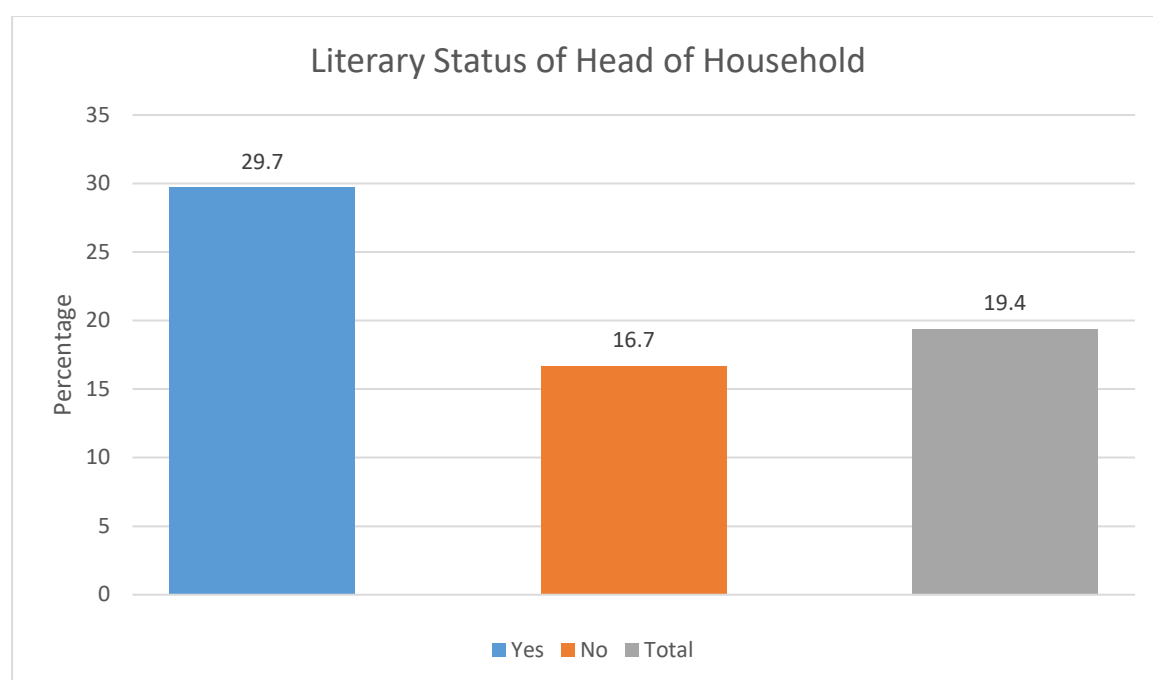


Figure 6-23: Proportion of households using an improved sanitation system: Literary status of head of household

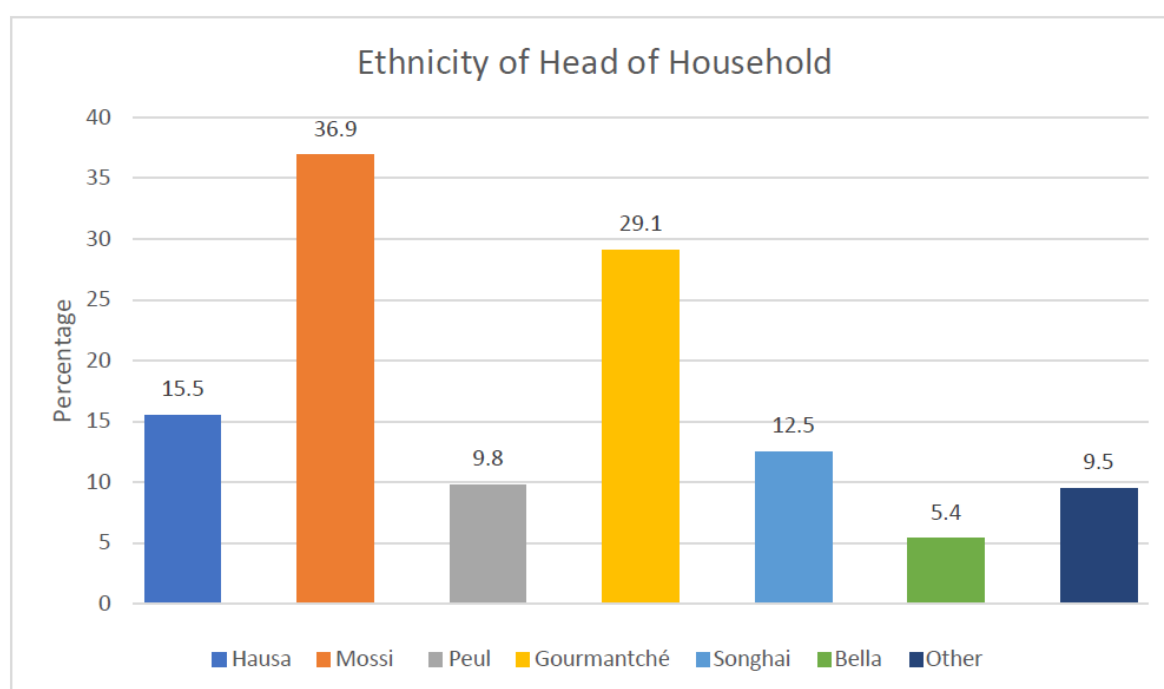


Figure 6-24: Proportion of households using an improved sanitation system: Ethnicity of head of household

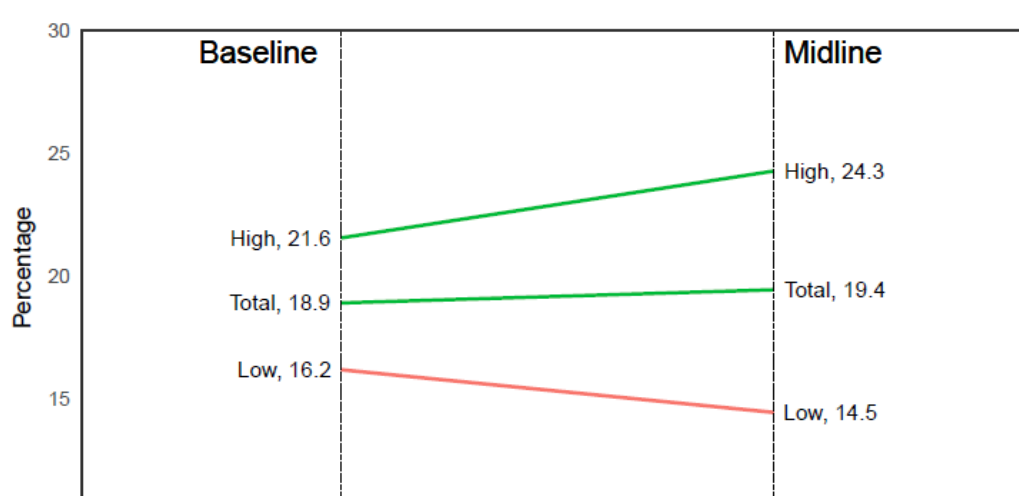
Comparison of Baseline and Midline

Table 6-7 shows that neither the increase noted in the High stratum, nor the reduction observed in the Low stratum were not significant.

Table 6-7: T-test comparison between the baseline and midline results by stratum for improved sanitation system

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	21.6	24.3	2.7	0.42
Low	16.2	14.5	-1.7	0.31
Total	18.9	19.4	0.5	0.78

The figure below shows the changes in each stratum and for the RISE zone between the baseline and midline. One question that could be asked is whether the difference in trend between the High and Low strata are different enough to attribute some of the progress in the High stratum to the RISE interventions. Unfortunately, the DiD test was not significant with a p-value of 0.79, and therefore does not support that the change is attributable to RISE interventions.

*Figure 6-25: Proportion of households using an improved sanitation system by stratum*

6.8. Household dietary diversity (Indicator I6)

Household dietary diversity is a score that indicates the extent to which members of the household consume food from a variety of critical food groups.

It accounts for consumption in the previous 24 hours of 12 different food categories, by any member of the household. The food categories include: cereals, roots and tubers, vegetables, fruits, meat and poultry, eggs, fish and seafood, legumes and nuts, milk, oil, sugar, and miscellaneous (condiments, spices, etc.). The guidelines are based on the definition for dietary diversity developed by the Food and Agriculture Organization of the United Nations.

NB: The household dietary diversity score ranges from 0 to 12 and is discrete. In this analysis, it is largely treated as a continuous variable, for instance by computing average values that may fall between discrete points. Also, applying statistical methods such as t-test that assume normal or t distributions for the variable of interest may not be fully applicable. Indeed, the score only takes 12 discrete values which is hardly generalizable to a normal distribution.

Midline Findings

Table 6-8 shows very similar average household dietary diversity scores for the High and

Low strata at 4.9 and 5.1, respectively. The difference between the two strata is not significant with a p-value of 0.52.

Table 6-8: Average household dietary diversity score by stratum

Stratum	Estimate	StdErr	LCI (95%)	UCI (95%)	DEFF
High	4.9	0.23	4.5	5.4	10.6
Low	5.1	0.14	4.8	5.4	5.6
Total	5.0	0.14	4.7	5.3	9.1

Key Socio-Demographic Disaggregation

The RISE zone of Burkina Faso has a higher average household dietary diversity score at 5.4 compared to 4.5 in the RISE zone of Niger. The difference was significant with a p-value smaller than 0.001.

Figure 6-26 shows the average household dietary diversity score along several socio-demographic dimensions. The average score in households headed by a female was 4.5, while for the households headed by a male it was 5.1. The difference of 8.8% is strongly significant with a p-value of 0.002.

The three main categories of marital status, i.e. monogamous, polygamous, and widow, have similar average household dietary diversity scores of about 5.

The households headed by a person who cannot read and write have a smaller average dietary diversity score of 4.8 compared to 5.6 for the households headed by a literate person. The difference of 0.8 is strongly significant with a p-value smaller than 0.001.

The Bella and the Hausa ethnic groups have the lowest average score at 4.6 and 4.7, respectively. The Mossi ethnic group has the higher score at 5.4 followed by the Gourmantché and the Songhai at 5.2.

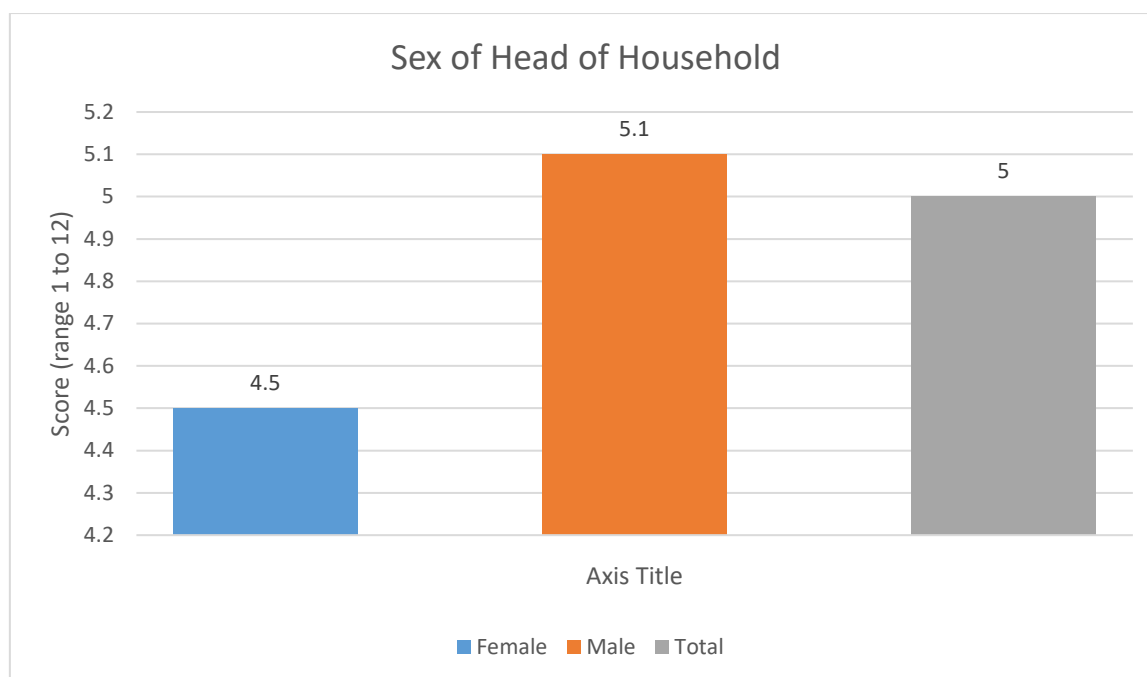


Figure 6-26: Average Household Dietary Diversity Score: Sex of Head of Household

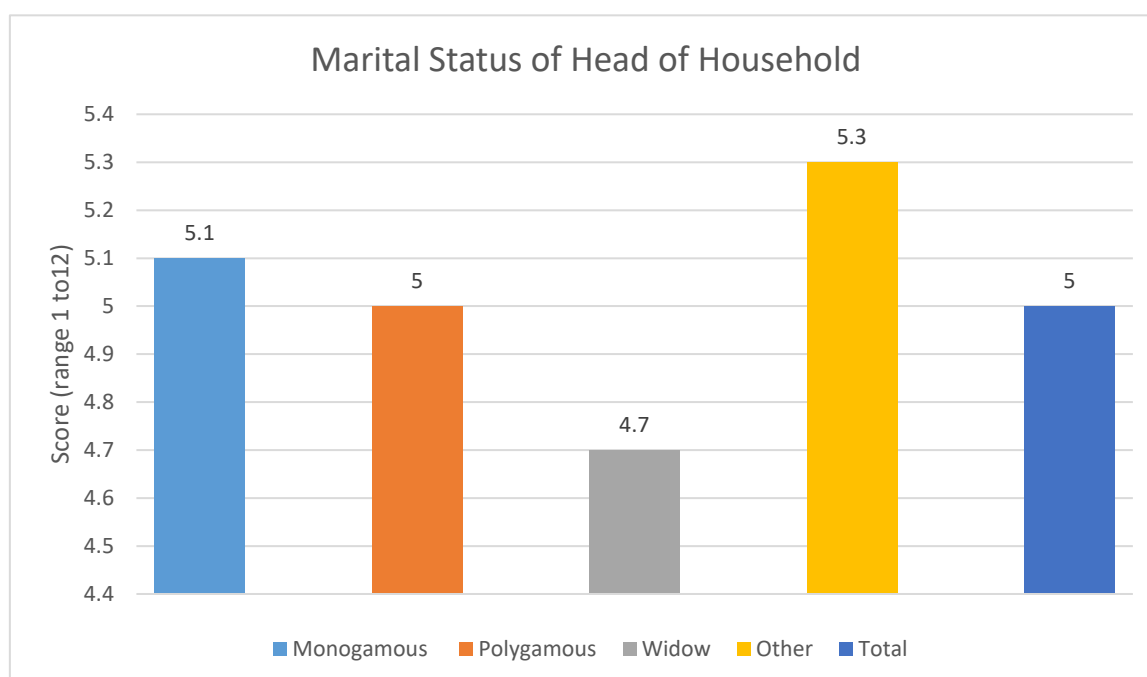


Figure 6-27: Average Household Dietary Diversity Score: Marital Status of Head of Household

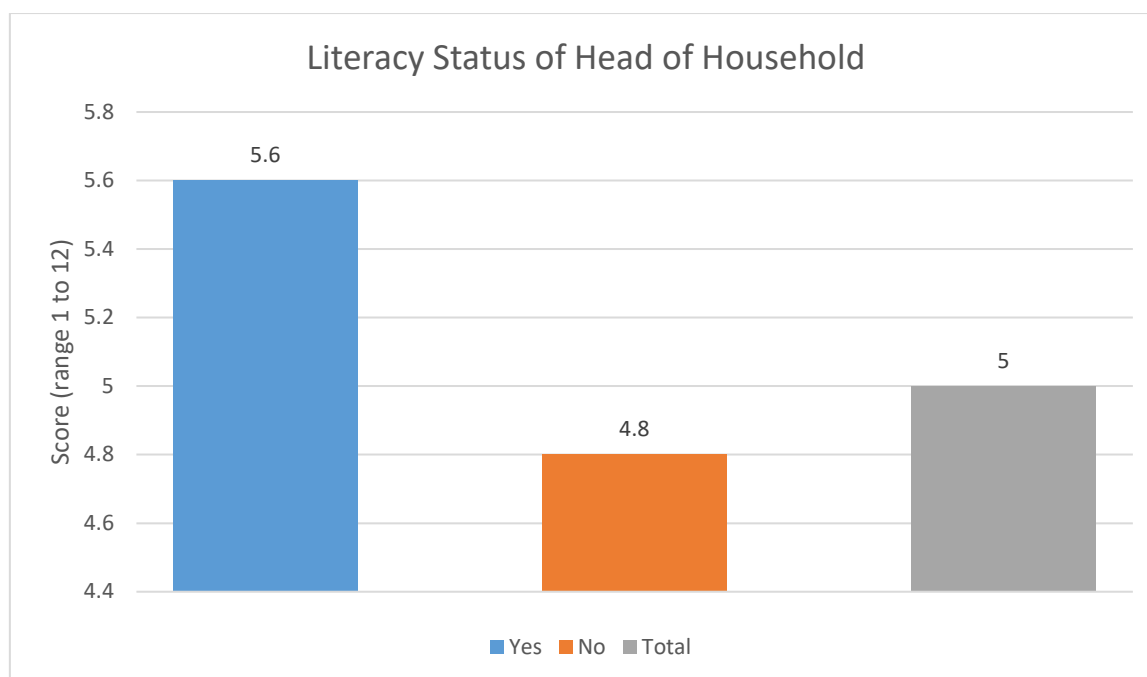


Figure 6-28: Average Household Dietary Diversity Score: Literacy Status of Head of Household

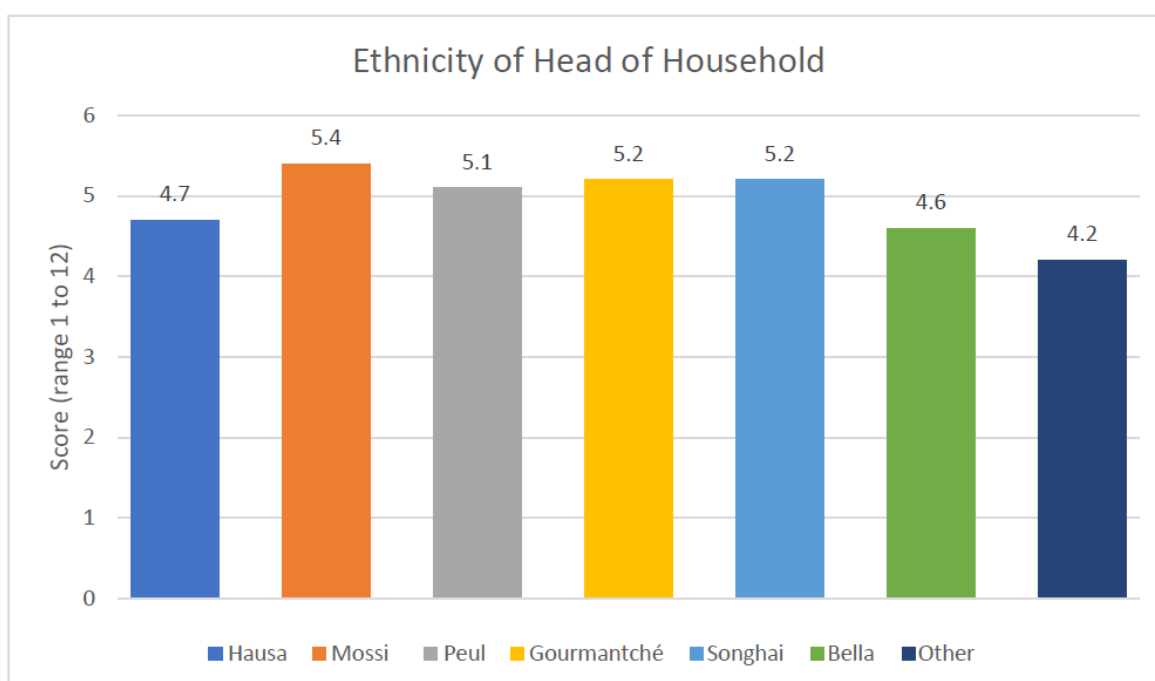


Figure 6-29: Average Household Dietary Diversity Score: Ethnicity of Head of Household

Comparison of Baseline and Midline

Table 6-9 shows that none of the changes within stratum and at the RISE zone were significant.

Table 6-9: T-test comparison between the baseline and midline results by stratum dietary diversity

Stratum	Baseline Est.	Midline Est.	Difference	P-Value

High	5.1	4.9	-0.2	0.26
Low	5.1	5.1	0.0	0.86
Total	5.1	5.0	-0.1	0.60

The table shows different trends between the High and Low strata. However, the DiD test p-value is 0.60, meaning the difference in trends is not significant.

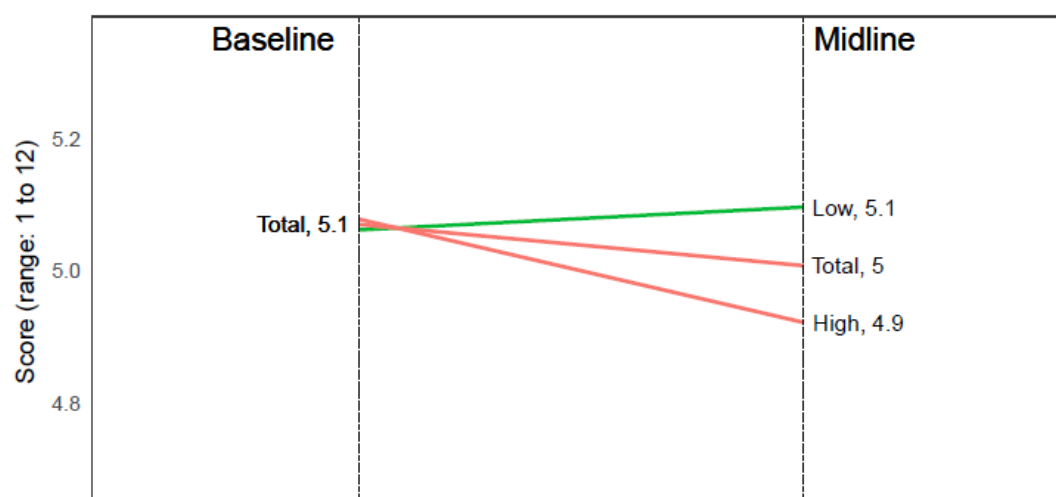


Figure 6-30: Average household dietary diversity score from baseline to midline by stratum

6.9. Minimum acceptable diet (MAD) among children 6-23 months of age (Indicator 17)

The Minimum acceptable diet (MAD) is a global dietary standard for children aged 6-23 months. It addresses two principles: the frequency of feedings and the diversity of diet. Frequency generally requires that children eat at least two meals per day, three for those over six months of age. Diversity requires at least four food groups. Breastfeeding is also taken into account.

In total, the estimated number of children 6-23 months of age in the RISE zone is 267,111. The population of children 6-23 months in the High stratum is estimated at 145,337 while the same population is estimated at 121,774 children in the Low stratum. Therefore, it is estimated that 54.4% of the children 6-23 months of age live in the High stratum. The difference between these two estimated numbers is not statistically significant.

Key Socio-Demographic Disaggregation

The prevalence of minimum acceptable diet (MAD) among children 6-23 months of age is much higher in the RISE zone of Niger at 8.7%. There is a 5.6% difference in the prevalence of MAD between the RISE zone of Niger and the RISE zone of Burkina Faso (see **Figure 6-31**). That difference is significant, however, with a p-value of 0.04.

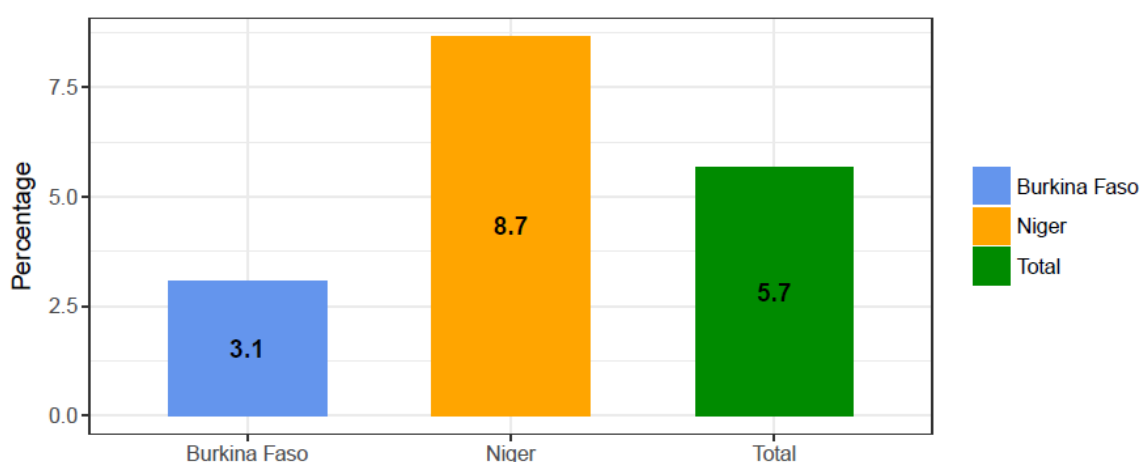


Figure 6-31: Proportion of children receiving a minimum acceptable diet (MAD) by RISE zone of each country

Given the small sample size of children receiving a minimum acceptable diet, it is not statistically justified to disaggregate the estimates by demographic variables with a large number of categories such as ethnicity. The disaggregation by sex of the child and literacy status of the head of household did not reveal any significant differences in the prevalence of MAD.

Comparison of Baseline and Midline

Table 6-10 shows that the change is not significant for either stratum or for the overall RISE zone.

Table 6-10: T-test comparison between the baseline and midline results by stratum for MAD

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	7.2	6.2	-1.1	0.80
Low	5.3	5.0	-0.3	0.86
Total	6.3	5.7	-0.7	0.78

Figure 6-32 shows the change in the High stratum and the stagnation in the Low stratum between the baseline and midline. The DiD test is not significant with a p-value of 0.87.

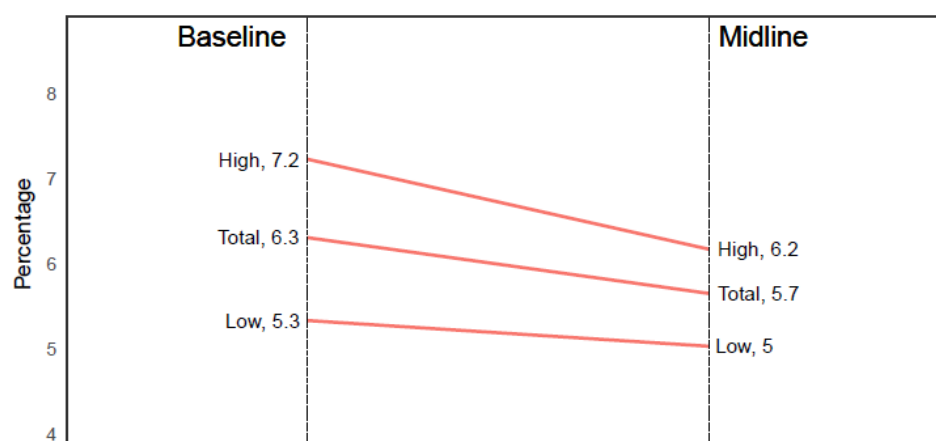


Figure 6-32: Proportion of children receiving a minimum acceptable diet (MAD) from baseline to midline by stratum

6.10. Exclusive breastfeeding of children under 6 months of age (Indicator 18)

Exclusive breastfeeding in the first months of life has proven important for the long-term health of children. This indicator measures the proportion of children under 6 months of age who are exclusively breastfed. Note that in the midline sample, there were only 307 respondent children under 6 months; among them 116 were exclusively breastfed. Given the small sample sizes, disaggregation must be considered carefully.

In total, the estimated number of children under 6 months of age living in the RISE zone is 73,938. The population of children under 6 months in the High stratum is estimated at 43,071 while the same population is estimated at 33,867 children in the Low stratum. Therefore, it is estimated that 56.0% of the children under 6 months of age live in the High stratum.

The data used to derive the exclusive breastfeeding indicator were not complete or reliable for one child. Hence, the information of that child was not incorporated in the exclusive breastfeeding analysis of this section.

The graph on the left side of **Figure 6-33** shows the estimated number of children receiving exclusive breastfeeding by stratum. In the High stratum the estimated number of children receiving exclusive breastfeeding is 19,803 while the corresponding number in the Low stratum is 10,724.

The graph on the right side of **Figure 6-33** shows the distribution of children under 6 months of age according to their exclusive breastfeeding status. The exterior ring represents the Low stratum while the interior ring shows data from the High stratum. The graph shows that there is a difference of 14.4% in the prevalence of exclusive breastfeeding between the two strata (i.e. 31.7% in the Low stratum versus 46.1% in the High stratum). That difference was marginally significant with a p-value of 0.056. A bigger sample size would probably show a significant difference.

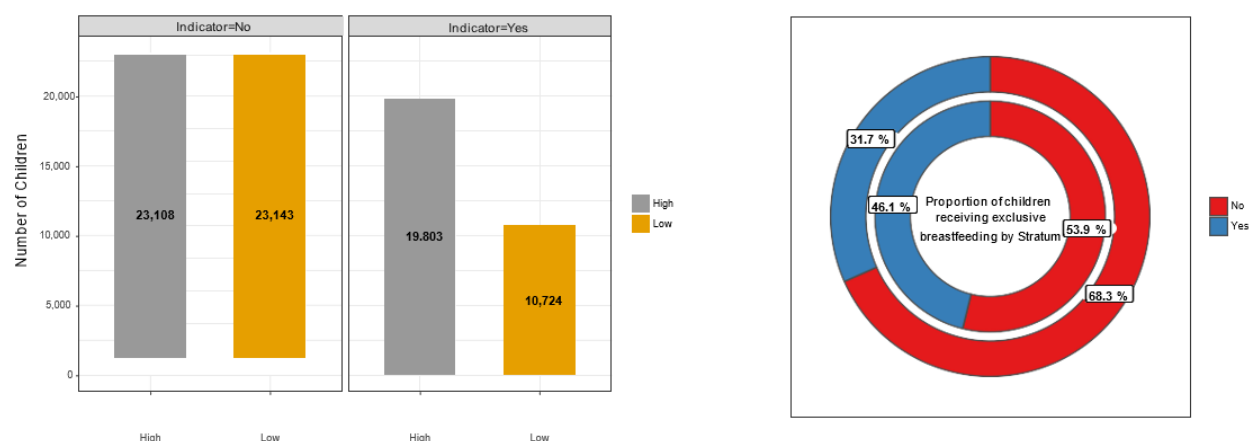


Figure 6-33: Exclusive breastfeeding: count and proportion by stratum

Key Socio-Demographic Disaggregation

As shown in **Figure 6-34**, the prevalence of exclusive breastfeeding among children under 6 months of age is lower in the RISE zone of Niger at 34.0% compared to 46.2% in the RISE zone of Burkina Faso. The difference of 12.2% is not statistically significant, however, given the low precision associated with the small sample sizes (i.e. 161 children under 6 months in the RISE zone of Burkina Faso sample and 143 in the RISE zone of Niger sample).

The small sample size of children under 6 months of age is inadequate to allow disaggregation the estimates by demographic variables with a large number of categories such as ethnicity. The disaggregation by sex of the child and literacy status of the head of household did not show any significant differences in the prevalence of exclusive breastfeeding.

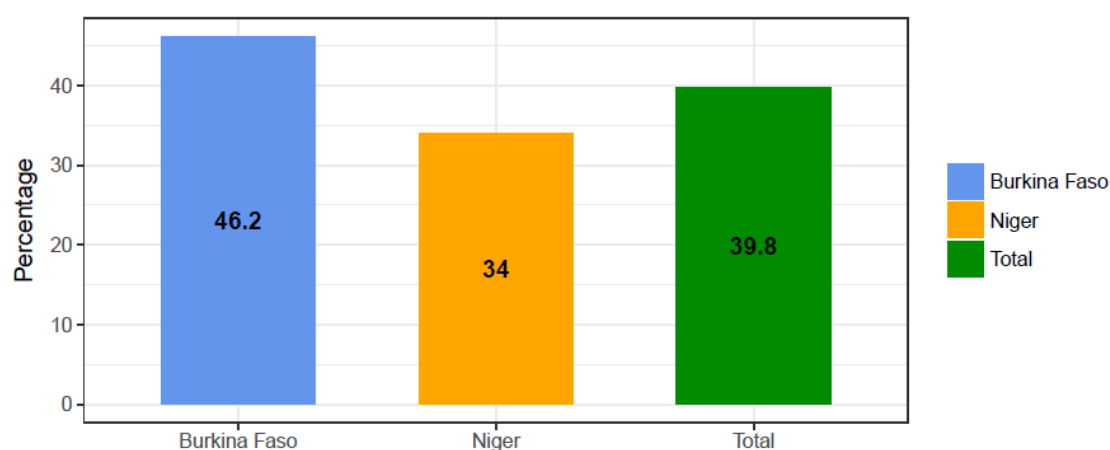


Figure 6-34: Proportion of children receiving exclusive breastfeeding by RISE zone of each country

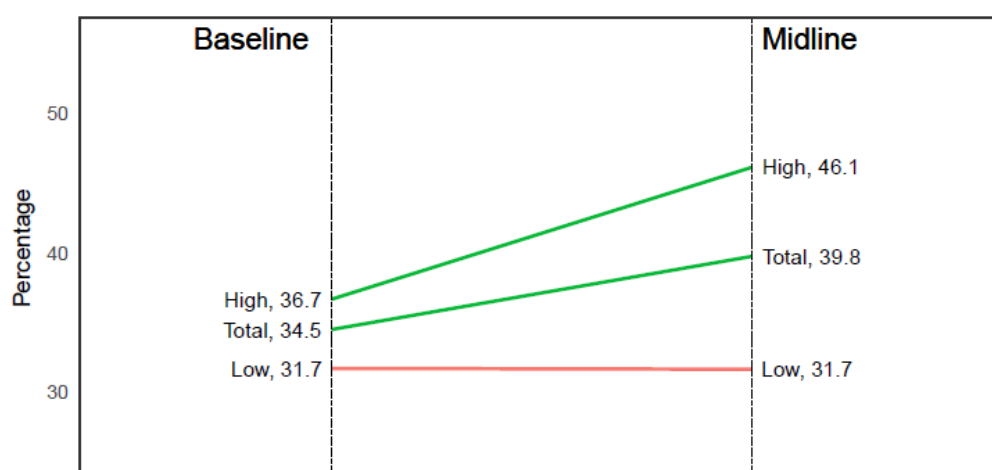
Comparison of Baseline and Midline

Table 6-11 shows that the changes are not significant for either of the strata, nor for the overall RISE zone.

Table 6-11: T-test comparison between the baseline and midline results by stratum for exclusive breastfeeding

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	36.7	46.1	9.5	0.16
Low	31.7	31.7	-0.1	0.99
Total	34.5	39.8	5.2	0.26

Figure 6-35 shows the change in the High stratum and the stagnation in the Low stratum between the baseline and midline. The DiD test shows that the results trend in the desired direction, but that the change is not statistically significant, with a p-value of 0.29.

*Figure 6-35: Proportion of children receiving exclusive breastfeeding from baseline to midline by stratum*

6.1.1. Propensity score matching for health and nutrition indicators

Only three indicators i.e. GAM, underweight and exclusive breastfeeding were retained for the PSM analysis because their p-values were under 0.30. Each of the children in the High stratum with non-missing values (i.e. 1,294 for baseline and 1,284 for midline) for the predictors (i.e. sex of the child, marital status, literacy, and ethnicity of the head of the household) was matched to the nearest children in the Low stratum. This procedure was conducted for both the baseline and midline samples. The DiD test was applied to the resulting combined sample.

Table 6-12 shows that the p-value of the test of difference increased for GAM and stunting while stable for exclusive breastfeeding. Based on the threshold of 0.05, none of these tests were significant from the beginning. Hence, the tests shown below are provided for information only.

Table 6-12: Propensity score matching for the GAM, prevalence of stunting and prevalence of breastfeeding.

Indicator	DiD p-value	DiD p-value after PSM
GAM	0.15	0.40
Stunting	0.23	0.41
Exclusive breastfeeding	0.29	0.29

7. Cross-Cutting Components

In addition to the goals related to Livelihoods, Governance, and Health and Nutrition, RISE's resilience enhancement efforts call for attention to a number of cross-cutting issues. These issues arise across different sectors of development and humanitarian assistance. Addressing them helps to reinforce collaborative learning and shared responsibility for resilience building. One of the key cross-cutting issues is Gender. Existing gender disparities in access to and control of assets (physical, financial, human, social and natural), decision making, and time use reduce the ability of individuals, households, villages and systems in targeted agro-pastoralist and marginal agriculture livelihood zones to mitigate, adapt to and recover from shocks and stresses. Targeted efforts that engage both men and women to reduce these disparities and shift socio-political and socio-cultural norms that disempower girls and women are essential not only for gender equity, but also for the achievement of the program's resilience aims.

Thus, the specific indicators used to track improvements in cross-cutting issues through the baseline and midline surveys focus on gender. The three indicators are:

- Indicator 5: Women's empowerment in agriculture index (subset: Production and Resources)
- Indicator 19: Proportion of the target population reporting increased agreement that males and females should have equal access to social, economic, and political opportunities
- Indicator 20: Percentage of women reporting effective participation in household decision making around production and income generation

The Women's empowerment in agriculture index (WEAI) is a standard measure developed by USAID FTF, IFPRI, and the Oxford Poverty and Human Development Initiative using five domains of empowerment (5DE); it is used by numerous international organizations to track women's empowerment. In this case, RISE uses a modified WEAI, at USAID's request, which focuses on a subset of the broader measure: two domains, Production and Resources, are used instead of the standard five, and the shares that each of those domains contributes to the WEAI score are adjusted accordingly.

- One challenge that arises in tracking improvements related to gender roles and equality is the potential for social desirability bias. A normative preference among donors for gender equality is increasingly well understood in the region (see the RISE Midterm Performance Assessment Phase II Qualitative Report), so respondents (both men and women) may become more adept at expressing preferences for gender equality that do not match their true beliefs or behaviors. To address this challenge, the survey includes a number of different survey questions that might tap into the issue in diverse ways.

Overview of Results: In the Cross-cutting Gender Equality category, we did not find any evidence that the RISE activities have had a positive effect to this point. The Women's Empowerment in Agriculture Index improved more in the Low exposure areas than in the

High exposure areas, and the proportion of respondents supporting equal access for females and male declined significantly in both the High and Low exposure areas.

7.1. Women's empowerment in agriculture index (Indicator 5)

This indicator is an adaptation of a common tool that measures the opportunities for women to gain control over their own lives through empowerment in the agricultural sector. The modified WEAI measure used for this evaluation counts women as empowered if they achieve a threshold of autonomy and decision-making power in Production and Resources, and it also accounts for the activities that other women achieve even if they do not reach the threshold of empowerment.

The weights assigned to the Production and Resources domains using the standard WEAI are each 20 percent of the total. Because they are weighted equally, we maintain those relative weights, thus assigning new weights of 50 percent to each of these domains (since they are the only two dimensions included in this modified version of WEAI). The sub-components within each domain are weighted equally, which means that Decision Making and Autonomy—the two sub-components of Production—are each worth 25 percent, and the three Resources sub-dimensions (Ownership, Purchases, and Credit Access) are each worth 16.7 percent.

The standard WEAI protocols indicate that a woman is empowered if she reaches achievement on 80 percent of the weighted indicators. Because this modified version has fewer indicators and thus constitutes a blunter measure, we use a threshold of 75 percent. Thus, a surveyed woman must reach achievement on some of the five sub-components, such that the weights assigned to those sub-components in which she is successful account for 75 percent of the weighting. The modified WEAI score, like the standard WEAI, captures the share of women who reach this empowerment threshold, plus the average level of achievement on the five sub-components for the women who do not reach the threshold. Finally, the modified WEAI used here does not include a contribution from the Global Parity Index, since the relevant questions were not posed to both men and women; 100 percent of the modified WEAI comes from the empowerment dimensions. See the annex for more information.

Note that in comparing the baseline to midline results, we calculated the WEAI scores at the village level, so the analyses that follow use village-level aggregations of the index. We can also report that the point estimates for the WEAI score aggregated from individual-level empowerment to the entire High and Low exposure areas at the midline are 66.4 and 62.7, respectively. At the endline stage, we will be in position to analyze the index in High vs. Low strata or by any alternative disaggregation.

Midline Findings

Table 7-1 shows that the average village level WEAI score is 70.6 for the overall RISE zone. The WEAI score is 71.3 in the Low stratum compared to 69.7 in the High stratum. The difference of 1.6 is not statistically significant with a p-value of 0.72. The average village level WEAI is higher in the RISE zone of Niger at 78.7 compared to 54.9 in the RISE zone of Burkina Faso. The difference of 23.8 is highly significant with a p-value less than 0.001.

Table 7-1: Average village level WEAI score by stratum and RISE zone of each country

Domain	Estimate	StdErr	LCI (95%)	UCI (95%)
Total				
Total	70.6	2.28	66.2	75.1
Stratum				
High	69.7	3.17	63.5	75.9
Low	71.3	3.13	65.2	77.4
RISE zone				
BURKINA FASO	54.9	1.52	51.9	57.9
NIGER	78.7	1.99	74.8	82.6

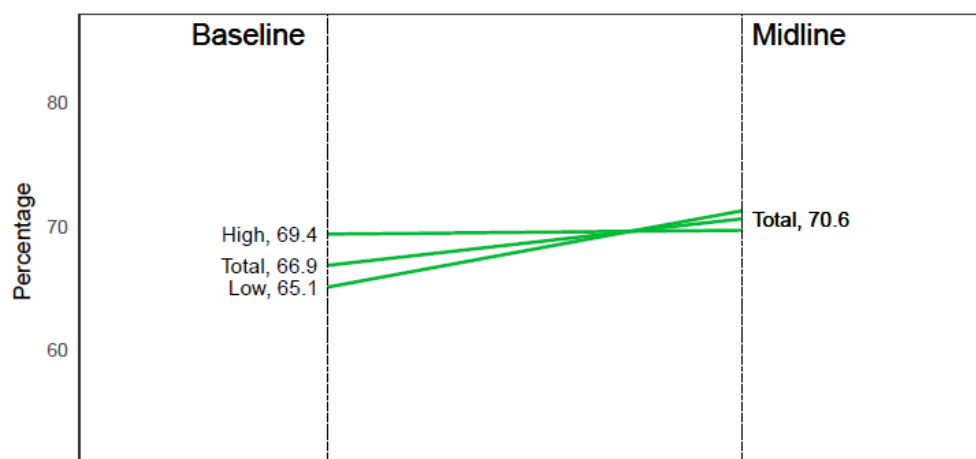
Comparison of the Baseline and Midline

Table 7-2 shows that the change in the High stratum was not statistically significant. However, the changes in the Low strata and at the overall RISE zone were significant.

Table 7-2: T-test comparison between baseline and midline results by stratum for WEAI

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	69.4	69.7	0.3	0.91
Low	65.1	71.3	6.2	0.02
Total	66.9	70.6	3.8	0.05

Figure 7-1 shows a larger increase in the Low stratum. However, the increase in the Low stratum was not sufficiently higher compared to the High stratum to support a statistically significant change in trend. The p-value of the DiD test was 0.12.

*Figure 7-1: Average village level WEAI score from baseline to midline by stratum*

7.2. Support for equal access for males and females (Indicator I9)

This indicator measures the degree to which households agree that males and females should have equal access to social, political, and economic opportunities.

NB: The question m1410 used to derive this indicator was collected from the household

questionnaire. Because, the respondent was not randomly selected from the list of people in the household, this indicator cannot be treated as person level variable. Instead, the indicator I9 will be treated as a household level indicator and interpreted as the best proxy available of what the household thinks about equal access for males and females to social, political, and economic opportunities.

Midline Findings

We analyzed the distribution of households according to their acceptance of equal access of males and females to social, political, and economic opportunities at the midline stage. The results indicate that 46.5% of the households in the High stratum believed in equal access for males and females compared to 43.1% in the Low stratum. The difference of 3.4% is not statistically significant with a p-value of 0.63. In terms of country-level differences, 54.8% of the households in the RISE zone of Burkina Faso believed in equal access for males and females compared to 32.5% in the RISE zone of Niger. The difference of 22.3% is statistically significant with a p-value less than 0.001.

Table 7-3 shows that the households headed by a female were more likely to agree that males and females should have equal access to social, political, and economic opportunities at 52.1% compared to 44.0% for the households headed by a male. However, this difference of 8.1% was not statistically significant.

Monogamous households agree at the lowest proportion (43.1%) that males and females should have equal access, followed by polygamous households at 46.3%. The difference is not statistically significant.

Table 7-3: Proportion of households that agree that males and females should have equal access to social, political, and economic opportunities by household type

Domain	Estimate (%)	StdErr	LCI (95%)	UCI (95%)
RISE zone				
Total	44.8	3.63	37.7	51.9
Sex of the head of household				
Male	44.0	3.79	36.6	51.4
Female	52.1	5.27	41.8	62.5
Marital status of the head of the household				
Monogamous	43.1	3.88	35.5	50.7
Polygamous	46.3	4.47	37.6	55.1
Widow	52.2	6.03	40.4	64.0
Other	50.7	7.76	35.5	65.9

Comparison of the Baseline and Midline

Table 7-4 shows that the changes within each stratum and at the level of the overall RISE zone were statistically significant, but in a negative direction (opposite the desired effect). SAREL has a few hypotheses that could explain the growth in negative perceptions towards equal opportunities, including: 1) a growing conservative ideological trend (particularly rooted in the Zinder region of Niger), 2) backlash and psychological reactance from social changes

perceived to be imposed by foreign stakeholders, and 3) other yet to be identified contextual changes that may have influenced the perceptions change. To understand these results, SAREL will be compiling any relevant opensource data available relating to changing gender perceptions in Niger and Burkina Faso over time. SAREL will also be disaggregating the raw survey data relating to this question in order to better understand the underlying dynamics that may be at play. After all existing data is fully leveraged, a few qualitative questions will be developed to test all hypotheses, and other possible explanations, and a short field survey will be conducted. Once completed, the data will be analyzed, and a final conclusion will be reported.

Table 7-4: T-test comparison between baseline and midline results by stratum for equal access

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	52.7	46.5	-6.1	0.04
Low	50.6	43.1	-7.5	0.02
Total	51.7	44.8	-6.8	0.00

Figure 7-2 shows that there was no difference in trend between the High and Low strata, which is confirmed by the DiD test of 0.74.

