

RISING II Baseline Study Report 2020

RISING II

*Recovery In Sudan for
Improved Nutrition
and Growth*

Funded by



Project Implemented by



Baseline Study Technical Support by



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LIST OF ACRONYMS

CAFOD	Catholic Agency for Overseas Development
CAG	Community Action Group
CAPI	Computer-assisted personal interviewing
CCA	Climate Change Adaptation
CFW	Cash for work
CI	Confidence Interval
CRS	Catholic Relief Services
CSI	Coping Strategies Index
DEO	Data entry operators
DFID	Department for International Development
DRR	Disaster Risk Reduction
DV	Dependent variable
DVS	Data Validation Supervisors
ENA	Essential Nutrition Actions
FANTA	Food and Nutrition Technical Assistance
FIES	Food Insecurity Experience Scale
FFW	Food for work
FGD	Focus Group Discussion
HHS	Household Hunger Scale
HFSSS	High Frequency Survey South Sudan
IGA	Income-generating activity
INGO	International Non-Governmental Organization
IPM	Integrated Pest Management
KG	Kilogram
MAD	Minimum acceptable diet
NCA	Norwegian Church Aid
NGO	Non-governmental organization
OLS	Ordinary least squares
Oxfam	Oxfam America
PNK	Phosphorous, nitrogen, potassium (chemical fertilizer)
PRA	Participatory Rural Appraisal
PPS	Probability Proportional to Size
PW/LW	Pregnant and lactating women
RISING	Recovery In Sudan for Improved Nutrition and Growth
SDG	Sudanese Pound
SHARP	Sudan Humanitarian Assistance and Resilience Programme
SILC	Savings and Internal Lending Committees
TANGO	Technical Assistance to Non-governmental Organizations
TO	Topical Outline
U5	Under five years old
UMCOR	United Methodist Committee on Relief
UN	United Nations
WASH	Water, Sanitation, and Hygiene
WDDS	Women's Dietary Diversity Score
WRA	Women of reproductive age
WV	World Vision

EXECUTIVE SUMMARY

Recovery in Sudan for Improved Nutrition and Growth II (RISING II) is an 18-month project that aims to improve livelihood and nutritional needs for 28,060 targeted households in all five Darfur states starting from February 1, 2020 to June 30, 2021. The RISING II project is implementing complementary activities to assist households to transition from emergency to the long-term recovery program, *Taadoud II*, to achieve the goal “*Vulnerable communities in Darfur have enhanced food and nutrition security year-round*”. RISING II is focusing on mitigating the impacts of shocks, preventing loss of household assets, and accelerating recovery for vulnerable returnee and resident households in the targeted 92 communities. Catholic Relief Services (CRS) and the three consortium partners – World Vision International (WVI), Norwegian Church Aid (NCA) and the Catholic Agency for Overseas Development (CAFOD) – are implementing RISING II activities. The consortium partners are complemented by private sector partners: Haggar Group, DAL Innovative Agriculture Company (DIAC), the SAY Group, learning partner, Tufts University, as well as seven local implementing partners. *RISING II* shares management, partners, and project structures with the *Taadoud II* project.

TANGO International provided technical support to the RISING II project as a third-party contractor to conduct a baseline study that included the development of both quantitative and qualitative research methods, survey instruments, data collection support and analysis, dissemination of study findings, and the drafting of a comprehensive Baseline Report.

A. Study Design

Quantitative: The RISING II baseline study followed an “adequacy study design” or non-experimental study design for simple pre-post comparison of results to measure changes over the period of time by comparing information from baseline to endline. For the quantitative component, a *two-stage cluster* sampling design was applied for the baseline study where the RISING II project “Communities” were considered as “Clusters” and “Probability Proportional to Size (PPS¹)” procedure was applied to select the clusters. The quantitative study design did not have any stratification and samples were selected across the five Darfur program states and localities. The final sample size was estimated representative to the project level estimates of the logframe indicators. The estimated total sample size was 980 project participating households, which was higher than the suggested sample size of 678 in the EFSP abbreviated statement of work². The suggested sample size was inflated to capture adequate number of children 0-5 months to estimate the logframe indicator OUTCOME 3.1.1³.