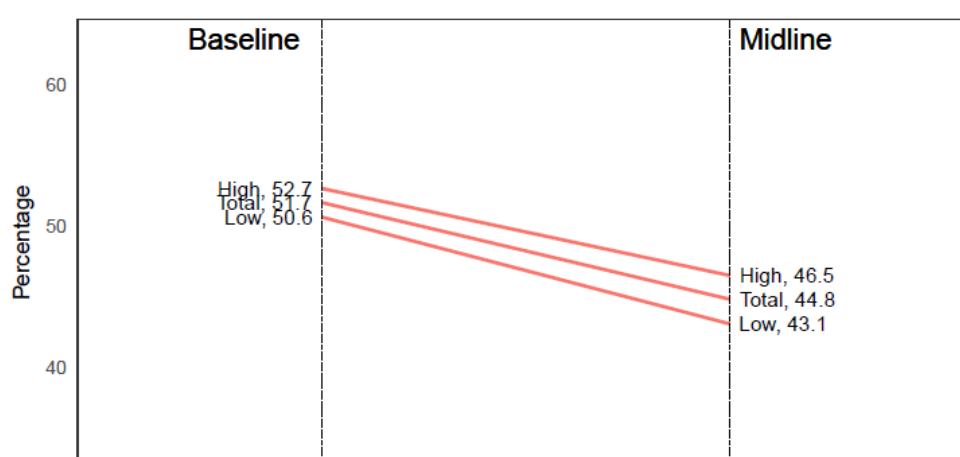


Figure 7-2: Proportion of households that agree that males and females should have equal access to social, political, and economic opportunities from baseline to midline by stratum

7.3. Women reporting effective participation (Indicator 20)

This indicator captures the degree to which women feel that they have opportunities to participate meaningfully in household decisions regarding production and income generation. Relative improvements over time in the High exposure zone would serve as evidence that women are gaining more autonomy and input as a result of the RISE programs. Women are interviewed about their participation in five categories of household decisions: cash crops, livestock, non-agricultural activities, employment, and fishing. If a respondent states that she participates to a medium or high degree in both the production decisions and the revenue decisions for at least one of the five categories, she is treated as participating effectively in household decisions.

Midline Findings

The graph on the left side of **Figure 7-3** shows that there are an estimated 285,000 women in the High stratum who showed evidence of effective participation while the corresponding estimate is about 250,000 in the Low stratum.

The graph on the right side of **Figure 7-3** shows the distribution of women according to their effective participation on decision making. The exterior ring represents the Low stratum while the interior ring shows data from the High stratum. The graph shows that 74.6% of women in the High stratum showed effective participation in decision making compared to 71.0% in the Low stratum. The difference of 3.6% is not statistically significant with a p-value of 0.39.

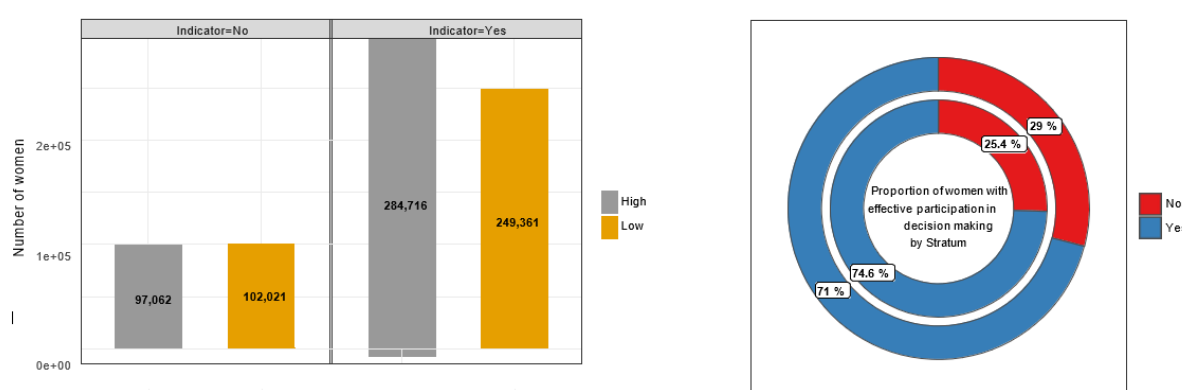


Figure 7-3: Proportion of women reporting effective participation in decision making by stratum

The graph on the left side of **Figure 7-4** shows that an estimate of more than 253,000 women in the RISE zone of Burkina Faso effectively participated in decision making while the corresponding estimate is about 280,000 in the RISE zone of Niger.

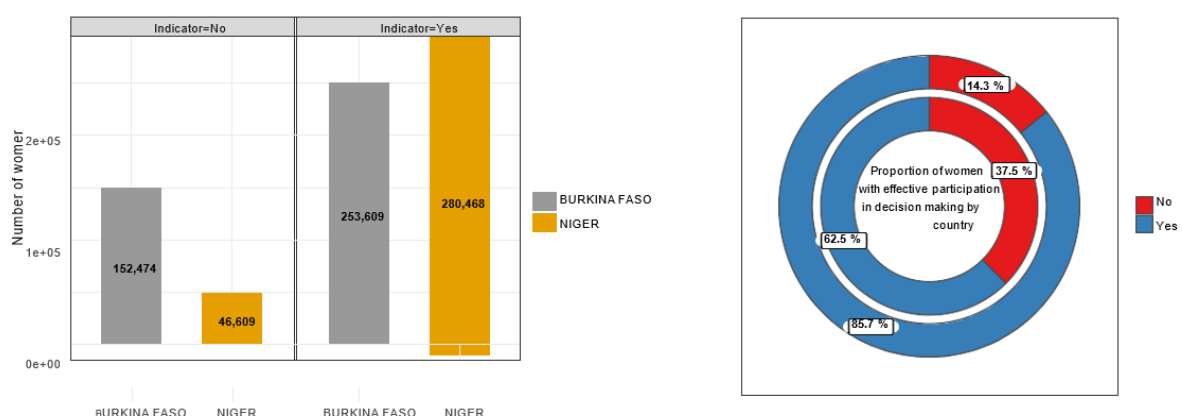


Figure 7-4: Proportion of women reporting effective participation in decisions by RISE zone in each country

The graph on the right side of **Figure 7-4** shows the distribution of women according to their effective participation in decision making. The exterior ring represents the RISE zone of Niger while the interior ring shows data from the RISE zone of Burkina Faso. The graph shows that the proportion of women with effective participation in decision making is significantly

higher in the RISE zone of Niger at 85.7% compared to 62.5% in the RISE zone of Burkina Faso. The difference of about 23% is highly significant with a p-value of less than 0.001.

The patterns of the decision making regarding production and revenue are very similar to the combined decision making reviewed in the previous paragraphs. That is, there is no significant differences between strata, but the proportion of women who made effective decisions, both for production and income generation, was significantly higher in the RISE zone of Niger. The difference was about 24% for decision making regarding both production and income generation; and in both cases it was statistically significant.

Table 7-5: Proportion of women with effective decision-making power, by activity type

Domain	Estimate (%)	StdErr	LCI (95%)	UCI (95%)
Production decisions				
Total	74.3	2.13	70.2	78.5
High	76.1	2.98	70.2	81.9
Low	72.5	2.98	66.6	78.3
BURKINA FASO	63.4	2.98	57.6	69.3
NIGER	87.9	1.29	85.3	90.4
Revenue decisions				
Total	74.5	2.18	70.3	78.8
High	76.7	3.11	70.6	82.8
Low	72.2	2.95	66.4	78.0
BURKINA FASO	63.8	3.01	57.9	69.7
NIGER	87.8	1.48	84.9	90.7

The review of the data concerning women with effective decision-making power revealed some difference across activities, countries and strata.

Overall, the percentage of women with effective decision-making power is higher among those engaged in the non-agricultural economic activities (62%), livestock (57%) and cash crops (54%). In contrast, among women involved in fishing and salaried employment, the percentage responding that they have effective decision-making is very low at 8% and 28%, respectively, although it is important to note that the number of households practicing the latter two activities is extremely small.

Regarding country level differences, the results revealed that the percentage of women with decision-making power is higher in Niger than in Burkina Faso for all the categories of activities except for non-agricultural economic activities.

Related to the strata, the results showed that the percentage of women with effective decision-making power is more important in the High Strata than in Low Strata for only livestock and the salaried employment categories.

The details on the results are presented in the tables below.

Table 7-6: Proportion of women with effective decision-making power, by strata and by country related to food production: crops primarily grown for household consumption

Types of responses	Stratum (%)			Countries (%)		
	High	Low	Total	Niger	Burkina	Total
Yes	41.99	42.74	42.46	51.93	35.24	42.46
No	58.01	57.26	57.54	48.07	64.76	57.54
Total	100	100	100	100	100	100

Table 7-7: Proportion of women with effective decision-making power, by strata and by country related to cash crops: crops primarily grown for sale in markets

Types of responses	Stratum (%)			Countries (%)		
	High	Low	Total	Niger	Burkina	Total
Yes	47.94	58.94	54.18	61.41	49.45	54.18
No	52.06	41.06	45.82	38.59	50.55	45.82
Total	100	100	100	100	100	100

Table 7-8: Proportion of women with effective decision-making power, by strata and by country related to livestock

Types of responses	Stratum (%)			Countries (%)		
	High	Low	Total	Niger	Burkina	Total
Yes	59.27	55.49	56.93	76.85	42.60	56.93
No	40.73	44.51	43.07	23.15	57.40	43.07
Total	100	100	100	100	100	100

Table 7-9: Proportion of women with effective decision-making power, by strata and by country related to non-agricultural economic activities: small business, self-employment, purchase and sale

Types of responses	Stratum (%)			Countries (%)		
	High	Low	Total	Niger	Burkina	Total
Yes	59.24	63.46	61.68	54.91	67.90	61.68
No	40.76	36.54	38.32	45.09	32.10	38.32

Total	100	100	100	100	100	100

Table 7-10: Proportion of women with effective decision-making power, by strata and by country related to salaried employment: work in kind or monetary in agriculture and other paid work

Types of responses	Stratum (%)			Countries (%)		
	High	Low	Total	Niger	Burkina	Total
Yes	31.28	24.60	28.14	32.45	14.58	28.14
No	68.72	75.40	71.86	67.55	85.42	71.86
Total	100	100	100	100	100	100

Table 7-11: Proportion of women with effective decision-making power, by strata and by country related to fishing and fish ponds

Types of responses	Stratum (%)			Countries (%)		
	High	Low	Total	Niger	Burkina	Total
Yes	0.00	11.11	8.33	25.00	0.00	8.33
No	100.00	88.89	91.67	75.00	100.00	91.67
Total	100	100	100	100	100	100

Comparison of the Baseline and Midline

Table 7-12 shows that none of the changes within strata or at the level of the overall RISE zone were significant.

Table 7-12: T-test comparison between baseline and midline results by stratum

Stratum	Baseline Est. (%)	Midline Est. (%)	Difference (%)	P-Value
High	78.6	74.6	-4.0	0.24
Low	71.1	71.0	-0.1	0.97
Total	75.0	72.8	-2.2	0.42

Figure 7-5 shows that the decrease was sharper in the High stratum, but the difference in trend was not significant. The DiD test p-value confirms that with a value of 0.47.

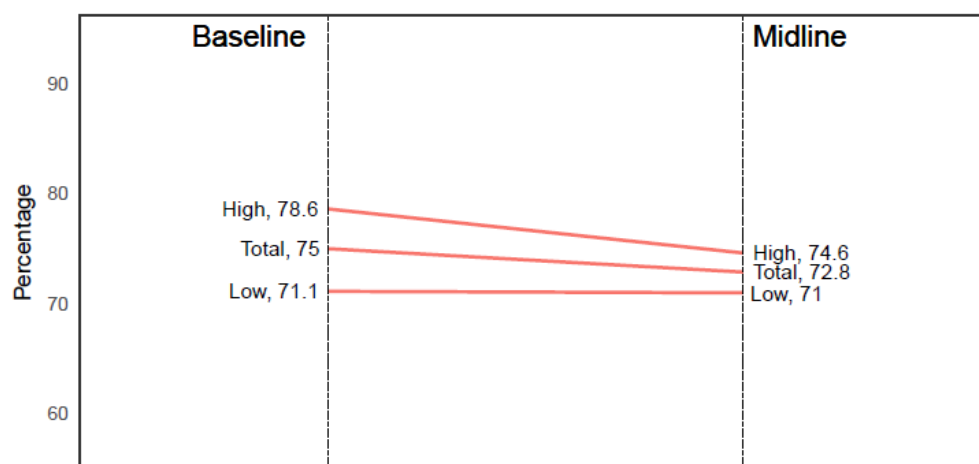


Figure 7-5: Proportion of women reporting effective participation in decisions from baseline to midline by stratum

8. Summary of Demographic Correlates: Gender, Literacy, and Ethnicity of Household Heads

The principal objective of the study was to characterize the RISE zone according to key measures of resilience and to draw comparisons from baseline to midline in the High exposure versus Low exposure areas. In doing so, however, we also tracked patterns according to a number of sociodemographic features of households that could potentially have a bearing on the outcomes. Throughout the report, we disaggregated the results for indicators according to a number of those features: the gender of heads of households, the marital status of household heads, whether or not household heads are literate, and the ethnicity of households. Though the study was not designed to test these factors as causal determinants of variation in resilience, there are nevertheless some correlations that are worth noting.

First, the sex of the head of household correlates with a number of outcomes. In general, households headed by women were significantly poorer than their male-headed counterparts. Women-headed households also scored worse on measures of sanitation, including having a soap-and-water handwashing station and an improved sanitation system. Interestingly, female-headed households correlated with better health outcomes for children living in those households, in terms of stunting, being underweight, and being malnourished, even though they face greater hunger and worse dietary diversity at the household level.

Second, a literate head of household correlated very strongly with a number of important resilience outcomes, all in the expected direction. Households with a head-of-household who can read were notably wealthier. They were also more likely to be engaged with the community and local leaders, in terms of reaching out to local power structures. Literate heads of households likewise correlated with the members of those households having greater dietary diversity and facing hunger less often. Finally, households with a literate head had much better sanitation practices: they were more likely to use improved sources of drinking water, they were more likely to have dedicated soap-and-water handwashing stations, and they tended to have improved sanitation systems at a greater rate than their counterparts.

Third, differences in indicator outcomes were notable across ethnic groups. The Hausa had a higher rate of poverty, and fewer and less valuable household assets; the Mossi tended to be the opposite on these livelihood indicators. Mossi children also tended to be healthier than children of other ethnic groups: they had low rates of both stunting and being underweight. The Peul/Fulani were particularly likely to suffer from malnutrition. The Gourmanchema were more likely than other ethnic groups to have improved drinking water and sanitation systems, whereas the Hausa were much more likely than other ethnic groups to have soap-and-water handwashing stations. These correlations summarized here constitute statistically significant differences, though we reported only comparative means to maintain the focus on the intervention effects. We did not find systematic differences in outcomes across monogamous and polygamous households, though a few isolated differences were apparent and were noted in the text under the sections for those indicators.

We should underscore two points about these sociodemographic factors and their analysis. First, these observed correlations were not tested in a manner that would allow for causal inferences. We cannot be sure, for example, if literacy contributes in an important way to livelihoods, governance, and health and nutrition, or if some (unobserved) factors that led those household heads to become literate also led their households to be wealthier, healthier, and more engaged. These correlations are nevertheless important to note, especially because RISE activities explicitly target women (which could address some of the challenges that female-headed households face) and aim to improve literacy. They may thus contribute in a causal manner to differences in low and high exposure areas over time, even though their isolated causal effects cannot be measured under the current implementation strategy.

Second, the midline survey upon which this report is based was not designed to explore *why* these various sociodemographic correlations exist. However, in complement to this quantitative data collection effort, TANGO International will be conducting a qualitative evaluation. That more in-depth examination of households and communities should shed important light on the nature of some of the correlations noted here.

9. Complementary Analysis Regarding Family Planning in the RISE Zone

During the development of the RISE baseline questionnaires in 2014, USAID requested that SAREL add a module that could be used to capture information on trends in the use of family planning practices and techniques in the RISE zone. None of the 21 key RISE indicators that constitute the main focus of the baseline, midline, and endline evaluations, and that are analyzed in the preceding chapters, specifically concern family planning. It is well known, however, that family planning is one of the keys and main challenges to achieving reinforced household resilience in the Sahel. RISE partners are implementing a number of activities aimed at promoting improved access to family planning services for improved maternal and child health, as well as addressing social, cultural, and other barriers to the adoption of family planning. These activities target women, men, and couples. Given the growing importance of family planning as an integral part of USAID's overall resilience strengthening strategy, we report below some of the results gathered on this subject during the baseline and midline surveys.

To gather information related to family planning, SAREL added a module on this subject to the RISE Gender questionnaire. Key questions included:

- Whether the women had heard of methods that a couple may use to delay or avoid pregnancy;
- Whether the women and their husbands/partners are doing anything or are currently using any method to delay or avoid pregnancy.

Respondents' answers to the above questions during the baseline and midline surveys are summarized in the tables and graphs below, by strata and by RISE zone of each country.

Table 9-1 and **Figure 9-1** reveal a notable increase between the baseline and the midline in the percentage of women (in both the High and Low strata) reporting that they have heard about methods that a couple may use to delay or to avoid pregnancy. Importantly, there is a significant improvement not only across the RISE zone over time, which suggests a general increase in awareness, but also in the High stratum relative to the Low stratum. This indicates that, above and beyond the broader progress in the study zone, the RISE activities seem to have had a notable impact on awareness regarding contraception.

Table 9-1: Women's awareness of methods a couple may use to delay or avoid pregnancy (by strata)

Types of responses	Baseline (%)			Midline (%)		
	High	Low	Total	High	Low	Total
Yes	84.9	72.5	78.7	90.3	80.3	85.4
No	15.1	26	20.6	9.7	19.5	14.5
Don't know	0	0.4	0.2	0	0	0

No answer	0	1.1	0.5	0	0.1	0.1
Total	100	100	100	100	99.9	100

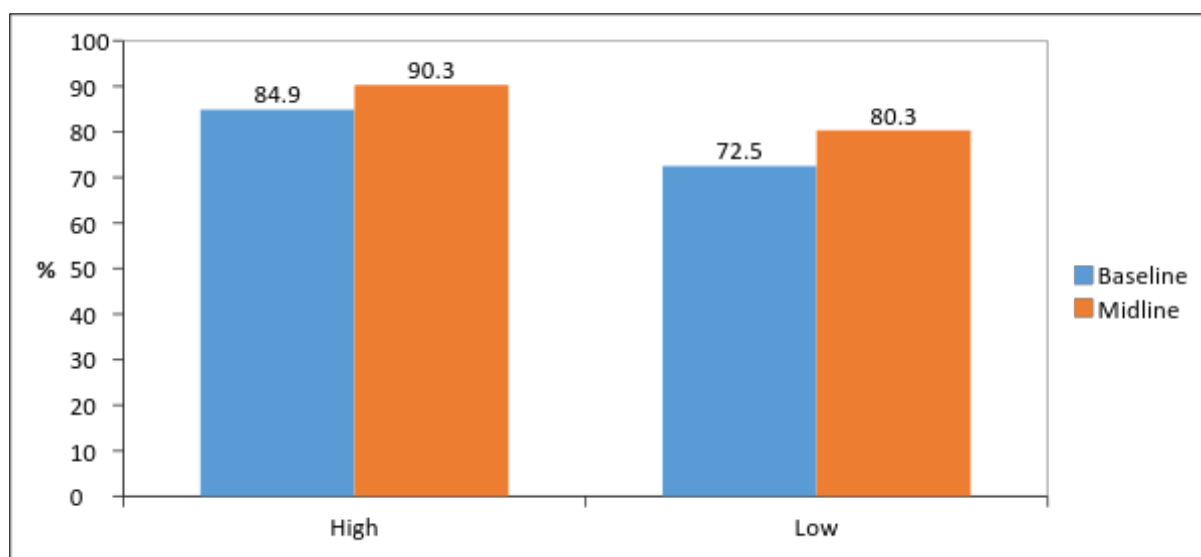


Figure 9-1: Women's awareness of methods a couple may use to delay or avoid pregnancy (by strata)

The analysis of trends by country show (see **Table 9-2** and **Figure 9-2**) show no significant change in awareness of contraceptive methods in the RISE zone of Burkina Faso between the baseline and the midline, but the percentage of women in the RISE zone of Niger reporting that they have heard about methods that a couple may use to delay or to avoid pregnancy increased perceptibly (from 67.6% at the baseline to 84.8% at the midline). The share of women in Burkina Faso familiar with contraceptive methods was already quite high at baseline, so ceiling effects likely prevented similar improvements there.

Table 9-2: Women's awareness of methods a couple may use to delay or avoid pregnancy (by country)

Type of responses	Baseline (%)			Midline (%)		
	Burkina Faso	Niger	Total	Burkina Faso	Niger	Total
Yes	88.4	67.6	78.7	86	84.8	85.4
No	11.5	30.9	20.6	14	15.1	14.5
Don't know	0.1	0.3	0.2	0	0	0
No answer	0	1.2	0.5	0	0.1	0.1
Total	100	100	100	100	100	100

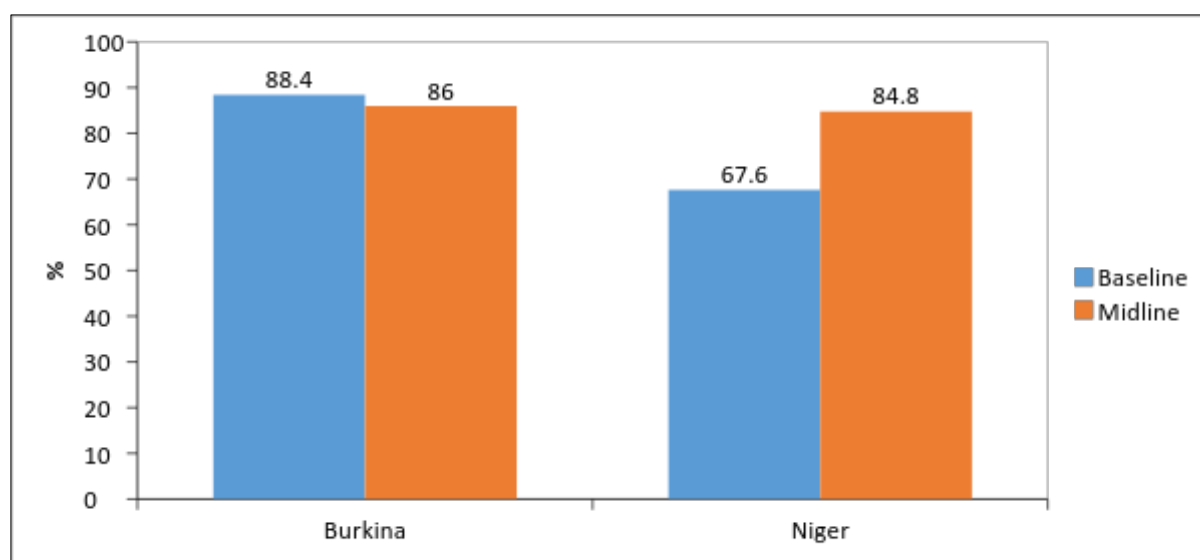


Figure 9-2: Women's awareness of methods a couple may use to delay or avoid pregnancy (by country)

With regard to the question of whether women are actually taking action and using some method to delay or avoid pregnancy, **Table 9-3** and **Figure 9-3** show a modest increase in the percentage of women responding affirmatively. Again, there is a slight improvement across both the High and Low strata.

Table 9-3: Percentage of women taking actions/using methods to delay or avoid pregnancy (by strata)

Types of responses	Baseline (%)			Midline (%)		
	High	Low	Total	High	Low	Total
Yes	24.2	20.6	22.5	25.8	22.9	24.4
No	66.7	68.4	67.5	63.1	65.8	64.4
N/A	9.1	10.9	9.9	11.1	11.3	11.2
Don't know	0	0.1	0	0	0	0
No answer	0	0	0	0	0	0
Total	100	100	99.9	100	100	100

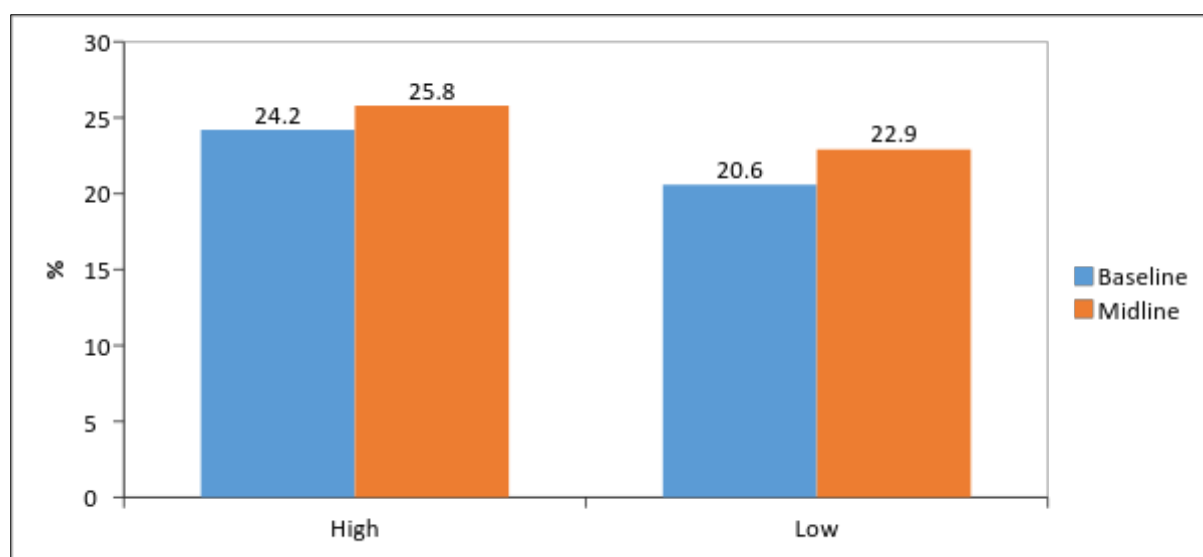


Figure 9-3: Percentage of women taking actions/using methods to delay or avoid pregnancy (by strata)

Table 9-4 and **Figure 9-4** reveal important differences, however, in trends in the Burkina and Niger parts of the RISE zone. While the percentage of women in the RISE zone of Burkina Faso reporting that they were taking action to delay or avoid pregnancy increased notably from 22% to 31%, in the RISE zone of Niger, the percentage declined during the period from 22.8% to 16.1%. The sample was small, however, and further analysis will be done to determine the significance of that result.

Table 9-4: Percentage of women taking actions/using methods to delay or avoid pregnancy (by country)

Types of responses	Baseline (%)			Midline (%)		
	Burkina Faso	Niger	Total	Burkina Faso	Niger	Total
Yes	22.3	22.8	22.5	31.3	16.1	24.4
No	66.7	68.7	67.5	58.8	71.1	64.4
N/A	10.9	8.5	9.9	9.9	12.8	11.2
Don't know	0.1	0	0	0	0	0
Not answer	0	0	0	0	0	0
Total	100	100	99.9	100	100	100

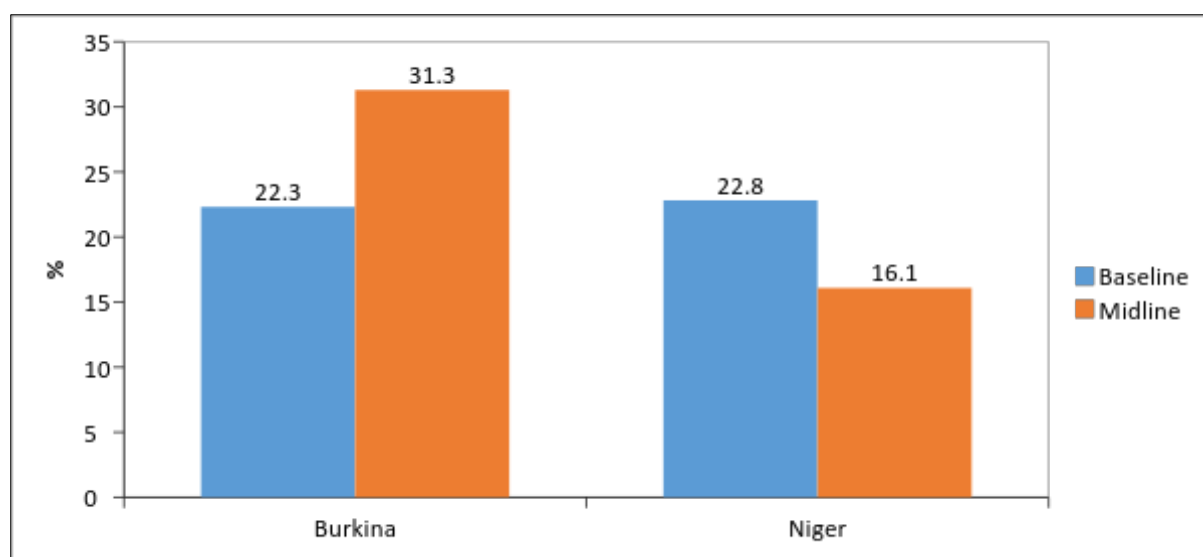


Figure 9-4: Percentage of women taking actions/using methods to delay or avoid pregnancy (by country)

These complementary analyses regarding family planning underscore two important trends at the midline point of the RISE program. First, there seems to be notable progress in terms of familiarity and understanding of family planning methods among women in the RISE zone. This is an important first step in building adaptive and transformative capacities at the household level. Second, change in behaviors seem to lag behind changes in awareness, particularly in Niger. The trend itself should not be surprising, as behavioral change typically takes longer to occur. Attention to these patterns between the midline and the endline surveys will shed more light on the adoption of family planning practices.

10. Lessons Learned and Recommendations

The RISE midline survey resulted in a number of new lessons learned, beyond those learned following the baseline study. We have also generated a number of recommendations that can serve the continuation of the RISE program, the endline survey of impact, and a potential second iteration of the RISE program. We begin this section by outlining lessons learned from a technical standpoint, followed by technical recommendations. We then present administrative lessons learned and corresponding recommendations.

10.1. Technical Lessons and Recommendations

Extensive data collection and analyses always result in new lessons learned from a technical standpoint; that was as true of the midline study as it was the baseline. We present the technical lessons learned and recommendations from the midline survey here.

10.2. Technical Lessons Learned

The time to administer the questionnaire in each household remains long (2 to 3 hours). This creates a hardship for the interviewees as well as those administering the questionnaire. We considered stripping out some modules this year that were not directly related to any of the 21 key indicators, but we backed away from this proposition because: 1) it was still early in the implementation of RISE, and we were loath to remove items that we might potentially need later in order to have a more complete picture and to help explain certain trends noted with the 21 main indicators, and 2) we were concerned that the removal of questionnaire items could complicate the comparison of the two data sets, and then the analysis. This question can be revisited in consultation with USAID after the completion of the midline report.

1. Despite the fact that the enumerators received a thorough and complete training, including 10 days of theoretical and practical training, some modules remained difficult to administer. This was particularly true of Module 5, concerning Household Assets. Measuring the current value of old household items is exceedingly complex in any conditions, and the enumerators had to rely on interviewee recall and had to inquire about a large number of items.
2. Before the analysis of data can take place, the period of data cleaning, coding, and preparation is critical for ensuring high quality results from the analysis. We learned during the course of the midline analyses that several measures from the baseline data had to be recalculated before comparative analyses could be conducted. For example, 211 children initially identified as belonging to households during the course of the survey were not available for the anthropometric measurements, but they nevertheless remained in the data set, thus skewing the means. Further, 22 women who were not heads of households or the spouse of the household head responded to the gender survey, which should not have been the case, so those data needed to be removed. These and other data challenges were appropriately addressed when SAREL added a high-level statistical expert who could work directly with the data. With a data set of the size and complexity of the midline survey, along with the

requirement to ensure that the baseline and midline data sets correspond perfectly, it is critical to engage higher-level expertise right from the data cleaning stage. In the case of the midline survey, the decision to seek a coordinator accredited by the American Statistical Association (ASA) to help us better contend with the methodological complexities of a survey of this kind was beneficial, because without his rigorous recalculation of the baseline values, there are errors that would not have been detected and methodological refinements that we would not have made. In addition, time needs to be set aside for an expert data analyst to ensure the quality of the data before analyses can begin.

3. In terms of data analysis, the treatment of missing data and exaggerated values remains a challenge. For example, there is often little guide for how much an item does or should cost in the RISE study zone, particularly in very rural areas where goods may come to families through informal means, so it is difficult to rectify wildly different reported values. Who exactly counts in a household seems straightforward, but that too can be complicated by patterns of seasonal migration and can add to the difficulty of data collection.
4. The availability of highly competent and qualified consultants to conduct the kinds of rigorous data analyses and statistical reporting required for a report such as this one is never guaranteed. Even if they are available and recruited to join the effort, they are often working on several commitments simultaneously. Thus, their time is spread over longer periods, making it more difficult to provide results of the analyses in a timely manner.

10.3. Recommendations Regarding the Technical Aspects

1. The questionnaire needs to be revised. This revision should a) reduce the time of the actual administering of the questionnaire by eliminating the modules that are not directly relevant to the RISE indicators (such as module 7), and ii) include a clear and straightforward process for measuring aspects related to key indicators, such as household assets.
2. To improve the quality of data, more time should be devoted to data cleaning before the schedule for analysis begins. This is doubly important as multiple rounds of data must be synchronized.
3. The length of time devoted to data collection is significant, and the data entry, coding, cleaning, and analysis took more time than anticipated, despite the best efforts of CESAO and the data processing experts. For the final quantitative evaluation, the use of tablets could help to ensure faster, high quality data entry and the delivery of clean data sets to the data experts in a relatively shorter period of time. We are also aware of the risks and challenges inherent in the use of tablets for data collection. The endline survey may provide an opportunity for SAREL and CESAO to at least pilot the use of tablets among a subset of respondents, which may add some efficiency and would also contribute to capacity building. Above all, it remains critical that highly competent data experts be brought in early enough to detect potential problems and ensure compatibility between different rounds of data before the analysis begin.

4. The treatment of missing data and other exaggerated values should be a point of emphasis both prior to and during data analysis. Calculation methodologies might be developed to provide ranges for values and guidelines for dealing with missing values in a systematic manner across all measures.
5. Data analyst consultants must be recruited early, and time must be set aside to assure compatibility in data sets before any analyses can begin. Measures must then be taken to avoid time conflicts and other inconveniences that might result in the late submission of deliverables.

10.4. Administrative Lessons and Recommendations

Administration of the survey, analysis, and report improved significantly from baseline to midline, especially with the fuller incorporation of CESAO. Nevertheless, a number of lessons were learned.

10.5. Administrative Lessons Learned

1. In both Niger and Burkina Faso, we learned that it is critical to begin the institutional arrangements at the earliest possible stage, especially with respect to obtaining the legal authorization at the Ministry of Territorial Administration in Burkina Faso and the Ministry of Interior in Niger. Advanced planning and initiative is also necessary to ensure a favorable decision from the institutional review board (IRB), prior to collecting the data.
2. Data collection at the midline stage went much more successfully than at the baseline stage, in large part due to the effort to implicate local authorities at every level and to engage the sample villages in an extensive awareness campaign.
3. Based on advice from local authorities, one Low exposure village in Niger had to be replaced due to security issues. In some villages in Burkina Faso, team surveyors received lodging, support, and advice related to security issues when moving from one village to another. In many cases, local authorities served as guides and facilitated the identification of households and administration of questionnaires in both countries. Though one case of an attack was reported during the course of data collection, overall, the data collection was well implemented in the planned timeframe. Collaboration with local authorities and populations contributed importantly to achieving the objective.
4. The decision to confer the data collection and processing to CESAO worked out very well in general, allowing SAREL (and USAID) to obtain good quality data, while also allowing SAREL's partner to substantially strengthen its capacity and experience in conducting a large-scale survey.
5. One deliberate change made for the preparation of the midline data collection is that Controllers were recruited separately from enumerators (based on more rigorous qualifications established for the position), and they completed a training (with supervisors), in advance of the training organized for the enumerator candidates. This enabled SAREL and CESAO to obtain more experienced persons for the control function, and to prepare them better to fulfill their role. By contrast, during the

baseline survey, controllers were selected from among the best enumerator candidates at the end of surveyor training. They had only cursory additional orientation to the specific responsibilities of controllers and the standards to apply.

6. For the midline survey, SAREL developed a guide and checklist to be used by the four quality control persons (two M&E consultants, two SAREL M&E specialists) mobilized to ensure the correct implementation of field data collection. The application of the guide helped to standardize the procedures for conducting the control missions and facilitated both the efficient exchange of notes from the field and the application of agreed remedial measures.
7. Logistical decisions in the field depend crucially on the context, and not every decision is right for every location. In working closely with CESA, SAREL learned that it is important for data collection partners to have a strong understanding of local contextual factors and idiosyncrasies.
8. Security proved to be a challenging issue in the current climate.
9. Despite relying on an enumeration of households conducted in 2015 in order to draw the sample, many households had changed or moved. Given the high degree of seasonal migration and livelihood challenges in the region, SAREL learned that household enumeration lists must be updated regularly.

10.6. Recommendations Regarding Administrative Aspects

1. The institutional arrangements required for obtaining authorizations to conduct the survey must be maintained as they have been conducted for the baseline and midline; it is important that the process start as early as possible.
2. Given the important improvements in the data collection process resulting from an effective awareness campaign in the sample villages, we recommend that this part of the process be treated as a formal and important step in the process. It is also important that collaboration begin early between surveys, the local authorities, and the populations under study.
3. The local partner organization, in this case CESA, should take on increasing responsibilities over the course of multiple rounds of data collection, working in a close collaborative relationship with the monitoring and evaluation project.
4. Controllers must be recruited and trained separately from survey enumerators. They should then be implicated in the training of those enumerators as a means of reinforcing capacities, fortifying chains of command, and increasing exposure to potential challenges in the administration of questionnaires.
5. A guide and checklist should be utilized by quality control personnel in subsequent data collection exercises as a means of maintaining standards and ensuring effective communication.
6. It is recommended to continue working with data collection partner(s) who have regional offices in the countries in question as well as staff familiar with the different regions. Further, adequate time must be given to the data collection team to carry out

an extensive awareness campaign prior to the actual data collection.

7. It may be necessary to involve local security in the data collection processes, and to ensure that survey teams have access to means of transportation that allow them to remain as mobile as possible.
8. With regard to the mobility of populations and the shortcomings of household enumeration in 2015, a new enumeration of households in the survey villages should be conducted in order to update the sampling frame prior to the next survey.

These recommendations should be given careful consideration in order to continue improving upon the data collection processes that began in 2015. The midline process improved significantly upon the baseline data collection and analysis in terms of efficiency, accuracy, and anticipation of challenges. We believe that additional gains can be realized for the endline survey, and the same recommendations may be useful in developing plans for subsequent RISE-related programs.

11. Conclusion

Substantively, the analyses indicate some areas of promise after two years of program activities. In particular, livelihood diversification seems to be improving, more villages are showing evidence of good governance and preparedness, and the shares of stunted and underweight children show signs of decreasing in the areas where RISE activities were implemented. Household diets do not seem to have improved, however, and practices that would improve sanitation are also not gaining in popularity. Finally, efforts to improve gender equality, a key cross-cutting initiative within the RISE program, have not yet resulted in measurable improvements.

The administration of the midline survey and the analysis of data improved upon the work undertaken for the baseline study. Some methodological challenges were addressed, and shortcomings in the original baseline data set were corrected in order to ensure complete compatibility with the midline data. SAREL relied on difference-in-differences analysis to compare changes in the High exposure zone versus the Low exposure zone over time, so consistency across the two rounds of data collection was critical.

To close, we note that the findings at this midline point should still be treated with some caution. Many program activities took longer than anticipated to fully implement, and a number of exogenous factors—including climate and population change, the rise of violent extremism, and activities supported by other donor agencies—can play an outsized role in influencing outcomes over a fairly short period of program implementation. Analyses at the endline will provide a more robust picture of the effectiveness of RISE activities in strengthening the resilience of vulnerable households and villages in the Sahel. The hope is that more gains will be observed and that those gains will be sustained beyond the life of the RISE program.

Appendix A. SAREL Methodological Guidelines for Measuring RISE Indicators

USAID's Resilience in the Sahel Enhanced (RISE) initiative aims to strengthen resilience by achieving reductions in a set of four topline indicators: shock-related needs, depth of poverty, severe hunger, and global acute malnutrition. SAREL is charged with conducting population-based surveys in Burkina Faso and Niger that provide baseline, midline, and final quantitative data related to the latter three of these broad goals.

Twenty-one specific RISE Indicators are used to track progress on the topline goals for which SAREL is responsible. This report presents guidelines for measuring those 21 RISE Indicators. Drawing from the REGIS-ER Monitoring and Evaluation Plan 2013 – 2018, the Ethiopia PRIME Impact Evaluation Report, the Niger Food for Peace (FFP) baseline analysis, and other USAID sources, the measurement strategies presented here are consistent with USAID methods employed elsewhere, which facilitates comparisons. The general approach is to link specific survey modules and questions—from the Village, Household, Gender, and Food Consumption questionnaires that were administered to participants in the field—to the Performance Indicator Reference Sheet (PIRS) for each RISE Indicator. The measurement and aggregation methods necessary for making those links differ for each indicator, and the measurement guidelines must in some cases be adapted to account for limitations in the data actually collected.

Below, the report provides detailed information to facilitate the measurement of each RISE Indicator. Under each indicator, definitions and clarifications are provided to the extent necessary. The report then describes the specific survey questions used to address the indicator, and the coding strategy to be used to account for whether or not for respondents or households meet the criterion in question, based on the data obtained from them through survey questions. Next, it provides instructions on how to aggregate and analyze the data from individual households in order to measure attainment of the RISE Indicator goals and to conduct the appropriate comparisons across countries, villages, and eventually high vs. low exposure areas. Those data will allow SAREL to develop a comprehensive set of descriptive baseline statistics for USAID. Finally, for each indicator, the report provides instructions for conducting multivariate analysis. This step will eventually be useful for determining the factors related to key outcomes of interest; it also highlights the control variables that will ultimately serve as matching factors for the propensity score matching of responses from high and low exposure villages. Notes on measurement innovations that result from data constraints are also reported.

Indicator 1: Depth of Poverty

Depth of Poverty measures the extent to which individuals are below the poverty line, if they are. It is calculated as the average difference between an individual's income and the poverty line of \$1.90/day, adjusted for Purchasing Power Parity (PPP) and inflation. Income is reported in Local Currency Units (LCUs), in this case FCFA, and is calculated based on household expenditures (see Indicator 4). Therefore, it may be easiest to calculate Indicator 4 prior to Indicator 1. Individuals whose income is above the poverty line should be given a value of zero.

Mathematically, depth of poverty is calculated based on the Poverty Gap Index (PGI), which is given by the formula:

$$PGI = \left(\frac{1}{N} \sum_{i=1}^N \left(\frac{z - y_i}{z} \right) \right) \times 100$$

Where N is the total number of individuals in the RISE zone, z is the country's poverty line in LCUs, and y_i is the daily per capita expenditures of individual i .

To calculate the Depth of Poverty at the national level, use the following steps:

- 1) For each individual listed in the table from A.11 above (under Prevalence of Poverty), subtract the individual's daily expenditures (y_i) from the country's poverty line.
 - a. For Burkina Faso: $451.587 - (y_i)$
 - b. For Niger: $460.058 - (y_i)$
- 2) For each individual, divide the figure from (1) above by the country's poverty line. This calculation generates the difference between each individual's income and the respective country's poverty line.
 - a. So, for Burkina Faso: $(451.587 - (y_i))/451.587$
 - b. So, for Niger: $(460.058 - (y_i))/460.058$
- 3) For all individuals for whom the calculation in (2) results in a negative number, indicating per capita expenditures that are greater than the country's poverty line, replace the figure from (2) with zero. If the calculation from (2) results in a positive number, leave those figures unchanged.
- 4) The estimated **depth of poverty** is the weighted average of the values calculated in (3) over all the individuals in the sample.

Descriptive Statistics to Calculate:

- Calculate separate values for each country.
- Disaggregate by Sex of the head of household.
- Disaggregate by the matrimonial situation of the head of household.
- After High and Low Exposure programs have been fully implemented in the field, we will eventually calculate depth of poverty based on High and Low Exposure zones.

Indicator 2: Prevalence of Households with Moderate or Severe Hunger

This indicator is based on the Household Hunger Scale (HHS). Respondents are asked about the frequency with which three events were experienced by household members in the last four weeks: 1) no food at all in the house; 2) went to bed hungry; and 3) went all day and night without eating. For each question, four responses are possible—never, rarely, sometimes, or often—which are then collapsed into the follow three responses: never (value=0), rarely or sometimes (value=1), and often (value=2). Values for the three questions are summed for each household, producing a HHS score ranging from 0 to 6.

The threshold for moderate or severe hunger is a score of 2 or more on the HHS. We do not make a further distinction between moderate and severe levels.

The indicator is calculated as follows:

- 1) First give a score for the first event: “No Food in Household.” Refer to Question I607 on the Food Consumption Questionnaire. If the response is coded 2, give the respondent 0 points for this event. If the response is coded 8 or 9, mark the outcome as missing data. If the response to QI607 is coded 1, proceed to QI607a.
- 2) From QI607a, if the response is coded 1 or 2, give the respondent 1 point for this event. If the response in QI607a is coded 3, give the respondent 2 points for this event.
- 3) Then give a score for the second event: “Went to Bed Hungry.” Refer to Question I608 on the Food Consumption Questionnaire. If the response is coded 2, give the respondent 0 points for this event. If the response is coded 8 or 9, mark the outcome as missing data. If the response to QI608 is coded 1, proceed to QI608a.
- 4) From QI608a, if the response is coded 1 or 2, give the respondent 1 point for this event. If the response in QI608a is coded 3, give the respondent 2 points for this event.
- 5) Finally, give a score for the third event: “Went All Day and Night Without Food.” Refer to Question I609 on the Food Consumption Questionnaire. If the response is coded 2, give the respondent 0 points for this event. If the response is coded 8 or 9, mark the outcome as missing data. If the response to QI609 is coded 1, proceed to QI609a.
- 6) From QI609a, if the response is coded 1 or 2, give the respondent 1 point for this event. If the response in QI609a is coded 3, give the respondent 2 points for this event.
- 7) For each respondent, sum the points for the three events. If the total is equal to or greater than 2 points, code the household 1 for Moderate or Severe Hunger. If the total is less than 2, code the household 0 for this outcome.
- 8) The numerator is the weighted total number of households with a score of 2 points or more. So, divide the weighted number of households coded 1 in (7) by the weighted total number of households in the sample for which HHS data was collected. This quotient is the estimated **prevalence of households with moderate or severe hunger**.

Descriptive Statistics to Calculate:

- The indicator can be disaggregated by country. Separate the totals from (7) by country, and divide those figures by the total number of households in each country's sample (for which HHS data was collected).
- After the implementation of High and Low Exposure programs, the data can also be disaggregated by exposure type.
- Disaggregate by sex of the head of household.

Multivariate Analysis:

As a next step, multivariate regressions can be conducted to determine the factors that predict moderate to severe hunger at the household level.

- a) Methodological approach: Logit regression – likelihood that a household suffers from moderate to severe hunger.
- b) Dependent variable: Binary dependent variable coded 1 if the household suffers moderate or severe hunger, 0 otherwise.
- c) Unit of analysis: the household. Therefore, the number of observations should equate to the number of households in the sample, minus any missing data.
- d) Possible Independent variables:
 - i. Country (Q100) – a 1/0 variable
 - ii. High/Low Exposure (later) – a 1/0 variable
 - iii. Size of household (Q201)
 - iv. Ethnicity of HH head (Q205) – 1/0 variables for each group, with one omitted
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Education level of the head of household (Q206)
 - vii. Education level of the wife of head of household, if different (Q206)
 - viii. Daily Household Income (based on expenditures, from Indicator 4, No. 8).
 - ix. Principal activity of the head of household: 1/0 variables for Agriculture and Commerce (all other responses serve as the omitted category).
 - x. Village fixed effects (1/0 variables for each village, omitting one).

Indicator 3a. Average Value of Household Assets

This measure captures the value of Consumptive, Productive, and Livestock assets in each household's possession, and averages the values across all households. The indicator can be reported in either LCU, in this case FCFA, or in US dollars.

We are unable to measure the value of assets in each household's possession with precision. For the Consumptive and Productive Assets, we have data on the number of items the household owns currently (Q501), the number it possessed one year ago (Q502), the number it possessed two years ago (Q503), whether or not one of the items was purchased during the last twelve months (Q504), and how much the household paid for all of those items purchased in the last twelve months (Q505). However, because we do not have information on how many of the items were purchased during the last twelve months, we cannot determine the precise average cost of the recently purchased items. We also do not have a baseline from which to assign monetary values to older assets, and we have no other data on their cost or how many were lost. The key shortcoming is that we do not have a precise way of determining the number of recently purchased items that contribute to the total spent on the items in Q505.

As an alternative, we simply add the total amounts spent on items during the last 12 months in each household. Thus, the value of assets per household will include only items purchased during the last 12 months, along with the value of livestock, for which we do have quantities currently owned and average price.

- 1) For Consumptive Assets: Sum the values listed in Question 505 (101 – 132) for each household. This figure represents the total amount spent by the household during the last 12 months.
- 2) For the Productive Assets: follow the same procedure. Sum the values listed in 505 (201 – 220), which represents the value of all productive assets purchased during the last 12 months.
- 3) For the Livestock Assets: sum the values listed in question 603 (01 – 13). This figure represents the value of all livestock assets.
- 4) For each household, sum (1) + (2) + (43). This represents the total value of assets for the household (using only purchases from the last 12 months) in FCFA.
- 5) To obtain the total value of assets for the households in 2010 US dollar Purchasing Power Parity (PPP), divide the values reported in (8) by the 2010 PPP conversion rate to US dollars.
 - a. For Burkina Faso: 223.10 FCFA
 - b. For Niger: 229.23 FCFA
- 6) Calculate the weighted average of the values in (4) to obtain the estimated **average value of household assets** in FCFA. The same calculation using (5) will provide the estimated average value of household assets in US dollar PPP terms.

Notes:

- 1) Agricultural production can also be included. To include the current stock of agricultural products, sum the values listed in Q706b (01-26) for each household. Add that amount to the sum calculated in (5) above to obtain the total value of assets including agriculture for each household. Then continue with step (6): sum the outcomes across all households and divide by the total number of households in the sample.
- 2) Despite the lack of precision in the household assets data, the measure will still be useful for tracking changes in purchases and asset ownership over time and in High and Low Exposure zones.

Descriptive Statistics to Calculate:

- The indicator should be disaggregated by country, particularly if the conversion to US dollars in PPP terms is made.
- Eventually we will disaggregate the data by High and Low Exposure zones.

Indicator 3b: Asset Ownership

This indicator measures the assets owned by the household, related to consumption, production, and livestock. Because Indicator 3a focuses on the average value of such assets, here we focus on the accumulation of assets themselves. With the implementation of High and Low Exposure programs and subsequent data collection, the indicator will allow us to track increases in the economic well-being of program beneficiaries through their acquisition of new assets. From this baseline study, we can also calculate the change in asset ownership over the past year, to track the economic trajectory of households.

The approach we employ here includes consumptive assets, productive assets, and Total Livestock Units (TLUs). It does not include land, nor does it include the agricultural output from production. It focuses on the durable (and livestock) assets that households possess.

- 1) For Consumptive assets: From Question 501, sum the values in the column from Q501.101 to Q501.132 for each household. The outcome is the number of Total Consumptive Assets that the household currently owns.
- 2) From Question 502, sum the values in the column from Q502.101 to Q502.132. Subtract the Q502 total from the Q501 total for each household. This is the household's Annual Change in Consumptive Assets.
- 3) For Productive assets: From Question 501, sum the values in the column from Q501.201 to Q501.220 for each household. The outcome is the number of Total Productive Assets that the household currently owns.
- 4) From Question 502, sum the values in the column from Q502.201 to Q502.220. Subtract the Q502 total from the Q501 total for each household. This is the household's Annual Change in Productive Assets.
- 5) For Total Livestock Units (TLU): From Question 602, sum the values in the column from Q602.01 to Q602.13 for each household. The outcome is the number of TLUs that the household currently owns.
- 6) From Question 601, sum the values in the column from Q601.01 to Q601.13. Subtract the Q601 total from the Q602 total for each household. This is the household's Annual Change in TLU assets.
- 7) To determine total asset ownership for the household, calculate the weighted sum of the outcomes from (1), (3), and (5) above; these are the current asset totals for each of the three types of assets. This figure represents **asset ownership** at the household level.
- 8) To determine annual asset change for the household, calculate the weighted sum of outcomes from (2), (4), and (6) above; these figures represent the change in each type of asset ownership over the past year. Outcomes may be negative for each type or for the total annual change in assets. This figure represents the estimated **annual change in asset ownership** at the household level.

Descriptive Statistics to Calculate:

- The average number of assets owned per household can be calculated by summing the total across households and dividing by the number of households in the sample.
- Average ownership of each type of asset can then be determined by disaggregating the overall average into Consumptive, Productive, and Livestock categories.
- Average number of assets and annual changes in asset ownership can also be disaggregated by country.
- Eventually, we will disaggregate the data by High and Low Exposure zones.
- Because the data is collected at the household level, we are unable to disaggregate the outcomes based on the gender of the owner, or on any other individual-level characteristics.

Multivariate Analysis:

As a next step, multivariate regressions can be conducted to determine the factors that predict asset ownership at the household level.

a) Methodological approach: OLS regression

b) Dependent variable: the number of assets owned by a household.

a) Unit of analysis: the household. Therefore, the number of observations should equate to the number of households in the sample, minus any missing data.

b) Possible Independent variables:

- a. Country (Q100) – a 1/0 variable
- b. High/Low Exposure (later) – a 1/0 variable
- c. Size of household (Q201)
- d. Ethnicity of HH head (Q205) – 1/0 variables for each group, with one omitted
- e. Distance from the chef-lieu (Q205 on the Village Questionnaire)
- f. Education level of the head of household (Q206)
- g. Education level of the wife of head of household, if different (Q206)
- h. Daily Household Income (based on expenditures, from Indicator 4, No. 8)
- i. Principal activity of the head of household: 1/0 variables for Agriculture and Commerce (all other responses serve as the omitted category).
- j. Village fixed effects (1/0 variables for each village, omitting one).

Indicator 4: Prevalence of Poverty

Prevalence of Poverty measures the percentage of people living on less than \$1.90 per day. The value is calculated in Local Currency Units (LCU), in this case FCFA; it is based on the Purchasing Power Parity conversion from US dollars and accounts for inflation. Because income measures are not appropriate for the region, the indicator relies instead on daily per capita consumption expenditures. The approach is based on USAID's Living Standards Measurement Survey (LSMS) methodology and the Feed the Future M&E Guidance Series Volume 8.

To calculate individual-level poverty, we will first calculate household poverty and then divide by the number of people in the household. The procedures follow:

- 1) Question 505 - Expenditures on Consumption
 - a. Add the value of all numbers in the column, from 505.101-505.132.
 - b. The data is recorded in a 12-month time frame. Therefore, divide the total by 365 to derive daily expenditures.
 - c. For any items for which the outcome is coded 8 or 9 (don't know or refused to answer), those responses should be replaced with the average amount spent on that item in the respondent's village. Thus, prior to calculating the individual expenditures, the village average must be calculated for each item (101-220). Make sure to exclude responses coded 8 or 9 when calculating that average. If there are few expenditures on a particular item (below five for the village), the average value can be calculated using the national average rather than the village average. The average value can then be inserted in place of the 8 or 9 in order to calculate the household's expenditures.
 - d. Any expenditure on an item that is 5 standard deviations or more above the mean—either village or national, according to the above guidelines—should be replaced by the mean, unless an investigation of the data point (through notes from the survey, for example), confirms a legitimate reason for the value entered. Therefore, calculate standard deviations for each item at the same time the mean is calculated (again making sure to exclude those coded 8 or 9). In each case that a value for one of the items 101-220 exceeds this threshold of 5 standard deviations above the mean, replace that value with the village (or national) mean.
 - e. There may be items for which the household did not spend any money over the past 12 months. That is fine; the zero expenditures do not affect the outcome, because the outcome is a sum of expenditures on the items. Be careful not to include the zero expenditures in the calculation of averages.
 - f. Record the outcome as Expenditures on Productive Assets. Each household will have one value here that is derived from the Q505 total.
- 2) Question E2.02 - Expenditures on Non-food Items I
 - a. Add the value of all numbers in the column, from E2.02 1101 – E2.02 1111.
 - b. The data is recorded in a 7-day time frame. Therefore, divide the total by 7 to derive daily expenditures.
 - c. If, for any item, Question E2.01 is coded 1 (indicating that the household used or bought the item) but no value is given for the item in E2.02, insert the village

- average value for that item in place of the missing data (or the national average value if there are too few households in the village that list a value here).
 - d. Again, any expenditure on an item that is 5 standard deviations or more above the mean should be replaced by the mean.
 - e. Record the outcome as Expenditures on Non-food Items. Each household will have one value here that is derived from the QE2.02 total.
- 3) Question E3.02 - Expenditures on Non-food Items II
 - a. Add the value of all numbers in the column, from E3.02 1201 – E3.02 1221.
 - b. The data is recorded in a 30-day time frame. Therefore, divide the total by 30 to derive daily expenditures.
 - c. If, for any item, Question E3.01 is coded 1 (indicating that the household used or bought the item) but no value is given for the item in E3.02, insert the village average value for that item in place of the missing data (or the national average value if there are too few households in the village that list a value here).
 - d. Again, any expenditure on an item that is 5 standard deviations or more above the mean should be replaced by the mean.
 - e. Record the outcome as Expenditures on Non-food Items II. Each household will have one value here that is derived from the QE3.02 total.
- 4) Question E4.02 - Expenditures on Non-food Items III
 - a. Add the value of all numbers in the column, from E4.02 1301 – E4.02 1308.
 - b. The data is recorded in a 3-month time frame. Therefore, divide the total by 91 to derive daily expenditures.
 - c. If, for any item, Question E4.01 is coded 1 (indicating that the household used or bought the item) but no value is given for the item in E4.02, insert the village average value for that item in place of the missing data (or the national average value if there are too few households in the village that list a value here).
 - d. Again, any expenditure on an item that is 5 standard deviations or more above the mean should be replaced by the mean.
 - e. Record the outcome as Expenditures on Non-food Items III. Each household will have one value here that is derived from the QE4.02 total.
- 5) Question E5.02 - Expenditures on Non-food Items IV
 - a. Add the value of all numbers in the column, from E5.02 1401 – E5.02 1417.
 - b. The data is recorded in a 12-month time frame. Therefore, divide the total by 365 to derive daily expenditures.
 - c. If, for any item, Question E5.01 is coded 1 (indicating that the household used or bought the item) but no value is given for the item in E5.02, insert the village average value for that item in place of the missing data (or the national average value if there are too few households in the village that list a value here).
 - d. Again, any expenditure on an item that is 5 standard deviations or more above the mean should be replaced by the mean.
 - e. Record the outcome as Expenditures on Non-food Items IV. Each household will have one value here that is derived from the QE5.02 total.
- 6) Question E1.04 - Food Expenditures
 - a. Add the value of all numbers in the column, from E1.04 101 to E1.04 1015. Question E1.04 is located on the Food Consumption Questionnaire.

- b. The data is recorded in a 7-day time frame. Therefore, divide the total by 7 to derive daily expenditures.
 - c. Again, any expenditure on an item that is 5 standard deviations or more above the mean should be replaced by the mean.
 - d. Record the outcome as Food Expenditures. Each household will have one value here that is derived from the QE1.04 total.
- 7) Calculate the value of Non-purchased Food consumed by the household:
 - a. Multiply the quantity of non-purchased food consumed from QE1.05a by the average value of the item for each item 101 – 906 in the column.
 - i. To calculate the average value of each item, divide the amount listed in E1.04 by the quantity of the item that was purchased, listed in E1.03a. That is: $E1.04/E1.03a$ for each item 101 – 906.
 - ii. Make sure that the unit measure for purchased (E1.03b) and non-purchased items (E1.05b) is the same. If it is different, standardize these measures so that the values can be compared. For example, suppose the unit measure in E1.03b is coded as 08 (a 50kg sac, from the list of codes on the questionnaire), and the quantity purchased is reported in E1.03a as 4. Suppose the unit measure in E1.05b is coded as 09 (a 100kg sac), and the quantity consumed is reported in E1.05a as 3. In this case, the average value is calculated in terms of 50kg sacs. Therefore, the values in E1.05a and E1.05b should be converted into the same 50kg unit measure: 3 100kg sacs would be equivalent to 6 50kg sacs. If the unit measures differ for purchased and non-purchased items and one or both of the unit measures are less precise (such as a pile or a packet), please estimate the comparison.
 - iii. If a household has values for the non-purchased quantity and units in E1.05a and E1.05b but no value for the purchased item, please insert the village average for the value of the item. If the household has paid values for the item, please use those same paid values to calculate the unit value of non-purchased items.
 - b. Create a new column that reflects this output, the value of non-purchased consumption for each of the items 101 – 906. Add the value of all numbers in this new column. This total reflects the total value of the household's non-purchased food items.
 - c. The data is recorded in a 7-day time frame. Therefore, divide the total by 7 to derive daily expenditures.
 - d. Again, any expenditure on an item that is 5 standard deviations or more above the mean should be replaced by the mean.
 - e. Record the outcome as Non-purchased Food. Each household will have one value here.
- 8) To calculate the value of lodging for the household, use the average value for the three regions of Burkina Faso (Central North, Sahel, and East), as calculated for the EICVM 2009-2010 survey. This value is 4,725FCFA per month, which comes to 157.50FCFA per day. Please use this value for all households in the RISE zone, as actual lodging expenditures were not collected through the survey.
- 9) Add the amounts for (1) to (7) above. This value represents the daily expenditures for the household in LCUs, in this case FCFA.

- 10) Divide (8) by the number of individuals in the household, from Question 200. This value represents the average daily expenditures for each person in the household.
- 11) Next, in order to compare individual-level daily expenditures to the poverty line, we need to determine the \$1.90/day threshold in LCUs, adjusted for Purchasing Power Parity and inflation. To do that, we use the following steps:
- Convert US Dollars into LCUs, using the 2010 Purchasing Power Parity (PPP) exchange rate as reported by the World Bank.⁴
 - For Burkina Faso, 1 USD = 223.10 FCFA
 - For Niger, 1 USD = 229.23 FCFA
 - Next, adjust that figure for inflation since 2010 using the Consumer Price Index (CPI) for the month closest to the data collection, with average monthly inflation in 2010 as the base factor (2010 CPI = 100). Those figures are obtained through the International Financial Statistics from the International Monetary Fund (IMF).⁵ Note that beginning in 2015, the IMF began using 2010 inflation as the base factor, instead of 2005. For that reason, the approach here differs slightly from the method used for the Niger Food For Peace baseline study conducted earlier.
 - For Burkina Faso, $CPI_{\text{March 2015}} = 106.534/100$
 - For Niger, $CPI_{\text{April 2015}} = 105.630/100$
 - Next, multiply the poverty line threshold of 1.90 by LCUs adjusted for 2010 PPP (a) and inflation (b).
 - For Burkina Faso: $1.90 * 223.10 * 106.534/100 = 294.592 \text{ FCFA}$
 - For Niger: $1.90 * 229.23 * 105.630/100 = 460.058 \text{ FCFA}$
 - The figures reported in (c) are the poverty line thresholds of \$1.90/day for Burkina Faso and Niger; it is against these figures that individual-level incomes are compared in order to determine the proportion living on less than \$1.90/day.
- 12) Create a table that lists each member of all households in the sample, along with the average daily expenditures for each person in that household, from (9) above. It is not necessary to list the individuals' names. The following is an example that includes two households, the first with four individuals and average daily per capita expenditures of 300 FCFA and the second with three individuals and average daily per capita expenditures of 250 FCFA:

Household	Individual	Daily Expenditures
01	01-01	300 FCFA
01	01-02	300 FCFA
01	01-03	300 FCFA
01	01-04	300 FCFA
02	02-01	250 FCFA
02	02-02	250 FCFA
02	02-03	250 FCFA

⁴ Data available at <http://data.worldbank.org/indicator/PA.NUS.PRVT.PP>.

⁵ Data available at <http://elibrary-data.imf.org/DataReport.aspx?c=1449311&d=33061&e=169393>.

- 13) `Count the weighted number of individuals from the table in (11) who have daily per capita expenditures below the poverty line from (10.c) above for each country. This will be the numerator.
- 14) Divide that number by the weighted total number of individuals living in households included in the sample (the denominator, from (11) above). This quotient represents the ***prevalence of poverty***.

Descriptive Statistics to Calculate:

- The indicator should be calculated for the entire sample and also disaggregated by country. Use the number of individuals below the poverty line in Burkina Faso as the numerator and the total number of individuals from the sampled households in Burkina as the denominator. Repeat for Niger.
- Disaggregate by sex.
- Disaggregate by sex of the head of household.
- After the implementation of High and Low Exposure programs, the data can eventually be disaggregated by exposure type.

Multivariate Regression:

As a next step, multivariate regressions can be conducted to determine the factors that predict poverty at the household level.

- a) Methodological approach: Ordinary Least Squares (OLS) regression. Alternatively, logit regression with binary dependent variable reflecting status of below the poverty line or not.
- b) Dependent variable: Average per capita expenditures at the household level (from (9) above). Alternatively, Status of below the poverty line or not, coded 1/0 (based on (12) above).
- c) Unit of analysis: the household. Therefore, the number of observations should equate to the number of households in the sample, minus any missing data.
- d) Possible Independent variables:
 - i. Country (Q100) – a 1/0 variable
 - ii. High/Low Exposure (later) – a 1/0 variable
 - iii. Size of household (Q201)
 - iv. Ethnicity of HH head (Q205) – 1/0 variables for each group, with one omitted
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Education level of the head of household (Q206)
 - vii. Education level of the wife of head of household, if different (Q206)
 - viii. Village fixed effects (1/0 variables for each village, omitting one)

Indicator 5: Women's Empowerment in Agriculture Index (WEAI)

This indicator builds on a commonplace tool that measures the opportunities that women in surveyed households have to gain control over their own lives through empowerment in the agricultural sector. The standard measure is comprised of a five-dimension scale (5DE) that is worth 90 percent of the index and a Global Parity Index that contributes 10 percent of the score. Each of the five dimensions and their corresponding sub-dimensions are assigned a weight toward the total 5DE score.

By design, the REGIS-ER baseline study measures only two dimensions on the 5DE scale: Production and Resources. Production includes two sub-dimensions: input in production Decision Making, and Autonomy in decisions. Resources include three sub-dimensions: Ownership, Purchases, and Credit Access. Furthermore, the baseline survey gathered relevant data only from women, through the Gender Questionnaire, so it is not possible to calculate the Gender Parity Index (which requires a comparison of empowerment among women and men). Thus, rather than reserving 10 percent of the score for the GPI, the totality of the WEAI will be determined by the two dimensions of the 5DE scale.

The weights assigned to the Production and Resources domains using the standard WEAI are each 20 percent of the total. Because they are weighted equally, we maintain those relative weights, thus assigning new weights of 50 percent to each of these domains (since they are the only two components of this revised version). The sub-components within each domain are weighted equally, which means that Decision Making and Autonomy are each worth 25 percent, and the three Resources sub-dimensions (Ownership, Purchases, and Credit Access) are each worth 16.7 percent.

The standard WEAI protocols indicate that a woman is empowered if she reaches achievement on 80 percent of the weighted indicators. Because this revised version has fewer indicators and thus constitutes a more blunt measure, we use a threshold of 75 percent. Thus, a surveyed woman must reach achievement on some of the five sub-dimensions, such that the weights assigned to those in which she is successful accounts for 75 percent of the weighting.

To calculate Empowerment at the village or country level, the equation is:

$$WEAI = H_E + H_N(A_a)$$

Where H_E is the percentage of women who are empowered based on the above guidelines, H_N is the percentage of women who are not empowered, and A_a is the average level of achievement for those who did not attain empowerment status. The second term is important to include because those women may still have reached achievement on some sub-dimensions despite that achievement not reaching the 75 percent threshold from the weighted indicators, and those achievements should be counted.

Note that the standard measures for the autonomy sub-dimension were not included in this survey, but a separate question typically assigned to the Input in Decision Making sub-dimension asks how much freedom women have to decide. Thus, we revised the indicator to treat this question as a measure of the Autonomy sub-dimension. As a result, we also adjusted the Production achievement thresholds from ≥ 2 down to ≥ 1 , because there are

now fewer measures under the Decision Making and Autonomy sub-dimensions, as noted below.

Finally, note that only the female respondents who complete the Gender Questionnaire are included in this measure.

- 1) For Decision Making, go to Question G2.02, A, B, C, and F
 - a. Count the number of responses from A, B, C, and F that are coded 3 (some), 4 (most), or 5 (all).
 - b. Note that D and E are not considered.
 - c. If the total coded 3, 4, or 5 from items A, B, C, and F is equal to or greater than 1, mark the respondent as reaching achievement for the Decision Making sub-dimension.

- 2) For Autonomy, go to Questions G4.01 and G4.02
 - a. Count the number of responses from G4.01 A – E that are coded 2 (indicating that the woman herself makes the decisions).
 - b. For the items not coded 2, go to G4.02 (on the freedom to make those decisions if she wants). Count the number of items from A – E coded 3 (medium) or 4 (high extent).
 - c. If the sum of those two counts, (a) + (b), is equal to or greater than 1, mark the respondent as reaching achievement for the Autonomy sub-dimension.

- 3) For Ownership, go to Question G303, A – N
 - a. Count the number of responses from A – N that are coded 1, 3, 5, 8, or 10 (indicating manners of female ownership of assets).
 - b. If the total from (a) is greater than 1, mark the respondent as reaching achievement for Ownership.
 - c. If the total from (a) is equal to 1, check whether the one positive outcome comes from items D (chickens), F (non-mechanized farming equipment), or K (long-lasting large items). If the one positive outcome does NOT come from one of these three items, mark the respondent as reaching achievement for Ownership.
 - d. If the total from (a) is zero, or if it is 1 and that 1 comes from D, F, or K, the respondent does not reach achievement for Ownership.

- 4) For Purchases, go to Question G301, A – G
 - a. If none of the items are coded 1 (for household ownership), the respondent does not reach achievement for Purchases.
 - b. If any of the items in G301, A – G are coded 1 for ownership, go to G304 – G307.
 - c. Count the number of items in G304, A-G that are coded 1, 3, 5, 8, or 10.
 - d. Count the number of items in G305, A-G that are coded 1, 3, 5, 8, or 10.
 - e. Count the number of items in G306, A-G that are coded 1, 3, 5, 8, or 10.
 - f. Count the number of items in G307, A-G that are coded 1, 3, 5, 8, or 10.
 - g. Tally the number of items with one of those codes from (c), (d), (e), and (f).
 - h. If (g) is greater than 1, mark the respondent as reaching achievement for Purchases.
 - i. If (g) is equal to 1, check whether the positive outcome comes from D (chickens) or F (non-mechanized farm equipment). If the one positive outcome does NOT come from one of these two items, mark the respondent as reaching achievement for Purchases.

- j. If the total from (g) is zero, or if it is 1 and that 1 comes from D or F, the respondent does not reach achievement for Purchases.
- 5) For Credit, go to Question G308, A – E.
 - a. If none of the types of credit are coded 1, 2, or 3 (for various forms of receiving credit), the respondent does not reach achievement for Credit.
 - b. If any of the items A – E are coded 1, 2, or 3, go to G309 and G310.
 - c. Count the number of items in G309, A – E that are coded 1, 3, 5, 8, or 10.
 - d. Count the number of items in G310, A – E that are coded 1, 3, 5, 8, or 10.
 - e. Tally the number of items with one of those codes from (c) and (d).
 - f. If (e) is equal to or greater than 1, mark the respondent as reaching achievement for Credit.
 - g. If (e) is equal to zero, the respondent does not reach achievement for Credit.
 - 6) For each respondent, calculate her Achievement Rate and her status as Empowered or Not Empowered.
 - a. Refer to the weighted indicators:
 - i. Achievement in Production = .25
 - ii. Achievement in Autonomy = .25
 - iii. Achievement in Ownership = .167
 - iv. Achievement in Purchases = .167
 - v. Achievement in Credit Access = .167
 - b. For each respondent, sum the weights for each sub-dimension for which she reached achievement.
 - c. If the total share is equal to or greater than .75, code the respondent as Empowered.
 - i. For example, if a respondent reached achievement in Production, Ownership, Purchases, and Credit Access, her Achievement Rate is $.25 + .167 + .167 + .167 = .75$, so she is Empowered.
 - d. If the total share is less than .75, the respondent is Not Empowered.
 - i. As another example, if a respondent reached achievement in Autonomy, Purchases, and Credit Access, her Achievement Rate is $.25 + .167 + .167 = .584$, so she is not Empowered.
 - e. For each respondent, record both the Empowerment status and the Achievement Rate.
 - 7) Calculate the village-level WEAI.
 - a. Disaggregate the responses by village. For each village:
 - b. Calculate the proportion that is Empowered (H_E): Divide the number of respondents who are Empowered by the total number of respondents (on the Gender Questionnaire) in the village.
 - c. Calculate the proportion from the village that is Not Empowered (H_N): $1 - (H_E)$.
 - d. Calculate the Achievement Average (A_a) for all respondents in the village who are not Empowered:
 - i. Sum all respondents' Achievement Rates that are $\leq .75$ in the village.
 - ii. Divide that sum by the number of respondents whose Achievement Rates are $\leq .75$ in the village.
 - e. Add (b) + the product of (c)*(d). This figure represents the **Women's Empowerment in Agriculture Index (WEAI)** score for each village.

Descriptive Statistics to Calculate:

- Report the average WEAI across all villages by summing the village WEAI scores and dividing by the number of villages.
- Similarly, aggregate the village figures by country to report a WEAI for Burkina Faso and Niger.
- Eventually, WEAI can be compared across High and Low Exposure zones.

Notes:

- I) The Gender questionnaires do not include demographic data for the respondent (who presumably differs from the respondent who completed the Household Questionnaire), so individual-level analyses are not possible. If household data from the Household Questionnaire can be matched to the Gender Questionnaire, it is possible to analyze the likelihood of a household's female respondent being Empowered, but only using household-level, and not individual-level, factors. See the regression description below.

Multivariate Analysis:

- a) Methodological approach: Logit regression
- b) Dependent variable: Empowered status (I/O variable).
 - d) Unit of analysis: the female respondent from the Gender Questionnaire. Therefore, the number of observations should equate to the number of households in the sample, minus any missing data.
- e) Possible Independent variables:
 - i. Country (Q100) – a I/O variable
 - ii. High/Low Exposure (later) – a I/O variable
 - iii. Size of household (Q201)
 - iv. Ethnicity of HH head (Q205) – I/O variables for each group, with one omitted
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Education level of the head of household (Q206)
 - vii. Education level of the wife of head of household, if different (Q206)
 - viii. Daily Household Income (based on expenditures, from Indicator 4, No. 8)
 - ix. Principal activity of the head of household: I/O variables for Agriculture and Commerce (all other responses serve as the omitted category).
 - x. Village fixed effects (I/O variables for each village, omitting one).

Indicator 6a: Number of Households with Income from Non-Agricultural Sources

This indicator tracks the livelihood activities of households to determine their sources of food and income over the past 12 months.

- 1) Refer to Question I201, items 201 – 305. If any of the items are coded 1, give the household a positive value for non-agricultural income. If all of those items are coded 2, the household does not receive any non-agricultural income.
- 2) For any items in Q1201.201 – 305 that are coded 1, go to Q1203. If the response is $\geq .10$ (meaning that the proportion of income provided by that item is equal to or greater than 10 percent of the family's income or food) for any of the items, classify non-agricultural sources as an Important source of income for the household.
- 3) Then, for any items in Q1201.201 – 305 that are coded 1, go to Q1204. If all of the items coded 1 in Q1201.201 – 305 are coded as 1 (dry season only) or 2 (wet season only) in Q1204, classify non-agricultural sources as a Temporary source of income for the household.
- 4) Then, for any items in Q1201.201 – 305 that are coded 1, go to Q1205. If any of those items are coded 1 (meaning the household relies on the item during times of stress) in Q1205, classify non-agricultural sources as a Critical source of income for the household.
- 5) Calculate the total weighted number of households in the sample that are classified as having some form of non-agricultural income, from (1) above. This represents the estimated **number of households with income from non-agricultural sources**.
- 6) Divide (5) by the total weighted number of households in the sample to obtain the estimated **proportion of households with income from non-agricultural sources**.
- 7) Sum the percentages from column I203 for agricultural sources and non-agricultural sources for each household. Then calculate the percentage of households for which the revenue coming from non-agricultural sources is at least 50 percent.

Descriptive Statistics to Calculate:

- Report both the number and the proportion of households for the total sample.
- Disaggregate the number and the proportion of households with non-agricultural income by country.
- Calculate the proportions of households in each country for which non-agricultural income is Important, Temporary, and Critical.
- Eventually, we can compare the number and proportion of households with non-agricultural income across High and Low Exposure zones.

Multivariate Analysis:

- a) Methodological approach: Logit regression

- b) Dependent variable: Household relies on some non-agricultural income (1/0 variable).
- c) Unit of analysis: the household. Therefore, the number of observations should equate to the number of households in the sample, minus any missing data.
- d) Possible Independent variables:
 - i. Country (Q100) – a 1/0 variable
 - ii. High/Low Exposure (later) – a 1/0 variable
 - iii. Size of household (Q201)
 - iv. Ethnicity of HH head (Q205) – 1/0 variables for each group, with one omitted
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Education level of the head of household (Q206)
 - vii. Education level of the wife of head of household, if different (Q206)
 - viii. Daily Household Income (based on expenditures, from Indicator 4, No. 8)
 - ix. Village fixed effects (1/0 variables for each village, omitting one)

Indicator 7: Share of Targeted Communities with Evidence of Good Governance

Good governance at the village level includes the following components: having natural resource management plans, stakeholders involved in addressing climate change, land under natural resource management, a conflict management system, success in mediating disputes, and community development plans.

We have data that allows us to incorporate some of these elements: natural resource management plans, conflict management systems, successful dispute mediation, and community development plans.

- 1) Question 802 on the Village Questionnaire: if the outcome is coded 1 (for the presence of a natural resource management plan), give the village a score of 1. If the outcome is coded 2 (for no plan), give the village a score of 0.
- 2) Question 803 on the Village Questionnaire: if the outcome is coded 1 (for the presence of a conflict management system), give the village a score of 1. If the outcome is coded 2 (for no such system), give the village a score of 0.
- 3) Question 804 on the Village Questionnaire: if the outcome is coded 1, 2, or 3 (meaning that a committee is successful in mediating half or more of local disputes), give the village a score of 1. If the outcome is coded 4 or 5 (meaning few disputes are successfully mediated), give the village a score of 0.
- 4) Question 806 on the Village Questionnaire: if the outcome is coded 1 (for the presence of a community development plan), give the village a score of 1. If the outcome is coded 2 (for no such plan), give the village a score of 0.
- 5) If the sum of the scores from (1) + (2) + (3) + (4) is equal to or greater than 2, mark the village as having Good governance.
- 6) Divide the weighted number of villages with Good governance from (5) by the weighted total number of villages in the sample. This represents the estimated **proportion of targeted villages with evidence of good governance**.

Descriptive Statistics to Calculate:

- Disaggregate the village data by country.
- Eventually we can compare the data across High and Low Exposure zones.

Multivariate Analysis:

- a) Methodological approach: Logit regression
- b) Dependent variable: Village has good governance (1/0 variable).
- c) Unit of analysis: the village. Therefore, the number of observations should equate to the number of villages in the study, minus any missing data.
- d) Possible independent variables:
 - i. Country (Q100) – a 1/0 variable

- ii. High/Low Exposure (later) – a 1/0 variable
 - iii. Size of village (Q201 from the Village Questionnaire)
 - iv. Predominant Ethnicity (Q203) – 1/0 variables for each group, omitting one)
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Presence of Formal State Representation (Q801: if coded 2 or 3, outcome = 1, Otherwise 0).
 - vii. Average Daily Household Income (based on expenditures, as calculated under Indicator 4, Number 8, averaged across all households sampled in the village).
- e) Alternative: use an ordered probit model where the dependent variable is a scaled variable from 0 – 3, indicating the number of the four elements explained above that are present in each village. The unit of analysis remains the village, and the independent variables remain the same.

Indicator 8: Share of Targeted Communities with Good Capacity to Manage Climate Shocks and Risks

This indicator measures the capacity of villages to adjust to climate shocks and risks either by coping with negative effects or taking advantage of positive climate change opportunities. For example, soil and water-saving strategies, improved cultural practices, and diversified income sources all help to reduce climate shocks at the village level. The data collection protocol is derived from the REGIS-ER PIRS related to Strengthened Government and Institutions.

The indicator is measured based on three criteria: Practices adopted to manage climate change, the level of application of those practices by village members, and the villages' own assessment of the effectiveness of these adaptations for managing climate change.

- 1) Questions 604b1, 604b2, and 604b3 on the Village Questionnaire: For each of the three questions completed (indicating that the village has adopted 1-3 activities from the list in 603b), give the village a score of 2 if the question is coded 1 (indicating a **high** level of implementation), and a score of 1 if the question is coded 2 (indicating an **average** level of implementation). Otherwise, give the village a score of zero. (Maximum score of 2+2+2 = 6).
- 2) Question 605b: If the level of effectiveness is coded as 1 (**very effective**), give the village a score of 4. If the level of effectiveness is coded as 2 (**average**), give the village a score of 3. Otherwise, give the village a score of zero.
- 3) If the village achieves a total score of 7 (out of a maximum of 10), code the village as having a good capacity for managing shocks and climate risk.
- 4) Calculate the weighted total number of villages having a good management capacity for shocks and climate risk. Divide that number by the weighted total number of villages in the sample. The outcome represents the estimated **proportion of villages with good capacity to manage climate shocks and risk**.

Descriptive Statistics to Calculate:

- Disaggregate the village data by country.
- Eventually we can compare the data across High and Low Exposure zones.

Multivariate Analysis:

- a) Methodological approach: Logit regression
- b) Dependent variable: Village has good capacity to manage climate risk (1/0 variable).
- c) Unit of analysis: the village. Therefore, the number of observations should equate to the number of villages in the study, minus any missing data.
- d) Possible Independent variables:
 - i. Country (Q100) – a 1/0 variable
 - ii. High/Low Exposure (later) – a 1/0 variable

- iii. Size of village (Q201 from the Village Questionnaire)
 - iv. Predominant Ethnicity (Q203) – 1/0 variables for each group, omitting one
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Presence of Formal State Representation (Q801: if coded 2 or 3, outcome = 1, Otherwise 0).
 - vii. Average Daily Household Income (based on expenditures, as calculated under Indicator 4, Number 8, averaged across all households sampled in the village).
- e) Alternative: use an ordered probit model where the dependent variable is a scaled variable from 0 – 2, where 0 = no activities or training, 1 = activities or training, and 2 = both activities and training. The unit of analysis remains the village, and the independent variables remain the same.

Indicator 9: Proportion of Individuals who engage with Local Power Structures

This indicator measures the extent to which residents have engaged successfully with local authorities in order to effect change over the past year.

- 1) Question I411 from the Household Questionnaire: if the response is coded 1 (indicating that the respondent has successfully engaged with a local authority in order to effect change over the past year), mark the respondent as successfully engaging with local power structures.
- 2) If the response to Q1411 is coded 8 or 9 (don't know or refused to answer), code the respondent as missing data.
- 3) Divide the weighted number of responses coded as successfully engaging with local power structures by the weighted total number of households in the sample. Note that you should not divide by the total number of individuals within all sampled households, because only one individual per household took part in this questionnaire. The outcome represents the estimated **proportion of individuals who engage with local power structures to effect change**.

Descriptive Statistics to Calculate:

- Disaggregate the data by country.
- Eventually we can compare the data across High and Low Exposure zones.

Multivariate Analysis:

- a) Methodological approach: Logit regression
- b) Dependent variable: Individual engages local power structures (1/0 variable).
- c) Unit of analysis: the individual. The number of total observations should equate to the number of households in the study, minus any missing data, because only one individual is sampled per household for this question.
- d) Possible Independent variables:
 - i. Country (Q100) – a 1/0 variable
 - ii. High/Low Exposure (later) – a 1/0 variable
 - iii. Size of household (Q201)
 - iv. Age of respondent (Q202)
 - v. Gender of respondent (Q203)
 - vi. Ethnicity of respondent (Q205) – 1/0 variables for each group, omitting one
 - vii. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - viii. Education level of respondent (Q206)
 - ix. Daily Household Income (based on expenditures, from Indicator 4, No. 8)
 - x. Principal activity of respondent (Q210): 1/0 variables for Agriculture and Commerce (all other responses serve as the omitted category).
 - xi. Village fixed effects (1/0 variables for each village, omitting one)

Indicator 10: Global Acute Malnutrition (GAM) in the Zone of Influence

This indicator measures the proportion of children under 5 years of age who are acutely malnourished, as defined by a weight-for-height Z score of two standard deviations below the global mean (which is calculated by the World Health Organization).

A different set of standards is used for children under the age of 2 and those aged 2 – 5 years, because the older children are measured in terms of standing height while the younger children are measured in terms of length.

- 1) Create a data set for all children from sampled households in the study, based on the data from the Food Consumption Questionnaire (which also includes the anthropometry of children). Then, for each child:
- 2) Note the age of the child (Q1707).
- 3) Note the Gender of the child (Q1704).
- 4) Note the weight of the child in kilograms (Q1711).
- 5) Note the length/height of the child in centimeters (Q1712).
- 6) Compare the weight-for-length/height to the WHO standard to identify children whose weight-for-length/height is two or more standard deviations below the global mean.
 - a. If the child is a boy aged 0 – 23 months, consult the Appendix A.1 table below. Find the length of the child, and note the corresponding weight that is two standard deviations below the mean (under the column SD2neg). If the child's weight is below the listed weight, mark the child as Malnourished.
 - b. If the child is a girl aged 0 – 23 months, consult the Appendix A.2 table below. Find the length of the child, and note the corresponding weight that is two standard deviations below the mean (under the column SD2neg). If the child's weight is below the listed weight, mark the child as Malnourished.
 - c. If the child is a boy aged 23 - 59 months, consult the Appendix A.3 table below. Find the length of the child, and note the corresponding weight that is two standard deviations below the mean (under the column SD2neg). If the child's weight is below the listed weight, mark the child as Malnourished.
 - d. If the child is a girl aged 23 - 59 months, consult the Appendix A.4 table below. Find the length of the child, and note the corresponding weight that is two standard deviations below the mean (under the column SD2neg). If the child's weight is below the listed weight, mark the child as Malnourished.
- 7) Divide the weighted number of children listed as Malnourished by the weighted total number of children in the sample. This represents the **Global Acute Malnutrition (GAM) Rate**.

Descriptive Statistics to Calculate:

- Disaggregate the data by country to calculate GAM for Burkina Faso and for Niger.
- Disaggregate the data by gender to calculate GAM for boys and girls.

- Disaggregate by the sex of the head of household.
- Eventually we will disaggregate the data by High and Low Exposure zones.

Multivariate Analysis:

- 1) Village level analysis
 - a. Method: OLS regression
 - b. Unit of Analysis: the village
 - c. Dependent Variable: the percentage of malnourished children in the village.
 - d. Independent Variables:
 - i. Country (Q100) – a 1/0 variable
 - ii. High/Low Exposure (later) – a 1/0 variable
 - iii. Size of village (Q201 from the Village Questionnaire)
 - iv. Predominant Ethnicity (Q203) – 1/0 variables for each, omitting one
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Presence of Formal State Representation (Q801: if coded 2 or 3, outcome = 1, Otherwise 0).
 - vii. Average Daily Household Income (based on expenditures, from Indicator 4, Number 8, averaged across all households sampled in the village).
- 2) Household level Analysis
 - a. Method: Logit regression
 - b. Unit of Analysis: the household
 - c. Dependent Variable: presence of any malnourished children in the HH (1/0)
 - d. Independent Variables:
 - i. Country (Q100) – a 1/0 variable
 - ii. High/Low Exposure (later) – a 1/0 variable
 - iii. Size of household (Q201)
 - iv. Ethnicity of HH head (Q205) – 1/0 variables for each group, omitting one
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Education level of the head of household (Q206)
 - vii. Education level of the wife of head of household, if different (Q206)
 - viii. Daily Household Income (based on expenditures, from Indicator 4, No. 8)
 - ix. Principal activity of the head of household: 1/0 variables for Agriculture and Commerce (all other responses serve as the omitted category).
 - x. Village fixed effects (1/0 variables for each village, omitting one)

Indicator 11: Prevalence of Stunted Children Under 5 Years of Age

This indicator measures the proportion of children under 5 years of age whose growth is moderately or severely stunted, as defined by a length/height Z score of at least two standard deviations below the global mean (which is calculated by the World Health Organization).

A different set of standards is used for children under the age of 2 and those aged 2 – 5 years, because the older children are measured in terms of standing height while the younger children are measured in terms of length.

- 1) Create a data set for all children from sampled households in the study, based on the data from the Food Consumption Questionnaire (which also includes the anthropometry of children). Then, for each child:
- 2) Note the age of the child (Q1707).
- 3) Note the Gender of the child (Q1704).
- 4) Note the length/height of the child in centimeters (Q1712).
- 5) Compare the length/height to the WHO standard to identify children whose length/height is two or more standard deviations below the global mean.
 - a. If the child is a boy, use the Boy columns in Appendix B. Find the age of the boy (in months) on the table, then note the corresponding length/height that is two standard deviations below the mean (under the column SD2neg). If the child's length/height is below the listed number in centimeters, mark the child as Stunted.
 - b. If the child is a girl, use the Girl columns in the same table, Appendix B. Find the age of the girl (in months) on the table, then note the corresponding length/height that is two standard deviations below the mean (under the column SD2neg). If the child's length/height is below the listed number in centimeters, mark the child as Stunted.
- 6) Divide the weighted number of children listed as Stunted by the weighted total number of children in the sample. This represents the **prevalence of stunted children under 5**.

Descriptive Statistics to Calculate:

- Disaggregate the data by country to calculate Stunted Prevalence for Burkina Faso and for Niger.
- Disaggregate the data by gender to calculate Stunted Prevalence for boys and girls.
- Disaggregate by the sex of the head of household.
- Eventually we will disaggregate the data by High and Low Exposure zones.

Multivariate Analysis:

Village level analysis

- a. Method: OLS regression
- b. Unit of Analysis: the village
- c. Dependent Variable: the percentage of stunted children in the village.
- d. Independent Variables:
 - i. Country (Q100) – a 1/0 variable
 - ii. High/Low Exposure (later) – a 1/0 variable
 - iii. Size of village (Q201 from the Village Questionnaire)
 - iv. Predominant Ethnicity (Q203) – 1/0 variables for each group, omitting one
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Presence of Formal State Representation (Q801: if coded 2 or 3, outcome = 1, Otherwise 0).
 - vii. Average Daily Household Income (based on expenditures, as calculated under Indicator 4, Number 8, averaged across all households sampled in the village).

Household level Analysis

- a. Method: Logit regression
- b. Unit of Analysis: the household
- c. Dependent Variable: presence of any stunted children in the HH (1/0)
- d. Independent Variables:
 - i. Country (Q100) – a 1/0 variable
 - ii. High/Low Exposure (later) – a 1/0 variable
 - iii. Size of household (Q201)
 - iv. Ethnicity of HH head (Q205) – 1/0 variables for each group, omitting one
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Education level of the head of household (Q206)
 - vii. Education level of the wife of head of household, if different (Q206)
 - viii. Daily Household Income (based on expenditures, as calculated under Indicator 4, Number 8).
 - ix. Principal activity of the head of household: 1/0 variables for Agriculture and Commerce (all other responses serve as the omitted category).
 - x. Village fixed effects (1/0 variables for each village, omitting one)

Indicator 12: Prevalence of Underweight Children Under 5 Years of Age

This indicator measures the proportion of children under 5 years of age who suffer from acute or chronic malnutrition and are thus significantly underweight. Underweight status is defined by a weight Z score of two standard deviations below the global mean (which is calculated by the World Health Organization).

- 1) Create a data set for all children from sampled households in the study, based on the data from the Food Consumption Questionnaire (which also includes the anthropometry of children). Then, for each child:
- 2) Note the age of the child (Q1707).
- 3) Note the Gender of the child (Q1704).
- 4) Note the weight of the child in kilograms (Q1711).
- 5) Compare the weight to the WHO standard to identify children whose weight is two or more standard deviations below the global mean.
 - a. If the child is a boy, use the Boy columns in Appendix C. Find the age of the boy (in months) on the table, then note the corresponding weight that is two standard deviations below the mean (under the column SD2neg). If the child's weight is below the listed number in kilograms, mark the child as Underweight.
 - b. If the child is a girl, use the Girl columns in the same table, Appendix C. Find the age of the girl (in months) on the table, then note the corresponding weight that is two standard deviations below the mean (under the column SD2neg). If the child's weight is below the listed number in kilograms, mark the child as Underweight.
- 6) Divide the number of children listed as Underweight by the total number of children in the sample. This represents the **Prevalence of Underweight Children under 5**.

Descriptive Statistics to Calculate:

- Disaggregate the data by age groups: 6 – 23 months and 24 – 59 months.
- Disaggregate the data by country to calculate Underweight Prevalence for Burkina Faso and for Niger.
- Disaggregate the data by gender to calculate Underweight Prevalence for boys and girls.
- Disaggregate by the sex of the head of household.
- Eventually we will disaggregate the data by High and Low Exposure zones.

Multivariate Analysis:

Village level analysis

- a. Method: OLS regression
- b. Unit of Analysis: the village
- c. Dependent Variable: the percentage of underweight children in the village.
- d. Independent Variables:

- i. Country (Q100) – a 1/0 variable
- ii. High/Low Exposure (later) – a 1/0 variable
- iii. Size of village (Q201 from the Village Questionnaire)
- iv. Predominant Ethnicity (Q203) – 1/0 variables for each group, omitting one
- v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
- vi. Presence of Formal State Representation (Q801: if coded 2 or 3, outcome = 1, Otherwise 0).
- vii. Average Daily Household Income (based on expenditures, as calculated under Indicator 4, Number 8, averaged across all households sampled in the village).

Household level Analysis

- a. Method: Logit regression
- b. Unit of Analysis: the household
- c. Dependent Variable: presence of any underweight children in the HH (1/0)
- d. Independent Variables:
 - viii. Country (Q100) – a 1/0 variable
 - ix. High/Low Exposure (later) – a 1/0 variable
 - x. Size of household (Q201)
 - xi. Ethnicity of HH head (Q205) – 1/0 variables for each group, omitting one
 - xii. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - xiii. Education level of the head of household (Q206)
 - xiv. Education level of the wife of head of household, if different (Q206)
 - xv. Daily Household Income (based on expenditures, as calculated under Indicator 4, Number 8).
 - xvi. Principal activity of the head of household: 1/0 variables for Agriculture and Commerce (all other responses serve as the omitted category).
 - xvii. Village fixed effects (1/0 variables for each village, omitting one)

Indicator 13: Percentage of Households Using an Improved Drinking Water Source

This indicator measures the shared of households in the sample that use an improved source of drinking water. Improved sources include: piped water, a public tap, a protected well, a tube well, a protected spring, or rainwater harvesting. These sources are protected from outside contamination, especially fecal matter. Bottled water depends on the conditions of the bottled water in specific countries, defined in a case-by-case basis.