The target sampled 980 of households was selected from the list of 15,347 RISING II project participating households. In the two-stage cluster sampling design, 49 clusters were selected by first using Probability Proportional to sizes (cluster size) and then, 20 project participating households were selected randomly from each selected cluster. Five data collection teams, each with five enumerators and one supervisor, interviewed the randomly selected sample households during 20 May - 24 June 2020. Due to COVID-19 travel restrictions, the data collection teams were provided with additional online training using the Cisco WebEx virtual platform. The enumerators collected all quantitative data through face-to-face

¹ When samples from different sized clusters are used and sampling is taken with the same probability, the chances of selecting a member from a large cluster are less than selecting a member from a smaller cluster. This is known as probability proportional to size (PPS). For example, if one sample had 20,000 members, the probability of a member being selected would be 1/20000 or .005 percent. If another sample had 10,000 members, the chance of a member being selected would be 1/10000 or .01 percent.

² FFP Guidance for an Abbreviated Statement of Work (SoW) for a Baseline Study and Final Evaluation for Emergency Programs (Revised on December 2019)

³ Detailed sample size estimation process is given in Annex-VI

interviews while maintaining social distancing, masking, and other standard COVID-19 safety guideline procedures as suggested in BHA/CRS COVID-19 guidelines.

Qualitative: The qualitative component was comprised of small focus group discussions (FGD) and key informant interviews (KII) to gain both community and household level perspectives, including (if they exist in the community): CAG members, community leaders, farmers/agro-pastoralists, market actors, community agricultural extension works, and health/nutrition stakeholders or community health promoters, all of whom are potential participants and/or stakeholders of the RISING II project.

The qualitative research was carried out among a randomly selected sub-set of the communities included in the quantitative sample. In each program state, one returnee community and one host community was randomly selected (if both categories of household status were present), and for each selected community the teams sought to conduct the following four types of interviews: 2 FGD with agro-pastoralist/farmer households; 1 FGD or KII with community leaders, CAG members, or community extension worker; 1 KII with a trader/market value chain actor; and 1 KII with a health/nutrition stakeholder. Therefore, the qualitative study aimed to conduct 50 interviews in total, split between returnees and host communities, across the five Darfur states. In all, the qualitative fieldwork resulted in 49 total FGD and KII interviews (131 male, 36 female participants across all interviews) across 11 communities of Darfur. One limitation is that only three of the communities were returnee due to mis-categorization of their status in the sample list; this means the ability to analyze the qualitative data to discuss differences between host and returnee status is limited. The qualitative study was not designed to provide analysis by gendered household type.

B. Disaggregation and Non-Responses

Mainly there were two levels of data disaggregation at the household level (RISING II participating household) that are Household status (returnees vs hosts) and Gendered household types (FNM, MNF, M&F and CNA⁴) to report on the disaggregated information for the logframe indicators. The sample size was not estimated to be representative to this level of disaggregation (stratification) as suggested in Feed the Future Population Based Sampling (PBS) guideline⁵. The sample households were selected across the gendered household types and no CNA households were selected in the random selection process. This may be explained by the fact that there are no RISING II project participating households in the CNA household category, or this category is very rare in RISING II communities. Gendered household type category was generated from the household roster of the sample households for using this category accurately. The information presented in this report is for the following two main categories of disaggregation (as required for the logframe indicators reporting): household status and gendered household types⁶.

The overall non-response rate was only 6%, broken down by program state as follows: 29% non-response in CRS-West, 7% in WVI-South, and 3% in CAFORD-North Darfur program states. There were no non-response cases in CRS-East and NCA-Central Darfur program states. More than two-thirds (71%) of the non-responses were due to the unavailability of any household members at the time of the interview and 11% were due to the unavailability of an adult household member (**Table 2**).

Out of total 980 selected households, 924 were actually interviewed. Of these, 91% households (840 households) were from M&F households and 7% from FNM households (69 households). Only 2%

⁴ **FNM:** Adult Female and No adult Male **MNF:** Adult Male and No adult Female **M&F:** Both Adult Male and adult Female **CNA:** Child and No Adults

⁵ Feed the Future Population-Based Survey Sampling Guide, Diana Maria Stukel, PhD, April 2018 (page 25-26)

⁶ Additionally, information was also collected on household livelihood types (e.g., farmers, pastoralists, nomads) and program states/implementing partners, but that disaggregated data is not required to present in the main text. This additional disaggregated information is given in Annex-I and Annex-II.

households were MNF households (15 households). These results indicate that the RHISING II participating households are mostly M&F households and very small number of households that are MNF/CAN⁷. Forty one percent households in the sample were from returnees (379). Most of the sample households (98%) were from farmers, while only 2% were from pastoralists with no sample from nomad category⁸.

C. Respondent and Household Demographics

The mean age of the prime respondents was 38 years old and about three-quarters (72 %) of respondents were the household head (**Annex II**). The RISING II participating households were found to have an average of 6.6 family members with 47 % being young children (0-14 years), which exhibits a large dependency ratio (101), and aligns with a similar pattern of population distribution amongst least development countries (**Figure 1**). Also, given the notably high percentage (52 %) of females among the age group 15-49 years, there is likely an out-migration of male household members.