- 1) See Question 407 from the Household Questionnaire.
 - a. If the response is coded as 02 (protected well), 05 (tube well), 06 (public tap), 07 (indoor tap), 08 (shared outdoor tap), or 11 (bottled), mark the household as using an improved source of drinking water.
 - b. If the response is coded as 12 (other), evaluate the source on a case-by-case basis. Mark the household as using an improved source of drinking water if the listed source offers protection from outside contamination.
 - c. If the response is coded as any other number, the household's drinking water is considered "unimproved."
- 2) Tally the number of households in the sample that use an improved source of drinking water.
- 3) Divide the weighted number of households using an improved source of drinking water by the weighted total number of households in the sample. This represents the estimated **percentage of households using an improved drinking water source**.

Descriptive Statistics to Calculate:

- Present both the number (2) and the proportion (3).
- Disaggregate the data by country.
- Disaggregate by the type of sources listed in point 1.a.
- Eventually we will disaggregate the data by High and Low Exposure zones.

Multivariate Analysis:

- a. Method: Logit regression
- b. Unit of Analysis: the household
- c. Dependent Variable: presence of an improved source of drinking water in the HH (1/0)
- d. Independent Variables:
 - i. Country (Q100) – a 1/0 variable
 - ii. High/Low Exposure (later) – a 1/0 variable
 - iii. Size of household (Q201)
 - iv. Ethnicity of HH head (Q205) – 1/0 variables for each group, omitting one
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Education level of the head of household (Q206)
 - vii. Education level of the wife of head of household, if different (Q206)
 - viii. Daily Household Income (based on expenditures, as calculated under Indicator 4, Number 8).

- ix. Principal activity of the head of household: 1/0 variables for Agriculture and Commerce (all other responses serve as the omitted category).
- x. Village fixed effects (1/0 variables for each village, omitting one)

Indicator 14: Percentage of Households with a Soap-and-Water Hand-washing Station

A hand-washing station with soap and water is a critical tool for minimizing contamination of foods. The station must be observable to enumerators, and the soap and water must be reachable from the station. Furthermore, the hand-washing station must be “commonly used,” indicating that it is easily observable and indicated by study participants as the place where household members typically wash their hands.

- 1) See Question 411 on the Household Questionnaire.
 - a. If the response is coded 2, 3, or 4 (indicating no observation of a hand-washing station), mark the household as NOT meeting the criteria.
 - b. If the response is coded 1 for observation of the hand-washing station, proceed to Q412.
- 2) Q412: If the response is coded 2 (indicating no water present), mark the household as NOT meeting the criteria. If the response is coded 1 (indicating water), proceed to Q413.
- 3) Q413: If the response is coded 3 or 4 (indicating no soap), mark the household as NOT meeting the criteria. If the response is coded 5 (for “other”), evaluate the response to determine if it is a form of soap. If the response is coded 1 or 2 (indicating various forms of soap), mark the household as meeting all criteria for the soap-and-water hand-washing station.
- 4) To summarize, (1) the hand washing station must be observed, (2) water must be present, and (3) soap must be present. If all three conditions are met, the household is recorded as having a soap-and-water hand-washing station.
- 5) Divide the weighted number of households that meet the conditions for a soap-and-water hand-washing station by the weighted total number of households in the sample. This represents the estimated **percentage of households with a soap-and-water hand-washing station**.

Descriptive Statistics to Calculate:

- Disaggregate the data by country.
- Eventually we will disaggregate the data by High and Low Exposure zones.

Multivariate Analysis:

- a. Method: Logit regression
- b. Dependent Variable: presence of a soap-and-water hand-washing station in the HH (1/0)
- c. Independent Variables:

Indicator 15: Percentage of Households Using an Improved Sanitation System

This indicator measures whether there is a sanitary facility in the household, as defined by the Millennium Development Goals. Sanitary facilities include: piped systems, septic systems, other flush facilities, pit latrines with a slab, composting toilets, and ventilated latrines.

- 1) See Question 406 on the Household Questionnaire.
 - a. If the response is coded 01 (pit flush toilet), 02 (flush toilet with septic), 03 (flush toilet with sewer), 04 (pit latrine with slab), 05 (composting toilet), or 06 (ventilated latrine), mark the household as using an improved sanitation system.
 - b. If the response is coded 07, 08, 09, 10, or 11, mark the household as NOT using an improved sanitation system.
- 2) Divide the number of households with an improved sanitation system by the total number of households in the sample. This represents the **Percentage of Households Using an Improved Sanitation System**.

Descriptive Statistics to Calculate:

- Disaggregate the data by country.
- Eventually we will disaggregate the data by High and Low Exposure zones.

Multivariate Analysis:

- a. Method: Logit regression
- b. Unit of Analysis: the household
- c. Dependent Variable: presence of a soap-and-water station in the HH (1/0)
- d. Independent Variables:
 - i. Country (Q100) – a 1/0 variable
 - ii. High/Low Exposure (later) – a 1/0 variable
 - iii. Size of household (Q201)
 - iv. Ethnicity of HH head (Q205) – 1/0 variables for each group, omitting one
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Education level of the head of household (Q206)
 - vii. Education level of the wife of head of household, if different (Q206)
 - viii. Daily Household Income (based on expenditures, from Indicator 4, No. 8)
 - ix. Principal activity of the head of household: 1/0 variables for Agriculture and Commerce (all other responses serve as the omitted category).
 - x. Village fixed effects (1/0 variables for each village, omitting one)

Indicator 16: Household Dietary Diversity

This indicator measures the mean number of food groups consumed by the household. It replaces the indicator for Women's Dietary Diversity, which is similar but which requires that the data relate exclusively to the food consumption of females.

The measure accounts for consumption in the previous 24 hours of a number of food groups, such as Grains, roots and tubers; Legumes and nuts; Dairy products (milk, yogurt, cheese); meats; eggs; and fruits and vegetables. There are 12 categories in total. The guidelines are based on the definition for dietary diversity developed by the Food and Agriculture Organization of the United Nations.

- 1) Go to Questions I501 to I512 on the Food Consumption Questionnaire.
 - a. If the response is coded as 1 (indicating that someone in the household consumed that food group in the last day), give the respondent a score of 1.
 - b. If the response is 2, 8, or 9 (indicating that no one consumed that food group or the respondent doesn't know/refuses to answer), give the respondent a score of 0.
- 2) Sum the scores from Q1501-Q1512. The total should be a number between 0 and 12, representing the number of food groups from the questionnaire that someone in the household has consumed during the last day. This represents the **household dietary diversity score**.
- 3) Calculate the weighted sum of household dietary diversity score and divide by the weighted number of households to determine the estimated average household dietary diversity score across the zone.

Descriptive Statistics to Calculate:

- Calculate the mean Household Dietary Diversity Score by country.
- Calculate the mean Household Dietary Diversity Score by village.
- Eventually, we will calculate the mean Household Dietary Diversity Score based on High and Low Exposure zones.

Multivariate Analysis:

- a. Method: OLS regression
- b. Unit of Analysis: the household
- c. Dependent Variable: Household Dietary Diversity Score (0 – 12 value)
- d. Independent Variables:
 - i. Country (Q100) – a 1/0 variable
 - ii. High/Low Exposure (later) – a 1/0 variable
 - iii. Size of household (Q201)
 - iv. Ethnicity of HH head (Q205) – 1/0 variables for each group, omitting one
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Education level of the head of household (Q206)

- vii. Education level of the wife of head of household, if different (Q206)
 - viii. Daily Household Income (based on expenditures, as calculated under Indicator 4, Number 8).
 - ix. Principal activity of the head of household: 1/0 variables for Agriculture and Commerce (all other responses serve as the omitted category).
 - x. Village fixed effects (1/0 variables for each village, omitting one)
- e. Alternative: Logit regression, with the dependent variable as the consumption of any one particular food group, such as meat (1/0 variable).

Indicator 17: Prevalence of Children Receiving a Minimum Acceptable Diet (MAD)

The measure of Minimum Acceptable Diet pertains to children from 6 – 23 months. The measure accounts for both diversity—in terms of food groups consumed by the children—and frequency of meals. Standards differ based on age categories (for example, 6 – 8 month old children have different minimum feeding frequencies) and also for breastfed children versus those who are not breastfeeding.

- 1) Create a data set for all children from sampled households in the study, based on the data from the Food Consumption Questionnaire (which also includes the anthropometry of children). Then, for each child:
- 2) Note the age of the child from Question 1707. If the child is less than 6 months or older than 23 months, exclude the child from this analysis.
- 3) From Question 17b03, note if the child is breastfed (coded 1 on the questionnaire) or if there is no evidence that the child is breastfed (coded 2, 8, or 9).
- 4) Calculate the child's dietary diversity in the following manner:
 - a. If Q17b19 OR Q17b 21 are coded 1, give the child a score of 1 for consuming grains. If both Q17b19 and Q17b21 are coded 2, give the child a score of 0 for grains.
 - b. If Q17b29 is coded 1, give the child a score of 1 for consuming legumes. If Q17b29 is coded 2, give the child a score of 0 for legumes.
 - c. If Q17b30 is coded 1, give the child a score of 1 for consuming dairy. If Q17b30 is coded 2, give the child a score of 0 for dairy.
 - d. If Q17b25, Q17b26, OR Q17b28 are coded 1, give the child a score of 1 for consuming meats. If all three are coded 2, give the child a score of 0 for meats.
 - e. If Q17b27 is coded 1, give the child a score of 1 for consuming eggs. If Q17b27 is coded 2, give the child a score of 0 for eggs.
 - f. If Q17b22 is coded 1, give the child a score of 1 for consuming fruits and vegetables high in Vitamin A. If Q17b22 is coded 2, give the child a score of 0 for high vitamin A fruits and vegetables.
 - g. If Q17b24 is coded 1, give the child a score of 1 for consuming other fruits and vegetables. If it is coded 2, give the child a score of 0 for other fruits and vegetables.
 - h. For points a-g above, if the response is coded 8 or 9, treat the data as missing.
- 5) If the child is aged 6 – 8 months (from Q1707) AND is breastfed (from Q17b03), calculate the minimum acceptable diet in the following manner:
 - a. If the child has a score equal to or greater than 4 for dietary diversity in step (4) above, mark the child as having a diverse diet.
 - b. Consult Q17b37, which records the number of times the child has eaten foods in the last 24 hours. If the number is equal to or greater than 2, mark the child as having a frequent diet.

- c. If the child has a diversity score of at least 4 AND a diet frequency of at least 2 times per day, mark the child as meeting the standards for a Minimum Acceptable Diet. Children who do not meet both of these criteria are considered to not have a minimum acceptable diet.
- 6) If the child is aged 9 – 23 months (from Q1707) AND is breastfed (from Q17b03), calculate the minimum acceptable diet in the following manner:
 - a. If the child has a score equal to or greater than 4 for dietary diversity in step (4) above, mark the child as having a diverse diet.
 - b. Consult Q17b37, which records the number of times the child has eaten foods in the last 24 hours. If the number is equal to or greater than 3, mark the child as having a frequent diet.
 - c. If the child has both a diverse diet AND a frequent diet, mark the child as meeting the standards for a Minimum Acceptable Diet. Children who do not meet both of these criteria are considered to not have a minimum acceptable diet.
 - d. Note that the difference in age groups is only that the older children should consume food at least 3 times per day, rather than 2.
- 7) If the child is NOT breastfed (coded 2, 8, or 9 from Q17b03), calculate the minimum acceptable diet in the following manner for all children aged 6 – 23 months:
 - a. If the child has a score equal to or greater than 4 for dietary diversity in step (4) above, mark the child as having a diverse diet.
 - b. Sum the numbers from Q17b09 and Q17b11. These questions indicate consumption of milk products. If the total for the child is equal to or greater than 2, mark the child as receiving adequate milk intake.
 - c. Consult Q17b37, which records the number of times the child has eaten foods in the last 24 hours. If the number is equal to or greater than 2, mark the child as having a frequent diet.
 - d. If the child meets all three criteria—diverse diet, adequate milk, and frequent diet—mark the child as meeting the standards for a Minimum Acceptable Diet. Children who do not meet all of these criteria are considered to not have a minimum acceptable diet.
- 8) Sum the weighted number of children (of all ages from 6 – 23 months) who meet the standards for a Minimum Acceptable Diet. Divide that number by the weighted total number of children between 6 – 23 months in the sample (adding together all children in that age range from all households). The outcome represents the estimated **prevalence of children 6 – 23 months receiving a Minimum Acceptable Diet (MAD)**.

Descriptive Statistics to Calculate:

- Disaggregate the outcome by age (6 – 8 months and 9 – 23 months)
- Disaggregate the outcome by gender to calculate MAD prevalence for boys and girls
- Disaggregate the outcome by country
- Eventually we will disaggregate the data by High and Low Exposure zones.

Multivariate Analysis:

Household-level analysis

- a. Method: Logit regression
- b. Unit of Analysis: the household
- c. Dependent Variable: Presence of any child in the household who does NOT receive a Minimum Acceptable Diet (1/0 variable)
- d. Independent Variables:
 - i. Country (Q100) – a 1/0 variable
 - ii. High/Low Exposure (later) – a 1/0 variable
 - iii. Size of household (Q201)
 - iv. Ethnicity of HH head (Q205) – 1/0 variables for each group, omitting one
 - v. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - vi. Education level of the head of household (Q206)
 - vii. Education level of the wife of head of household, if different (Q206)
 - viii. Daily Household Income (based on expenditures, as calculated under Indicator 4, Number 8).
 - ix. Principal activity of the head of household: 1/0 variables for Agriculture and Commerce (all other responses serve as the omitted category).
 - x. Village fixed effects (1/0 variables for each village, omitting one)
- e. Alternative: OLS regression, with the dependent variable as the proportion of children in the household who receive a Minimum Acceptable Diet.
- f. Note: If the household has no children from 6 – 23 months, that household is excluded from the analysis.

Indicator 18: Prevalence of Exclusive Breastfeeding of Children under 6 Months Old

Exclusive breastfeeding indicates that a child has received breastmilk but has not received any other food or liquid (aside from possible rehydration solutions).

- 1) Create a data set for all children from sampled households in the study, based on the data from the Food Consumption Questionnaire (which also includes the anthropometry of children). Then, for each child:
- 2) Note the age of the child from Question I707. If the child is older than 6 months, exclude the child from this analysis.
- 3) From Question I7b03, note if the child is breastfed (coded 1 on the questionnaire). If yes, give the child a score of 1 for breastfed. If the child is coded 2, mark the child as not being breastfed. If the child is coded 8 or 9, code the data as missing.
- 4) For each child, if ANY of the following questions are coded 1, indicating that the child has consumed that item in the past 24 hours, mark the child as consuming Other Food Items:
 - a. Q17b07
 - b. Q17b08
 - c. Q17b10
 - d. Q17b12
 - e. Q17b13
 - f. Q17b14
 - g. Q17b16 – Q17b37 (all inclusive)
- 5) If ALL of the questions listed above in (4) are coded 2 (indicating that the child did not consume the item), mark the child as being Exclusively Breastfed. If any are coded 1, meaning the child consumed the item, the child is not exclusively breastfed.
- 6) If all of the questions listed above in (4) are coded 8 or 9 (indicating don't know or refused to answer), treat the data as missing. If at least one of the items is given a value of 1 or 2, treat the data as sufficiently present.
- 7) Divide the weighted number of children aged 0 – 6 months who are exclusively breastfed by the weighted total number of children aged 0 – 6 from all households in the sample. This represents the estimated **prevalence of exclusive breastfeeding of children under 6 months old**.

Descriptive Statistics to Calculate:

- Disaggregate the data based on gender
- Disaggregate the data based on country=
- Eventually we will disaggregate the data based on High and Low Exposure zones.

Multivariate Analysis:

Household-level analysis

- a. Method: Logit regression
- b. Unit of Analysis: the household
- c. Dependent Variable: Presence of an exclusively breastfeeding child (I/O variable)
- d. Independent Variables:
 - xi. Country (Q100) – a I/O variable
 - xii. High/Low Exposure (later) – a I/O variable
 - xiii. Size of household (Q201)
 - xiv. Ethnicity of HH head (Q205) – I/O variables for each group, omitting one
 - xv. Distance from the chef-lieu (Q205 on the Village Questionnaire)
 - xvi. Education level of the head of household (Q206)
 - xvii. Education level of the wife of head of household, if different (Q206)
 - xviii. Daily Household Income (based on expenditures, as calculated under Indicator 4, Number 8).
 - xix. Principal activity of the head of household: I/O variables for Agriculture and Commerce (all other responses serve as the omitted category).
 - xx. Village fixed effects (I/O variables for each village, omitting one)
- e. Alternative: OLS regression, with the dependent variable as the proportion of children aged 0 – 6 months who are Exclusively Breastfed.
- f. Note: If the household has no children from 0 – 6 months, that household is excluded from the analysis.

Indicator 19: Proportion Supporting Equal Access for Males and Females to Social, Economic, and Political Opportunities

This indicator measures the degree to which participants agree that males and females should have equal access to opportunities. Data are gathered from both men and women, allowing for comparisons across gender. Once initiatives, training, and outreach are put in place, the data will also provide a measure of the positive impacts that those programs have on gender equality.

Note: we will be able to measure the change in this proportion only after the midline study.

- 1) Go to Question 1410 on the Household Questionnaire, concerning equal access to social, economic, and political opportunities.
- 2) If the response is coded 1, mark the response as a positive outcome; the respondent thinks men and women should have equal access to those opportunities.
- 3) If the response is coded 2, mark the response as a negative outcome; the respondent does not think men and women should have equal access to those opportunities.
- 4) If the response is coded 8 or 9 (indicating doesn't know or refused to answer), mark the response as missing data.
- 5) Sum the weighted number of responses coded as positive, and divide that number by the weighted total number of responses in the sample. This represents the estimated **proportion supporting equal access for males and females to social, economic, and political opportunities**.

Descriptive Statistics to Calculate:

- Disaggregate the data based on gender, in order to calculate the proportions of positive responses for both men and women.
- Disaggregate the data by country.
- Disaggregate the data based on age categories: calculate the proportion of positive responses among 18 – 30-year-olds, 31 – 55-year-olds, and those above 55 years old.
- Eventually we will disaggregate the data by High and Low Exposure zones.

Multivariate Analysis:

- a) Methodological approach: Logit regression
- b) Dependent variable: Individual supports equal access for males and females (1/0 variable).
- c) Unit of analysis: the individual. The number of total observations should equate to the number of households in the study, minus any missing data, because only one individual is sampled per household for this question.
- d) Possible Independent variables:
 - Country (Q100) – a 1/0 variable
 - High/Low Exposure (later) – a 1/0 variable

Size of household (Q201)
Age of respondent (Q202)
Gender of respondent (Q203)
Ethnicity of respondent (Q205) – 1/0 variables for each group, with one omitted
Distance from the chef-lieu (Q205 on the Village Questionnaire)
Education level of respondent (Q206)
Daily Household Income (based on expenditures, from Indicator 4, No. 8)
Principal activity of respondent (Q210): 1/0 variables for Agriculture and Commerce (all other responses serve as the omitted category).

Indicator 20: Percentage of Women Reporting Effective Participation in Household Decision Making

This indicator aims to capture the degree to which women feel that they have opportunities to participate meaningfully in household decisions regarding production and income generation. The data is drawn only from female respondents who participated in the Gender Questionnaire.

- 1) Go to Module G2, Activity A (food production).
 - a. If G2.01a is coded 1 for Activity A, meaning that the household conducted this activity during the previous 12 months, AND
 - b. If G2.01 is coded 1, meaning the female respondent participated, AND
 - c. If G2.02 is coded 3, 4, or 5, meaning that the female respondent had at least some input, give the respondent a score of 1 for Effective Participation in Production Decisions for Activity A.
 - d. All three of those conditions must be met. If one is not, give the respondent a score of 0 for Effective Participation in Production Decisions for Activity A.
- 2) Stay with Module G2, Activity A to evaluate Income Decisions.
 - a. If G2.01a is coded 1, AND
 - b. If G2.01 is coded 1, AND
 - c. If G2.03 is coded 3, 4, or 5, meaning that the female respondent had at least some input in income decisions, give the respondent a score of 1 for Effective Participation in Income Decisions for Activity A.
 - d. All three of those conditions must be met. If one is not, give the respondent a score of 0 for Effective Participation in Income Decisions for Activity A.
- 3) Repeat steps (1) and (2) for Activities B (cash crops), C (livestock), D (non-agricultural activities), E (employment), and F (fishing).
- 4) For Activity A, if the respondent scored 1 both for Production Decisions (1.c) and Income Decisions (2.c), mark the respondent as Effectively Participating in Activity A.
- 5) Repeat step (4) for Activities B – F.
- 6) Classify respondents by degree of participation:
 - a. If the respondent effectively participates in at least one activity (either on Production or Income), mark the respondent as having Effective Participation.
- 7) Sum the weighted number of respondents on the Gender Questionnaire who effectively participate in at least one activity (either on Production or Income) from (6.a) above. Divide this number by the weighted total number of respondents in the Gender Questionnaire sample. This represents the estimated **percentage of women reporting effective participation in household decision making**.

Descriptive Statistics to Calculate:

- Disaggregate the data by country.

- In addition to the proportion reporting effective participation, also calculate the proportion of women that report participating the production decisions and the revenue decisions separately.
- Eventually we will disaggregate the data by High and Low Exposure zones.

Notes:

The Gender questionnaires do not include demographic data for the respondent (who presumably differs from the respondent who completed the Household Questionnaire), so individual-level analyses are not possible. If household data from the Household Questionnaire can be matched to the Gender Questionnaire, it is possible to analyze the likelihood of a household's female respondent having Effective Participation, but only using household-level, and not individual-level, factors.

Appendix B. WHO Height and Weight Standards

Length	SD2neg
109	14.983
109.1	15.013
109.2	15.043
109.3	15.073
109.4	15.104
109.5	15.135
109.6	15.165
109.7	15.196
109.8	15.227
109.9	15.258
110	15.289

Table WFH.

Weight for Height Table – for Boys aged 24-59 months

Height	SD2neg	Height	SD2neg	Height	SD2neg
65.0	6.335	69.9	7.292	74.8	8.173
65.1	6.355	70.0	7.311	74.9	8.190
65.2	6.376	70.1	7.330	75.0	8.207
65.3	6.396	70.2	7.349	75.1	8.223
65.4	6.416	70.3	7.368	75.2	8.240
65.5	6.436	70.4	7.387	75.3	8.257
65.6	6.456	70.5	7.406	75.4	8.273
65.7	6.476	70.6	7.424	75.5	8.290
65.8	6.496	70.7	7.443	75.6	8.306
65.9	6.516	70.8	7.462	75.7	8.323
66.0	6.536	70.9	7.480	75.8	8.339
66.1	6.556	71.0	7.499	75.9	8.355
66.2	6.575	71.1	7.518	76.0	8.371
66.3	6.595	71.2	7.536	76.1	8.387
66.4	6.615	71.3	7.555	76.2	8.403
66.5	6.635	71.4	7.573	76.3	8.420
66.6	6.654	71.5	7.592	76.4	8.436
66.7	6.674	71.6	7.610	76.5	8.452
66.8	6.694	71.7	7.628	76.6	8.467
66.9	6.713	71.8	7.647	76.7	8.483
67.0	6.733	71.9	7.665	76.8	8.499
67.1	6.752	72.0	7.683	76.9	8.515
67.2	6.772	72.1	7.701	77.0	8.531
67.3	6.791	72.2	7.719	77.1	8.546
67.4	6.811	72.3	7.737	77.2	8.562
67.5	6.830	72.4	7.755	77.3	8.578
67.6	6.850	72.5	7.773	77.4	8.593
67.7	6.869	72.6	7.791	77.5	8.609

Height	SD2neg	Height	SD2neg	Height	SD2neg
67.8	6.888	72.7	7.809	77.6	8.624
67.9	6.908	72.8	7.827	77.7	8.640
68.0	6.927	72.9	7.844	77.8	8.655
68.1	6.946	73.0	7.862	77.9	8.671
68.2	6.966	73.1	7.880	78.0	8.686
68.3	6.985	73.2	7.897	78.1	8.702
68.4	7.004	73.3	7.915	78.2	8.718
68.5	7.024	73.4	7.932	78.3	8.733
68.6	7.043	73.5	7.950	78.4	8.749
68.7	7.062	73.6	7.967	78.5	8.764
68.8	7.081	73.7	7.985	78.6	8.780
68.9	7.101	73.8	8.002	78.7	8.795
69.0	7.120	73.9	8.019	78.8	8.811
69.1	7.139	74.0	8.036	78.9	8.826
69.2	7.158	74.1	8.054	79.0	8.842
69.3	7.177	74.2	8.071	79.1	8.858
69.4	7.197	74.3	8.088	79.2	8.874
69.5	7.216	74.4	8.105	79.3	8.890
69.6	7.235	74.5	8.122	79.4	8.906
69.7	7.254	74.6	8.139	79.5	8.922
69.8	7.273	74.7	8.156	79.6	8.938
79.7	8.954	84.8	9.916	89.9	11.002
79.8	8.970	84.9	9.938	90.0	11.022
79.9	8.986	85.0	9.959	90.1	11.043
80.0	9.002	85.1	9.981	90.2	11.063
80.1	9.019	85.2	10.002	90.3	11.083
80.2	9.035	85.3	10.024	90.4	11.103
80.3	9.052	85.4	10.046	90.5	11.123
80.4	9.069	85.5	10.067	90.6	11.144
80.5	9.085	85.6	10.089	90.7	11.164
80.6	9.102	85.7	10.111	90.8	11.184

Height	SD2neg	Height	SD2neg	Height	SD2neg
80.7	9.119	85.8	10.133	90.9	11.204
80.8	9.136	85.9	10.154	91.0	11.224
80.9	9.153	86.0	10.176	91.1	11.244
81.0	9.171	86.1	10.198	91.2	11.264
81.1	9.188	86.2	10.220	91.3	11.284
81.2	9.205	86.3	10.242	91.4	11.304
81.3	9.223	86.4	10.263	91.5	11.324
81.4	9.241	86.5	10.285	91.6	11.344
81.5	9.258	86.6	10.307	91.7	11.364
81.6	9.277	86.7	10.328	91.8	11.384
81.7	9.295	86.8	10.350	91.9	11.404
81.8	9.313	86.9	10.372	92.0	11.424
81.9	9.331	87.0	10.393	92.1	11.444
82.0	9.350	87.1	10.415	92.2	11.463
82.1	9.368	87.2	10.436	92.3	11.483
82.2	9.387	87.3	10.458	92.4	11.503
82.3	9.406	87.4	10.479	92.5	11.523
82.4	9.425	87.5	10.501	92.6	11.543
82.5	9.444	87.6	10.522	92.7	11.563
82.6	9.463	87.7	10.544	92.8	11.582
82.7	9.483	87.8	10.565	92.9	11.602
82.8	9.503	87.9	10.586	93.0	11.622
82.9	9.522	88.0	10.607	93.1	11.641
83.0	9.542	88.1	10.629	93.2	11.661
83.1	9.562	88.2	10.650	93.3	11.681
83.2	9.582	88.3	10.671	93.4	11.701
83.3	9.602	88.4	10.692	93.5	11.721
83.4	9.622	88.5	10.713	93.6	11.741
83.5	9.643	88.6	10.734	93.7	11.760
83.6	9.663	88.7	10.755	93.8	11.780
83.7	9.684	88.8	10.775	93.9	11.800

Height	SD2neg	Height	SD2neg	Height	SD2neg
83.8	9.705	88.9	10.796	94.0	11.820
83.9	9.725	89.0	10.817	94.1	11.840
84.0	9.746	89.1	10.838	94.2	11.860
84.1	9.767	89.2	10.858	94.3	11.880
84.2	9.788	89.3	10.879	94.4	11.899
84.3	9.809	89.4	10.899	94.5	11.919
84.4	9.831	89.5	10.920	94.6	11.940
84.5	9.852	89.6	10.940	94.7	11.960
84.6	9.873	89.7	10.961	94.8	11.980
84.7	9.895	89.8	10.981	94.9	12.000
95.0	12.020	100.1	13.110	105.2	14.334
95.1	12.040	100.2	13.133	105.3	14.359
95.2	12.060	100.3	13.155	105.4	14.384
95.3	12.080	100.4	13.178	105.5	14.410
95.4	12.100	100.5	13.201	105.6	14.435
95.5	12.121	100.6	13.224	105.7	14.461
95.6	12.141	100.7	13.247	105.8	14.486
95.7	12.161	100.8	13.270	105.9	14.512
95.8	12.182	100.9	13.293	106.0	14.537
95.9	12.202	101.0	13.317	106.1	14.563
96.0	12.223	101.1	13.340	106.2	14.589
96.1	12.243	101.2	13.363	106.3	14.615
96.2	12.264	101.3	13.386	106.4	14.641
96.3	12.284	101.4	13.410	106.5	14.667
96.4	12.305	101.5	13.433	106.6	14.692
96.5	12.326	101.6	13.457	106.7	14.718
96.6	12.347	101.7	13.480	106.8	14.744
96.7	12.367	101.8	13.504	106.9	14.770
96.8	12.388	101.9	13.528	107.0	14.797
96.9	12.409	102.0	13.551	107.1	14.823
97.0	12.430	102.1	13.575	107.2	14.849

Height	SD2neg	Height	SD2neg	Height	SD2neg
97.1	12.451	102.2	13.599	107.3	14.875
97.2	12.472	102.3	13.623	107.4	14.902
97.3	12.494	102.4	13.646	107.5	14.928
97.4	12.515	102.5	13.670	107.6	14.954
97.5	12.536	102.6	13.694	107.7	14.981
97.6	12.558	102.7	13.718	107.8	15.008
97.7	12.579	102.8	13.742	107.9	15.034
97.8	12.600	102.9	13.766	108.0	15.061
97.9	12.622	103.0	13.791	108.1	15.088
98.0	12.644	103.1	13.815	108.2	15.115
98.1	12.665	103.2	13.839	108.3	15.142
98.2	12.687	103.3	13.863	108.4	15.168
98.3	12.709	103.4	13.888	108.5	15.195
98.4	12.731	103.5	13.912	108.6	15.223
98.5	12.752	103.6	13.937	108.7	15.250
98.6	12.774	103.7	13.961	108.8	15.277
98.7	12.796	103.8	13.985	108.9	15.304
98.8	12.818	103.9	14.010	109.0	15.332
98.9	12.840	104.0	14.035	109.1	15.359
99.0	12.863	104.1	14.059	109.2	15.386
99.1	12.885	104.2	14.084	109.3	15.414
99.2	12.907	104.3	14.109	109.4	15.442
99.3	12.929	104.4	14.134	109.5	15.470
99.4	12.952	104.5	14.159	109.6	15.497
99.5	12.974	104.6	14.183	109.7	15.525
99.6	12.997	104.7	14.209	109.8	15.553
99.7	13.019	104.8	14.233	109.9	15.581
99.8	13.042	104.9	14.258	110.0	15.609
99.9	13.065	105.0	14.283	110.1	15.637
100.0	13.087	105.1	14.309	110.2	15.666
110.3	15.694	115.4	17.205		

Height	SD2neg	Height	SD2neg	Height	SD2neg
110.4	15.722	115.5	17.236		
110.5	15.751	115.6	17.266		
110.6	15.779	115.7	17.297		
110.7	15.808	115.8	17.328		
110.8	15.836	115.9	17.359		
110.9	15.865	116.0	17.389		
111.0	15.894	116.1	17.420		
111.1	15.922	116.2	17.451		
111.2	15.951	116.3	17.481		
111.3	15.980	116.4	17.512		
111.4	16.009	116.5	17.543		
111.5	16.038	116.6	17.574		
111.6	16.067	116.7	17.605		
111.7	16.096	116.8	17.635		
111.8	16.126	116.9	17.666		
111.9	16.155	117.0	17.697		
112.0	16.184	117.1	17.728		
112.1	16.213	117.2	17.759		
112.2	16.243	117.3	17.790		
112.3	16.272	117.4	17.821		
112.4	16.302	117.5	17.852		
112.5	16.331	117.6	17.883		
112.6	16.361	117.7	17.913		
112.7	16.390	117.8	17.944		
112.8	16.420	117.9	17.975		
112.9	16.450	118.0	18.006		
113.0	16.479	118.1	18.037		
113.1	16.509	118.2	18.068		
113.2	16.539	118.3	18.099		
113.3	16.569	118.4	18.130		
113.4	16.599	118.5	18.161		

Height	SD2neg	Height	SD2neg	Height	SD2neg
113.5	16.629	118.6	18.192		
113.6	16.659	118.7	18.223		
113.7	16.689	118.8	18.254		
113.8	16.719	118.9	18.285		
113.9	16.749	119.0	18.316		
114.0	16.779	119.1	18.347		
114.1	16.809	119.2	18.377		
114.2	16.840	119.3	18.408		
114.3	16.870	119.4	18.439		
114.4	16.900	119.5	18.470		
114.5	16.931	119.6	18.501		
114.6	16.961	119.7	18.532		
114.7	16.991	119.8	18.563		
114.8	17.022	119.9	18.593		
114.9	17.052	120.0	18.624		
115.0	17.083				
115.1	17.113				
115.2	17.144				
115.3	17.175				

Weight for Height Table – for Girls aged 24-59 months

Height	SD2neg	Height	SD2neg	Height	SD2neg
65.0	6.071	69.9	6.954	74.8	7.766
65.1	6.090	70.0	6.971	74.9	7.781
65.2	6.109	70.1	6.988	75.0	7.797
65.3	6.128	70.2	7.006	75.1	7.812
65.4	6.146	70.3	7.023	75.2	7.828
65.5	6.165	70.4	7.040	75.3	7.844
65.6	6.184	70.5	7.057	75.4	7.859
65.7	6.203	70.6	7.074	75.5	7.875
65.8	6.221	70.7	7.091	75.6	7.890
65.9	6.240	70.8	7.108	75.7	7.906
66.0	6.259	70.9	7.125	75.8	7.922
66.1	6.277	71.0	7.142	75.9	7.937
66.2	6.296	71.1	7.159	76.0	7.953
66.3	6.314	71.2	7.176	76.1	7.968
66.4	6.333	71.3	7.193	76.2	7.984
66.5	6.351	71.4	7.210	76.3	7.999
66.6	6.369	71.5	7.227	76.4	8.015
66.7	6.388	71.6	7.244	76.5	8.031
66.8	6.406	71.7	7.261	76.6	8.046
66.9	6.424	71.8	7.278	76.7	8.062
67.0	6.442	71.9	7.294	76.8	8.078
67.1	6.460	72.0	7.311	76.9	8.094
67.2	6.479	72.1	7.328	77.0	8.109
67.3	6.497	72.2	7.345	77.1	8.125
67.4	6.515	72.3	7.361	77.2	8.141
67.5	6.533	72.4	7.378	77.3	8.157
67.6	6.550	72.5	7.395	77.4	8.173
67.7	6.568	72.6	7.411	77.5	8.189
67.8	6.586	72.7	7.428	77.6	8.205

Height	SD2neg	Height	SD2neg	Height	SD2neg
67.9	6.604	72.8	7.444	77.7	8.221
68.0	6.622	72.9	7.461	77.8	8.237
68.1	6.640	73.0	7.477	77.9	8.253
68.2	6.657	73.1	7.493	78.0	8.270
68.3	6.675	73.2	7.510	78.1	8.286
68.4	6.693	73.3	7.526	78.2	8.302
68.5	6.710	73.4	7.542	78.3	8.319
68.6	6.728	73.5	7.559	78.4	8.335
68.7	6.745	73.6	7.575	78.5	8.352
68.8	6.763	73.7	7.591	78.6	8.368
68.9	6.781	73.8	7.607	78.7	8.385
69.0	6.798	73.9	7.623	78.8	8.402
69.1	6.815	74.0	7.639	78.9	8.419
69.2	6.833	74.1	7.655	79.0	8.436
69.3	6.850	74.2	7.671	79.1	8.453
69.4	6.868	74.3	7.687	79.2	8.470
69.5	6.885	74.4	7.702	79.3	8.487
69.6	6.902	74.5	7.718	79.4	8.504
69.7	6.919	74.6	7.734	79.5	8.522
69.8	6.937	74.7	7.750	79.6	8.539
79.7	8.556	84.8	9.550	89.9	10.623
79.8	8.574	84.9	9.571	90.0	10.644
79.9	8.592	85.0	9.592	90.1	10.664
80.0	8.609	85.1	9.613	90.2	10.685
80.1	8.627	85.2	9.634	90.3	10.706
80.2	8.645	85.3	9.655	90.4	10.726
80.3	8.663	85.4	9.676	90.5	10.747
80.4	8.681	85.5	9.697	90.6	10.768
80.5	8.700	85.6	9.719	90.7	10.788
80.6	8.718	85.7	9.740	90.8	10.809
80.7	8.736	85.8	9.761	90.9	10.830

Height	SD2neg	Height	SD2neg	Height	SD2neg
80.8	8.755	85.9	9.782	91.0	10.850
80.9	8.773	86.0	9.803	91.1	10.871
81.0	8.792	86.1	9.825	91.2	10.892
81.1	8.810	86.2	9.846	91.3	10.912
81.2	8.829	86.3	9.867	91.4	10.933
81.3	8.848	86.4	9.888	91.5	10.953
81.4	8.867	86.5	9.910	91.6	10.974
81.5	8.886	86.6	9.931	91.7	10.995
81.6	8.905	86.7	9.952	91.8	11.015
81.7	8.924	86.8	9.973	91.9	11.036
81.8	8.943	86.9	9.994	92.0	11.056
81.9	8.962	87.0	10.015	92.1	11.077
82.0	8.982	87.1	10.037	92.2	11.098
82.1	9.001	87.2	10.058	92.3	11.118
82.2	9.021	87.3	10.079	92.4	11.139
82.3	9.040	87.4	10.100	92.5	11.159
82.4	9.060	87.5	10.121	92.6	11.180
82.5	9.080	87.6	10.142	92.7	11.201
82.6	9.100	87.7	10.163	92.8	11.221
82.7	9.119	87.8	10.184	92.9	11.242
82.8	9.139	87.9	10.205	93.0	11.262
82.9	9.159	88.0	10.226	93.1	11.283
83.0	9.179	88.1	10.247	93.2	11.304
83.1	9.199	88.2	10.268	93.3	11.324
83.2	9.220	88.3	10.289	93.4	11.345
83.3	9.240	88.4	10.310	93.5	11.366
83.4	9.260	88.5	10.331	93.6	11.386
83.5	9.281	88.6	10.352	93.7	11.407
83.6	9.301	88.7	10.373	93.8	11.428
83.7	9.321	88.8	10.394	93.9	11.448
83.8	9.342	88.9	10.415	94.0	11.469

Height	SD2neg	Height	SD2neg	Height	SD2neg
83.9	9.363	89.0	10.436	94.1	11.490
84.0	9.383	89.1	10.457	94.2	11.511
84.1	9.404	89.2	10.477	94.3	11.532
84.2	9.425	89.3	10.498	94.4	11.552
84.3	9.445	89.4	10.519	94.5	11.573
84.4	9.466	89.5	10.540	94.6	11.594
84.5	9.487	89.6	10.561	94.7	11.615
84.6	9.508	89.7	10.581	94.8	11.636
84.7	9.529	89.8	10.602	94.9	11.657
95.0	11.678	100.1	12.795	105.2	14.090
95.1	11.699	100.2	12.818	105.3	14.117
95.2	11.719	100.3	12.842	105.4	14.145
95.3	11.740	100.4	12.865	105.5	14.173
95.4	11.761	100.5	12.889	105.6	14.200
95.5	11.783	100.6	12.913	105.7	14.228
95.6	11.804	100.7	12.937	105.8	14.256
95.7	11.825	100.8	12.960	105.9	14.284
95.8	11.846	100.9	12.984	106.0	14.312
95.9	11.867	101.0	13.008	106.1	14.340
96.0	11.888	101.1	13.033	106.2	14.368
96.1	11.909	101.2	13.057	106.3	14.397
96.2	11.930	101.3	13.081	106.4	14.425
96.3	11.952	101.4	13.105	106.5	14.454
96.4	11.973	101.5	13.130	106.6	14.482
96.5	11.994	101.6	13.155	106.7	14.511
96.6	12.015	101.7	13.179	106.8	14.540
96.7	12.037	101.8	13.204	106.9	14.569
96.8	12.058	101.9	13.229	107.0	14.598
96.9	12.080	102.0	13.253	107.1	14.627
97.0	12.101	102.1	13.278	107.2	14.656
97.1	12.123	102.2	13.303	107.3	14.685

Height	SD2neg	Height	SD2neg	Height	SD2neg
97.2	12.144	102.3	13.329	107.4	14.715
97.3	12.166	102.4	13.354	107.5	14.744
97.4	12.188	102.5	13.379	107.6	14.773
97.5	12.209	102.6	13.404	107.7	14.803
97.6	12.231	102.7	13.430	107.8	14.833
97.7	12.253	102.8	13.455	107.9	14.863
97.8	12.275	102.9	13.481	108.0	14.892
97.9	12.297	103.0	13.506	108.1	14.922
98.0	12.319	103.1	13.532	108.2	14.953
98.1	12.341	103.2	13.558	108.3	14.983
98.2	12.363	103.3	13.584	108.4	15.013
98.3	12.385	103.4	13.610	108.5	15.043
98.4	12.407	103.5	13.636	108.6	15.073
98.5	12.429	103.6	13.662	108.7	15.104
98.6	12.452	103.7	13.688	108.8	15.135
98.7	12.474	103.8	13.714	108.9	15.165
98.8	12.496	103.9	13.741	109.0	15.196
98.9	12.519	104.0	13.767	109.1	15.227
99.0	12.542	104.1	13.793	109.2	15.258
99.1	12.564	104.2	13.820	109.3	15.289
99.2	12.587	104.3	13.847	109.4	15.320
99.3	12.610	104.4	13.873	109.5	15.351
99.4	12.633	104.5	13.900	109.6	15.382
99.5	12.655	104.6	13.927	109.7	15.413
99.6	12.679	104.7	13.954	109.8	15.445
99.7	12.702	104.8	13.981	109.9	15.476
99.8	12.725	104.9	14.008	110.0	15.508
99.9	12.748	105.0	14.035	110.1	15.539
100.0	12.771	105.1	14.063	110.2	15.571
110.3	15.603	115.4	17.297		
110.4	15.634	115.5	17.331		

Height	SD2neg	Height	SD2neg	Height	SD2neg
110.5	15.666	115.6	17.365		
110.6	15.698	115.7	17.400		
110.7	15.730	115.8	17.434		
110.8	15.762	115.9	17.468		
110.9	15.794	116.0	17.503		
111.0	15.827	116.1	17.537		
111.1	15.859	116.2	17.571		
111.2	15.891	116.3	17.606		
111.3	15.924	116.4	17.640		
111.4	15.956	116.5	17.674		
111.5	15.989	116.6	17.708		
111.6	16.021	116.7	17.743		
111.7	16.054	116.8	17.777		
111.8	16.087	116.9	17.812		
111.9	16.119	117.0	17.846		
112.0	16.152	117.1	17.881		
112.1	16.185	117.2	17.915		
112.2	16.218	117.3	17.949		
112.3	16.251	117.4	17.984		
112.4	16.284	117.5	18.018		
112.5	16.317	117.6	18.053		
112.6	16.350	117.7	18.087		
112.7	16.384	117.8	18.122		
112.8	16.417	117.9	18.156		
112.9	16.451	118.0	18.190		
113.0	16.484	118.1	18.225		
113.1	16.517	118.2	18.259		
113.2	16.551	118.3	18.294		
113.3	16.584	118.4	18.328		
113.4	16.618	118.5	18.363		
113.5	16.652	118.6	18.397		

Height	SD2neg	Height	SD2neg	Height	SD2neg
113.6	16.685	118.7	18.432		
113.7	16.719	118.8	18.466		
113.8	16.753	118.9	18.500		
113.9	16.786	119.0	18.534		
114.0	16.820	119.1	18.569		
114.1	16.854	119.2	18.603		
114.2	16.888	119.3	18.638		
114.3	16.922	119.4	18.672		
114.4	16.956	119.5	18.706		
114.5	16.990	119.6	18.741		
114.6	17.024	119.7	18.775		
114.7	17.058	119.8	18.810		
114.8	17.092	119.9	18.844		
114.9	17.126	120.0	18.878		
115.0	17.160				
115.1	17.194				
115.2	17.229				
115.3	17.263				

Note: data from http://www.who.int/childgrowth/standards/weight_for_height/en/

WHO standard for “stunted”: length/height in centimeters, 2 standard deviations below child growth median, by age and sex.

GIRLS					BOYS			
Months	SD2neg	Months	SD2neg		Months	SD2neg	Months	SD2neg
1	49.727	31	84.297		1	50.773	31	85.754
2	53.006	32	84.939		2	54.438	32	86.352
3	55.569	33	85.57		3	57.313	33	86.937
4	57.777	34	86.21		4	59.741	34	87.532
5	59.585	35	86.819		5	61.669	35	88.096
6	61.217	36	87.439		6	63.362	36	88.675
7	62.654	37	88.031		7	64.82	37	89.226
8	64.042	38	88.634		8	66.21	38	89.787
9	65.315	39	89.209		9	67.485	39	90.324
10	66.532	40	89.777		10	68.696	40	90.855
11	67.737	41	90.355		11	69.887	41	91.399
12	68.893	42	90.906		12	71.022	42	91.916
13	69.97	43	91.469		13	72.078	43	92.444
14	71.009	44	92.006		14	73.091	44	92.946
15	72.046	45	92.553		15	74.1	45	93.46
16	73.017	46	93.076		16	75.042	46	93.952
17	73.959	47	93.607		17	75.955	47	94.456
18	74.904	48	94.116		18	76.868	48	94.939

GIRLS					BOYS			
19	75.792	49	94.621		19	77.722	49	95.418
20	76.685	50	95.135		20	78.579	50	95.914
21	77.527	51	95.628		21	79.383	51	96.389
22	78.372	52	96.131		22	80.19	52	96.88
23	79.171	53	96.615		23	80.949	53	97.354
24	79.276	54	97.11		24	81.017	54	97.843
25	80.035	55	97.582		25	81.742	55	98.314
26	80.777	56	98.065		26	82.446	56	98.801
27	81.525	57	98.529		27	83.154	57	99.272
28	82.232	58	98.989		28	83.82	58	99.739
29	82.945	59	99.457		29	84.49	59	100.225
30	83.616	60	99.908		30	85.12	60	100.692

Note: data from http://www.who.int/childgrowth/standards/height_for_age/en/

WHO standard for Underweight: weight in kilograms, 2 standard deviations below child growth median, by age and sex.

GIRLS					BOYS			
Months	SD2neg	Months	SD2neg		Months	SD2neg	Months	SD2neg
1	3.148	31	10.118		1	3.376	31	10.654
2	3.944	32	10.257		2	4.322	32	10.781
3	4.531	33	10.395		3	5.012	33	10.906
4	5.017	34	10.535		4	5.565	34	11.033
5	5.402	35	10.669		5	5.994	35	11.155
6	5.733	36	10.806		6	6.357	36	11.28
7	6.008	37	10.938		7	6.653	37	11.4
8	6.257	38	11.073		8	6.917	38	11.524
9	6.473	39	11.202		9	7.145	39	11.643
10	6.671	40	11.33		10	7.354	40	11.762
11	6.863	41	11.46		11	7.556	41	11.885
12	7.047	42	11.585		12	7.747	42	12.004
13	7.22	43	11.712		13	7.924	43	12.125
14	7.389	44	11.834		14	8.095	44	12.243
15	7.562	45	11.96		15	8.267	45	12.363
16	7.728	46	12.08		16	8.431	46	12.479
17	7.892	47	12.204		17	8.591	47	12.598
18	8.061	48	12.323		18	8.753	48	12.713

GIRLS					BOYS			
19	8.223	49	12.442		19	8.908	49	12.827
20	8.389	50	12.564		20	9.066	50	12.944
21	8.549	51	12.682		21	9.218	51	13.056
22	8.714	52	12.805		22	9.373	52	13.172
23	8.874	53	12.923		23	9.522	53	13.285
24	9.039	54	13.044		24	9.675	54	13.4
25	9.197	55	13.161		25	9.821	55	13.511
26	9.355	56	13.281		26	9.964	56	13.625
27	9.516	57	13.397		27	10.11	57	13.736
28	9.669	58	13.511		28	10.248	58	13.845
29	9.824	59	13.629		29	10.388	59	13.958
30	9.97	60	13.742		30	10.52	60	14.067

Note: data from http://www.who.int/childgrowth/standards/weight_for_age/en/

Appendix C. Baseline Survey Questionnaires

C.1: Household Questionnaire

C.2: Gender Questionnaire

C.3: Household Food Consumption Survey & Child Anthropometry Questionnaire

C.4: Village Questionnaire

CI. Household Questionnaire



RESILIENCE IN THE SAHEL ENHANCED (RISE)

**Mid-line Survey: Household Questionnaire****MODULE 1: HOUSEHOLD IDENTIFICATION COVER SHEET**

DATE OF SURVEY			
	Day	Month	Year

100: Country	101: Region	102: Province/District	103: Commune	104: Village
..... 	 	 	 	

GPS UNIT (UTM reading)				109	110
105: Accuracy	106: Elev	107: Lat	108: Long	Enumerator Code	Supervisor Code
.....					

111: Compound	112: Household
Compound ID:	Household ID in Village:
Full Name of Head of Compound:	Household ID in Sample:
	Full Name of Head of Household:
Phone Number of Head of Compound:	Phone Number of Head of Household:
	Household Size:

113		Interview status comments:
Interview result (circle code)		
Fully completed 1		
Partially completed 2		
Refusal 3		
Absent 4		
Other 5		

Supervisor's clearance
"I certify that this questionnaire has been collected in accordance with the survey design and RISE survey guidance."
Supervisor's Name: _____
Date of Verification: / /

Confidential

INFORMED CONSENT SIGNATURE PAGE

Thank you for the opportunity to speak with you. We are from SAREL, a USAID-funded project in partnership with the Governments of Niger and Burkina Faso. We are conducting a survey to learn about agriculture, food security, food consumption, nutrition and wellbeing of households in this area. Your household has been selected to participate in an interview on topics such as your dwelling characteristics, household expenditures and assets, household food consumption and nutrition of children. The survey includes questions about the household generally, and questions about individuals within your household, if applicable. These questions in total will take approximately one and half hours (1h30) to complete and your participation is entirely voluntary. If you agree to participate, you can choose to stop at any time or to skip any questions you do not want to answer. Your answers will be completely confidential; we will not share information that identifies you with anyone.

Do you have any questions about the survey or what I have just said? If in the future you have any questions regarding the survey and the interview, or concerns or complaints we welcome you to contact the USAID/SAREL Project (**Stephen Reid** | Chief of Party, Sahel Resilience Learning (SAREL) Project / Tel.: 227-9663-0291 | 227-9025-7197 / sreid@sarelproject.com). We will leave one copy of this form for you so that you will have record of this contact information and about the study.

	Name	Consent to participate in survey (Insert code)		Signature or mark
		YES=1	NO=2	
1		☐	☐	
2		☐	☐	
3		☐	☐	
4		☐	☐	
5		☐	☐	
6		☐	☐	

7		☐	
8		☐	
9		☐	
10		☐	

MODULE 2: HOUSEHOLD ROSTER AND DEMOGRAPHICS

QUESTION WORDING AND NUMBER												
200	201	202	203	204	205	206	207	208	209	210	211	212
ID	Household member name (Start with household head)	[name]'s Age in full years	[name]'s Sex	[name]'s Relationship to household head	[name]'s ethnic group	For ages 5 years and above			For ages 12 years and above		Identification of children between 0 and 59 months and caregivers (mothers, grandmothers, etc.)	
		Put "00" for members under 1 and "80" for members over 80	1 Male 2 Female	Enter codes from list	Enter from list	Maximum education completed by [name] Enter from list	Can [name] read or write a national language? 1 Yes 2 No	Can [name] read or write a foreign language? 1. Yes-French 2. Yes-English 3. Yes-Arabic (BF) 4. Yes-Other 5. No	[name]'s Marital status Enter from list	[name]'s Primary Occupation Enter from list	Write down the numbers of children under 5	Write down [name]'s caregiver's number
01												

QUESTION WORDING AND NUMBER												
200	201	202	203	204	205	206	207	208	209	210	211	212
ID	Household member name (Start with household head)	[name]'s Age in full years	[name]'s Sex	[name]'s Relationship to household head	[name]'s ethnic group	For ages 5 years and above			For ages 12 years and above		Identification of children between 0 and 59 months and caregivers (mothers, grandmothers, etc.)	
		Put "00" for members under 1 and "80" for members over 80	1 Male 2 Female	Enter codes from list	Enter from list	Maximum education completed by [name] Enter from list	Can [name] read or write a national language? 1 Yes 2 No	Can [name] read or write a foreign language? 1. Yes-French 2. Yes-English 3. Yes-Arabic (BF) 4. Yes-Other 5. No	[name]'s Marital status Enter from list	[name]'s Primary Occupation Enter from list	Write down the numbers of children under 5	Write down [name]'s caregiver's number

QUESTION WORDING AND NUMBER												
200	201	202	203	204	205	206	207	208	209	210	211	212
ID	Household member name (Start with household head)	[name]'s Age in full years	[name]'s Sex	[name]'s Relationship to household head	[name]'s ethnic group	For ages 5 years and above			For ages 12 years and above		Identification of children between 0 and 59 months and caregivers (mothers, grandmothers, etc.)	
		Put "00" for members under 1 and "80" for members over 80	1 Male 2 Female	Enter codes from list	Enter from list	Maximum education completed by [name] Enter from list	Can [name] read or write a national language? 1 Yes 2 No	Can [name] read or write a foreign language? 1. Yes-French 2. Yes-English 3. Yes-Arabic (BF) 4. Yes-Other 5. No	[name]'s Marital status Enter from list	[name]'s Primary Occupation Enter from list	Write down the numbers of children under 5	Write down [name]'s caregiver's number
_ _ 		_ _	_	_ _	_ _	_ _	_	_	_	_	_ _	_ _
_ _ 		_ _	_	_ _	_ _	_ _	_	_	_	_	_ _	_ _
_ _ 		_ _	_	_ _	_ _	_ _	_	_	_	_	_ _	_ _
_ _ 		_ _	_	_ _	_ _	_ _	_	_	_	_	_ _	_ _
_ _ 		_ _	_	_ _	_ _	_ _	_	_	_	_	_ _	_ _
_ _ 		_ _	_	_ _	_ _	_ _	_	_	_	_	_ _	_ _

QUESTION WORDING AND NUMBER												
200	201	202	203	204	205	206	207	208	209	210	211	212
ID	Household member name (Start with household head)	[name]'s Age in full years	[name]'s Sex	[name]'s Relationship to household head	[name]'s ethnic group	For ages 5 years and above			For ages 12 years and above		Identification of children between 0 and 59 months and caregivers (mothers, grandmothers, etc.)	
		Put "00" for members under 1 and "80" for members over 80	1 Male 2 Female	Enter codes from list	Enter from list	Maximum education completed by [name] Enter from list	Can [name] read or write a national language? 1 Yes 2 No	Can [name] read or write a foreign language? 1. Yes-French 2. Yes-English 3. Yes-Arabic (BF) 4. Yes-Other 5. No	[name]'s Marital status Enter from list	[name]'s Primary Occupation Enter from list	Write down the numbers of children under 5	Write down [name]'s caregiver's number

QUESTION WORDING AND NUMBER												
200	201	202	203	204	205	206	207	208	209	210	211	212
ID	Household member name (Start with household head)	[name]'s Age in full years	[name]'s Sex	[name]'s Relationship to household head	[name]'s ethnic group	For ages 5 years and above			For ages 12 years and above		Identification of children between 0 and 59 months and caregivers (mothers, grandmothers, etc.)	
		Put "00" for members under 1 and "80" for members over 80	1 Male 2 Female	Enter codes from list	Enter from list	Maximum education completed by [name] Enter from list	Can [name] read or write a national language? 1 Yes 2 No	Can [name] read or write a foreign language? 1. Yes-French 2. Yes-English 3. Yes-Arabic (BF) 4. Yes-Other 5. No	[name]'s Marital status Enter from list	[name]'s Primary Occupation Enter from list	Write down the numbers of children under 5	Write down [name]'s caregiver's number

QUESTION WORDING AND NUMBER												
200	201	202	203	204	205	206	207	208	209	210	211	212
ID	Household member name (Start with household head)	[name]'s Age in full years	[name]'s Sex	[name]'s Relationship to household head	[name]'s ethnic group	For ages 5 years and above			For ages 12 years and above		Identification of children between 0 and 59 months and caregivers (mothers, grandmothers, etc.)	
		Put "00" for members under 1 and "80" for members over 80	1 Male 2 Female	Enter codes from list	Enter from list	Maximum education completed by [name] Enter from list	Can [name] read or write a national language? 1 Yes 2 No	Can [name] read or write a foreign language? 1. Yes-French 2. Yes-English 3. Yes-Arabic (BF) 4. Yes-Other 5. No	[name]'s Marital status Enter from list	[name]'s Primary Occupation Enter from list	Write down the numbers of children under 5	Write down [name]'s caregiver's number

QUESTION WORDING AND NUMBER												
200	201	202	203	204	205	206	207	208	209	210	211	212
ID	Household member name (Start with household head)	[name]'s Age in full years	[name]'s Sex	[name]'s Relationship to household head	[name]'s ethnic group	For ages 5 years and above			For ages 12 years and above		Identification of children between 0 and 59 months and caregivers (mothers, grandmothers, etc.)	
		Put "00" for members under 1 and "80" for members over 80	1 Male 2 Female	Enter codes from list	Enter from list	Maximum education completed by [name] Enter from list	Can [name] read or write a national language? 1 Yes 2 No	Can [name] read or write a foreign language? 1. Yes-French 2. Yes-English 3. Yes-Arabic (BF) 4. Yes-Other 5. No	[name]'s Marital status Enter from list	[name]'s Primary Occupation Enter from list	Write down the numbers of children under 5	Write down [name]'s caregiver's number

HOUSEHOLD MEMBER ROSTER AND DEMOGRAPHICS CODE LIST

Cod	Question 204: Relationship	Code	Question 205: Ethnic	Code	Question 206: Education	Code	Question: 209 Marital status
01	Household Head		<u>Burkina Faso Ethnic Groups</u>	01	Never Attended	1	Never married
02	Spouse (wife/husband)	11	Mossi	02	Pre-school	2	Married, monogamous
03	Own son/daughter	12	Fulfuldé/Peul	03	CP1/CI (first year of primary school)	3	Married, polygamous
04	Child from spouse's other marriage	13	Gourmantché	04	CP2/CP (second year of primary school)	4	Cohabitation
05	Step-son/step-daughter	14	Songhai/Sonrai	05	CE1 (third year of primary school)	5	Divorced/separated
06	Grandson/granddaughter	15	Touareg	06	CE2 (fourth year of primary school)	6	Widow(er)
07	Brother/sister	16	Bella	07	CM1 (fifth year of primary school)		
08	(Biological) parent father/mother	17	Other ethnic groups	08	CM2 (sixth year of primary school)	Code s	Question 210: Main Activity
09	Step-father/step-mother			09	6ème (first year of secondary school)	1	Agriculture
10	Niece/nephew	Code s	<u>Niger Ethnic Groups</u>	10	5ème (second year of secondary school)	2	Livestock
11	Co-wife	21	Hausa	11	4ème (third year of secondary school)	3	Trade
12	House Help	22	Djerma	12	3ème (fourth year of secondary school)	4	N/A
13	Another household member	23	Fulfuldé/Peul	13	2nde (fifth year of secondary school)	5	Other
		24	Gourmantché	14	1ère (sixth year of secondary school)	8	Unaccounted for
		25	Touareg	15	Terminale (seventh year of secondary school)		
		26	Bella	16	Higher		
		27	Songhai/Sonrai	17	Vocational before CEP/CFEPD		
		28	Other ethnic groups	18	Vocational post-CEP/CFEPD		
				19	Vocational sec. post-BEPC (Junior Secondary School Diploma)		

MODULE 3: SHOCKS (list shocks)

300: During the past five (5) years did your household experience any [shock]?		Yes 1 (If « yes », skip to 301)			
		No 1 (If « no », skip to module 4)			
		DK 8 (If « DK », skip to module 4)			
		Refused 9 (If « Refused », skip to module 4)			
QUESTION WORDING AND NUMBER					
SHOCK LIST	301	302	303	304	305
	List the various shocks and circle the codes of the shocks experienced by the household	How many times did you experience [shock] in the last five years?	Among the shocks experienced in the last 5 years, which have you experienced in the last 12 months? Yes = 1 No = 2 (skip to next shock)	What was the severity of the impact of this/these shock(s) experienced by your household in the last 12 months on your income and food consumption? 1. None 2. Slight impact 3. Moderate impact 4. Strong impact 5. Worst ever happened 8. DK	To what extent were you and your household able to recover after this/these shock(s) experienced in the last 12 months? 1. Did not recover 2. Recovered some, but worse off than before [event] 3. Recovered to same level as before [event] 4. Recovered and better off 5. Not affected by [event] 8. DK
Climatic Shocks	Codes				
Excessive rains	01	_ _	_	_	_

	QUESTION WORDING AND NUMBER				
	301	302	303	304	305
SHOCK LIST	List the various shocks and circle the codes of the shocks experienced by the household	How many times did you experience [shock] in the last five years?	Among the shocks experienced in the last 5 years, which have you experienced in the last 12 months? Yes = 1 No = 2 (skip to next shock)	What was the severity of the impact of this/these shock(s) experienced by your household in the last 12 months on your income and food consumption? 1. None 2. Slight impact 3. Moderate impact 4. Strong impact 5. Worst ever happened 8. DK	To what extent were you and your household able to recover after this/these shock(s) experienced in the last 12 months? 1. Did not recover 2. Recovered some, but worse off than before [event] 3. Recovered to same level as before [event] 4. Recovered and better off 5. Not affected by [event] 8. DK
Too little rain/drought	02				
Massive insect invasion	03				
Epizootic (animal disease outbreak)	04				
Bush fires	05				
Conflict shocks					
Land conflicts	06				

	QUESTION WORDING AND NUMBER				
	301	302	303	304	305
SHOCK LIST	List the various shocks and circle the codes of the shocks experienced by the household	How many times did you experience [shock] in the last five years?	Among the shocks experienced in the last 5 years, which have you experienced in the last 12 months? Yes = 1 No = 2 (skip to next shock)	What was the severity of the impact of this/these shock(s) experienced by your household in the last 12 months on your income and food consumption? 1. None 2. Slight impact 3. Moderate impact 4. Strong impact 5. Worst ever happened 8. DK	To what extent were you and your household able to recover after this/these shock(s) experienced in the last 12 months? 1. Did not recover 2. Recovered some, but worse off than before [event] 3. Recovered to same level as before [event] 4. Recovered and better off 5. Not affected by [event] 8. DK
Conflicts between farmers and herders	07				
Conflict/violence involving entire communities/villages	08				
Theft of assets/holdups (animals, crops, etc.)	09				
Socioeconomic shocks					
Sharp food price increase	10				

	QUESTION WORDING AND NUMBER				
	301	302	303	304	305
SHOCK LIST	List the various shocks and circle the codes of the shocks experienced by the household	How many times did you experience [shock] in the last five years?	Among the shocks experienced in the last 5 years, which have you experienced in the last 12 months? Yes = 1 No = 2 (skip to next shock)	What was the severity of the impact of this/these shock(s) experienced by your household in the last 12 months on your income and food consumption? 1. None 2. Slight impact 3. Moderate impact 4. Strong impact 5. Worst ever happened 8. DK	To what extent were you and your household able to recover after this/these shock(s) experienced in the last 12 months? 1. Did not recover 2. Recovered some, but worse off than before [event] 3. Recovered to same level as before [event] 4. Recovered and better off 5. Not affected by [event] 8. DK
Unavailability of agricultural or livestock inputs	11				
Drop in agricultural or livestock product demand	12				
Disease/exceptional health-related expense	13				
Debt repayment	14				
Increase in price of agricultural or livestock inputs	15				

	QUESTION WORDING AND NUMBER				
	301	302	303	304	305
SHOCK LIST	List the various shocks and circle the codes of the shocks experienced by the household	How many times did you experience [shock] in the last five years?	Among the shocks experienced in the last 5 years, which have you experienced in the last 12 months? Yes = 1 No = 2 (skip to next shock)	What was the severity of the impact of this/these shock(s) experienced by your household in the last 12 months on your income and food consumption? 1. None 2. Slight impact 3. Moderate impact 4. Strong impact 5. Worst ever happened 8. DK	To what extent were you and your household able to recover after this/these shock(s) experienced in the last 12 months? 1. Did not recover 2. Recovered some, but worse off than before [event] 3. Recovered to same level as before [event] 4. Recovered and better off 5. Not affected by [event] 8. DK
Drop in price of agricultural or livestock products	16				
Job loss by household member	17				
Long-term unemployment	18				
Abrupt end of assistance/regular support from outside the household	19				
Sudden increase in household size (including birth: triplets etc.)	20				

	QUESTION WORDING AND NUMBER				
	301	302	303	304	305
SHOCK LIST	List the various shocks and circle the codes of the shocks experienced by the household	How many times did you experience [shock] in the last five years?	Among the shocks experienced in the last 5 years, which have you experienced in the last 12 months? Yes = 1 No = 2 (skip to next shock)	What was the severity of the impact of this/these shock(s) experienced by your household in the last 12 months on your income and food consumption? 1. None 2. Slight impact 3. Moderate impact 4. Strong impact 5. Worst ever happened 8. DK	To what extent were you and your household able to recover after this/these shock(s) experienced in the last 12 months? 1. Did not recover 2. Recovered some, but worse off than before [event] 3. Recovered to same level as before [event] 4. Recovered and better off 5. Not affected by [event] 8. DK
Anthropogenic Shocks					
Fire (house,...)	21	_ _	_	_	_
Psychosocial Shocks					
Death of household member	22	_ _	_	_	_
Emigration of household member	23	_ _	_	_	_
Serious illness of household member	24	_ _	_	_	_

	QUESTION WORDING AND NUMBER				
	301	302	303	304	305
SHOCK LIST	List the various shocks and circle the codes of the shocks experienced by the household	How many times did you experience [shock] in the last five years?	Among the shocks experienced in the last 5 years, which have you experienced in the last 12 months? Yes = 1 No = 2 (skip to next shock)	What was the severity of the impact of this/these shock(s) experienced by your household in the last 12 months on your income and food consumption? 1. None 2. Slight impact 3. Moderate impact 4. Strong impact 5. Worst ever happened 8. DK	To what extent were you and your household able to recover after this/these shock(s) experienced in the last 12 months? 1. Did not recover 2. Recovered some, but worse off than before [event] 3. Recovered to same level as before [event] 4. Recovered and better off 5. Not affected by [event] 8. DK
Other Shocks					
Forced repatriation	25				
Household dislocation	26				

306. How did you cope with the shock(s) you experienced in the last 12 months?		
N°	REMEDIES TO SHOCKS	YES=1 NO=2
	LIVESTOCK AND LAND HOLDINGS	
01	Send livestock in search of pasture	☐
02	Sell livestock	☐
03	Slaughter livestock	☐
04	Lease out land	☐
	MIGRATION	
05	Migrate (only some family members)	☐
06	Migrate (the whole family)	☐
07	Send children or an adult to stay with relatives	☐
	COPING STRATEGIES TO REDUCE CURRENT EXPENDITURE	
08	Take children out of school	☐
09	Move to less expensive housing	☐
10	Limit portion size at mealtimes	☐

N°	REMEDIES TO SHOCKS	YES=1 NO=2
	COPING STRATEGIES TO GET MORE FOOD OR MONEY	
11	Take up new wage labor	☐
12	Sell household items (e.g., radio, bed)	☐
13	Sell productive assets (e.g., plow, water pump)	☐
14	Take out a loan from an NGO	☐
15	Take out a loan from a bank	☐
16	Take out a loan from a money lender	☐
17	Take out a loan from friends or relatives	☐
18	Send children to work for money (e.g., domestic service)	☐
19	Receive money or food from family members	☐
20	Receive food aid from the government	☐
21	Receive food aid from an NGO	☐
22	Participate in food-for-work or cash-for-work	☐
23	Use money from savings	☐
24	Get money from a relative that migrated (remittances)	☐

25	Eating of lean season food: Anza; etc.	
26	Excavation of termite mounds	
27	Hunting, gathering	
28	Consume seed stock held for next season	
29	Reduce number of meals eaten in a day	
30	Other (specify)	

MODULE 4. HOUSEHOLD HOUSING CHARACTERISTICS

N°	QUESTION WORDING	• ANSWERS	• Typing
400	What is the occupancy status of dwelling(s)?	• 1. Owner • 2. Leased property • 3. Rent • 4. Lodging provided by the employer • 5. Lodging provided free of charge by a third party • 6. Other (specify) _____	
401	Type of dwelling occupied by the head of household	• 1. Single housing • 2. Multi-dwelling building (no block) • 3. Hut • 4. Villa • 5. Apartment Building • 6. Other (specify) _____	
402	What materials have been used to construct the roof of the dwelling?	• 1. Sheet metal • 2. Cement • 3. Straw or thatch • 4. Wood and mud (earth) • 5. Plastic sheeting • 6. Other (specify) _____	
403	What materials have been used to construct the floor of the dwelling?	• 1. Dirt • 2. Cow dung • 3. Concrete/stone/cement	

N°	QUESTION WORDING	• ANSWERS	• Typing
		• 4. Sand • 5. Other (specify) _____	
404	What materials have been used to construct the walls of the dwelling?	• 1. Cement/concrete • 2. Fired brick • 3. Clay/clay brick • 4. Wood/bamboo • 5. Stones • 6. Sheet metal • 7. Straw • 8. Other (specify) _____	
405	How many rooms does the household have?	(Number of rooms)	
406	What is the main type of latrine used by your household?	• 01. Pit flush toilet • 02. Flush toilet connected to a sealed septic system • 03. Flush toilet connected to a sewage system • 04. Pit toilet with slab • 05. Composting toilet • 06. Ventilated improved pit • 07. Flush toilet with no connection to sewage system • 08. Pit toilet with no slab or connected to open septic system • 09. Bucket latrine • 10. Hanging toilet/latrine • 11. In the open	
407	What is the main source of drinking water supply for your household?	• 01. Surface water (dam, river, stream, lake, pond, creek, irrigation channel, canal) • 02. Protected well • 03. Uncovered, concrete-cased well	

N°	QUESTION WORDING	ANSWERS	Typing
		04. Traditional well 05. Boreholes/tube-wells 06. Public fountain/public tap 07. Own indoor tap 08. Shared outdoor tap 09. Cart with small tanks/drums 10. Tank trucks 11. Bottled water 12. Other (specify) _____	
408	Do you usually do anything to make the water you drink healthier?	1. Yes 2. No [if « no », skip to question 410]	
409	What do you do to make the water you drink healthier?	1. Boil it 2. Add bleach/chlorine 3. Filter with cloth 4. Use a water filter 5. Solar disinfection 6. Let the water stand 7. Add Aquatabs 8. Other (specify) _____	
410	How long does it take to get water for domestic use (round trip including waiting time for fetching water)? If the water source is in the compound, enter 000 as time value. If water is delivered to the home, enter the Not Applicable code 999	Duration in minutes	
411	Please, show me where the household members wash their hands most often?	1. Observation 2. No observation in the household/compound/plot 3. No observation because not allowed to see 4. No observation for other reasons	Skip to 414 •
412	Section dedicated to observations Check the presence of water at the specified hand washing location	1. There is water 2. There is no water	

N°	QUESTION WORDING	• ANSWERS	• Typing
413	Section dedicated to observations Check the presence of soap, detergent, or other cleaning agent Also ask if the soap/detergent is kept in another room in the house	1. Soap or detergent 2. Solid, liquid, powder, paste 3. Ash, mud, sand 4. None 5. Other (specify) _____	
414	When do your household members wash their hands? Several answers possible (circle the codes corresponding to all answers provided by the respondent and enter responses codes in the spaces) <u>Do not read the answers.</u>	01. Before eating 02. After eating 03. Before praying 04. Before breastfeeding or feeding a child 05. Before cooking food 06. After using the toilet/latrine 07. After cleaning or changing diapers of a child who has defecated 08. When hands are dirty 09. After cleaning the toilet or bedpan 10. Other (specify) 88. DK 99. Refused	

MODULE 5. ASSETS (EXCLUDING LIVESTOCK)

CONSUMPTION/PRODUCTION ASSETS		QUESTION WORDING AND NUMBER								
		500	501	502	503	504	505	505a	505b	505c
		Does your household currently own (name of asset)? 1 = Yes 2 = No	Number owned now	Number owned a year ago	Number owned two years ago	Have you purchased any of these [ITEMS] in the last 12 months? Yes = 1 No = 2 (skip to Q505a)	For purchased items, how much did you pay in total for these [ITEMS] in the last 12 months? (CFA F) 8 = DK 9 = Refused	Did you acquire any of these [ITEMS] free of charge in the last 12 months? Yes = 1 No = 2 (skip to Q505c)	If you wanted to sell (types of asset) acquired free of charge over the last 12 months today, on average how much would you receive from the sale? (FCFA)	If you wanted to sell your old [types of asset] today, excluding those that you acquired (purchased and/or received free of charge) in the last 12 months, on average how much would you receive from the sale? (FCFA)
Cod e	1 = CONSUMPTION ASSETS									
101	Improved charcoal/wood stove	☐	☐	☐	☐	☐	☐	☐	☐	☐
102	Kerosene stove	☐	☐	☐	☐	☐	☐	☐	☐	☐
103	Gas stove	☐	☐	☐	☐	☐	☐	☐	☐	☐
104	Chairs	☐	☐	☐	☐	☐	☐	☐	☐	☐
105	Blanket/sakala	☐	☐	☐	☐	☐	☐	☐	☐	☐
106	Iron	☐	☐	☐	☐	☐	☐	☐	☐	☐
107	Sofa/armchair	☐	☐	☐	☐	☐	☐	☐	☐	☐

CONSUMPTION/PRODUCTION ASSETS		QUESTION WORDING AND NUMBER								
		500	501	502	503	504	505	505a	505b	505c
		Does your household currently own (name of asset)? 1 = Yes 2 = No	Number owned now	Number owned a year ago	Number owned two years ago	Have you purchased any of these [ITEMS] in the last 12 months? Yes = 1 No = 2 (skip to Q505a)	For purchased items, how much did you pay in total for these [ITEMS] in the last 12 months? (CFA F) 8 = DK 9 = Refused	Did you acquire any of these [ITEMS] free of charge in the last 12 months? Yes = 1 No = 2 (skip to Q505c)	If you wanted to sell (types of asset) acquired free of charge over the last 12 months today, on average how much would you receive from the sale? (FCFA)	If you wanted to sell your old [types of asset] today, excluding those that you acquired (purchased and/or received free of charge) in the last 12 months, on average how much would you receive from the sale? (FCFA)
108	Mosquito net	☐	☐	☐	☐	☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐
109	Wooden bed	☐	☐	☐	☐	☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐
110	Metal bed	☐	☐	☐	☐	☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐
111	Telephone set/cellular phone	☐	☐	☐	☐	☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐
112	Radio	☐	☐	☐	☐	☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐
113	Tape player	☐	☐	☐	☐	☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐
114	Television	☐	☐	☐	☐	☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐
115	Jewelry, gold	☐	☐	☐	☐	☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐
116	Jewelry, silver	☐	☐	☐	☐	☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐

211

212

		QUESTION WORDING AND NUMBER								
		500	501	502	503	504	505	505a	505b	505c
		Does your household currently own (name of asset)? 1 = Yes 2 = No	Number owned now	Number owned a year ago	Number owned two years ago	Have you purchased any of these [ITEMS] in the last 12 months? Yes = 1 No = 2 (skip to Q505a)	For purchased items, how much did you pay in total for these [ITEMS] in the last 12 months? (CFA F) 8 = DK 9 = Refused	Did you acquire any of these [ITEMS] free of charge in the last 12 months? Yes = 1 No = 2 (skip to Q505c)	If you wanted to sell (types of asset) acquired free of charge over the last 12 months today, on average how much would you receive from the sale? (FCFA)	If you wanted to sell your old [types of asset] today, excluding those that you acquired (purchased and/or received free of charge) in the last 12 months, on average how much would you receive from the sale? (FCFA)
202	Sickle	☐	☐	☐	☐	☐	☐	☐	☐	☐
203	Pick axe	☐	☐	☐	☐	☐	☐	☐	☐	☐
204	Axe	☐	☐	☐	☐	☐	☐	☐	☐	☐
205	Pruning/Cutting shears	☐	☐	☐	☐	☐	☐	☐	☐	☐
206	Hoe	☐	☐	☐	☐	☐	☐	☐	☐	☐
207	Spade or shovel	☐	☐	☐	☐	☐	☐	☐	☐	☐
208	Traditional beehive	☐	☐	☐	☐	☐	☐	☐	☐	☐
209	Modern Beehive	☐	☐	☐	☐	☐	☐	☐	☐	☐
210	Knapsack chemical sprayer	☐	☐	☐	☐	☐	☐	☐	☐	☐

214

CONSUMPTION/PRODUCTION ASSETS		QUESTION WORDING AND NUMBER								
		500	501	502	503	504	505	505a	505b	505c
		Does your household currently own (name of asset)? 1 = Yes 2 = No	Number owned now	Number owned a year ago	Number owned two years ago	Have you purchased any of these [ITEMS] in the last 12 months? Yes = 1 No = 2 (skip to Q505a)	For purchased items, how much did you pay in total for these [ITEMS] in the last 12 months? (CFA F) 8 = DK 9 = Refused	Did you acquire any of these [ITEMS] free of charge in the last 12 months? Yes = 1 No = 2 (skip to Q505c)	If you wanted to sell (types of asset) acquired free of charge over the last 12 months today, on average how much would you receive from the sale? (FCFA)	If you wanted to sell your old [types of asset] today, excluding those that you acquired (purchased and/or received free of charge) in the last 12 months, on average how much would you receive from the sale? (FCFA)
220	Watering can									

MODULE 5a. ACCESS TO LAND

506a	Has your household engaged in farming activities in the last 12 months?		1. Yes (Fill in the table) 2. No (skip to next module)	
Farm N°	506b Type of Farm		507 Area (ha)	508 Mode of acquisition
	01. Rain-fed farm 02. Off-season 03. Orchard 04. Hydro-agricultural developments 05. Garden	06. Rain-fed + off-season 07. Rain-fed + off-season + orchard 08. Orchard + off-season 09. Orchard + rain-fed 10. Other		01. Inherited 02. Bought 03. Sharecropping basis 04. Use right (usufruct) 05. Borrowed 06. Right of the axe 07. Hydro-agricultural development 08. Leased 09. Gift, grant 10. Other (specify)
01				
02				
03				
04				
05				
06				

07	☐ ☐	☐ ☐ ☐ ☐ , ☐ ☐	☐ ☐
08	☐ ☐	☐ ☐ ☐ ☐ , ☐ ☐	☐ ☐
09	☐ ☐	☐ ☐ ☐ ☐ , ☐ ☐	☐ ☐
10	☐ ☐	☐ ☐ ☐ ☐ , ☐ ☐	☐ ☐
11	☐ ☐	☐ ☐ ☐ ☐ , ☐ ☐	☐ ☐
13	☐ ☐	☐ ☐ ☐ ☐ , ☐ ☐	☐ ☐
14	☐ ☐	☐ ☐ ☐ ☐ , ☐ ☐	☐ ☐
15	☐ ☐	☐ ☐ ☐ ☐ , ☐ ☐	☐ ☐

MODULE 6: LIVESTOCK ASSETS

TYPE OF LIVESTOCK		QUESTION WORDING AND NUMBER		
		601	602	603
		Total [livestock types] owned one year ago (opening stock)	Total [livestock type] owned now (closing stock) if Q602=0 skip to next row)	If you wanted to sell all your [livestock types] today, how much in total would you receive from the sale? (CFA F)
01	Oxen (bovine)			
02	Sheep (ovine)			
03	Goats (caprine)			
04	Donkeys			
05	Horse (equine)			
06	Pigs (porcine)			
07	Camels – dromedaries			
08	Rabbits			
09	Hens			
10	Guinea fowls			
11	Turkeys			
12	Ducks			
13	Pigeons			

MODULE 7. LIVESTOCK COMMODITIES (Ask these questions even if the household does not own or use livestock.)

		700	701	702	703	704	705
Commodity		Did your household produce (name of product) in the last 12 months? Yes = 1 No = 2 (if No, skip to next product)	Number of animals that have been milked in the last 12 months?	Number of months in which milking occurs every day in the last 12 months?	Frequency (number of milkings per day during those months)?	Daily milk quantity in liters collected during these months?	If some of the milk produced was sold, what proportion (%) of milk was sold per day during those months?
1	Cattle Milk						
2	Sheep/Goat milk						
3	Camel milk						

MODULE 7a. HOUSEHOLD AGRICULTURAL PRODUCTION

Commodity		QUESTION WORDING AND NUMBER								
		701b		702b		703b	704b	705b		706b
		Total [commodity] produced in the last 12 months		Total [commodity] sold in the last 12 months Complete for any produce sold If none has been sold, skip to Q705b		Value of commodity sold in the last 12 months	Where did you mainly sell [commodity]? 1= Local market 2=Regional market 3=Others	Current stock of [commodity] 888 = DK		If you wanted to sell the stock today, how much would you receive from the sale? (CFA F)
		Quantity	Unit	Quantity	Unit			Quantity	Unit	
01	Millet									
02	Maize									
03	Rice									
04	Sorghum									
05	Wheat									
06	Fonio									
07	Cowpea									
08	Peanut									
09	Sesame									
10	Vouandzou									
11	Tobacco									
12	Cotton									
13	Beans									

Commodity		QUESTION WORDING AND NUMBER								
		701b		702b		703b	704b	705b		706b
		Total [commodity] produced in the last 12 months		Total [commodity] sold in the last 12 months Complete for any produce sold If none has been sold, skip to Q705b		Value of commodity sold in the last 12 months	Where did you mainly sell [commodity]? 1= Local market 2=Regional market 3=Others	Current stock of [commodity] 888 = DK		If you wanted to sell the stock today, how much would you receive from the sale? (CFA F)
		Quantity	Unit	Quantity	Unit			Quantity	Unit	
14	Tigernut									
15	Henna									
16	Sweet potato									
17	Irish potato									
18	Onion									
19	Hot pepper									
20	Sorrel									
21	Okra									
22	Tomato									
23	Lettuce (salad)									
24	Cabbage									
25	Fruit trees (specify)									
26	Other (specify)									

Units of measure code list											
01 Kilograms	02 Quintal	03 Ton	04 Stack	05 Basket	06 50 kg bag	07 100 kg bag	08 Pack	09 Bundles	10 Unit	11 « Tine »	12 Other

MODULE 8. HOUSEHOLD CONSUMPTION EXPENDITURE

Ask these questions about the consumption/expenditures of all household members. Ask whoever is most knowledgeable about the food the household members have eaten over the past 7 days, as well as any non-food items that household members have bought. The same respondent should be asked questions in Modules E2-E5.

Note: Quantities are often reported in local units of measure. Any unit listed must be able to be converted to a standardized unit. This conversion will happen during data analysis. It should not be done in the field by the enumerator.

MODULE 8-E2. NON-FOOD EXPENDITURES OVER PAST 7 DAYS

		Over the past week (7 days), did your household use or buy any [item]?	How much did you pay (how much did [item] cost) in total? What is the estimated value of [item] used in the last 7 days that:
		Yes = 1 No = 2 DK = 8 Refused = 9	1. The household received free of charge 2. The household used some of [item] in the last 7 days 3. Other
		} skip to next asset	
Code	Items	E2.01	E2.02 (CFAF)
1101	Charcoal or other fuel for cooking		
1102	Firewood		
1103	Gasoline		

1104	Kerosene	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
1105	Gas	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
1106	Batteries	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
1107	Candles	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
1108	Matches	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
1109	Prepaid top-up card/mobile phone credit transfer	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
1110	Transport	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
1111	Milling fees for grains	☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

MODULE 8-E3. NON-FOOD EXPENDITURES OVER THE PAST 30 DAYS

		Over the past 30 days (, did your household use or buy any [item]? Yes = 1 No = 2 DK = 8 Refused = 9	How much did you pay (how much did [item] cost) in total? What is the estimated value of [item] used in the last 30 days that: 1. The household received free of charge 2. The household used some of [item] in the last 30 days 3. Other
Code	Items	E3.01	E3.02 (CFAF)
1201	Milling fees for grains (excluding cost of grain itself), grain		
1202	Personal products (body soap, skin creams, shampoo, razor blades, toothbrush/paste, etc.).		
1203	Soap for clothes		
1204	Donation - to church, mosque, charity, beggar, etc.		
1205	Insecticides		
1206	Cooking gas		
1207	Gasoline or diesel		
1208	Light bulbs		
1209	Electricity fees		
1210	Top-up card fees		
1211	Transport costs (bush taxi, motorcycle taxi, canoe, carts, etc.)		
1212	(Motor vehicle, motorcycle) service, repair, or parts		

1213	Bicycle service, repair, or parts		
1214	Repairs & maintenance to dwelling		
1215	Repairs to household and personal items (radios, watches, etc., excluding battery purchases)		
1216	Vehicle batteries		
1217	Batteries		
1218	Male hairdressing fees		
1219	Female hairdressing fees		
1220	Health expenditures related to illnesses and injuries		
1221	Health expenditures for preventative care (visits, medications, etc.)		

MODULE 8-E4. NON-FOOD EXPENDITURES OVER PAST THREE MONTHS

		Over the past 3 months, did your household use or buy any [item]? Yes = 1 No = 2 DK = 8 Refused = 9 } skip to next asset	How much did you pay (how much did [item] cost) in total? What is the estimated value of [item] used in the last 3 months that: - The household received free of charge - The household used some of [item] in the last 3 months - Other
Code	Items	E4.01	E4.02 (CFAF)
1301	Clothing		
1302	Shoes		
1303	Dishware (bowls, plates, glassware)		
1304	Cooking utensils (cooking pots, stirring spoons and whisks, etc.)		
1305	Light bulbs		
1306	Torch/flashlight		
1307	Kerosene lamp		
1308	Music or CD/DVD or video cassette		

MODULE 8-E5. NON-FOOD EXPENDITURES OVER PAST 12 MONTHS

		Over the past year (12 months), did your household use or buy any [item]? Yes = 1 No = 2 DK = 8 Refused = 9 } skip to next asset	How much did you pay (how much did [item] cost) in total? What is the estimated value of [item] used in the last 12 months that: - The household received free of charge - The household used some of [item] in the last 12 months - Other
Code	Items	E5.01	E5.02 (CFAF)
1401	Carpet, rugs, mats		
1402	Shoe repair		
1403	Linen-towels, sheets, blankets		
1404	Toys		
1405	Mosquito nets		
1406	Construction materials (bricks, cement, wood)		
1407	Dowry		
1408	Marriage ceremony costs		
1409	Funeral costs for household members		
1410	Funeral costs for non-household members (relatives, neighbors/friends)		

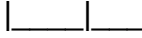
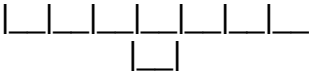
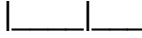
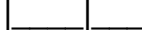
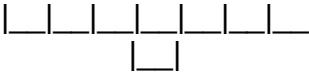
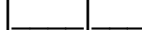
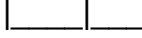
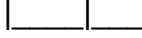
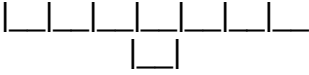
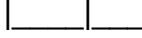
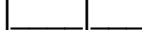
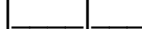
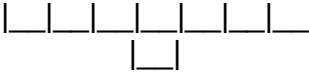
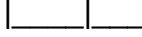
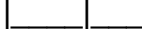
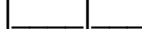
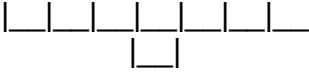
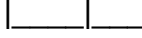
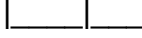
1411	Major health expenses (hospitalizations, traditional healer costs) including travel, lodging and food expenses		
1412	Education expenses (fees, books, uniforms, etc.).		
1413	Rituals and traditional events		
1414	Punitive compensation (property damage, injury, loss of life)		
1415	Fertilizer purchase		
1416	Land or livestock taxes		
1417	Tax (paid by household members)		

MODULE 9. ACCESS TO FINANCIAL SERVICES/CREDIT

N°	QUESTION WORDING	• ANSWERS	•
901	Have any household members taken out a loan in the last 12 months (cash or in-kind)?	1. Yes (if "yes", skip to q903) 2. No 8. DK (skip to Module 10) 9. Refused (skip to Module 10)	• ☐
902	If not, why not? Enter respondent's answer and skip to Module 10	1. Didn't need 2. Couldn't find a loan that met my needs" (i.e. "is appropriate" in terms of size, terms, Sharia-compliant, etc.); 3. Afraid I couldn't pay back 4. No loan providers in my area 5. Other (specify) 8. DK 9. Refused	☐

If yes, list all the loans taken out by household members.

QUESTION WORDING AND NUMBER							
903	904	905	906	907	908	909	910
Loan Number	ID of household member who took the loan Enter IDs or household members who took the loan	Source of the loan 01 Money lender 02 Friend/Neighbor 03 Family member 04 Micro credit 05 Bank 06 NGO 07 Religious institution 08 Savings group, including warrantage scheme 09 Input supplier 10 Local trader 11 Community based organization (CBO) 12 Other (specify) 88 DK 99 Refused	What was the total value of the loan? (CFA F)	Do you have to pay a monthly interest rate or service fee on the loan? 1=yes 2=no 8 = DK 9 = Refused	Purpose of the loan 1. Feed family 2. Pay school fees 3. Pay medical fees 4. Production inputs (e.g. livestock, agricultural inputs) 5. Business capital 6. Pay veterinary fees 7. Other	Who made the decision from [SOURCE]? 01 Myself 02 Partner 03 Myself and partner/spouse together 04 Another household member 05 Myself and other household member(s) 06 Partner/spouse 07 Household 08 Myself and another external person 09 Partner/spouse and another external person 10 Myself, partner/spouse and another external person	Who makes the decision on what to do with the money/item borrowed from [SOURCE]? 01 Myself 02 Partner 03 Myself and partner/spouse together 04 Another household member 05 Myself and other household member(s) 06 Partner/spouse 07 Household 08 Myself and another external person 09 Partner/spouse and another external person 10 Myself, partner/spouse and another external person
1							
2							

3							
4							
5							
6							
7							

MODULE 10. ACCESS TO FINANCIAL SERVICES/ SAVINGS

1001	Do any of your household members have cash savings?	Yes..... 1 No 2 DK..... 8 Refused 9	(skip to next module)	

QUESTION WORDING AND NUMBER			
1002	1003	1004	1005
Saving Number	Enter the ID of household member owning the savings	Where is the savings held? 1. In cash at home 2. With microfinance institution 3. With bank 4. With savings group 5. Other (specify) 8. DK 9. Refused	What is the primary purpose of the saving? 1. To use in emergencies 2. To buy livestock 3. For non-livestock business investment 4. Seed purchase 5. Invest in agriculture 6. Timber harvesting/reforestation 7. Other (specify) 8. DK 9. Refused
1			
2			
3			
4			

5			
6			

MODULE II. ACCESS TO INFORMATION

TYPE OF INFORMATION		QUESTION WORDING AND NUMBER	
		1101	1102
		Did you receive any information on [topic] in the last 12 months?	What was your main source of information about [topic]?
		Yes = 1 No = 2 skip to next topic DK = 8 skip to next topic Refused = 9 skip to next topic	01. Rural development agents 02. Service providers (agricultural, health/hygiene, veterinary, etc.) 03. Village/traditional leaders 04. Koranic schoolteachers 05. Madrasa/Franco-Arabic teachers 06. Conventional/mainstream education teachers 07. Neighbors or friends 08. Government officials 09. Family members 10. Newspapers 11. Audiovisual media/TV/radio 12. Internet or SMS 13. Town crier 14. Village Development Committee (CVD) 15. Other (specify)
1	Long-term changes in weather patterns		
2	Rainfall prospects / weather prospects for coming season		
3	Water availability and prices of local boreholes, shallow wells etc.		
4	Methods for animal health/husbandry		
5	Livestock disease threats or epidemics		
6	Innovations in cultivation		

7	Child nutrition and health information		

MODULE 12. LIVELIHOOD ACTIVITIES

		QUESTION WORDING AND NUMBER				
		1201	1202	1203	1204	1205
LIVELIHOOD ACTIVITIES		What were the sources of your household's food/income over the whole last 12 months? Yes = 1 No = 2 Read list of sources to respondents	Rank these sources based on the proportion of food/income they provide for your household Rank all sources listed in Q1201, starting with 01 as the highest proportion of food/income	Enter the proportion of food/income they provide for your household	Is this food/income source available in the dry season only, wet season only, or all year? 1. Dry season only 2. Wet season only 3. Both (all year round) 8. DK 9. Refused	Do you only rely on this source during times of stress? 1. Yes 2. No 8. DK 9. Refused
Code	1. <u>Agricultural Sources</u>					
101	Farming/crop production and sales					
102	Livestock production and sales					
103	Farm laborer					
104	Production and sale of seedlings, seeds, animal feed					
105	Production and sale of firewood, charcoal, poles, timber					
106	Sale of wild products					
107	Employed in an agricultural and animal product processing and marketing company					

		QUESTION WORDING AND NUMBER				
		1201	1202	1203	1204	1205
		What were the sources of your household's food/income over the whole last 12 months? Yes = 1 No = 2 Read list of sources to respondents	Rank these sources based on the proportion of food/income they provide for your household Rank all sources listed in Q1201, starting with 01 as the highest proportion of food/income	Enter the proportion of food/income they provide for your household	Is this food/income source available in the dry season only, wet season only, or all year? 1. Dry season only 2. Wet season only 3. Both (all year round) 8. DK 9. Refused	Do you only rely on this source during times of stress? 1. Yes 2. No 8. DK 9. Refused
108	Private agricultural service providers (veterinary paraprofessionals, agricultural service delivery agent, etc.)					
109	Other (specify)					
110	Other (specify)					
	2. Non-agricultural Sources					
201	Retailing (shopkeeper, sale of non-agricultural products etc.)					
202	Non-agricultural service delivery agent					
203	Technical and professional activities (carpenter, mason, bike or motorcycle repairman, tire repairman, mechanic, cellular phone repairman, motor pump repairman, tailor, etc.)					

		QUESTION WORDING AND NUMBER				
		1201	1202	1203	1204	1205
LIVELIHOOD ACTIVITIES		What were the sources of your household's food/income over the whole last 12 months? Yes = 1 No = 2 Read list of sources to respondents	Rank these sources based on the proportion of food/income they provide for your household Rank all sources listed in Q1201, starting with 01 as the highest proportion of food/income	Enter the proportion of food/income they provide for your household	Is this food/income source available in the dry season only, wet season only, or all year? 1. Dry season only 2. Wet season only 3. Both (all year round) 8. DK 9. Refused	Do you only rely on this source during times of stress? 1. Yes 2. No 8. DK 9. Refused
204	Artisanal mining					
205	Non-agricultural worker (factory, company, mine, etc.)					
206	Domestic help					
207	Crafts (pottery, basketry, carved wood, etc.)					
208	Carrier, docker					
209	Other (specify)					
210	Other (specify)					
3. External non-agricultural Sources						
301	Migration/Rural exodus					

		QUESTION WORDING AND NUMBER				
		1201	1202	1203	1204	1205
LIVELIHOOD ACTIVITIES		What were the sources of your household's food/income over the whole last 12 months? Yes = 1 No = 2 Read list of sources to respondents	Rank these sources based on the proportion of food/income they provide for your household Rank all sources listed in Q1201, starting with 01 as the highest proportion of food/income	Enter the proportion of food/income they provide for your household	Is this food/income source available in the dry season only, wet season only, or all year? 1. Dry season only 2. Wet season only 3. Both (all year round) 8. DK 9. Refused	Do you only rely on this source during times of stress? 1. Yes 2. No 8. DK 9. Refused
302	Gifts/inheritance					
303	Other (specify)					
304	Other (specify)					
305	Other (specify)					

Questions to be asked only if the household responded in the table above that migration was a source of food / income in the last 12 months

1206. In your household, how many people have migrated in the last twelve months?					_ _	
QUESTION WORDING AND NUMBER						
		1207	1208	1209	1210	1211
Migrant List		Where did the person migrate to?	Is migration seasonal or permanent?	How long ago (in months) did the person migrate?	What is the main income generating activity in which the person is engaged over there?	Has the person ever sent money back to your household from his/her place of migration?
		1. Another locality in the country	1. Seasonal	(enter the number of months since the individual migrated)		1. Yes 2. No 8. DK 9. Refused
		2. Another African country	2. Permanent			
		3. Another non-African country	8. DK			
		8. DK	9. Refused			
9. Refused		8. DK				
9. Refused		9. Refused				
1	Person 1	_	_	_ _	 _ _	_
2	Person 2	_	_	_ _	 _ _	_

3	Person 3					
4	Person 4					
5	Person 5					

MODULE 13. SOCIAL AND CAPACITY-BUILDING SUPPORT

N°	QUESTION WORDING	ANSWERS	CODES																																
FORMAL SOURCES OF SOCIAL SUPPORT																																			
1301	Has your household received any kind of support from the government, an NGO or religious organization during the last 12 months?	1. Yes 2. No 8. DK 9. Refused  Skip to Q1304a																																	
1302	Who provided the support? (Multiple response) NB: Use the answer codes, not the answer number. For example: for Q1302, if the household says that they received support from a religious organization (Yes =1), put Code “1”, not Code “3”, which is the answer number.	<table border="1"> <tbody> <tr> <td>1. Government.....</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>2. NGO/Association/Project.....</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>3. Religious organization</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>4. Other (specify)</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> </tbody> </table>	1. Government.....	Yes = 1	No = 2		2. NGO/Association/Project.....	Yes = 1	No = 2		3. Religious organization	Yes = 1	No = 2		4. Other (specify)	Yes = 1	No = 2																		
1. Government.....	Yes = 1	No = 2																																	
2. NGO/Association/Project.....	Yes = 1	No = 2																																	
3. Religious organization	Yes = 1	No = 2																																	
4. Other (specify)	Yes = 1	No = 2																																	
1303	What types of support were received? (Read list) NB: Use the answer codes, not the answer number. For example: for Q1303, if the household says that they received “Food for work/Cash for work” (Yes =1), put Code “1”, not Code “2”, which is the answer number.	<table border="1"> <tbody> <tr> <td>1. Food ration</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>2. Food-for-work/Cash-for-work</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>3. Housing materials</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>4. Installed water points</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>5. Installed latrine</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>6. School for children</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>7. Cash transfer</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>8. Loans</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> </tbody> </table>	1. Food ration	Yes = 1	No = 2		2. Food-for-work/Cash-for-work	Yes = 1	No = 2		3. Housing materials	Yes = 1	No = 2		4. Installed water points	Yes = 1	No = 2		5. Installed latrine	Yes = 1	No = 2		6. School for children	Yes = 1	No = 2		7. Cash transfer	Yes = 1	No = 2		8. Loans	Yes = 1	No = 2		
1. Food ration	Yes = 1	No = 2																																	
2. Food-for-work/Cash-for-work	Yes = 1	No = 2																																	
3. Housing materials	Yes = 1	No = 2																																	
4. Installed water points	Yes = 1	No = 2																																	
5. Installed latrine	Yes = 1	No = 2																																	
6. School for children	Yes = 1	No = 2																																	
7. Cash transfer	Yes = 1	No = 2																																	
8. Loans	Yes = 1	No = 2																																	

N°	QUESTION WORDING	ANSWERS			CODES
			1		
		9. Other (specify)	Yes = 1	No = 2	
INFORMAL SOURCES OF SOCIAL SUPPORT					
1304a	Has your household received any kind of support from relatives, neighbors or friends in the past 12 months?)	1. Yes 2. No 8. DK 9. Refused 2. No 8. DK 9. Refused → Skip to Q1305			
1304b	What types of assistance has your household received from relatives, neighbors or friends in the past 12 months? (Read list) NB: Use the answer codes, not the answer number. For example: for Q1304b, if the household says that they received a "Loan" (Yes =1), put Code "1", not Code "4", which is the answer number.	1. Zakat	Yes = 1	No = 2	
		2. Remittances	Yes = 1	No = 2	
		3. Gifts/habbanaye (donation of cash/animals to people in need)	Yes = 1	No = 2	
		4. Loans (cash, labor, seeds, animals)	Yes = 1	No = 2	
		5. Restocking of poorer relatives	Yes = 1	No = 2	
		6. Sadaqa	Yes = 1	No = 2	
		7. Other (specify)	Yes = 1	No = 2	
1305	At the moment, if your household had a problem and needed <i>money or food</i> urgently, would you be able to get it from relatives living in this community?	1. Yes 2. No 8. DK 9. Refused			
1306	At the moment, if your household had a problem and needed money for food urgently, would you be able to get it from relatives living elsewhere?	1. Yes 2. No			

N°	QUESTION WORDING	ANSWERS	CODES
		• 8. DK • 9. Refused	
1307	At the moment, if your household had a problem and needed money for food urgently, would you be able to get it from people in your community who are not your relatives?	• 1. Yes • 2. No • 8. DK • 9. Refused	
1308	At the moment, if your household had a problem and needed money for food urgently, would you be able to get it from people living someplace else who are not your relatives?	• 1. Yes • 2. No • 3. DK • 4. Refused	
1309	Compared to one year ago has your ability to get this type of assistance:	• 1. Increased • 2. Stayed the same • 3. Decreased • 8. DK • 9. Refused	
1310	At the moment, if someone in your household fell ill or was injured, and you needed assistance to perform work in your household, would you be able to get it from people in your community or from relatives?	• 1. Yes • 2. No • 8. DK • 9. Refused	
1311	At the moment, if your household had a problem and needed assistance to perform work therein, would you be able to get it from relatives living elsewhere?	• 1. Yes • 2. No • 8. DK • 9. Refused	
1312	At the moment, if your household had a problem and needed assistance to perform work therein, would you be able to get it from people in your community who are not your relatives?	• 1. Yes • 2. No • 8. DK • 9. Refused	

N°	QUESTION WORDING	ANSWERS	CODES																												
1313	At the moment, if your household had a problem and needed assistance to perform work therein, would you be able to get it from people living elsewhere who are not your relatives?	1. Yes 2. No 8. DK 9. Refused																													
1314	Compared to one year ago has the number of people you think you could ask for assistance to perform work in your household:	1. Increased 2. Stayed the same 3. Decreased 8. DK 9. Refused																													
1315a	Has your household given assistance to relatives, neighbors or friends in the past 12 months?	1. Yes 2. No 8. DK 9. Refused → Skip to Q1316																													
1315b	What types of assistance has your household given to relatives, neighbors or friends in the past 12 months? (Read list) NB: Use the answer codes, not the answer number. For example: for Q1315b, if the household says that they received “Remittances” (Yes =1), put Code “1”, not Code “2”, which is the answer number.	<table> <tr> <td>1. Zakat.....</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>2. Remittances</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>3. Gifts/habbanaye (donation of cash/animals to people in need)</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>4. Loans (cash, labor, seeds, animals)</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>5. Restocking of poorer relatives</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>6. Sadaqa</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> <tr> <td>7. Other (specify)</td><td>Yes = 1</td><td>No = 2</td><td> </td></tr> </table>	1. Zakat.....	Yes = 1	No = 2		2. Remittances	Yes = 1	No = 2		3. Gifts/habbanaye (donation of cash/animals to people in need)	Yes = 1	No = 2		4. Loans (cash, labor, seeds, animals)	Yes = 1	No = 2		5. Restocking of poorer relatives	Yes = 1	No = 2		6. Sadaqa	Yes = 1	No = 2		7. Other (specify)	Yes = 1	No = 2		
1. Zakat.....	Yes = 1	No = 2																													
2. Remittances	Yes = 1	No = 2																													
3. Gifts/habbanaye (donation of cash/animals to people in need)	Yes = 1	No = 2																													
4. Loans (cash, labor, seeds, animals)	Yes = 1	No = 2																													
5. Restocking of poorer relatives	Yes = 1	No = 2																													
6. Sadaqa	Yes = 1	No = 2																													
7. Other (specify)	Yes = 1	No = 2																													

N°	QUESTION WORDING	ANSWERS	CODES
1316	At the moment, if a relative in this community had a problem and needed <i>money for food</i> urgently, would you be able to give money or food?	• 1. Yes • 2. No • 8. DK • 9. Refused	☐
1317	At the moment, if a relative outside this community had a problem and needed <i>money for food</i> urgently, would you be able to give money or food?	• 1. Yes • 2. No • 8. DK • 9. Refused	☐
1318	At the moment, if someone who is not your relative, but lives in this community had a problem and needed <i>money for food</i> urgently, would you be able to give money or food?	• 1. Yes • 2. No • 8. DK • 9. Refused	☐
1319	At the moment, if someone who is not your relative and lives someplace else had a problem and needed <i>money for food</i> urgently, would you be able to give money or food?	• 1. Yes • 2. No • 8. DK • 9. Refused	☐
1320	Compared to one year ago has your ability to give this type of assistance:	• 1. Increased • 2. Stayed the same • 3. Decreased • 8. DK • 9. Refused	☐
1321	At the moment, if a relative who lives in this community had a problem and needed <i>help with his/her work</i> , would you be able to help him/her with it?	• 1. Yes • 2. No • 8. DK • 9. Refused	☐
1322	At the moment, if a relative who lives outside this community had a problem and needed <i>help with his/her work</i> , would you be able to help him/her with it?	• 1. Yes • 2. No • 8. DK • 9. Refused	☐
1323	At the moment, if a person who is not your relative but lives in this community had a problem and needed <i>help with his/her work</i> , would you be able to help him/her with it?	• 1. Yes • 2. No • 3. DK • 4. Refused	☐

N°	QUESTION WORDING	ANSWERS	CODES
1324	At the moment, if a person who is not your relative and lives someplace else had a problem and needed <i>help with his/her work</i> , would you be able to help him/her with it?	1. Yes 2. No 8. DK 9. Refused	
1325	Compared to one year ago has your ability to give this type of assistance:	1. Increased 2. Stayed the same 3. Decreased 8. DK 9. Refused	
CAPACITY-BUILDING SUPPORT			
1326	In the last 12 months, have you or anyone in your household ever received any vocational (job) or skill training?	1. Yes 2. No 8. DK 9. Refused	
1327	Who provided the vocational skills training?	1. Government 2. NGO/Association/Project 3. Private sector 8. DK 9. Refused	
1328	In the last 12 months, have you or anyone in your household ever received any business development training?	1. Yes 2. No 8. DK 9. Refused	
1329	Who provided the business development training?	1. Government 2. NGO/Association/Project 3. Private sector 8. DK 9. Refused	
1330	In the last 12 months, have you or anyone in your household received any early warning training?	1. Yes	

N°	QUESTION WORDING	ANSWERS	CODES
		2. No 8. DK 9. Refused  Skip to Q1332	
1331	Who provided the early warning training?	1. Government 2. NGO/Association/Project 3. Private sector 8. DK 9. Refused	☐
1332	In the last 12 months, have you or anyone in your household received any natural resource management training?	1. Yes 2. No 8. DK 9. Refused  Skip to Q1334	☐
1333	Who provided the natural resource management training?	1. Government 2. NGO/Association/Project 3. Private sector 8. DK 9. Refused	☐
1334	In the last 12 months, have you or anyone in your household received seed packets/starter packets from the government or NGOs?	1. Yes 2. No 3. DK 4. Refused  Skip to Q1336	☐
1335	Who did you receive them from?	1. Government 2. NGO/Association/Project 8. DK 9. Refused	☐
1336	In the last 12 months, have you or anyone in your household received adult education (literacy or numeracy or financial education)?	1. Yes 2. No 8. DK 9. Refused  Skip to Q1338	☐
1337	Who provided adult education (literacy, numeracy or financial education)?	1. Government 2. NGO/Association/Project	☐

N°	QUESTION WORDING	ANSWERS	CODES
		3 Private sector 8. DK 9. Refused	
1338	In the last 12 months, have you or anyone in your household received training in how to use your cell phone to get market information such as prices?	1. Yes 2. No 8. DK 9. Refused 	
1339	Who did you receive training on how to use your cell phone to get market information like prices from?	1. Government 2. NGO/Association/Project 3 Private sector 8. DK 9. Refused	

MODULE 14. ASPIRATIONS AND CONFIDENCE TO ADAPT

N°	QUESTION WORDING	• ANSWER/CODE	
1401	Please tell me which one of these views you most agree with.	1. "Each person is primarily responsible for his/her success or failure in life". 2. "One's success or failure in life is a matter of his/her destiny". 3. "One's success or failure in life is a combination of his/her own efforts and destiny" 8. DK 9. Refused	☐
1402	Please tell me which one of these views you most agree with.	1. "To be successful, above all one needs to work very hard". " 2. "To be successful, above all one needs to be lucky". " 3. "To be successful, above all one needs God". 8. DK 9. Refused	☐
1403	Are you willing to move somewhere else to improve your life?	1. Yes 2. No 8. DK 9. Refused	☐
1404	Do you agree that one should always follow the advice of the elders?	1. Yes 2. No 8. DK 9. Refused	☐
1405	Do you communicate regularly with at least one person outside the village?	1. Yes 2. No 8. DK	☐

N°	QUESTION WORDING	ANSWER/CODE	
		9. Refused	
1406	In the last 7 days, have you engaged in any economic activities with members of other groups of people outside your community? For example, farming, trading, employment, borrowing or lending money.	1. Yes 2. No 8. DK 9. Refused	
1407	How many times in the last 30 days have you gotten together with people to have food or drinks, either in their home or in a public place?	88= DK ; 99 = Refused	
1408	How many times in the last 30 days have you attended a church/mosque or other religious service?	888= DK ; 999 = Refused	
1409	In the last 12 months, how many times have you stayed more than 2 days outside this village?	88= DK ; 99 = Refused	
1410	Do you think men and women should have equal access to social, economic and political opportunities?	1. Yes 2. No 8. DK 9. Refused	
1411	Have you successfully engaged with a local authority body to effect a change in your village during the past year?	1. Yes 2. No 8. DK 9. Refused	

Below is a series of statements that you may agree or disagree with. Using the scales below indicate your agreement with each item.

N°	QUESTION WORDING	CODES/ANSWERS							
		Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	DK	Refused
1412	I feel like what happens in my life is mostly determined by powerful people.	1	2	3	4	5	6	8	9
1413	My experience in my life has been that what is going to happen will happen.	1	2	3	4	5	6	8	9
1414	My life is mainly controlled by other powerful people.	1	2	3	4	5	6	8	9
1415	It is not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.	1	2	3	4	5	6	8	9
1416	I can mostly determine what will happen in my life.	1	2	3	4	5	6	8	9
1417	When I get what I want, it is usually because I worked hard for it.	1	2	3	4	5	6	8	9
1418	My life is determined by my own actions.	1	2	3	4	5	6	8	9
1419	Most people are basically honest.	1	2	3	4	5	6	8	9
1420	Most people can be trusted.	1	2	3	4	5	6	8	9
1421	I trust my neighbors to look after my house if I am away.	1	2	3	4	5	6	8	9

C.2: Gender Questionnaire



RESILIENCE IN THE SAHEL ENHANCED (RISE)



Mid-line Survey: GENDER QUESTIONNAIRE

MODULE G1: RESPONDENT IDENTIFICATION COVER SHEET

DATE OF SURVEY	Day Month Year

100: Country	101: Region	102: Province/District	103: Commune	104: Village
.....				

GPS UNIT (UTM reading)				109	110
105: Accuracy	106: ELEV	107: Lat	108: Long	Enumerator Code	Supervisor Code
.....					

111: Compound	112: Household
Compound ID:	Household ID in Village:
Full Name of Head of Compound: _____	Household ID in Sample:
Phone Number of Head of Compound: _____	Full Name of Head of Household: _____
_____	Phone Number of Head of Household: _____
_____	_____

Answers to Modules G2 through G5 shall be provided by the household member identified in the household questionnaire	113: ID of household member identified in the household questionnaire

114												
Interview result (circle code)	Interview status comments:											
<table border="1"> <tr> <td>Fully completed</td> <td>1</td> <td rowspan="5"> </td> </tr> <tr> <td>Partially completed</td> <td>2</td> </tr> <tr> <td>Refusal</td> <td>3</td> </tr> <tr> <td>Absent</td> <td>4</td> </tr> <tr> <td>Other</td> <td>5</td> </tr> </table>	Fully completed	1		Partially completed	2	Refusal	3	Absent	4	Other	5	
Fully completed	1											
Partially completed	2											
Refusal	3											
Absent	4											
Other	5											

Supervisor's clearance
"I certify that this questionnaire has been collected in accordance with the survey design and RISE survey guidance."
Supervisor's Name: _____
Date of Verification:

Confidential

INFORMED CONSENT SIGNATURE PAGE

Thank you for the opportunity to speak with you. We are from SAREL, a USAID-funded project in partnership with the Governments of Niger and Burkina Faso. We are conducting a survey to learn about agriculture, food security, food consumption, nutrition and wellbeing of households in this area. Your household has been selected to participate in an interview on topics such as your dwelling characteristics, household expenditures and assets, household food consumption and nutrition of children. The survey includes questions about the household generally, and questions about individuals within your household, if applicable. These questions in total will take approximately one and half hours (1h30) to complete and your participation is entirely voluntary. If you agree to participate, you can choose to stop at any time or to skip any questions you do not want to answer. Your answers will be completely confidential; we will not share information that identifies you with anyone.

Do you have any questions about the survey or what I have just said? If in the future you have any questions regarding the survey and the interview, or concerns or complaints we welcome you to contact the USAID/SAREL Project (**Stephen Reid** | Chief of Party, Sahel Resilience Learning (SAREL) Project /

Tel. : 227-9663-0291 | 227-9025-7197 / sreid@sarelproject.com). We will leave one copy of this form for you so that you will have record of this contact information and about the study.

	Name	Consent to participate in survey (Insert code)		Signature or mark
		YES=1	NO=2	
1		☐	☐	
2		☐	☐	
3		☐	☐	
4		☐	☐	
5		☐	☐	
6		☐	☐	
7		☐	☐	
8		☐	☐	

9			
10			

MODULE G2: ROLE IN DECISION MAKING ON PRODUCTION AND INCOME-GENERATING ACTIVITIES

Activity Code	Activity Description	QUESTION WORDING AND NUMBER			
		Did your household conduct this activity (activity name) over the past 12 months? Yes = 1 No = 2 If the answer is "NO", go to the next activity	Did you (singular) participate in an [ACTIVITY] over the past 12 months (i.e., during [on/two] cropping season(s))? Yes 1 No.....2 >> skip to next activity	What was your level of input in the decision making on [ACTIVITY]? 1. None; 2. Input in very few decisions; 3. Input in some decisions; 4. Input in most decisions; 5. Input in all decisions;	What was your level of input in the decision making on the use of revenue generated by [ACTIVITY]? 1. None; 2. Input in very few decisions; 3. Input in some decisions; 4. Input in most decisions; 5. Input in all decisions;
		G2.01a	G2.01	G2.02	G2.03
A	Food production: crops primarily grown for household consumption				
B	Cash crops: crops primarily grown for sale in markets				
C	Livestock				
D	Non-agricultural economic activities: small business, self-employment, purchase and sale				
E	Employment income/salary: work in kind or monetary in agriculture and other paid work				
F	Fishing and fish pond				

MODULE G3: ACCESS TO PRODUCTIVE CAPITAL

N°	Productive Capital	QUESTION WORDING AND NUMBER								
		Is there anyone in your household who currently owns [item]?	How many [ITEM] does your household currently own?	01. Myself 02. Partner/spouse 03. Myself and partner/spouse together 04. Another household member 05. Myself and (an)other household member(s) 06. Partner/spouse and (an)other household member(s)	07. Someone (or group of people) from outside the household 08. Myself and another external person 09. Partner/spouse and another external person 10. Myself, partner/spouse and another external person 88. DK 99. Refused	According to you, who owns most of [ITEM]?	Most of the time, who may decide to sell [ITEM], according to you?	Most of the time, who may decide to give [ITEM] away, according to you?	Most of the time, who may decide to mortgage or lease [ITEM], according to you?	Who contributes the most in decisions about a new purchase of [ITEM]?
	Productive Capital	Yes = 1 No = 2 DK = 8 Refused = 9 Skip to next item								
	Productive Capital	G301	G302	G303	G304	G305	G306	G307		
A	Farming land (smallholdings/lots)									
B	Rearing large livestock (cattle, camels, donkeys, horses)									
C	Rearing small livestock (goats, pigs, sheep)									
D	Chickens, duck, turkeys, pigeons, other poultry									
E	Fish pond or fishing gear									
F	Farming equipment (non-mechanized)									
G	Farming equipment (mechanized)									
H	Non-agricultural economic equipment									

N°	Productive Capital	QUESTION WORDING AND NUMBER						
		Is there anyone in your household who currently owns [item]?	How many [ITEM] does your household currently own?	01. Myself 02. Partner/spouse 03. Myself and partner/spouse together 04. Another household member 05. Myself and (an)other household member(s) 06. Partner/spouse and (an)other household member(s)		07. Someone (or group of people) from outside the household 08. Myself and another external person 09. Partner/spouse and another external person 10. Myself, partner/spouse and another external person 88. DK 99. Refused		
				According to you, who owns most of [ITEM]?	Most of the time, who may decide to sell [ITEM], according to you?	Most of the time, who may decide to give [ITEM] away, according to you?	Most of the time, who may decide to mortgage or lease [ITEM], according to you?	Who contributes the most in decisions about a new purchase of [ITEM]?
I	House (and other buildings)							
J	Long-lasting large consumer goods (refrigerator, TV)							
K	Long-lasting large consumer goods (radio, pot, utensils)							
L	Cellular phone							
M	Other land not used for agricultural needs (smallholdings, residential and commercial land)							
N	Means of transportation (bicycle, motorcycle, car, canoe)							

MODULE G3 (ct'd): ACCESS TO CREDIT

Credit Source Code	Names of Credit Source	QUESTION WORDING AND NUMBER		
		Did anyone in your household take out a loan or borrow cash/kind from [SOURCE] over the past 12 months? 1 = Yes, cash 2 = Yes, in kind 3 = Yes, cash and in kind 4 = No (if no, skip to next credit source) 8 = DK (if DK, skip to next credit source) 9 = Refused (if refused, skip to next credit source)	Who made the decision from [SOURCE]? 01. Myself 02. Partner/spouse 03. Myself and partner/spouse together 04. Another household member 05. Myself and other household member(s) 06. Partner/spouse and the other household members 07. Someone (or group of people) from outside the household 08. Myself and other external persons 09. Partner/spouse and other external persons 10. Myself, partner/spouse and another external person. 88 = Don't know 99 = Refused	Who makes the decision on what to do with the money/item borrowed from [SOURCE]? 01. Myself 02. Partner/spouse 03. Myself and partner/spouse together 04. Another household member 05. Myself and other household member(s) 06. Partner/spouse and the other household members 07. Someone (or group of people) from outside the household 08. Myself and other external persons 09. Partner/spouse and other external persons 10. Myself, partner/spouse and another external person. 88 = Don't know (If DK, go to the next source of credit) 99 = Refused (if refused, go to the next source of credit)
		G308	G309	G310
A	Non-governmental organization (NGO)			
B	Informal lender			
C	Formal lender (bank/financial institution)			

D	Friends or relatives	_	_ _	_ _
E	Microfinance run by associations or VSLAs/SACCOs loan/swap transaction	_	_ _	_ _

MODULE G4: DECISION MAKING

N°	ASPECTS OF HOUSEHOLD LIFE	QUESTION WORDING AND NUMBER	
		When decisions are made on the following aspects of the household life, who makes the decision?	To what extent do you think you can make your own decisions on these aspects of the household life if you want (wanted)?
		01. Husband 02. Myself (if Myself, go to the next aspect) 03. Husband and myself 04. Another household member 05. Jointly with another household member 06. Jointly with another person from outside the household 07. Another person from outside the household 08. No decision 09. Activity not carried out by the household (go to the next aspect) 88. DK 99. Refused	1. Not at all 2. Small extent 3. Medium extent 4. To a high extent
		G4.01	G4.02
A	Obtaining inputs for agricultural production		
B	Type of crops to be grown		
C	Taking crops to the market (or not)		
D	Livestock		
E	Your (singular) own income or paid job		
F	Major household expenses (such as a large household appliance like a refrigerator)		
G	Minor household expenses (such as food for daily consumption and other household needs)		

H	Migration/exodus for paid labor		

MODULE G5: USE OF CONTRACEPTION

Now, I would like to talk about family planning with you; the various ways or methods a couple may use to delay or avoid pregnancy.

G5.01 Have you heard of methods a couple may use to delay or avoid pregnancy?

1 = yes

2 = no

8 = DK

9 = Refused

End of
interview
☐

IF RESPONDENT HAS NEVER HEARD OF METHODS THAT A COUPLE MAY USE TO AVOID PREGNANCY, STOP THE INTERVIEW HERE

N°	QUESTIONS	CLASSIFICATION OF CODES	Type
G5.02	Are you and your husband/partner doing anything or are you currently using any method to delay or avoid pregnancy?	1. Yes 2. No 3. N/A 8. DK 9. Refused	☐

Section 5: DECISION MAKING PROCESS

Now, I would like to discuss the way decisions are made in your household

N°	QUESTIONS	CODING CLASSIFICATION

G5.03	In your opinion, who should decide the number of children a couple should have? SEVERAL ANSWERS ARE POSSIBLE.	1. Husband/partner	☐
		2. Wife	☐
		3. Husband/partner and wife together	☐
		4. Husband/partner and wife and family members	☐
		5. Family elders	☐
		6. Service provider(s)	☐
		7. Other (specify)	☐

		8. DK	☐
		9. Refused	☐
G5.04	In your opinion, who should decide the birth control method a couple should use? SEVERAL ANSWERS ARE POSSIBLE.	1. Husband/partner	☐
		2. Wife	☐
		3. Husband/partner and wife together	☐
		4. Husband/partner and wife and family members	☐
		5. Family elders	☐
		6. Service provider(s)	☐
		7. Other (specify)	☐
		8. DK	☐
		9. Refused	☐

G5.05	SEE QUESTION #502: IF THE COUPLE CURRENTLY USE A BIRTH CONTROL METHOD Who decided on the choice of the birth control method that you or your husband/partner is currently using?	1. Husband/partner 2. Myself 3. Husband/partner and wife together 4. Husband/partner and wife and family members 5. Family elders 6. Service provider(s) 7. Other (specify) 8. DK 9. Refused	
G5.06	IF THE COUPLE CURRENTLY USE NO BIRTH CONTROL METHOD Who decided not to use any birth control method?	1. Husband/partner 2. Myself 3. Husband/partner and wife together 4. Husband/partner and wife and family members 5. Family elders 6. Service provider(s) 7. Other (specify) 8. DK 9. Refused	

KISH table to select one of the head of household's wives in a polygamous household (where several wives live in the same household) to answer the GENDER questionnaire

INSTRUCTIONS

1. Check Q204 in the Household questionnaire. If the head of household has more than one wife living in the household concerned, use the method described below to select one wife to be interviewed.
2. Enter details of all the head of household's wives who live in the household in the table.
3. Check the last digit of the household number (column) on page I and circle the corresponding number in the column below.
4. See where the last digit of the household number (column) and the number of head of household's wives (range) intersect.
5. The figure in the cell where the range and the column intersect shows which of the head of household's wives should be interviewed for the questionnaire.

For example: If the wife's number = 3 and the last digit of the household number = 5, wife 2 will be selected from the list.

N°	Line N°	Name	Age	Last digit of Household Number (see page I)									
				1	2	3	4	5	6	7	8	9	0
1				1	1	1	1	1	1	1	1	1	1
2				1	2	1	2	1	2	1	2	1	2
3				1	2	3	1	2	3	1	2	3	3
4				1	2	3	4	1	2	3	4	1	4
5				1	2	3	4	5	1	2	3	4	5
6				1	2	3	4	5	6	4	2	6	1
7				1	2	3	4	5	6	7	1	4	7
8				1	2	3	4	5	6	7	8	4	3
9				1	2	3	4	5	6	7	8	9	2
10				1	2	3	4	5	6	7	8	9	10

C.3: Household Food Consumption Survey & Child Anthropometry Questionnaire



RESILIENCE IN THE SAHEL ENHANCED (RISE)



MID-LINE SURVEY: HOUSEHOLD FOOD CONSUMPTION SURVEY AND CHILD ANTHROPOMETRY QUESTIONNAIRE

MODULE 1: HOUSEHOLD IDENTIFICATION COVER SHEET

DATE OF SURVEY			
	Day	Month	Year

100: Country	101: Region	102: Province/District	103: Commune	104: Village

GPS UNIT (UTM reading)				109	110
105: Accuracy	106: ELEV	107: Lat	108: Long	Enumerator Code	Supervisor Code

111: Compound Compound ID: Full Name of Head of Compound: _____ Phone Number of Head of Compound: _____	112: Household Household ID in Village: Household ID in Sample: Full Name of Head of Household: _____ Phone Number of Head of Household: _____

113 Interview result (circle code) Fully completed 1 Partially completed 2 Refusal 3 Absent 4 Other 5	Interview status comments: _____ _____ _____ _____ _____

Supervisor's clearance "I certify that this questionnaire has been collected in accordance with the survey design and RISE survey guidance." Supervisor's Name: _____ Date of Verification: / /

Confidential

INFORMED CONSENT SIGNATURE PAGE

Thank you for the opportunity to speak with you. We are from SAREL, a USAID-funded project in partnership with the Governments of Niger and Burkina Faso. We are conducting a survey to learn about agriculture, food security, food consumption, nutrition and wellbeing of households in this area. Your household has been selected to participate in an interview on topics such as your dwelling characteristics, household expenditures and assets, household food consumption and nutrition of children. The survey includes questions about the household generally, and questions about individuals within your household, if applicable. These questions in total will take approximately one and half hours (1h30) to complete and your participation is entirely voluntary. If you agree to participate, you can choose to stop at any time or to skip any questions you do not want to answer. Your answers will be completely confidential; we will not share information that identifies you with anyone.

Do you have any questions about the survey or what I have just said? If in the future you have any questions regarding the survey and the interview, or concerns or complaints we welcome you to contact the USAID/SAREL Project (**Stephen Reid** | Chief of Party, Sahel Resilience Learning (SAREL) Project /

Tel. : 227-9663-0291 | 227-9025-7197 / sreid@sarelproject.com). We will leave one copy of this form for you so that you will have record of this contact information and about the study.

	Name	Consent to participate in survey (Insert code)		Signature or mark
		YES=1	NO=2	
1		☐	☐	
2		☐	☐	
3		☐	☐	
4		☐	☐	
5		☐	☐	
6		☐	☐	

7		☐	
8		☐	
9		☐	
10		☐	

MODULE 8_E1. FOOD CONSUMPTION OVER PAST 7 DAYS

Ask these questions about the consumption/expenditures of all household members. Ask whoever is most knowledgeable about the food the household members have eaten over the past 7 days, as well as any non-food items that household members have bought.

Note: Quantities are often reported in local units of measure. Any unit listed must be able to be converted to a standardized unit. This conversion will happen during data analysis. It should not be done in the field by the enumerator.

INCLUDE FOOD EATEN BOTH COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME		Over the past one week (7 days), did you or others in your household eat any [food]?	How much [food] in total did your household eat in the past week?		How much [food] came from purchases made in the last 7 days?		How much did you spend on [food] that was eaten in the last 7 days? <i>If family ate part but not all of something they purchased, estimate only cost of what was consumed</i>	How much of the [food] eaten in the last 7 days came from own-production?		How much of the [food] eaten in the last 7 days came from gifts and other sources?	
Code		E1.01	E1.02a Quantity	E1.02b Unit	E1.03a Quantity	E1.03b Unit	E1.04 (CFA F)	E1.05a Quantity	E1.05b Unit	E1.06a Quantity	E1.06b Unit
	Cereals, grains and cereal products (Category 1)										
101	Maize flour										
102	Wheat flour										
103	Cassava flour (attiéké, tapioca, gari, etc.)										
104	Beans four (cowpea flour)										
105	Maize										
106	Millet										
107	Rice										
108	Sorghum										

INCLUDE FOOD EATEN BOTH COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME		Over the past one week (7 days), did you or others in your household eat any [food]? Yes = 1 No = 2	How much [food] in total did your household eat in the past week?	How much [food] came from purchases made in the last 7 days?	How much did you spend on [food] that was eaten in the last 7 days? <i>If family ate part but not all of something they purchased, estimate only cost of what was consumed</i>	How much of the [food] eaten in the last 7 days came from own-production?	How much of the [food] eaten in the last 7 days came from gifts and other sources?				
Code		E1.01	E1.02a Quantity	E1.02b Unit	E1.03a Quantity	E1.03b Unit	E1.04 (CFA F)	E1.05a Quantity	E1.05b Unit	E1.06a Quantity	E1.06b Unit
109	Fonio										
110	Other cereals										
111	Pasta (spaghetti, macaroni, pasta)										
112	Bread (wheat, maize)										
113	Biscuits										
114	Fritter, fried dough										
115	Flat cake, griddlecake (rice, corn, etc.)										
116	Other pastries										
	Meat, fish and eggs (Category 2)										
201	Beef										
202	Goat										
203	Mutton										
204	Poultry/chicken										
205	Camel										
206	Pork										
207	Eggs										
208	Bush meat										
209	Other meat										

INCLUDE FOOD EATEN BOTH COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME		Over the past one week (7 days), did you or others in your household eat any [food]?	How much [food] in total did your household eat in the past week?		How much [food] came from purchases made in the last 7 days?		How much did you spend on [food] that was eaten in the last 7 days? <i>If family ate part but not all of something they purchased, estimate only cost of what was consumed</i>	How much of the [food] eaten in the last 7 days came from own-production?	How much of the [food] eaten in the last 7 days came from gifts and other sources?		
Code		E1.01	E1.02a Quantity	E1.02b Unit	E1.03a Quantity	E1.03b Unit	E1.04 (CFA F)	E1.05a Quantity	E1.05b Unit	E1.06a Quantity	E1.06b Unit
210	Fresh fish										
211	Smoked fish										
212	Dried fish										
213	Tinned fish										
214	Other (specify)										
Fruit (Category 3)											
301	Mango										
302	Pineapple										
303	Orange										
304	Other citrus fruits (tangerine, lemon grapefruit)										
305	Banana										
306	Watermelon										
307	Dates										
308	Sugarcane										
309	Melon										
310	Palm-tree (fruit)										
311	Kola nut										

INCLUDE FOOD EATEN BOTH COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME		Over the past one week (7 days), did you or others in your household eat any [food]?	How much [food] in total did your household eat in the past week?		How much [food] came from purchases made in the last 7 days?		How much did you spend on [food] that was eaten in the last 7 days? <i>If family ate part but not all of something they purchased, estimate only cost of what was consumed</i>	How much of the [food] eaten in the last 7 days came from own-production?	How much of the [food] eaten in the last 7 days came from gifts and other sources?		
		Yes = 1 No = 2									
Code		E1.01	E1.02a Quantity	E1.02b Unit	E1.03a Quantity	E1.03b Unit	E1.04 (CFA F)	E1.05a Quantity	E1.05b Unit	E1.06a Quantity	E1.06b Unit
312	Cactus fruit										
313	Guava										
314	Strawberry										
315	Other (specify)										
	Milk and Dairy Products (Category 4)										
401	Fresh milk										
402	Curdled milk										
403	Powder milk										
404	Cheese										
405	Butter										
406	Yogurt (Solani, etc.)										
407	Other dairy products										
	Market garden produce (Category 5)										
501	Onion										
502	Lettuce (salad)										
503	Cabbage										
504	Eggplant										

INCLUDE FOOD EATEN BOTH COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME		Over the past one week (7 days), did you or others in your household eat any [food]? Yes = 1 No = 2	How much [food] in total did your household eat in the past week?	How much [food] came from purchases made in the last 7 days?	How much did you spend on [food] that was eaten in the last 7 days? <i>If family ate part but not all of something they purchased, estimate only cost of what was consumed</i>	How much of the [food] eaten in the last 7 days came from own-production?	How much of the [food] eaten in the last 7 days came from gifts and other sources?				
Code		E1.01	E1.02a Quantity	E1.02b Unit	E1.03a Quantity	E1.03b Unit	E1.04 (CFA F)	E1.05a Quantity	E1.05b Unit	E1.06a Quantity	E1.06b Unit
505	Carrot										
506	Green beans										
507	Cucumber										
508	Field peas										
509	Squash and zucchini										
510	Fresh tomato										
511	Dried tomato										
512	Dried okra										
513	Dried beans										
514	Vouandzou										
515	Other dried vegetables										
516	In-shell peanuts										
517	Peanut kernel										
518	Kapok flower (« voaga »)										
519	Baobab leaves										
520	Moringa leaves										
521	Sorrel leaves										
522	Yodo (« foye gouto »)										

INCLUDE FOOD EATEN BOTH COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME		Over the past one week (7 days), did you or others in your household eat any [food]? Yes = 1 No = 2	How much [food] in total did your household eat in the past week?	How much [food] came from purchases made in the last 7 days?	How much did you spend on [food] that was eaten in the last 7 days? <i>If family ate part but not all of something they purchased, estimate only cost of what was consumed</i>	How much of the [food] eaten in the last 7 days came from own-production?	How much of the [food] eaten in the last 7 days came from gifts and other sources?				
Code		E1.01	E1.02a Quantity	E1.02b Unit	E1.03a Quantity	E1.03b Unit	E1.04 (CFA F)	E1.05a Quantity	E1.05b Unit	E1.06a Quantity	E1.06b Unit
523	Other vegetables or leaves										
524	Malahia (« Fakkou »)										
	Sugar, honey, fats, and oil (Category 6)										
601	Sugar										
602	Honey										
603	Palm oil										
604	Shea butter										
605	Peanut oil										
606	Other oils (soy, sesame, maize, etc. to be specified)										
607	Peanut paste										
608	Other (specify)										
	Beverages and energizers										
701	Water										
702	Tea										
703	Coffee in pot or bag										
704	Chocolate										
705	Soft drinks/sodas, carbonated drinks										

INCLUDE FOOD EATEN BOTH COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME		Over the past one week (7 days), did you or others in your household eat any [food]? Yes = 1 No = 2	How much [food] in total did your household eat in the past week?	How much [food] came from purchases made in the last 7 days?	How much did you spend on [food] that was eaten in the last 7 days? <i>If family ate part but not all of something they purchased, estimate only cost of what was consumed</i>	How much of the [food] eaten in the last 7 days came from own-production?	How much of the [food] eaten in the last 7 days came from gifts and other sources?				
		E1.01	E1.02a Quantity	E1.02b Unit	E1.03a Quantity	E1.03b Unit	E1.04 (CFA F)	E1.05a Quantity	E1.05b Unit	E1.06a Quantity	E1.06b Unit
706	Fruit juice										
707	Local beer (« dolo »)										
708	Locally brewed liquor										
709	Spirits (whiskey, gin, cognac)										
710	Tobacco (chewing, or snuff, smoking)										
711	Cigarette										
712	Other tisanes and infusions										
713	Other (specify)										
Spices and miscellaneous (Category 8)											
801	Salt										
802	Pepper										
803	Hot pepper										
804	Maggi seasoning										
805	« Soumbala »										
806	Tomato concentrate										
807	Peanut cake (« couracoura », « koulikouli »)										
808	Garlic										
809	Ginger										

INCLUDE FOOD EATEN BOTH COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME		Over the past one week (7 days), did you or others in your household eat any [food]? Yes = 1 No = 2	How much [food] in total did your household eat in the past week?		How much [food] came from purchases made in the last 7 days?		How much did you spend on [food] that was eaten in the last 7 days? <i>If family ate part but not all of something they purchased, estimate only cost of what was consumed</i>	How much of the [food] eaten in the last 7 days came from own-production?		How much of the [food] eaten in the last 7 days came from gifts and other sources?	
Code		E1.01	E1.02a Quantity	E1.02b Unit	E1.03a Quantity	E1.03b Unit	E1.04 (CFA F)	E1.05a Quantity	E1.05b Unit	E1.06a Quantity	E1.06b Unit
810	Other spices (to be specified)										
	Tubers (Category 9)										
901	Cassava										
902	Yam										
903	Irish potato										
904	Taro										
905	Sweet potato										
906	Other tubers (to be specified)										
	Prepared dishes (Category 10)										
1001	Millet ball and milk										
1002	Millet ball without milk/milky porridge										
1003	Millet and green leaves dish (no meat, no fish)										
1004	Sorghum and green leaves (no meat, no fish)										
1005	Maize and green leaves dish (no meat, no fish)										
1006	Other millet, sorghum or maize-based dishes										
1007	Boiled beans										

INCLUDE FOOD EATEN BOTH COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME		Over the past one week (7 days), did you or others in your household eat any [food]? Yes = 1 No = 2	How much [food] in total did your household eat in the past week?	How much [food] came from purchases made in the last 7 days?	How much did you spend on [food] that was eaten in the last 7 days? <i>If family ate part but not all of something they purchased, estimate only cost of what was consumed</i>	How much of the [food] eaten in the last 7 days came from own-production?	How much of the [food] eaten in the last 7 days came from gifts and other sources?				
Code		E1.01	E1.02a Quantity	E1.02b Unit	E1.03a Quantity	E1.03b Unit	E1.04 (CFA F)	E1.05a Quantity	E1.05b Unit	E1.06a Quantity	E1.06b Unit
1008	Rice and cowpea										
1009	Rice and baobab leaves sauce										
1010	Rice and tomato sauce										
1011	Jollof rice and fish/chicken										
1012	Rice and peanut sauce										
1013	Pasta with no meat, no chicken, no fish										
1014	Hot coffee (bought from a seller)										
1015	Hot tea, coffee (bought from a seller)										

MODULE 15: HOUSEHOLD DIETARY DIVERSITY

Ask these questions of whoever is most knowledgeable about the food consumption of household members. Read the list of foods. Choose “yes” if anyone in the household ate at least one of the food items under each category. Choose “no” if no one in the household ate the food.

Now I would like to ask you about the types of foods that you or anyone else in your household ate yesterday during the day and at night.

Please include all food eaten both at your home and away from home.

N°	QUESTION WORDING	ANSWERS/CODES	
1501	Any bread, rice, pasta, fritters, biscuits, or other foods made from millet, sorghum, maize, rice, wheat?	1. Yes 2. No 8. DK 9. Refused	☐
1502	Any food made from Irish potato, yam, sweet potato, cassava, taro and other tubers?	1. Yes 2. No 8. DK 9. Refused	☐
1503	Any food made with vegetables such as onions, cabbage, green leafy vegetables, gathered wild green leaves, tomato, cucumber, mushroom, green pepper, beet root, garlic, or carrots?	1. Yes 2. No 8. DK 9. Refused	☐
1504	Any food or fruit juices made from fruits such as mango, banana, oranges, pineapple, papaya, guava, avocado, wild fruit, or apple?	1. Yes 2. No 8. DK 9. Refused	☐
1505	Any food made from meat such as beef, lamb, goat, wild game, chicken, or other birds, other meats?	1. Yes 2. No 8. DK 9. Refused	☐

1506	Any eggs?	• 1. Yes • 2. No • 8. DK • 9. Refused	☐
1507	Any fresh fish, smoked fish, fish soup/sauce or dried fish or shellfish?	• 1. Yes • 2. No • 8. DK • 9. Refused	☐
1508	Any foods made from beans (white, brown, horse), peas, lentils, chick peas, rapeseed, linseed, sesame, sunflower, vetch, soybean flour or nuts (groundnuts, groundnut flour)?	• 1. Yes • 2. No • 8. DK • 9. Refused	☐
1509	Any cheese, yogurt, milk, powder milk, butter or other milk products?	• 1. Yes • 2. No • 8. DK • 9. Refused	☐
1510	Any foods made with oil, margarine, fat, or butter?	• 1. Yes • 2. No • 8. DK • 9. Refused	☐
1511	Any sugar, sugar cane, tamarind or honey?	• 1. Yes • 2. No • 8. DK • 9. Refused	☐
1512	Any other foods, such as condiments, traditional beer, beer, wine, coffee or tea?	• 1. Yes • 2. No • 8. DK • 9. Refused	☐

MODULE 16: HOUSEHOLD HUNGER

Ask these questions of whoever is most knowledgeable of household members.

N°	QUESTION WORDING	CODES/ANSWERS	
1601	In the past four weeks, did you worry that your household would not have enough food?	1. Yes 2. No 8. DK 9. Refused  Skip to Q1602	
1601a	In the past four weeks, how often did you worry that your household would not have enough food?	1. Rarely (once or twice in the past four weeks) 2. Sometimes (three to ten times in the past four weeks) 3. Often (more than ten times in the past four weeks) 8. DK 9. Refused	
1602	In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	1. Yes 2. No 8. DK 9. Refused  Skip to Q1603	
1602a	How often were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	1. Rarely (once or twice in the past four weeks) 2. Sometimes (three to ten times in the past four weeks) 3. Often (more than ten times in the past four weeks) 8. DK 9. Refused	
1603	In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?	1. Yes 2. No 8. DK 9. Refused  Skip to Q1604	
1603a	How often did you or any household member have to eat a limited variety of foods due to a lack of resources?	1. Rarely (once or twice in the past four weeks) 2. Sometimes (three to ten times in the past four weeks) 3. Often (more than ten times in the past four weeks) 8. DK 9. Refused	
1604	In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?	1. Yes 2. No 8. DK 9. Refused  Skip to Q1605	

N°	QUESTION WORDING	CODES/ANSWERS	
1604a	How often did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?	1. Rarely (once or twice in the past four weeks) 2. Sometimes (three to ten times in the past four weeks) 3. Often (more than ten times in the past four weeks) 8. DK 9. Refused	
1605	In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	1. Yes 2. No 8. DK 9. Refused Skip to Q1606	
1605a	How often did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	1. Rarely (once or twice in the past four weeks) 2. Sometimes (three to ten times in the past four weeks) 3. Often (more than ten times in the past four weeks) 8. DK 9. Refused	
1606	In the past four weeks, did you or any other household member have to eat fewer meals in a day because there was not enough food?	1. Yes 2. No 8. DK 9. Refused Skip to Q1607	
1606a	How often did you or any other household member have to eat fewer meals in a day because there was not enough food?	1. Rarely (once or twice in the past four weeks) 2. Sometimes (three to ten times in the past four weeks) 3. Often (more than ten times in the past four weeks) 8. DK 9. Refused	
1607	In the past four weeks, was there ever no food to eat (of any kind) in your household because of lack of resources to get food?	1. Yes 2. No 8. DK 9. Refused Skip to Q1608	
1607a	How often was there ever no food to eat (of any kind) in your household because of lack of resources to get food?	1. Rarely (once or twice in the past four weeks) 2. Sometimes (three to ten times in the past four weeks) 3. Often (more than ten times in the past four weeks) 8. DK 9. Refused	
1608	In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?	1. Yes 2. No Skip to Q1609	

N°	QUESTION WORDING	CODES/ANSWERS	
		• 8. DK • 9. Refused	
1608a	How often did you or any household member go to sleep at night hungry because there was not enough food?	• 1. Rarely (once or twice in the past four weeks) • 2. Sometimes (three to ten times in the past four weeks) • 3. Often (more than ten times in the past four weeks) • 8. DK • 9. Refused	
1609	In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?	• 1. Yes • 2. No • 8. DK • 9. Refused  Skip to next module	
1609a	How often did you or any household member go a whole day and night without eating anything because there was not enough food?	• 1. Rarely (once or twice in the past four weeks) • 2. Sometimes (three to ten times in the past four weeks) • 3. Often (more than ten times in the past four weeks) • 8. DK • 9. Refused	

MODULE 17. CHILD ANTHROPOMETRY

Ask these questions of the primary caregiver of each child aged 0–59 months in the household, as identified in Module 2. Check to see if each caregiver has given consent to be interviewed on the signature page of the informed consent form. If a caregiver has not yet given consent, return to Module 1a and gain caregiver consent before proceeding.

Fill in the information for q1701-q1703 for all of the children identified in q212 of Module 2.

N°	QUESTION WORDING	CODES/ANSWERS						
		Child 1	Child 2	Child 3	Child 4	Child 5	Child 6	Child 7
1701	Record caregiver's number from Module 2							
1702	Record child's number from Module 2							
1703	Record child's first name							
1704	What is child's sex?	1 Boy 2 Girl 	1 Boy 2 Girl 	1 Boy 2 Girl 	1 Boy 2 Girl 	1 Boy 2 Girl 	1 Boy 2 Girl 	1 Boy 2 Girl
AGE OF CHILD								
1705	When was [child's name] born (dd/mm/yy)?	 Day	 Day	 Day	 Day	 Day	 Day	 Day
	If the respondent does not know the exact birth date ask:	 Month	 Month	 Month	 Month	 Month	 Month	 Month
	Does [child's name] have a health/vaccination card with the birth date recorded? If the health/vaccination card is shown and the respondent confirms the information is correct,	 Year	 Year	 Year	 Year	 Year	 Year	 Year

N°	QUESTION WORDING	CODES/ANSWERS						
		Child 1	Child 2	Child 3	Child 4	Child 5	Child 6	Child 7
	record the date of birth as documented on the card. If the day is unknown, put 88 in the space If the month is unknown, put 88 in the space							
1706	How old was [child's name] at [his/her] last birthday? Record age in completed years.	_ _	_ _	_ _	_ _	_ _	_ _	_ _
1707	How many months old is [child's name]? Record age in completed months.	_ _ Month	_ _ Month	_ _ Month	_ _ Month	_ _ Month	_ _ Month	_ _ Month

N°	QUESTION WORDING		CODES/ANSWERS						
			Child 1	Child 2	Child 3	Child 4	Child 5	Child 6	Child 7
1708	Check 1707. Is the child under 60 months [age months]?	☐ 1. Yes ☐ 2. No → Skip to next child or end module	_	_	_	_	_	_	_
1709	Is the child available to be weighed and measured?	☐ 1. Yes ☐ 2. YES (DISABLED) ☐ 3. NO (ABSENT) ☐ 4. NO (SICK) → Skip to next child or end module	_	_	_	_	_	_	_
WEIGHT OF CHILD									
1710	Does child have edema? (observe if child shows signs of swelling of the feet)	☐ 1. Yes ☐ 2. No	_	_	_	_	_	_	_

1711	Weigh the child (Weight in kilograms)	•	Kg	Kg	Kg	Kg	Kg	Kg	Kg	
HEIGHT OF CHILD										
1712	Measure the child (Height in centimeters) <i>Children under 24 months should be measured lying down; Children 24 months or older should be measured standing up.</i>		cm	cm	cm	cm	cm	cm	cm	

MODULE 17a. NUTRITIONAL STATUS AND FEEDING PRACTICES FOR CHILDREN UNDER 24 MONTHS OLD**Exclusive Breastfeeding and Minimum Acceptable Diet (MAD)**

N°	QUESTION WORDING	CODES/ANSWERS						
		Child 1	Child 2	Child 3	Child 4	Child 5	Child 6	Child 7
17b01	Is (child's name) under 24 months? Check 1707. Is the child under 24 months [age months]?	1. Yes 2. No If "no" skip to next ☐	1. Yes 2. No If "no" skip to next ☐	1. Yes 2. No If "no" skip to next ☐	1. Yes 2. No If "no" skip to next ☐	1. Yes 2. No If "no" skip to next ☐	1. Yes 2. No If "no" skip to next ☐	1. Yes 2. No If "no" skip to next ☐
17b02	Has (child's name) already been breastfed?	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b04 ☐	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b04 ☐	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b04 ☐	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b04 ☐	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b04 ☐	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b04 ☐	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b04 ☐
17b03	Has (child's name) been breastfed during the day or at night?	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b05 ☐	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b05 ☐	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b05 ☐	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b05 ☐	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b05 ☐	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b05 ☐	1. Yes 2. No 8. DK 9. Refused ↓ Skip to 17b05 ☐
17b04	Sometimes babies are breastfed in different ways, for example with a spoon, a cup or a bottle. This can occur when the mother cannot always be with the baby. Sometimes babies are breastfed by another woman or	1. Yes 2. No 8. DK	1. Yes 2. No 8. DK	1. Yes 2. No 8. DK	1. Yes 2. No 8. DK	1. Yes 2. No 8. DK	1. Yes 2. No 8. DK	1. Yes 2. No 8. DK

N°	QUESTION WORDING	CODES/ANSWERS						
		Child 1	Child 2	Child 3	Child 4	Child 5	Child 6	Child 7
	from breast milk donated by another woman with a spoon, cup, bottle or another way. This can happen if a mother cannot breastfeed her baby. Has (child's name) got breast milk using one of these methods during the day or night yesterday?	9. Refused ☐	9. Refused ☐	9. Refused ☐	9. Refused ☐	9. Refused ☐	9. Refused ☐	9. Refused ☐
17b05	Now I would like to ask you about certain drugs and vitamins which are sometimes given to children under 24 months old. Has (child's name) received vitamin drops or other drugs as drops yesterday during the day or evening?	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐
17b06	Has (child's name) received oral rehydration solution during the day or night yesterday?	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐
Now, I would like to ask you about some liquids (child's name) may have taken yesterday during the day or night yesterday.								
Do you know if (child's name) had:								
17b07	Ordinary water (without bubbles or carbonation) for example, from a well, spring, or tap?	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐
17b08	Preparations for children under 24 months old, such as France lait, Nativa, other dairy products	1. Yes	1. Yes	1. Yes	1. Yes	1. Yes	1. Yes	1. Yes

N°	QUESTION WORDING	CODES/ANSWERS						
		Child 1	Child 2	Child 3	Child 4	Child 5	Child 6	Child 7
	such as Nestlé for children?	2. No 8. DK ↓ 9. Refused Skip to 17b10	2. No 8. DK ↓ 9. Refused Skip to 17b10	2. No 8. DK ↓ 9. Refused Skip to 17b10	2. No 8. DK ↓ 9. Refused Skip to 17b10	2. No 8. DK ↓ 9. Refused Skip to 17b10	2. No 8. DK ↓ 9. Refused Skip to 17b10	2. No 8. DK ↓ 9. Refused Skip to 17b10
17b09	How many times in the day and in the night has (child's name) consumed a preparation of formula for children under 24 months old yesterday?							
17b10	Has (child's name) drunk canned, powdered or fresh milk?	1. Yes 2. No 8. DK ↓ 9. Refused Skip to 17b12	1. Yes 2. No 8. DK ↓ 9. Refused Skip to 17b12	1. Yes 2. No 8. DK ↓ 9. Refused Skip to 17b12	1. Yes 2. No 8. DK ↓ 9. Refused Skip to 17b12	1. Yes 2. No 8. DK ↓ 9. Refused Skip to 17b12	1. Yes 2. No 8. DK ↓ 9. Refused Skip to 17b12	1. Yes 2. No 8. DK ↓ 9. Refused Skip to 17b12
17b11	How many times in the day and in the night has (child's name) drunk that milk yesterday?							
17b12	Has (child's name) drunk juice or beverages?	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No

N°	QUESTION WORDING	CODES/ANSWERS						
		Child 1	Child 2	Child 3	Child 4	Child 5	Child 6	Child 7
		8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused
17b13	Clear broth	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused
17b14	Yogurt	1. Yes 2. No 8. ☒ DK 9. Refused Skip to 17b16 	1. Yes 2. No 8. ☒ DK 9. Refused Skip to 17b16 	1. Yes 2. No 8. ☒ DK 9. Refused Skip to 17b16 	1. Yes 2. No 8. ☒ DK 9. Refused Skip to 17b16 	1. Yes 2. No 8. ☒ DK 9. Refused Skip to 17b16 	1. Yes 2. No 8. ☒ DK 9. Refused Skip to 17b16 	1. Yes 2. No 8. ☒ DK 9. Refused Skip to 17b16
17b15	How many times in the day or in the night has (child's name) eaten yogurt yesterday?							
17b16	Has (child's name) eaten porridge such as cowpea puree, porridge, enriched porridge (« koko ») Misola, CSB, etc.?	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No

N°	QUESTION WORDING	CODES/ANSWERS						
		Child 1	Child 2	Child 3	Child 4	Child 5	Child 6	Child 7
		8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused
17b17	Other liquids such as tea, decoction, sugar water, « rouboutou » (Coranic verses written on a slate and washed to give children)?	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused
17b18	Other liquids?	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused
Yesterday during the day and in the night, has (child's name) drunk/eaten (food under the group)								
WRITE (1) IF RESPONDENT SAYS « YES », (2) IF RESPONDENT SAYS « NO », (8) IF S/HE DOES NOT KNOW AND (9) IF S/HE REFUSES								
17b19	Cereal-based foods such as bread, biscuit, cake, fritters, couscous, rice, pasta, porridge, cereal or other foods made from corn, rice, fonio, wheat (« bulgur », « doumé »), sorghum, and millet?	1. Yes 2. No 8. DK 9. Refused	1. Yes 2. No 8. DK 9. Refused	1. Yes 2. No 8. DK 9. Refused	1. Yes 2. No 8. DK 9. Refused	1. Yes 2. No 8. DK 9. Refused	1. Yes 2. No 8. DK 9. Refused	1. Yes 2. No 8. DK 9. Refused

N°	QUESTION WORDING	CODES/ANSWERS						
		Child 1	Child 2	Child 3	Child 4	Child 5	Child 6	Child 7
		☐	☐	☐	☐	☐	☐	☐
17b20	Carrots, squash, monkey bread, « gonda » (papaya) whose inside color is yellowish or orange-yellow?	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐
17b21	Potatoes, yams, cassava, taro, any food made of roots or tubers?	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐
17b22	Spinach, lettuce, sorrel, « molohiya » (« fakkou »), baobab leaf (« kouka »), « yodo », okra leaf, Moringa, « tchapatta », other local dark green leafy vegetables?	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐
17b23	Ripe mangoes, ripe papayas, guava, melon?	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No	1. Yes 2. No

N°	QUESTION WORDING	CODES/ANSWERS						
		Child 1	Child 2	Child 3	Child 4	Child 5	Child 6	Child 7
		8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused 	8. DK 9. Refused
17b24	Other fruits or vegetables such as cabbage, cauliflower, watermelon, squash/zucchini, onion, tomato, eggplant (« yalo »), green beans?	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused
17b25	Liver, kidney, heart, or other offal?	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused
17b26	Any meat such as beef, pork, sheep, goat, chicken, duck?	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused
17b27	Eggs?	1. Yes	1. Yes	1. Yes	1. Yes	1. Yes	1. Yes	1. Yes

N°	QUESTION WORDING	CODES/ANSWERS						
		Child 1	Child 2	Child 3	Child 4	Child 5	Child 6	Child 7
		2. No 8. DK 9. Refused 	2. No 8. DK 9. Refused 	2. No 8. DK 9. Refused 	2. No 8. DK 9. Refused 	2. No 8. DK 9. Refused 	2. No 8. DK 9. Refused 	2. No 8. DK 9. Refused
17b28	Fresh or dried fish, shellfish, seafood?	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused
17b29	Any food made from beans, peas, lentils or beans, « vouandzou »/cowpea (« dan-wari »), néré/« soubala »?	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused
17b30	Cheese, yogurt or other dairy products?	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused

N°	QUESTION WORDING	CODES/ANSWERS						
		Child 1	Child 2	Child 3	Child 4	Child 5	Child 6	Child 7
17b31	Any oil, grease, or butter or any food based on any of these products?	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐
17b32	Any sugary food such as chocolates, candies, sweets, pastries, cakes, cookies?	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐
17b33	Any seasoning for flavor, such as pepper, spices, herbs or fish powder?	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐	1. Yes 2. No 8. DK 9. Refused ☐
17b34	Any larvae, snails, insects?	1. Yes 2. No 8. DK 9. Refused	1. Yes 2. No 8. DK 9. Refused	1. Yes 2. No 8. DK 9. Refused	1. Yes 2. No 8. DK 9. Refused	1. Yes 2. No 8. DK 9. Refused	1. Yes 2. No 8. DK 9. Refused	1. Yes 2. No 8. DK 9. Refused

N°	QUESTION WORDING	CODES/ANSWERS						
		Child 1	Child 2	Child 3	Child 4	Child 5	Child 6	Child 7
17b35	Any foods made of red palm oil, red palm nut or red palm nut pulp sauce?	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused
17b36	Has [child's name] eaten any solid, semi-solid or soft food during the day or in the night yesterday?	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused 	1. Yes 2. No 8. DK 9. Refused
17b37	How many times has [child's name] eaten any solid, semi-solid or soft food other than liquids during the day or in the night yesterday?							

****THANK YOU****

After the interview thank the respondent for giving you his/her time and for the co-operation in providing the

information. Inform them that you may possibly be returning to collect more information or seek any necessary clarification on the information provided at later date. At this point invite the respondent to ask you any questions that he/she might have. Answer where you can. If you do not know the answer(s), tell the respondent that his/her questions will be forwarded to a relevant person who can respond.

C.4: Village Questionnaire

 USAID FROM THE AMERICAN PEOPLE	RESILIENCE IN THE SAHEL ENHANCED (RISE)	 SAREL Projet d'Apprentissage sur la Résilience au Sahel

Mid-line Survey: Village Questionnaire

MODULE 1: VILLAGE IDENTIFICATION COVER SHEET

DATE OF SURVEY	Day	Month	Year

100: Country	101: Region	102: Province/District	103: Commune	104: Village

GPS UNIT (UTM reading)				109	110
105: Accuracy	106: ELEV	107: Lat	108: Long	Enumerator Code	Supervisor Code

At least three respondents must be included.

<u>Respondents' Full Name</u>	<u>Telephone Number</u>
1.	
2.	
3.	
4.	
5.	
6.	

Confidential

INFORMED CONSENT SIGNATURE PAGE

Thank you for the opportunity to speak with you. We are from SAREL, a USAID-funded project in partnership with the Governments of Niger and Burkina Faso. We are conducting a survey to learn about agriculture, food security, food consumption, nutrition and wellbeing of households in this area. Your community has been selected to participate in an interview on topics such as the types of services available here, the community organizations, and the stressors that have affected you. These questions in total will take approximately one hour to complete and your participation is entirely voluntary. If you agree to participate, you can choose to stop at any time or to skip any questions you do not want to answer. Your answers will be completely confidential; we will not share information that identifies you with anyone.

Do you have any questions about the survey or what I have just said? If in the future you have any questions regarding the survey and the interview, or concerns or complaints we welcome you to contact the USAID/SAREL Project (**Stephen Reid** | Chief of Party, Sahel Resilience Learning (SAREL) Project /

Tel. : 227-9663-0291 | 227-9025-7197 / sreid@sarelproject.com). We will leave one copy of this form for you so that you will have record of this contact information and about the study.

	Name	Consent to participate in survey (Insert code)		Signature or mark
		YES=1	NO=2	
1		☐	☐	
2		☐	☐	
3		☐	☐	
4		☐	☐	
5		☐	☐	
6		☐	☐	
7		☐	☐	

8			
9			
10			
11			

MODULE 2. VILLAGE CHARACTERISTICS

N°	QUESTION WORDING	CODES/ANSWERS		
201	What is the total population of this village?			_ _ _ _ _
202	In the last five years, has the population of this village stayed the same, increased or decreased?	1. Stayed the same 2. Increased 3. Decreased		_
203	What are the three largest ethnic groups in this village?	Burkina Faso Ethnic Groups 11. Mossi 12. Fulfuldé/Peul 13. Gourmantché 14. Songhaï/Sonraï 15. Touareg 16. Bella	Niger Ethnic Groups 21. Haoussa 22. Djerma 23. Sonraï 24. Peul 25. Gourmantché 26. Touareg 27. Bella 28. Kanouri	1 st _ _ _ 2 nd _ _ _ 3 rd _ _ _
204	How far is this village from the nearest town? (kms) <i>Town: e.g. presence of important educational centers like schools, integrated health centers or hospitals, banks, business services, major markets, input supplies facilities, other facilities...</i>			_ _ _
205	How far is this village from the zonal capital? (kms)			_ _ _
206	For how many years has this village existed?	1. More than 20 years 2. Between 10 and 20 years 3. Less than 10 years 8. DK		_

N°	QUESTION WORDING	CODES/ANSWERS	
207	In addition to the rainy season campaign does your village have a second cropping season?	1. Yes 2. No	☐
208	Does this village have corridors and communal grazing areas?	1. Yes 2. No (Skip to q211)	☐
209	If yes, is there a group in the village that decides who can use these grazing areas and when they can use them?	1. Yes 2. No	☐
210	In the last 12 months, has there ever been a problem of too many animals on the communal grazing land?	1. Yes 2. No	☐
211	Does this community have a communal water source for livestock?	1. Yes 2. No (Skip to q214)	☐
212	What is this communal water source?	1. River 2. Pond 3. Borehole 4. Well	☐
213	In the last 12 months, has there ever been a time when there was not enough water for all the animals?	1. Yes 2. No	☐
214	Do people in this community get their firewood from communal land?	1. Yes 2. No (Skip to q217)	☐
215	If yes, is there a group in the community that decides who can gather the wood and how much?	1. Yes 2. No	☐
216	In the last 12 months, has there ever been a problem of not enough firewood on the communal land?	1. Yes 2. No	☐
217	Is there a water users' group that manages the water used for irrigation in this community? (Enter N/A if the village does not practice irrigation)	1. Yes 2. No 3. N/A	☐

MODULE 3. COMMUNITY INFRASTRUCTURE AND SERVICES

N°	QUESTION WORDING	CODES/ANSWERS	
WATER			
301	Does this village have access to piped water?	1. Yes 2. No (Skip to q304)	
302	If yes, is the water in public standpipes or piped into houses?	1. Public standpipes 2. Piped into houses 3. Public standpipes and piped into houses	
303	What share of the households in the village has access to piped water?	1. All households 2. Most of the households 3. About half of the households 4. Less than half of the households 5. Very few	
304	What are the main sources of drinking water supply in the dry season?	01. Tube wells 02. Public standpipes 03. Protected hand-dug wells 04. Protected springs 05. Rainwater collection 06. Ponds and rivers 07. Unprotected springs/wells 08. Truck/vendor 09. Borehole 10. Piped into houses 11. Other (specify) _____	1 st 2 rd 3 rd
305	What are the main sources of drinking water supply in the rainy season?	01. Tube wells 02. Public standpipes	1 st

N°	QUESTION WORDING	CODES/ANSWERS	
		03. Protected hand-dug wells 04. Protected springs 05. Rainwater collection 06. Ponds and rivers 07. Unprotected springs/wells 08. Truck/vendor 09. Borehole 10. Piped into houses 11. Other (specify)_____	2 rd 3 rd
ELECTRICITY			
306	Do any of the households in the village have electricity?	1. Yes 2. No (Skip to q309)	
307	What share of households in the village has electricity?	1. All households 2. Most of the households 3. About half of the households 4. Less than half of the households 5. Very few	
308	What is the main source of electricity?	1. Public utility 2. Generator 3. Other (specify)_____	
TELEPHONE SERVICE			
309	Does this village have cell phone service?	1. Yes 2. No (Skip to q311)	
310	What share of households in this village has cell phones?	1. All households 2. Most of the households 3. About half of the households 4. Less than half of the households 5. Very few	

N°	QUESTION WORDING	CODES/ANSWERS	
311	Does this village have public telephones?	1. Yes (Skip to q317) 2. No (Skip to q312)	
312	How far from the village is the nearest public telephone? (kms)		
ROADS AND TRANSPORTATION			
313	What are the main routes used to reach this village? (multiple responses possible) Paved road = road protected by a waterproof surface (surface-dressed laterite) Rural road = earth road (unpaved)	1. Paved road 2. Dirt road (laterite) 3. Mixed paved and dirt 4. Footpath 5. Trail 6. Other (specify)	
314	Are there times of the year when people cannot travel because of poor road/trail conditions?	1. Yes 2. No	
315	Is this village served by a public transport system?	1. Yes (Skip to q317) 2. No	
316	How far from the village is the nearest public transport? (kms)		
317	What is the share of households in this village that uses public transportation?	1. All households 2. Most of the households 3. About half of the households 4. Less than half of the households 5. Very few	
INFRASTRUCTURE			
317a	How far from the village is there a passable road that leads to the municipal capital?	1. Village (Skip to 317c) 2. Less than 1 km 3. 1 to 2 km	

N°	QUESTION WORDING	CODES/ANSWERS	
		4. 3 to 5 km 5. More than 5 km	
317b	Are there times of the year when people cannot access this road?	1. Yes 2. No	☐
317c	How far from the village is there a passable road that leads to the departmental/provincial capital?	1. Village (Skip to 317e) 2. Less than 1 km 3. 1 to 2 km 4. 3 to 5 km 5. More than 5 km	☐
317d	Are there times of the year when people cannot access this road?	1. Yes 2. No	☐
317e	How far from the village is there a passable road that leads to the regional capital?	1. Village (Skip to 318) 2. Less than 1 km 3. 1 to 2 km 4. 3 to 5 km 5. More than 5 km	☐
317f	Are there times of the year when people cannot access this road?	1. Yes 2. No	☐
HOUSING			
318	What share of households in the village has tin (corrugated sheet metal) roofs?	1. All households 2. Most of the households 3. About half of the households 4. Less than half of the households 5. Very few 6. None	☐
319a	What share of households in the village has adobe (laterite mud)	1. All households	☐

N°	QUESTION WORDING	CODES/ANSWERS	
	housing?	2. Most of the households 3. About half of the households 4. Less than half of the households 5. Very few 6. None	
319b	What share of households in the village has semi-solid (cement and adobe) housing?	1. All households 2. Most of the households 3. About half of the households 4. Less than half of the households 5. Very few 6. None	
319c	What share of households in the village has solid material housing (hard)?	1. All households 2. Most of the households 3. About half of the households 4. Less than half of the households 5. Very few 6. None	
SCHOOLS			
320	Is there a primary school in this village?	1. Yes (Skip to q322) 2. No (Skip to q321)	
321	How far from the village is the nearest primary school? (kms)		
322	What share of eligible school-age children attends primary school?	1. All 2. Most 3. About half 4. Less than half 5. Very few 6. None	
323	Are there enough teachers for the primary school that the children	1. Yes	

N°	QUESTION WORDING	CODES/ANSWERS	
	in this village attend?	2. No	
324	What is the physical condition of the primary school that the children in this village attend?	1. Very good 2. Good 3. Poor 4. Very poor	
325	Is there a secondary school in this village?	1. Yes (Skip to q327) 2. No (Skip to q326)	
326	How far from the village is the nearest secondary school? (kms)		
327	What share of eligible school-age children attends secondary school?	1. All 2. Most 3. About half 4. Less than half 5. Very few	
328	Are there enough teachers for the secondary school that the children in this community attend??	1. Yes 2. No	
329	What is the physical condition of the secondary school that the children attend?	1. Very good 2. Good 3. Poor 4. Very poor	
HEALTH SERVICES			
330	Is there a health center in this village?	1. Yes (skip to q332) 2. No (Skip to q331)	
331	How far is this village from the nearest health center? (kms)		
332	What is the physical condition of the village health center?	1. Very good 2. Good 3. Poor	

N°	QUESTION WORDING	CODES/ANSWERS		
		4. Very poor		
333	In the last 12 months, was there a time when people in the village needed health services but could not get them from the health center?	1. Yes 2. No (Skip to q335)		
334	If yes, why were the village members not able to get health services from the health center? (multiple responses possible) List reasons	01. No beds, health center was full	Yes = 1 No = 2	
		02. No staff in the health center	Yes = 1 No = 2	
		03. Health center was destroyed/burnt	Yes = 1 No = 2	
		04. Security problem reaching the center	Yes = 1 No = 2	
		05. No transportation to reach the center	Yes = 1 No = 2	
		06. No road or poor road conditions on the way to the center	Yes = 1 No = 2	
		07. No drugs at the health center	Yes = 1 No = 2	
		08. No money for services	Yes = 1 No = 2	
		09. Quality of the health service is very poor	Yes = 1 No = 2	
		10. Other (specify)_____	Yes = 1 No = 2	
VETERINARY AND VALUE-ADDED ANIMAL SERVICES				
335	Is there a public animal health service in this village?	1. Yes (skip to q337) 2. No (Skip to q336)		
336	If no, how far from the village is the nearest public animal health service? (kms)			

N°	QUESTION WORDING	CODES/ANSWERS			
337	What is the physical condition of the nearest public animal health service to this village?	1. Very good 2. Good 3. Poor 4. Very poor			
338	In the last 12 months, was there a time when people in the village needed veterinary services but could not get them from the public animal health service?	1. Yes 2. No (Skip to q340)			
339	If yes, why were the village members not able to get veterinary services from the public animal health service? (multiple responses possible) List reasons	1. No staff in the service	Yes = 1	No = 2	
		2. The service was too busy	Yes = 1	No = 2	
		3. Security problem reaching the service	Yes = 1	No = 2	
		4. No transportation to reach the service	Yes = 1	No = 2	
		5. No road or poor road conditions on the way to the service	Yes = 1	No = 2	
		6. The service had no equipment/drugs	Yes = 1	No = 2	
		7. Households had no money for services	Yes = 1	No = 2	
		8. Quality of the services is poor	Yes = 1	No = 2	
		9. Other (specify)_____	Yes = 1	No = 2	
340	Which services does the public animal health service provide? (multiple responses possible)	1. Livestock vaccinations	Yes = 1	No = 2	
		2. Livestock antibiotics	Yes = 1	No = 2	

N°	QUESTION WORDING	CODES/ANSWERS			
	List services	3. De-worming	Yes = 1	No = 2	☐
		4. Dipping inoculation	Yes = 1	No = 2	☐
		5. Other treatment for diseases	Yes = 1	No = 2	☐
		6. Supplemental feeding (commercial feeding)	Yes = 1	No = 2	☐
		7. Other (specify) _____	Yes = 1	No = 2	☐
340b1	Are there any other forms of veterinary services to maintain animal health in the village?	1. Yes 2. No			☐
340b2	If yes, what services are on offer?	1. Local and private veterinary services (LPVS)	Yes = 1	No = 2	☐
		2. Female poultry vaccinators	Yes = 1	No = 2	☐
		3. Other (specify)	Yes = 1	No = 2	☐
AGRICULTURAL EXTENSION SERVICES					
341	Are there agricultural extension services offered in this village?	1. Yes 2. No (Skip to q343)			☐
342	If yes, what agricultural extension services are provided? (multiple responses possible)	1. Seed supply	Yes = 1	No = 2	☐
		2. Fertilizer supply	Yes = 1	No = 2	☐
		3. Training	Yes = 1	No = 2	☐
		4. Climate-adapted technologies (e.g., drought-tolerant seeds)	Yes = 1	No =	☐
	List services				

N°	QUESTION WORDING	CODES/ANSWERS			
				2	
		5. Other (specify)_____	Yes = 1	No = 2	
343	In the last 12 months, was there a time when people in the village needed these services but could not get them?	1. Yes 2. No (Skip to q345)			
344	Is yes, why were the village members not able to get agricultural extension services? (multiple responses possible) List reasons	01. Extension service center was closed	Yes = 1	No = 2	
		02. There was no extension worker	Yes = 1	No = 2	
		03. Security problem	Yes = 1	No = 2	
		04. Extension workers were not cordial	Yes = 1	No = 2	
		05. The extension center was too far away.	Yes = 1	No = 2	
		06. There was no transportation to reach the service	Yes = 1	No = 2	
		07. No road or poor road condition	Yes = 1	No = 2	
		08. No money to access services	Yes = 1	No = 2	
		09. Quality of the services is very poor	Yes = 1	No = 2	
		10. Other (specify)_____	Yes = 1	No = 2	

N°	QUESTION WORDING	CODES/ANSWERS			
MARKETS					
345	How far away is the nearest livestock market from this village? (kms)				
346	In the last 12 months, was there a time when people in this village needed to buy or sell livestock in the market but could not?	1. Yes 2. No (Skip to q348)			
347	If yes, why were the village members not able to buy or sell livestock in the market? (multiple responses possible) List reasons	1. Market closed	Yes = 1	No = 2	
		2. No road or poor road condition	Yes = 1	No = 2	
		3. No transportation	Yes = 1	No = 2	
		4. Could not pay for transportation	Yes = 1	No = 2	
		5. Security problem	Yes = 1	No = 2	
		6. Other (specify) _____	Yes = 1	No = 2	
348	Is there an emergency plan for livestock offtake if a drought hits?	1. Yes 2. No			
348a	Does your village have facilities to buy or sell agricultural products (foodstuffs, agricultural inputs such as seed, etc.)?	1. Yes 2. No. If no, skip to q349			
348b	If yes, what facilities does it have?	1. Cereal banks (CB)	Yes = 1	No = 2	
		2. Agricultural input banks	Yes = 1	No = 2	
		3. Other (specify) _____ = 2	Yes = 1	No = 2	

N°	QUESTION WORDING	CODES/ANSWERS			
349	If no, how far from this village is the nearest market that sells agricultural products? (kms)				□□□□
350	In the last 12 months, was there a time when people in this village needed to buy or sell agricultural products at cereal banks or agricultural input banks in the village but were unable to do so?	1. Yes 2. No			□
350a	If yes, why were villagers unable to buy or sell agricultural products in the village? (multiple responses possible) List reasons	1. Cereal/agricultural input bank not open at the right time Yes = 1 No = 2 2. Cereal/agricultural input bank lacked supplies Yes = 1 No = 2 3. Other (specify) _____ Yes = 1 No = 2			□ □ □
350b	In the last 12 months, was there a time when people in this village needed to buy or sell agricultural products at cereal banks or agricultural input banks at the market but were unable to do so?	1. Yes 2. No. If no, skip to q352			
351	If yes, why were people in the village unable to buy or sell agricultural products at the market? (multiple responses possible) List reasons	1. _____ Market _____ closed 2. No road or poor road condition 3. _____ No _____ transportation 4. Could not pay for transportation 5. _____ Security _____ problem 6. Other (specify) _____	Yes = 1 Yes = 1 Yes = 1 Yes = 1 Yes = 1 Yes = 1	No = 2 No = 2 No = 2 No = 2 No = 2 No = 2	□ □ □ □ □ □
352	How far away is the nearest market for purchasing agricultural inputs from this village? (kms)				□□□□
353	In the last 12 months, was there a time when people in this village needed to buy agricultural inputs in the market but could not?	1. Yes 2. No (Skip to q355)			□

N°	QUESTION WORDING	CODES/ANSWERS				
354	If yes, why were people in the village not able to buy agricultural inputs in the market? (multiple responses possible) List reasons	1. Market closed	Yes = 1	No = 2	☐	
		2. No road or poor road condition	Yes = 1	No = 2	☐	
		3. No transportation	Yes = 1	No = 2	☐	
		4. Could not pay for transportation	Yes = 1	No = 2	☐	
		5. Security problem	Yes = 1	No = 2	☐	
		6. Other (specify) _____	Yes = 1	No = 2	☐	
SECURITY						
355	Does this village have a security or police force?	1. Yes 2. No (Skip to q357)				☐
356	If yes, who provides the security/police force? (multiple responses possible) List providers	1. Local government	Yes = 1	No = 2	☐	
		2. National government	Yes = 1	No = 2	☐	
		3. Community members	Yes = 1	No = 2	☐	
		4. Other (specify)	Yes = 1	No = 2	☐	
357	How long does it take for security/police force to reach this village?	1. Over one hour 2. About one hour 3. Half an hour				☐

N°	QUESTION WORDING	CODES/ANSWERS			
		4. Minutes			
SAVINGS/CREDIT					
358	Are there people or institutions in this village where people can save money?	1. Yes 2. No (Skip to q360)			☐
359	If yes, which persons or institutions provide these services? (multiple responses possible) List providers	1. Banks 2. NGO/Project 3. Community group/Association/Group 4. Friends/relatives 5. Shops/merchants 6. Microfinance institution (MFI) 7. Other (specify)_____	Yes = 1 No = 2 Yes = 1 No = 2 Yes = 1 No = 2 Yes = 1 No = 2 Yes = 1 No = 2 Yes = 1 No = 2	☐ ☐ ☐ ☐ ☐ ☐ ☐	
360	Are there people or institutions in this village from which people can borrow money?	1. Yes 2. No (Skip to q362)			☐
361	If yes, which persons or institutions provide these services? (multiple responses possible) List providers	1. Banks 2. NGO/Project 3. Community group/Association/Group	Yes = 1 No = 2 Yes = 1 No = 2 Yes = 1 No =	☐ ☐ ☐	

N°	QUESTION WORDING	CODES/ANSWERS				
				2		
		4. Friends/relatives	Yes = 1	No = 2	☐	
		5. Shops/merchants	Yes = 1	No = 2	☐	
		6. Microfinance institution (MFI)	Yes = 1	No = 2	☐	
		7. Other (specify)	Yes = 1	No = 2	☐	
OTHER PROGRAMS AND SERVICES						
362	Are there institutions in this village where people can receive adult education or training?	1. Yes 2. No (Skip to q364)				☐
363	If yes, who provides these services? (multiple responses possible) List providers	1. Government	Yes = 1	No = 2	☐	
		2. NGO/Project	Yes = 1	No = 2	☐	
		3. Religious organization	Yes = 1	No = 2	☐	
		4. Community group/Association/Group	Yes = 1	No = 2	☐	
		5. Other (specify)	Yes = 1	No = 2	☐	
364	Are there institutions in this village where people can receive food assistance?	1. Yes 2. No (Skip to q366)				☐
365	If yes, who provides these services? (multiple responses possible) List providers	1. Government	Yes = 1	No = 2	☐	
		2. NGO/Project	Yes = 1	No = 2	☐	

N°	QUESTION WORDING	CODES/ANSWERS			
		3. Religious organization	Yes = 1	No = 2	
		4. Community group/Association/Group	Yes = 1	No = 2	
		5. Other (specify)	Yes = 1	No = 2	
366	Are there institutions in this village where people can receive housing materials or other non-food items assistance?	1. Yes 2. No (Skip to q368)			
367	If yes, who provides these services? (multiple responses possible) List providers	1. Government	Yes = 1	No = 2	
		2. NGO/Project	Yes = 1	No = 2	
		3. Religious organization	Yes = 1	No = 2	
		4. Community group/Association/Group	Yes = 1	No = 2	
		5. Other (specify)	Yes = 1	No = 2	
368	Are there people/institutions in this village from which people can receive assistance in the case of livestock losses?	1. Yes 2. No (Skip to q370)			
369	If yes, who provides these services? (multiple responses possible) List providers	1. Government	Yes = 1	No = 2	
		2. NGO/Project	Yes = 1	No = 2	
		3. Religious organization	Yes = 1	No =	

N°	QUESTION WORDING	CODES/ANSWERS			
				2	
		4. Community group/Association/Group	Yes = 1	No = 2	
		5. Other (specify)_____	Yes = 1	No = 2	
370	Are there people/institutions in this village from which people can receive assistance due to losses of crops?	1. Yes 2. No (Skip to next module)			
371	If yes, who provides these services? (multiple responses possible) List providers	1. Government	Yes = 1	No = 2	
		2. NGO/Project	Yes = 1	No = 2	
		3. Religious organization	Yes = 1	No = 2	
		4. Community group/Association/Group	Yes = 1	No = 2	
		5. Other (specify)_____	Yes = 1	No = 2	

MODULE 4. COMMUNITY ORGANIZATIONS

	QUESTION WORDING AND NUMBER		
	401	402	403
TYPES OF COMMUNITY ORGANIZATION	What are the community organizations and groups that are active in this village? <i>Circle the codes for the following community organizations and groups that are active in this village</i>	Who participates in this group? 1= Men 2= Women 3= Both	Which age group participates in this group? 1=Youth 2=Adults 3=Older persons 4=Everyone
List of the types of community organization	Code		
Water users' group	01	☐	☐
Grazing land users' group	02	☐	☐
Disaster planning group (SCAP RU in Niger)	03	☐	☐
Health committee	04		
Students' group	05		
Community police/monitoring group	06		
Credit or micro-finance group	07	☐	☐
Mutual help group (including burial companies)	08	☐	☐

Trade or business associations	09	☐	☐
Civic group (improving community)	10	☐	☐
Charitable group (helping others)	11	☐	☐
Religious group	12	☐	☐
Political group	13	☐	☐
Women's group	14	☐	☐
Youth group	15	☐	☐
Other (specify)	16	☐	☐
Other (specify)	17	☐	☐
Other (specify)	18	☐	☐
		☐	☐
		☐	☐
		☐	☐

MODULE 5. GOVERNMENT AND NGO PROGRAMS

N°	QUESTION WORDING	CODES/ANSWERS			
501	Were there any government programs implemented in this village in the last 5 years?	1. Yes 2. No (Skip to q503)			☐
502	If yes, what kinds of government programs are there? (List all programs)	1. Livestock 2. Agriculture 3. Water 4. Health 5. Disaster planning 6. Disaster response 7. Other (specify) _____ 8. Other (specify) _____ 9. Other (specify) _____	Yes = 1 Yes = 1 Yes = 1 Yes = 1 Yes = 1 Yes = 1 Yes = 1 Yes = 1	No = 2 No = 2 No = 2 No = 2 No = 2 No = 2 No = 2 No = 2	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
503	Were there any NGO programs implemented in this village in the last 5 years?	1. Yes 2. No (Skip to next module)			☐
504	If yes, what kinds of NGO programs are there?	I. Livestock	Yes = 1 Yes = 1	No = 2 No = 2	☐ ☐

	(List all programs)	2.	Agriculture	Yes = 1	No = 2	☐
		3.	Water	Yes = 1	No = 2	☐
		4.	Health	Yes = 1	No = 2	☐
		5.	Disaster planning	Yes = 1	No = 2	☐
		6.	Disaster response	Yes = 1	No = 2	☐
		7.	Other (specify)	Yes = 1	No = 2	☐
		8.	Other (specify)	Yes = 1	No = 2	☐
		9.	Other (specify)	Yes = 1	No = 2	☐

MODULE 6. SHOCKS

TYPES OF SHOCKS		QUESTION NUMBERS AND ANSWER CODES					
		601	602	603	604	605	606
SHOCK LIST List shocks and circle the answer. Put the year when the shocks occurred, even if a shock occurred several times in the same year		Over the past five years, what shock(s) has this village experienced? <i>Circle the shock(s) experienced by this village over the past 5 years</i>	Date (mo/year) (2017) If the month is unknown, enter the year when the shock was experienced	Date (mo/year) (2016) If the month is unknown, enter the year when the shock was experienced	Date (mo/year) (2015) If the month is unknown, enter the year when the shock was experienced	Date (mo/year) (2014) If the month is unknown, enter the year when the shock was experienced	Date (mo/year) (2013) If the month is unknown, enter the year when the shock was experienced
Climatic shocks		Code					
	Excessive rains/floods	01	__/__/____	__/__/____	__/__/____	__/__/____	__/__/____
	Too little rain/drought	02	__/__/____	__/__/____	__/__/____	__/__/____	__/__/____
	Massive insect invasion	03	__/__/____	__/__/____	__/__/____	__/__/____	__/__/____
	Epizootic	04	__/__/____	__/__/____	__/__/____	__/__/____	__/__/____
	Bush fires	05	__/__/____	__/__/____	__/__/____	__/__/____	__/__/____
	Erosion	06	__/__/____	__/__/____	__/__/____	__/__/____	__/__/____
Conflict shocks							
	Land conflicts	07	__/__/____	__/__/____	__/__/____	__/__/____	__/__/____
	Conflicts between farmers and breeders	08	__/__/____	__/__/____	__/__/____	__/__/____	__/__/____
	Conflict/violence involving entire communities/villages	09	__/__/____	__/__/____	__/__/____	__/__/____	__/__/____
	Theft of assets/holdups (animals, crops, etc.)	10	__/__/____	__/__/____	__/__/____	__/__/____	__/__/____

TYPES OF SHOCKS		QUESTION NUMBERS AND ANSWER CODES					
		601	602	603	604	605	606
Economic shocks							
	Sharp food price increase	11	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _
	Unavailability of agricultural or livestock inputs	12	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _
	Drop in agricultural or livestock product demand	13	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _
	High increase in price of agricultural or livestock inputs	14	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _
	Drop in price of agricultural or livestock products	15	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _
	Job loss by household member	16	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _
	Abrupt end of support/regular support from outside the household	17	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _
	Sudden increase in household size (including birth: triplets etc.)	18	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _	_ _ / _ _ _

MODULE 6b. MANAGEMENT OF CLIMATE SHOCKS

N°	QUESTION WORDING	CODES/ANSWERS	
601b	Over the last 5 to 10 years have you noticed a significant change in climate in this village?	1=Yes 2=No >> Skip to next module	
602b	If yes, list the two main effects of climate change that have had the most impact on villagers' welfare?	1=Irregular rains; 2=Poor rainfall distribution in time and space; 3=Drought; 4=Floods; 5=Poor groundwater recharge; 6=Loss of vegetation cover; 7=Disappearance of certain wild animal species; 8=Other (specify)	1 st 2 nd
603b	List the three main new practices or techniques adopted in this village to address the impact of climate change	01=Improved seed; 02=Irrigation (off-season crops) 03=Mineral fertilizer 04=Organic fertilizer 05=Zai; 06=Half-moon; 07=Bunds; 08=Trenches; 09=Benches (contour earth bunds); 10=Tree planting; 11=Mulching; 12=Composting 13=Fallow; 14=Cultivation techniques (seeding rate, crop	1 st 2 nd

N°	QUESTION WORDING	CODES/ANSWERS	
		rotation...); 15=Plant treatment; 16=Breed improvement; 17=Feed improvement; 18=De-worming; 19=Immunization; 20=Feed treatment/conservation; 21=Fish farming techniques; 22=Other (specify)_____	3 rd
604b1	What is the level of implementation of the first new practice or technique to adapt to climate change by inhabitants?	1. Very high (75% - 100%) 2. Average (50% - 74%) 3. Low (1% - 49%) 4. No implementation (0%)	
604b2	What is the level of implementation of the second new practice or technique to adapt to climate change by inhabitants?	1. Very high (75% - 100%) 2. Average (50% - 74%) 3. Low (1% - 49%) 4. No implementation (0%)	
604b3	What is the level of implementation of the third new practice or technique to adapt to climate change by inhabitants?	1. Very high (75% - 100%) 2. Average (50% - 74%) 3. Low (1% - 49%) 4. No implementation (0%)	
605b	What is the level of effectiveness of adaptation to the impact of climate change in this village?	1. Very effective 2. Average 3. Low 4. Not effective at all	

N°	QUESTION WORDING	CODES/ANSWERS	
606b	In your village, are there resource people trained in techniques to cope with climate change who disseminate those techniques?	1. Yes 2. No	<input type="checkbox"/>

MODULE 7. LAND MANAGEMENT

N°	TYPES OF LAND TENURE List the types of land tenure	What are the types of land tenure that exist in your village?		
		1=Yes	2=No	
701.	Customary – privately held	☐		
702.	Customary land – communally held	☐		
703.	Leasehold	☐		
704.	Freehold	☐		
705.	Public land	☐		
706.	Other (specify)	☐		
707.	What is the main mode of acquisition of a farm in your village today? Enter the answer	1. Cash purchase 2. Allocation by the community/local authorities Inheritance 3. Obtained for free/gift 4. Possession taken (after deforestation) 5. Other (specify)		☐
	What is the second most common	1. Cash purchase		

708	mode of acquisition of a farm in your village today? Enter the answer	 2. Allocation by the community/local authorities Inheritance 3. Obtained for free/gift 4. Possession taken (after deforestation) 5. Other (specify) 	_____

MODULE 8. GOVERNANCE

N°	QUESTION WORDING	CODES/ANSWERS	
801	What type of community governance do you have in your village?	1. Traditional 2. Formal government representative 3. Both	_
802	Has your village defined clear and widely accepted rules to ensure good management of natural resources?	1. Yes 2. No	_
803	Do you have a natural resources management-related conflict resolution committee in your village?	1. Yes 2. No (Skip to q805)	_
804	Is the conflict resolution committee successful in finding appropriate and sustainable solutions to conflicts that arise?	1. All 2. Most 3. About half 4. Less than half 5. Very few	_
805	Does your village take regular initiatives to engage with commune (municipal) and state authorities to increase the quality of public infrastructure and services (health, agriculture, education, roads, etc.)?	1. Often 2. Periodically 3. Very rarely 4. Never	_
806	Does your commune (municipality) have a commune (municipal) development plan?	1. Yes 2. No 3. DK	_
807	Does your village chief share commune (municipal) development plan implementation-related information with the public?	1. Often 2. At least once a year 3. Never 4. DK	_

****THANK YOU****

After the interview thank the respondents for giving you their time and for the co-operation in providing the information. Inform them that you may possibly be returning to collect more information or seek any necessary clarification on the information provided at later date. At this point invite the respondents to ask you any questions that they might have. Answer where you can. If you do not know the answer(s), tell them that their questions will be forwarded to a relevant person who can respond.

Appendix D. Midline Sample Villages

Villages in RISE Midline Sample – BURKINA FASO

	Region	Province	Commune	Village	Stratum	RISE Project(s)	X	Y
1	EST	Gnagna	Coalla	Ganta	H	FASO	-0.074	13.524
2			Mani	Koulfo	H	REGIS-ER, FASO	-0.001	13.232
3			Bilanga	Dipienga	L		0.218	12.779
4				Kabaré	L		0.101	12.564
5				Tobou	L		0.087	12.612
6				Benhourgou	L		0.506	12.393
7			Piela	Piéla	L		-0.140	12.719
8		Komandjari	Gayeri	Toumbenga	H	REGIS-ER, FASO	0.566	12.762
9				Kourgou	H	REGIS-ER, FASO	-0.766	12.321
10			Foutouri	Tankoualou	H	REGIS-ER, FASO	0.954	12.987
11		Gourma	Matiacoali	Oubriounou	L		1.065	12.410
12				Boaligou	L		1.068	12.458
13				Ouro-Aou	L		0.901	12.677
14			Yamba	Bogolé	L		0.515	12.288
15				Diankongou	L		-0.118	13.283

	Region	Province	Commune	Village	Stratum	RISE Project(s)	X	Y
16	SAHEL	Yagha	Mansila	Mansila	L		0.638	13.164
17				Téparé	L		0.539	13.186
18			Solhan	Gongorgouol	H	REGIS-ER, FASO	0.495	13.318
19			Boundore	Louba	L		0.909	13.264
20		Soum	Tongomayel	Kobaoua	L		-1.519	13.939
21				Touronata	L		-1.329	14.245
22				Kadiel	L		-1.435	13.909
23			Arbinda	Sikiré	L		-0.732	14.310
24				Yirakoulga	L		-0.719	14.007
25		Seno	Gorgadji	Boundounyouddji	L		-0.457	14.064
26			Falagountou	Falagountou	L		0.186	14.364
27				Fétobarabé	L		0.092	14.378
28			Seytenga	Oussaltan-Dongobé	H	REGIS-ER	0.447	13.908
29		Oudalan	Gorom-Gorom	Bosséye-Barabé	L		-0.332	14.539
30				Essakane-Site	L		0.025	14.395
31				Adiaréye-Diaréye	L		-0.571	14.354
32				Gorom-Gorom-Secteur 5	L		-0.232	14.439

	Region	Province	Commune	Village	Stratum	RISE Project(s)	X	Y
33				Kel-Eguief	L		-0.184	14.427
34				Bidi 2	L		-0.328	14.372
35				Dambouguél	L		-0.364	14.202
36			Markoye	Markoye	L		0.034	14.645
37				Déibanga-Tafororat	L		-0.031	14.795
38				Weldé-Tondobanda	L		0.057	14.581
39	CENTR E- NORD	Sanmatenga	Kaya	Kaya-Secteur 4	H	VIM	-1.087	13.072
40				Kaya-Secteur 5	H	VIM	-1.107	13.088
41				Foura	H	VIM	-1.300	13.188
42				Konéan	H	VIM	-0.984	13.099
43				Basnéré	H	VIM	-1.261	13.255
44				Nongfaéré-Bangré	H	VIM	-1.059	13.185
45				Ilyalla	H	VIM	-1.117	13.236
46			Pissila	Pissila	H	VIM	-0.825	13.163
47				Poulallé	H	VIM	-0.850	13.094
48			Mane	Guinsa	L		-1.322	13.101
49				Forgui	L		-0.952	12.997

	Region	Province	Commune	Village	Stratum	RISE Project(s)	X	Y
50			Namisgma	Nyonranga	H	VIM	-1.301	13.357
51			Pensa	Zinibéogo	L		-0.747	13.832
52		Namentenga	Boulsa	Belga	L		-0.491	12.878
53				Kobouré	L		-0.519	12.620
54				Niega	L		-0.504	12.525
55				Konkoara-Yarsé	L		-0.586	12.540
56			Tougouri	Tilga	H	FASO	-0.596	13.109
57				Taonsogo	H	FASO	-0.641	13.230
58			Bouroum	Bélogo	H	REGIS-ER, FASO	-0.568	13.774

Villages in RISE Midline Sample – NIGER

	Region	Department	Commune	Village	Stratum	RISE Project(s)	X	Y
1	MARADI	Aguie	Tchadoua	Hardo Bi Seyni	H	LAHIA	7.540	13.385
2		Dakoro	Mayara	Itta Ibro	L		7.244	14.070
3				Tajae Agolla	L		7.217	13.886
4			Sabon Machi	Zabouré Maikasso	H	REGIS-ER	7.231	13.136
5		Gazaoua	Gangara	Makada	H	LAHIA	7.870	13.427

	Region	Department	Commune	Village	Stratum	RISE Project(s)	X	Y
6		Guidan Roundji	Chadakori	Dan Baouchi	L		7.084	13.719
7				Garin Moutoun Daya	L		7.019	13.682
8				Guidan-Ara	L		7.067	13.684
9				Talala	L		6.990	13.680
10			Guidan Roundji	Dan Turké	H	REGIS-ER; Sawki	6.770	13.670
11		Mayahi	Kanin Bakache	Dillali Maissongo	H	PASAM-TAI	7.744	13.897
12				Zaroumey	H	PASAM-TAI	8.019	13.924
13	TILLABERI	Filingue	Kourfeye Centre	Chical Chanyassou	L		3.435	14.236
14		Gotheye	Dargol	Agoufour	L		1.417	14.033
15				Djoubourga	L		1.318	13.852
16				Goria Bangou Tara	L		1.319	13.802
17				Goungo Djoubourga	L		1.290	13.825
18				Tondi Tchiria	L		1.319	14.071
19				Wiya Banguia	L		1.135	14.007
20		Kollo	Hamdallaye	Nazey Gado Baba Koira	L		2.552	13.819
21		Ouallam	Dingazi	Tanga Koira	L		2,252	14.248
22				Alfagaydo	L		2.488	13.984

	Region	Department	Commune	Village	Stratum	RISE Project(s)	X	Y
23			Simiri	Gaobanda Guesse	L		2.174	14.186
24				Tchedi Kouara	L		2.201	14.052
25		Tera	Mehana	Kobachire	L		1.042	14.537
26				Mehana	L		1.137	14.398
27	ZINDER	Dungass	Dungass	Garin Dan Baba	L		9.103	13.143
28				Garin MI Garke	L		9.394	13.057
29		Kantche	Dan Barto	Zakarawa	H	PASAM-TAI	8.403	13.243
30			Daouche	Amsoudou	H	PASAM-TAI	8.410	13.500
31				Badahi Haoussa	H	PASAM-TAI	8.420	13.452
32			Ichirnawa	Daratchama	H	PASAM-TAI	8.618	13.619
33				Tacheri	H	PASAM-TAI	8.625	13.502
34			Kantche	Kourni Bougage	H	PASAM-TAI	8.420	13.570
35			Kourni	Walawa 2	H	PASAM-TAI	8.435	13.190
36			Yaouri	Guidan Elhadj Zakko	H	PASAM-TAI	8.675	13.253
37			Matameye	Maguirami Hausa	H	PASAM-TAI	8.535	13.369
38		Magaria	Bande	Bandé	H	REGIS-ER	8.891	13.170
39				Dan Ala	H	REGIS-ER	8.835	13.103
40		Mirriah	Gouna	Garin Arewa	L		9.052	13.519

	Region	Department	Commune	Village	Stratum	RISE Project(s)	X	Y
41				Tchoukouloua I	L		9.153	13.585
42				Zangou Malam Kadre	L		9.114	13.469

Appendix E I. Scope of Work – Data Collection

Termes de Référence :

Enquête quantitative à mi-parcours dans la zone USAID/RISE

Collecte et traitement des données

Septembre 2016

CONTEXTE ET JUSTIFICATION DE LA PRESTATION

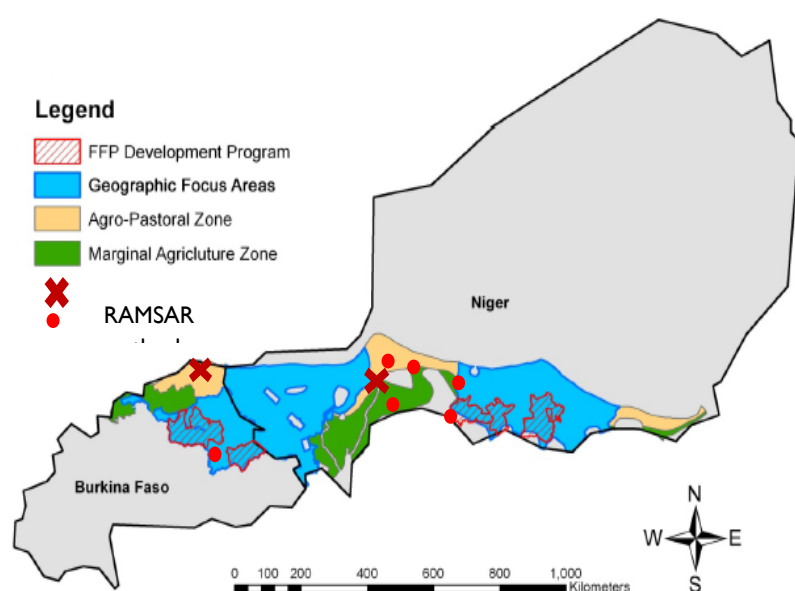
“Sahel Résilience Learning Project” (SAREL) est un projet d’apprentissage sur la résilience au Sahel d’une durée de cinq ans (2014 à 2019), financé par l’Agence américaine pour le Développement International (USAID) et mis en œuvre par The Mitchell Group, Inc. (TMG), un bureau d’études américain de conseil en développement, avec un consortium de partenaires.

L’objectif du projet SAREL consiste à assurer un soutien aux activités de suivi, d’évaluation, de collaboration et d’apprentissage dans le cadre de la programmation en matière de résilience de l’USAID au Sahel. En tant que tel, il ne s’agit pas d’une intervention autonome. C’est l’un de trois nouveaux projets financés par l’USAID dans les régions du Centre-nord, du Sahel, et de l’Est du Burkina Faso, ainsi que les régions de Tillabéri, Maradi, et Zinder au Niger, dont :

- Résilience et Croissance Économique au Sahel – Résilience Améliorée ou « Enhanced Résilience Cooperative Agreement » (REGIS-ER), lancé en fin 2013 ; et
- Résilience et Croissance Économique au Sahel – Croissance Accélérée et Création de Chaîne de Valeur ou « Accelerated Growth (Value Chain) » (REGIS-AG), lancé en 2015.

L’initiative RISE inclut également les Projets Vivres pour la Paix ou « Food for Peace » (FFP) financés par l’USAID qui interviennent au Niger (dans les régions de Maradi et de Zinder) depuis 2013 et au Burkina Faso dans la région du Sahel (Dori) et dans la région du Centre Nord (Kaya) depuis 2011 (voir carte ci-dessous).

Carte de la zone d’intervention de RISE (en bleu)



Les résultats attendus du SAREL sont :

1. Tester, élargir, et accélérer l'adoption de technologies éprouvées permettant de renforcer la résilience et les innovations en cours
2. Développer, tester et catalyser l'adoption généralisée de nouveaux modèles intégrant l'assistance humanitaire et au développement
3. Promouvoir l'appropriation, accroître les capacités des institutions nationales et régionales, et coordonner les interventions humanitaires de développement dans les zones d'intervention
4. Traiter des questions relatives au genre qui sont essentielles à la résilience et à la croissance
5. Créer une base de données de gestion des connaissances qui abritera une évaluation de base, des données de suivi en cours, et des évaluations d'impact de l'initiative RISE.

Dans le cadre de l'objectif 5, il est prévu la réalisation d'études pour collecter les données quantitatives et qualitatives nécessaires au suivi et à l'évaluation de l'initiative RISE au Burkina Faso et au Niger.

Ainsi SAREL a réalisé en 2015 une étude quantitative de base auprès de 2492 ménages répartis dans 100 villages (42 au Niger et 58 au Burkina Faso) en vue d'établir la situation de référence de 23 indicateurs de performance de l'Initiative RISE. La collecte des données de cette première enquête s'est déroulée sur le terrain de fin avril à fin mai 2015. Cette étude quantitative a été complétée par une étude qualitative conduite par une autre firme (TANGO).

Pour la réalisation de cette enquête de base, SAREL, avec l'appui d'une structure universitaire basée à Ouagadougou (Burkina Faso), a élaboré un document méthodologique (méthode d'évaluation, plan de sondage, tirage de l'échantillon au premier degré) et a finalisé les outils de collecte des données (en adaptant les outils utilisés dans le cadre d'un projet similaire de l'USAID en Ethiopie) comprennent un questionnaire-ménage, un questionnaire village, un questionnaire sur l'anthropométrie, un questionnaire genre. SAREL a également développé des manuels pour faciliter la mise en œuvre de cette enquête (manuels de l'enquêteurs, manuels de contrôleurs, les guides en langues sur les concepts et questions clés des questionnaires).

Conformément à son plan d'évaluation, en vue de mesurer le niveau de progrès au niveau de ces indicateurs, deux ans après la mise en œuvre de cette première enquête, SAREL envisage de conduire une enquête à mi-parcours dans les mêmes villages au cours de la même période (mars-avril 2017) en s'appuyant sur les mêmes outils et la même méthodologie développés pour l'enquête de base.

Dans le cadre de la mise en œuvre de cette enquête à mi-parcours, SAREL recherche les services d'une organisation ou un bureau d'étude avec une expérience solide de conduite des études quantitatives auprès d'un nombre important de ménages, et bien imprégné de la question de la résilience pour l'appuyer dans la réalisation de l'enquête de mi-parcours.

OBJECTIFS DE LA PRESTATION

L'objectif global de la présente mission est de réaliser une enquête quantitative à mi-parcours dans les 100 villages de la zone RISE.

Les objectifs spécifiques sont :

- Assurer le recrutement, la formation du personnel ;
- Assurer la collecte des données sur le terrain ;
- Assurer le traitement des données.

ACTIVITES

Il s'agit de préparer et conduire l'enquête dans les mêmes villages que ceux de l'enquête de base. Il est important de rappeler que l'enquête de base a permis de collecter les données sur :

- 100 villages (questionnaires villages) ;
- 2492 ménages (sur une prévision de 2500) à travers le questionnaire ménage ;
- 2488 femmes (épouses des chefs de ménages échantillonnés) dans le cadre du questionnaire genre) ;
- 2403 enfants de moins de 5 ans des ménages échantillonnés dans le cadre du questionnaire anthropométrie (mesure de poids, taille, longueur des enfants).

L'enquête de mi-parcours a pour objectif de collecter les données sur les mêmes groupes cibles (villages, ménages, les femmes épouses des chefs des ménages et les enfants de moins de 5 ans des ménages) afin de pouvoir mesurer le niveau des indicateurs de performance de RISE.

Dans le cadre cette mission, le Consultant aura à :

- produire la méthodologie de mise en œuvre de l'enquête (sur la base des éléments d'orientation formulés par SAREL-voir point V. Méthodologie) ;
- recruter et former le personnel de terrain (enquêteurs, contrôleurs et superviseurs) ;
- réaliser l'enquête pilote (et éventuellement finaliser la méthodologie et les outils de collecte des données sur la base des leçons apprises) ;
- préparer et conduire une campagne d'information auprès des autorités administratives et communales, et des autorités traditionnelles et communautaires ;
- mettre en place et déployer des équipes pour la conduite de l'enquête ;
- procéder au tirage des unités secondaires (ménages) ;
- administrer les questionnaires ;
- recruter et former les agents de saisie ;

- développer les programmes de saisie ;
- saisir et apurer les données ;
- faire l'archivage électronique et physique des questionnaires de l'enquête.

LIVRABLES

Les livrables suivants sont attendus par le consultant au terme de la prestation :

Livable 1 : La proposition méthodologique détaillée de mise en œuvre de l'enquête sur le terrain comprenant :

- la démarche méthodologique de mise en œuvre de l'enquête ;
- le plan de communication (campagne d'information) de l'enquête ;
- le chronogramme de travail détaillé.

Livable 2 : Les programmes de saisie des données.

Livable 3 : Le rapport de recrutement et de formation du personnel de terrain comprenant entre autres :

- la liste des candidats recrutés pour la formation et leurs CVs ;
- le programme de formation ;
- le déroulement de l'enquête pilote ;
- l'instrument et la méthode d'évaluation et de sélection des superviseurs et enquêteurs ;
- la liste du personnel retenu après la formation ;
- le plan de déploiement des équipes sur le terrain ;
- la logistique.

Livable 4 : Le rapport de la campagne d'information de l'enquête auprès des autorités administratives et communales, et les autorités traditionnelles et communautaires.

- Le déroulement de la mission (étapes, période) ;
- Le point saillant des activités conduites (rencontres, thèmes débattus, les réactions pertinentes des acteurs rencontrés relativement à l'objet de l'enquête en termes de suggestions, remarques, recommandations etc...) ;
- Les adresses des personnes rencontrées (noms et prénoms, structures, fonctions, numéros de téléphone, mails etc.) ;
- Une conclusion succincte axée sur les leçons apprises de cette mission notamment la participation des acteurs, leurs réactions et toutes autres suggestions qui pourraient aider lors de la mise en œuvre de l'enquête sur le terrain.

Livable 5 : Le rapport terrain de l'enquête décrivant notamment :

- le déploiement des équipes ;
- le processus de collecte, de supervision et de contrôle qualité ;
- les difficultés rencontrées ;
- les recommandations.

Livable 6 : Les bases des données sur les logiciels SPSS, STATA, EXCEL accompagnées d'un guide de codification ;

Livable 7 : Rapport final de l'enquête ;

Livable 8 : Questionnaires papier remplis archivés ;

Livable 9 : CD-Rom d'archivage électronique de l'enquête.

METHODOLOGIE

La méthodologie du consultant devra faire ressortir les éléments sur lesquels il doit s'appuyer pour mener le travail ci-dessus décrit. A titre d'orientation, le Consultant doit bâtir sa méthodologie sur les points suivants (non limitatif) :

I Recrutement du personnel de terrain

La collecte de données de haute qualité est essentielle pour le succès de l'enquête. Il est important de recruter des personnes matures, responsables pour jouer le rôle d'enquêteurs et qu'elles accomplissent leurs missions avec soins et précisions. Le Consultant devra constituer un nombre adéquat d'équipes d'enquêteurs et d'enquêtrices, de contrôleurs et de superviseurs de manière à couvrir l'ensemble des villages échantillons dans le délai imparti. Dans le recrutement, le Consultant doit veiller à une bonne répartition entre les hommes et les femmes et la connaissance de la langue locale des villages à enquêter.

Dans sa proposition méthodologique, le Consultant devra préciser notamment :

- Comment mettra-t-il en place son personnel (superviseurs, contrôleurs et enquêteurs) ?
- Comment compte-t-il assurer la collecte des données au niveau des femmes et des données anthropométriques au niveau des enfants de moins de cinq (5) ans ?
- Comment tenir compte de la diversité linguistique des villages échantillonnés dans la collecte des données ?

2 Formation du personnel

La formation des équipes d'enquêtes étant la clé de réussite du processus, le Consultant devra proposer un programme de formation et une stratégie en vue de la mise en œuvre de cette

formation. Cette formation devra couvrir toutes les tâches, techniques et approches méthodologiques et aspects d'éthiques indispensables que les équipes doivent maîtriser pour la mener à bien leurs missions. La formation doit par ailleurs permettre aux équipes de se familiariser avec les outils de collecte des données (questionnaires, utilisation des outils de mesures anthropométriques, etc.) et les procédures de tirage des ménages, entretien avec enquêteurs). La formation doit permettre une maîtrise des rôles et des responsabilités des différents membres des équipes d'enquêtes indispensable pour assurer une bonne collaboration sur le terrain.

Le consultant proposera une démarche à suivre pour tester les candidats ainsi que des critères d'évaluation permettant de juger de l'attitude des candidats face aux répondants et leur aptitude à administrer le questionnaire dans des temps acceptables. Les candidats qui démontreront des aptitudes supérieures durant la formation et l'enquête pilote pourront être retenus comme contrôleurs.

Le consultant élaborera à l'attention du SAREL un rapport de la formation qui devra contenir des éléments permettant de connaître le nombre d'enquêteurs recrutés, leur profil, leur répartition hommes / femmes, leur niveau d'instruction, leur lieu d'affectation et leurs aptitudes à communiquer dans la langue de la zone.

En ce qui concerne particulièrement les éléments de stratégie pour cette formation, le Consultant devra expliquer :

- Comment compte-t-il assurer le processus de formation du personnel de l'enquête ?
- Quels sont les aspects généraux les plus importants que le Consultant prendra en compte pour outiller les équipes d'enquêtes pour mieux asseoir une bonne collaboration et réussir la collecte des données sur le terrain ?
- Le SAREL est soucieux d'assurer la comparabilité et la fiabilité des résultats des enquêtes entre la zone RISE du Niger et celle du Burkina Faso. Pour ce faire, il est important que tout le personnel chargé de l'enquête y compris les coordinateurs, les contrôleurs, les superviseurs et les deux équipes d'enquêteurs aient une même compréhension et une même maîtrise des questionnaires et de la méthodologie de conduite de l'enquête. Quelles sont les dispositions que le Consultant propose pour répondre à cette préoccupation ?
- Pour que les questions soient posées de la même manière par tous les enquêteurs en vue de minimiser les biais des manuels en langues ont été élaborés prenant en compte les questions et concepts clés des questionnaires. Le Consultant dans son approche méthodologique devra indiquer comment son plan de formation prendra en compte la maîtrise en langues par les enquêteurs de ces questions et concepts clés ?
- Comment le Consultant devra assurer la formation sur des aspects thématiques comme l'anthropométrie ?

- Quelle démarche méthodologique à suivre pour tester les candidats ainsi que des critères d'évaluation pour juger l'attitude des candidats face aux répondants et leur aptitude à administrer le questionnaire dans des temps acceptables ?
- Etc.

3. Réaliser l'enquête pilote

Cette phase de l'enquête est primordiale pour permettre aux enquêteurs de mieux s'imprégner des outils de collecte des données et à l'utilisation des autres manuels notamment le guide traduit en langue. Elle doit par ailleurs permettre de détecter les enquêteurs aptes à mener convenablement l'enquête. Elle doit permettre aussi de recenser des difficultés afin de mieux asseoir un dispositif cohérent et une organisation conséquente pour la collecte des données, la gestion de la logistique etc.

Dans sa méthodologie, le Consultant doit décrire comment il compte s'organiser pour mieux conduire cette phase. En particulier il doit ressortir :

- Quelles sont les dispositions qu'il compte prendre dans les deux pays pour la conduite de l'enquête pilote ?
- Comment compte-t-il faire pour évaluer la capacité des enquêteurs à faire usage des leçons apprises au cours de cette phase ?
- Etc.

4 Conduire la campagne d'information et de sensibilisation auprès des autorités administratives et coutumières

En prélude au déploiement des équipes d'enquête et à la collecte des données, il sera nécessaire de conduire une mission d'information et sensibilisation des acteurs dans les régions, les départements/provinces, les communes et les villages retenus – comme SAREL a fait pour l'enquête de base. La campagne – qui doit être achevée au moins 10 jours avant le premier déploiement des équipes d'enquêteurs – a pour objectif de porter l'information à tous les niveaux en vue de susciter l'adhésion des différents acteurs pour cette enquête. C'est pourquoi, SAREL a identifié et ciblé les acteurs ci-dessous pour cette campagne d'information : les Gouverneurs des régions concernées ; les Préfets ou Haut-Commissaires ; les Maires ; et les chefs de canton et de villages. Au niveau des autorités administratives, le Consultant devra faire un bref exposé (oral) de l'initiative RISE, le projet SAREL et situer l'objectif de l'enquête de mi-parcours. Au niveau village, la campagne devra rappeler le contexte de l'enquête et insister sur l'adhésion massive et la forte implication du village notamment au cours de l'énumération et de l'entretien avec les ménages échantillonnés. La mission discutera avec les autorités villageoises sur les facilités à accorder aux équipes d'enquêteurs qui seront dans les villages notamment l'identification de local pour les abriter tout au long de leur séjour, etc.

Dans sa proposition méthodologique, le Consultant devra préciser notamment :

- Comment il organisera la campagne d'information et de sensibilisation dans chaque pays (nombre d'équipes, composition, profil des membres) ?

- Les supports à utiliser pour les rencontres avec les autorités ?
- Le calendrier indicatif

5.5. Déploiement des équipes d'enquête

Dans sa proposition méthodologique, le Consultant devra faire ressortir :

- Comment compte-t-il assurer le déplacement des équipes d'enquête sur le terrain ?
- Comment compte-t-il gérer la logistique (contrats, véhicules, moto, les fournitures etc.) :
- Comment compte-t-il apporter un appui technique et organisationnel aux enquêteurs dans la collecte des données ?
- Quel mécanisme compte-t-il mettre en place pour assurer le contrôle de qualité des données ?
- Comment le Consultant compte-t-il surmonter et documenter les difficultés rencontrées par les équipes d'enquête ?
- Quelle stratégie de communication le Consultant compte-t-il mettre en place pour une bonne mise en œuvre de la collecte des données sur le terrain ?

5.6. Collecte des données

Le consultant procédera à la collecte des données conformément au plan de déploiement prévu. Au cours de cette phase, le Consultant mettra en œuvre sa stratégie de communication en vue de permettre une bonne mise en œuvre du processus. Il doit en outre veiller au mouvement des enquêteurs et des chefs d'équipes conformément au plan de déploiement. Il doit coordonner la logistique conformément au plan de travail et apporter un appui technique et organisationnel aux enquêteurs dans la collecte des données.

Le consultant veillera à l'application des procédures convenues pour la vérification et le contrôle de qualité des données. L'application de ces procédures devrait permettre d'intervenir rapidement si des erreurs systématiques se produisent au niveau de l'administration des questions ou au niveau d'un enquêteur. Tout problème rencontré par les enquêteurs durant l'administration des questionnaires devrait être résolu par le consultant. Les contrôleurs et les superviseurs devront documenter fidèlement les difficultés rencontrées dans leurs zones.

Pour cette phase, le Consultant devra faire ressortir dans sa méthodologie :

- Les différentes étapes de mise en œuvre de l'enquête dans chaque village ;
- Quelle stratégie d'information et de sensibilisation du village et des ménages à enquêter que le Consultant compte mettre en place pour une meilleure adhésion des populations à l'enquête ?

- Le contrôle qualité de la collecte des données étant la fonction la plus importante qui garantit la qualité des données, la fiabilité des données et la cohérence des données, le Consultant devra préciser dans son approche méthodologique, le mécanisme qu'il compte mettre en place pour assurer le contrôle qualité ?
- Quel sont les éléments que le Consultant devra prendre en compte pour le suivi des performances des enquêteurs sur le terrain ?

5.7. Traitement et constitution de la base de données

Au cours de cette étape, le Consultant devra procéder à la saisie des données collectées. Afin de garantir la fiabilité dans la saisie des données, SAREL opte pour le principe de la double saisie manuelle des questionnaires de l'enquête, c'est-à-dire que chaque questionnaire devra être saisi deux fois pour permettre la comparaison des saisies afin de corriger immédiatement toute erreur de saisie. Pour ce faire, le consultant développera les masques de saisie une fois les questionnaires validés.

Le Consultant devra mettre en place un dispositif de contrôle de saisie des données. Il doit au cours de cette phase, procéder à l'apurement et au nettoyage de ces données.

Il est à noter que toutes les informations issues de l'enquête et les données collectées seront la propriété exclusive de SAREL, et le consultant devra à cet effet transférer tous les documents à la fin de l'enquête à SAREL. Il est à noter que les questionnaires papiers remplis seront également livrés à SAREL pour archivage.

Note : Pour la durée de l'opération de la saisie, SAREL prêtera au Consultant 10 ordinateurs desktops avec claviers, souris, et UPS, en bon état.

- Comment le Consultant compte mettre en place l'équipe de saisie ?
- Comment le Consultant compte-t-il centraliser les données collectées des deux pays ?
- Comment le Consultant compte-t-il assurer la supervision de la saisie de données ;
- Quel mécanisme compte-t-il mettre en place pour assurer le contrôle de qualité de la saisie des données ?
- Comment le Consultant compte-t-il pour assurer le nettoyage et l'apurement des données ?
- Par ailleurs, compte tenu du fait que SAREL a opté pour le principe de la double saisie, le Consultant devra décrire dans sa méthodologie comment il compte traiter les données de l'enquête conformément à ce souhait de SAREL.

Durée de la consultation

La durée envisagée de la présente consultation est estimée à sept (07) mois à compter de sa date de notification de l'ordre de service. La collecte des données sur le terrain doit impérativement démarrer au plus tard en mars 2017 pour s'achever au plus tard en avril 2017. La double saisie des questionnaires et le nettoyage et l'apurement devra être achevé au plus

tard le 10 juin 2017.

Le consultant proposera un chronogramme de travail détaillé pour la réalisation de l'enquête conformément aux exigences de l'étude.

Ressources humaines clés

Pour la réalisation de l'enquête, les soumissionnaires proposeront une équipe d'experts clés répondant au minimum aux exigences que requiert la mise en œuvre de l'enquête dans la zone RISE à cheval les deux pays. Les soumissionnaires proposeront une équipe technique compétente capable de conduire cette enquête. Le personnel technique clé doit pouvoir coordonner, superviser, et traiter les données de l'enquête.

Pour les Experts clés proposés dans le cadre de cette mission, les soumissionnaires devront joindre leurs CVs détaillés avec la description de leurs qualifications et expériences.

Tout membre de l'équipe désigné comme « expert-clé » doit garantir son engagement pour toute la durée requise par ce contrat et ne pourra être remplacé sans l'accord préalable de SAREL.

CONTROLE DE QUALITE

Afin de s'assurer de la qualité de cette enquête, SAREL s'attachera les services d'un consultant indépendant pour réaliser ce contrôle qui se fera tout au long de l'enquête. Le Consultant en charge de la réalisation de l'enquête devra tout mettre en œuvre pour assurer une bonne collaboration avec ce dernier.

Appendix E2. Scope of Work Data Analysis

Scope of work for the SAREL RISE MIDLINE DATA ANALYSIS – Coordinator CONTEXT and JUSTIFICATION of the service to be provided

The Mitchell Group, Inc. was contracted by USAID in March 2014 to implement the Sahel Resilience Learning (SAREL) project. SAREL is one of four new and ongoing projects funded by USAID that contribute to strengthening the resilience of households and villages in chronically vulnerable zones of Niger and Burkina Faso. Convinced that the impact of humanitarian and development investments in the Sahel have been considerably reduced by weak collaboration among stakeholders and the absence of rigorous approaches and systems for assessing and learning from interventions, USAID designed SAREL to boost adaptive, evidence-based, collaborative learning among resilience stakeholders. If this approach is successful, it will speed the development and adoption of resilience-enhancing best practices, innovations and models, and enable USAID and other stakeholders to better leverage and integrate scarce humanitarian and development resources.

The overall objective of SAREL is to provide monitoring, evaluation, collaboration and learning support to USAID's resilience programming in the Sahel. The project has five specific objectives:

1. Test, expand and accelerate the adoption of proven resilience-enhancing technologies and innovations already underway;
2. Develop, test and catalyze widespread adoption of new models that integrate humanitarian and development assistance;
3. Promote ownership, build the capacity of national and regional institutions, and coordinate humanitarian and development interventions in the zone of intervention;
4. Address gender issues key to resilience and growth; and
5. Create a knowledge management database that will house a baseline assessment, ongoing monitoring data, and impact evaluations for REGIS-ER and REGIS-AG.

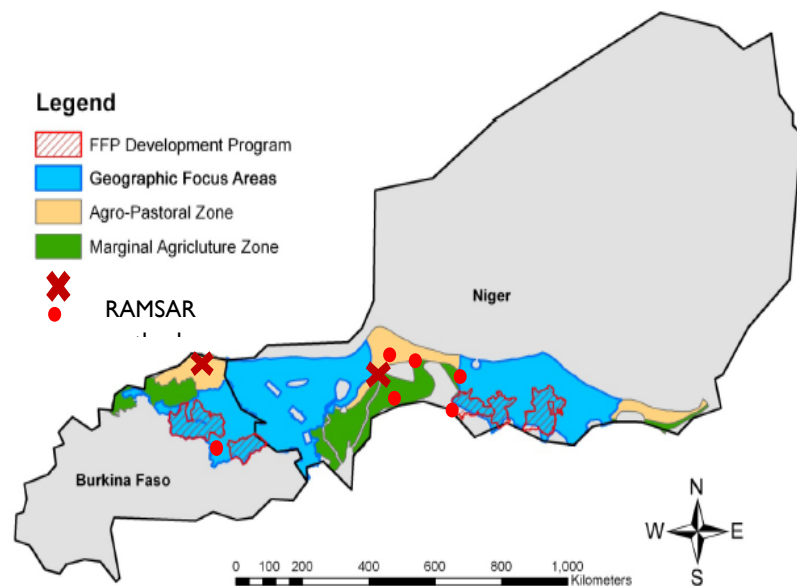
OBJECTIVES

In 2015, the SAREL team and its local partners completed a baseline quantitative survey of approximately 2500 households across 100 villages in the RISE zone (see figure below). A portion of those villages constitute a High-intensity stratum, wherein a combination of RISE-related programs were implemented; the remaining villages were designated as a Low-intensity stratum of comparable localities but without the RISE interventions. Currently underway in 2017 is a midline quantitative survey of approximately the same size, conducted in the same villages (though it is not a household panel design; household selection was randomized during each phase). The data collection instruments include a household questionnaire, a village questionnaire, a women's questionnaire, and a food and child

anthropometry questionnaire.

The midline quantitative survey has two components. The first concerns the data collection process which will be conducted by SAREL's partner CESAO.

RISE Intervention Zone Map (in blue)



The second component is comprised of data analysis and a report. According to SAREL's evaluation methodology developed in 2015 for evaluating the impact of RISE Initiative, data analysis will rely on data gathered during the midline as well as data collected during the baseline. SAREL solicits the assistance of a qualified **Data Coordinator** to develop an appropriate, comprehensive methodological approach to the data analysis, and to oversee and conduct rigorous statistical analyses of the midline data, of changes over time from baseline to midline, and of differences across the High and Low strata. The Coordinator must have necessary experience, demonstrated capacity in analysis, and skill leading consultant teams.

With this mission in mind, the Coordinator will:

- Assist in the recruitment of a statistical analysis expert
- Collaborate with SAREL staff in the development of testable hypotheses
- Make recommendations to SAREL concerning data analysis and statistical package to be used
- Work as a team with the data analyst on data analysis for both surveys
- Oversee tests of significance and hypotheses tests outlined by SAREL
- Ensure application of appropriate weighting and analysis techniques

- Collaborate with the analyst on the development of appropriate tables and figures
- Write summary briefs, a draft report, and a final report
- Store the survey data analyses and do-files

DELIVERABLES AND RESPONSIBILITIES

The Coordinator will be familiar with conducting data analyses using STATA, SPSS, R, or a comparable statistical software package, in order to supervise and assist the data analyst. In particular, the coordinator must take into consideration any data weighting issues and must ensure appropriate design-based calculations of precision (e.g., standard errors, confidence intervals) and p-value.

The deliverables expected from the Coordinator are as follows:

2.1. Refining and finalizing the methodology and work plan:

During the first week of mobilization, the Coordinator will refine and finalize a technical proposal and work plan with support and input from the Data Analyst. The proposal and work plan will be adapted to take into account the comments made during a preliminary meeting which will be held immediately after notification by SAREL of the award of the contract to the Coordinator.

The technical proposal of the Coordinator must be accompanied by a timetable of work describing the chronology of the different tasks associated with the analysis, the use of material resources, the submission and validation of deliverables, etc.

The results and expected deliverables are:

Results	Deliverables
The final methodology for analyses is developed.	Deliverable 1: a revised, final proposal detailing the methodological approach to the analyses: • The methodological approach to each principal set of analyses • The data analysis plan • The use of human and material resources • The timeline of detailed work plans

2.2. Weighting of the SAREL midline sample

In order to reflect the selection scheme and ensure that the sample represents the target population, the sample weights will be computed for use in the statistical analysis. The Coordinator is not responsible for ensuring all design variables necessary to the weighting calculation will be available on the final data collected file. Instead the data collection team will be responsible to provide the sufficient information for sample weighting.

The Coordinator will be mainly responsible for the weights calculations with appropriate support from the Data Analyst.

Results	Deliverables
Final sample weights added to the data.	Deliverable 2: set of sample weights necessary for the analysis: • A technical document providing the methodology used to calculate the weights including a detailed description of the formulas used • The dataset including the added variables related to the weighting

2.3. Summary Analyses of key indicators and demographic information

The RISE initiative includes a set of 21 key indicators used to track progress toward resilience among households and villages in the intervention zone. In addition, data has been collected on numerous demographic and livelihood factors that help to describe the context in systematic terms. This includes measures of family size and structure, family dwelling conditions, exposure to shocks, and community services. All estimates should be derived following the stratified two-stage sample design used to collect the data.

It is important to note that the RISE baseline and midline surveys are probability-based sample surveys, so to analyze the data, the Coordinator and data analyst must take into consideration the survey design. During this step, the Coordinator will advise on the statistical software scripts for producing survey-based estimates and he will verify the summary statistics calculated by the Data Analyst for all the key indicators and the estimates of precision (standard errors, significance levels "p-values", and confidence intervals). The Coordinator will also verify and assist with the calculation of statistics for the demographic and social factors described in the baseline report.

- Specify the design (the design structure, as well as the weights) to a suitable statistical software program procedure, such as the various Stata svy procedures (e.g., svy: mean)
- Review the indicators and demographic factors addressed in the baseline report
- Apply the data analysis plan developed for the analysis of baseline data to calculate all the 21 key indicators for the midline data (request from SAREL)

- Verify overall means, standard deviations, and confidence intervals
- Verify disaggregated statistics by strata and country
- Oversee significance tests for the key indicators to analyze comparison between strata, country and sex
- Write the summary of findings

Results	Deliverables
Midline summary statistics and a write-up are provided.	Deliverable 3: A summary write-up that accompanies a table and figures that present summary statistics for the key indicators and additional demographic and social factors from the midline data • Means, SD, and CI for key indicators • Disaggregated indicator data by stratum, country • Means, SD, and CI for demographic factors • Disaggregated demographic data by stratum, country • Test of significance for selected indicators • Do-files for calculations • A 2-3 page summary of findings, with note of any notable coding choices

2.4. Difference-in-Differences over time across strata

SAREL is interested in determining the extent to which the RISE interventions have impacted the villages and households where those interventions have been implemented. Doing so requires a difference-in-difference analysis with two components: the change over time in the High-intensity villages, and a comparison of that change to the change over time in the Low-intensity villages. This strategy accounts for any differences in the High and Low strata at the baseline, and for the fact that secular changes (having nothing to do with the RISE interventions) may have taken place over time across the entire RISE zone, thus potentially affecting both the High and Low strata:

$$\text{D-i-D: } (\text{High}_{t1} - \text{Low}_{t1}) - (\text{High}_{t0} - \text{Low}_{t0})$$

The difference-in-difference analyses should focus on village-level data (from the village surveys) and from village means (calculated from the individual-level surveys). Analyses should include the 21 key indicators plus additional demographic and social factors that SAREL requests. The Data Analyst will generate the tables and figures that present the difference-in-differences analyses. The Coordinator will provide methodological oversight and prepare the

written (narrative) write-up that accompany the tables and figures. The results and expected deliverables are:

Results	Deliverables
Difference-in-difference analyses are conducted across strata to evaluate the effects over time and across strata since the baseline.	Deliverable 4: A summary write-up that accompanies a tables and figures presenting difference-in-differences across the High and Low strata • D-i-D for key indicators • D-i-D for additional demographic factors • Do-files for calculations • A brief write-up: a few-sentence description of each finding, plus any notable coding choices

2.5. Propensity Score Matching analyses

The design of the RISE interventions is quasi-experimental: similar villages were assigned to the High- and Low-intensity strata so that differences might reasonably be attributed to the interventions themselves, and not to pre-existing differences in the villages. Regarding the individual-level data, the assumption is that participants in the High and Low strata are also relatively similar, but because they were not assigned to those villages at random (instead having already lived there and thus been assigned to the High or Low strata in clusters), it is important to match household participants as rigorously as possible across the High and Low strata in conducting the analyses of household and individual-level data. Doing so holds as much constant as possible while varying the exposure to RISE programs, in order to most precisely determine their effects.

The Coordinator will collaborate with the Data Analyst in identifying appropriate matching techniques and assist him in conducting nearest-neighbor propensity score matching analyses that match on a standard set of demographic and geographical factors (e.g., gender, age, education, household size, standard of living) to determine the effects of exposure to RISE programs (High stratum) on the key RISE indicators. The Coordinator will prepare a summary write-up of the matching results.

Results	Deliverables
Propensity score matching analyses for individual-level data are conducted to test the effects of strata on individual-level outcomes.	Deliverable 5: A summary write-up that accompanies tables and figures presenting the results of nearest-neighbor propensity score matching to test the effects of stratum on key RISE indicators • Propensity score matching analyses of key indicators from the household survey data • Propensity score matching analyses from the gender survey data • Propensity score matching analyses from the food & anthropometry survey data • Do-files for calculations • A brief write-up: a few-sentence description of each finding, plus any notable coding choices

2.6. Standard multivariate analyses with controls

As a complement to propensity score matching analyses, SAREL also requires analyses of the household- and individual-level indicators using standard regression analysis (e.g. OLS, Logit, etc.) with controls. Multivariate regression, i.e. regression model with more than dependent variable, will be considered if appropriate a. This will allow for a comparison of matched and conventional regression results. Exposure to the High or Low stratum again constitutes the key explanatory variable of interest.

The Coordinator will provide methodological oversight to the Data Analyst in generating the tables and figures that present the results of standard multivariate analyses of key indicators. The Coordinator will prepare the written (narrative) write-up that accompany the tables and figures. The results and expected deliverables are the following:

Result	Deliverables
Standard regression analyses are run to test the effects of strata on key outcomes.	Deliverable 6: A summary write-up that accompanies tables and figures presenting the results of standard multivariate analyses of key indicators • Regression analysis from the household survey data • Regression analysis from the gender/women's survey data • Regression analysis from the food & anthropometry survey data • Regression analysis from the village survey data

	• Do-files for calculations • A brief write-up: a few-sentence description of each finding, plus any notable coding choices

2.7. Additional hypothesis testing

In addition to evaluating the effects of stratum assignment on the key RISE indicators, SAREL is interested in exploring a number of complementary hypotheses. The Coordinator will oversee additional difference-in-differences, matching, or standard multivariate analyses to test the hypotheses that SAREL proposes. These tests may implicate independent and dependent variables drawn from survey questions not otherwise used in the analyses of indicators. SAREL will provide the hypotheses for testing after contract approval and may update the request as appropriate during the course of the contract.

The results and expected deliverables are the following:

Results	Deliverables
Hypothesis testing is conducted based on complementary hypotheses provided by SAREL.	Deliverable 7: A summary write-up of tables displaying the results of hypothesis tests requested by SAREL. • Multivariate analyses using an appropriate approach given the subset of data and the hypotheses • Do-files for calculations • A brief write-up: one short paragraph per hypothesis, plus notable coding choices

2.9. Do-files and data sets

As a point of emphasis, SAREL will need to receive the do-files (which indicate the commands for regression analysis) for all final analyses. As a reminder, the Coordinator should ensure that appropriate weighting techniques are used and should apply appropriate precision estimators. Furthermore, if the Coordinator reorganizes the data set in any way to facilitate data analysis (e.g., merging modules, disaggregating by stratum or country, creating a separate data set for children, etc.), he must provide SAREL with copies of those reorganized data sets.

The results and expected deliverables are the following:

Results	Deliverables
Do-files and data sets are provided to SAREL.	Deliverable 8: Do-files for all final analyses and any reorganized data sets • Do-files can be provided with each analysis separately • Any merged, disaggregated, or reorganized data sets • A brief description of any decisions related to the reorganization of data sets to facilitate analysis

2.8. Final reporting

The Coordinator will draft a report that summarizes key findings from each deliverable section. The Coordinator will hold a workshop to share the survey results and to allow for discussion of the findings. In addition, at the end of this survey, the Coordinator is required to give SAREL a technical report on the overall execution of the data analysis.

The workshop will bring together members of the SAREL team and its evaluation partner CESAO and USAID at Niamey (Niger) or Ouagadougou (Burkina Faso). The workshop timing as well as the list of participants will be established by SAREL.

The final report should be a complement to the tables and summaries provided for each deliverable; its goal is to highlight key findings, underscore notable trends, and describe data analysis challenges. It is not necessary to repeat all findings, though SAREL should be able to easily combine the tables and analyses with the report. The report will be transmitted, in French and in English, in three hard copies and in electronic format. This report will be accompanied by any necessary annexes.

The results and expected deliverables are the following:

Results	Deliverables
The midline analysis report is produced, approved and finalized.	Deliverable 9: Analysis report and workshop • Draft analysis report • Workshop report • Final analysis report • Analyses archived

Duration of the Activity and Level of Effort

The proposed duration of the analyses is estimated at seven (14) weeks from the date of notification to the Coordinator. The Level of Effort is estimated at **50 days**.

The Coordinator will propose a detailed schedule of work for the completion of the data analysis, adhering to the expected responsibilities and deliverables. A guideline for work activities is as follows:

Activity	Period
In-depth review of RISE baseline survey and data analysis methodology and report, of RISE midline survey reports, and other key background documents	Week 0 (3 days)
Inception in-country visit	5 days (period to be determined)
Review of the sample design and weighting of the SAREL sample	Week 1 (5 days - assuming all necessary information is available on the files)
Development of Methodological Approach	Week 2 (4 days)
Summary Statistics and Diff-in-Diff analysis	Week 3 and 4 (5 days)
Propensity Score and Multivariate analysis	Week 5 and 6 (5 days)
Additional Hypothesis Testing	Week 7 and 8 (5 days)
Draft Report in one language (English or French)	Week 9 and 10 (5 days)
Review by the SAREL team	Week 11 and 12 (0 days)
Finalize Report and Translation to the second language	Week 13 (8 days)
Prepare and Deliver Workshop (in-country visit)	Week 14 (5 days)

PROFILE OF COORDINATOR

In order to conduct the analyses and prepare the required reports, the Coordinator must respond, at a minimum, to the criteria and to the experience described below. The Coordinator will also assist in identifying and vetting the Data Analyst. Both "key-expert" members of the team (Coordinator and Data Analyst) must ensure his or her commitment for the entire time required by this Service Agreement.

4.1. Expected Experience

The Coordinator will be the main technical manager ensuring the professional implementation of this RISE data analysis work. He/she will oversee the management of the Data Analyst and the technical communication with SAREL, and will participate, as needed, in periodic meetings or phone conferences with USAID to provide progress updates. He/she will be guarantor of the quality of the work and of good management and the coordination of the overall team. He/she will be responsible for the quality control of the entire process and of expected deliverables of the analysis.

The Coordinator must:

- Hold an advanced university degree (Masters or higher) in statistics, economics, sociology,

agronomy, demography or other equivalent degrees in relevant areas

- Have strong experience - at least ten (10) years in organization of quantitative research of a large scale (covering at least 1500 rural households and of focus groups), particularly in Burkina Faso, Niger and/or in the sub-region
- Have a proven ability in processing databases, analyzing survey data, writing reports and disseminating findings in a timely manner
- Have skills in systems establishment of control and verification of the quality of survey procedures
- Have strong experience in the organization of impact evaluations of rural development programs and projects;
- Maintain close relations with the Quality Control Consultant in charge of quality control that will be recruited by SAREL
- Have experience with or familiarity with USAID programming
- Possess knowledge of the socio-political environment, cultural and economic in Burkina Faso and Niger

U.S. Agency for International Development

Almadies Road

PO Box 49

Dakar, Senegal