D. Key Quantitative Findings

Household Food Consumption Score, Hunger Scale Reduced Coping Strategies: Overall, 53% of RISING II participating households were found with borderline or poor Food Consumption Scores (FCS of 42 or less), which was higher ($p<0.10$) among the FNM households (70%) compared to MNF households (45%) and M&F households, (**Figure 5** in main report). These differences were statistically significant ($p<0.10$ for FNM to MNF and $p<0.01$ for FNM to M&F). Returnees were found with a slightly lower poor/borderline FCS (47%) than host community households (57%), but the difference is not statistically significant. The logframe targets for the indicator **IMPACT i** (FCS), which are 0% for Poor FCS and +15% over baseline (i.e., 62.1%) for Acceptable, might be achievable but are nevertheless ambitious (**Table 1**).

Table 1 RISING II Project Logframe Indicators

LOGFRAME INDICATORS			PARTICIPANT BASED RISING II BASELINE SURVEY 2020								
			HOUSEHOLD STATUS		GENDERED HH TYPE			ALL			TARGET
								Total	95% CI	DEF	
1. IMPACT i: % of HH with poor, borderline, and adequate Food Consumption Score (FCS)	Poor (%)	21.3	25.0	38.0 ^{a**}	20.9	22.3	23.5 (17.8, 29.1)	2.013	0.0		
	Borderline (%)	25.8	31.9	31.6	23.6	29.3	29.4 (24.5, 35.2)	1.603	-		
	Acceptable (%)	52.9	43.1	30.4 ^{a*,b**}	55.5	48.4	47.1 (40.9, 53.5)	1.900	62.1		
	<i>n (household)</i>	379	545	69	15	840	924				
2. IMPACT ii: Prevalence of HH with moderate or severe hunger (Household Hunger Scale, HHS)	Percentage (%)	20.1	21.3	27.2	39.0	19.9	20.8 (16.5, 25.1)	1.61	10.8		
	<i>n (household)</i>	379	545	69	15	840	924				
3. OUTCOME 1.1: % of HHs with equitable and uninterrupted access to shared natural resources throughout the year.	At least 3 (%)	50.6 [*]	42.6	47.5 ^{a***}	79.1 ^{c***}	45.1	45.9 (39.7, 52.1)	1.87	65.9		
	At least 4 (%)	24.7	24.6	30.5 ^{a*}	53.7 ^{c***}	23.6	24.6 (20.3, 28.9)	1.51	44.6		
	All 5 (%)	6.7	8.1	6.7	20.9	7.3	7.5 (5.5, 9.5)		27.5		
	<i>n (household)</i>	379	545	69	15	840	924				
4. OUTCOME 1.2.1: Reduced Coping Strategies Index (rCSI)	Mean	12.5	11.2	13.9 ^{b**}	10.9	11.5	11.7 (10.3, 13.2)	2.04	8.8		
	STD	11.3	10.3	9.8	12.0	10.8	10.7				
	Min.	0.0	0.0	0.0	0.0	0.0	0.0				
	Max.	48.0	56.0	48.0	40.0	56.0	56.0				
	<i>n (household)</i>	379	545	69	15	840	924				
5.	Percentage (%)	34.3	33.4	18.1 ^{b***}	20.9	35.3	33.8 (27.1, 40.5)	2.08	63.8		

⁷ The sampling frame of RISING II participating households shows 67% households are M&F, 15% FNM, 11% MNF and 7% CNA.

⁸ In RISING II sampling frame 98.5% were farmers, 1.4% percent were pastoralists and 0.1% were nomads

OUTCOME 1.3.1: % of HH using improved natural resources.	<i>n (household)</i>	379	545	69	15	840	924		
6. OUTCOME 2.1: Number of months of HH food self-sufficiency as a result of improved agricultural production programming	Mean (Month)	4.1***	4.9	4.0 ^{b*}	3.5 ^{c***}	4.6	4.6 (4.2, 4.9)	1.78	5.9
	STD						3.0		
	Min.						0.0		
	Max.						12		
	<i>n (household)</i>	379	545	69	15	840	924		
7. OUTCOME 2.2: % of beneficiaries reporting net income from their livelihood.	Percent (%)	73.1	72.8	67.9	69.5	73.3	72.9 (66.4, 79.4)	1.99	92.9
	<i>n (household)</i>	318	437	48	13	494	755		
8. OUTCOME 2.1.1: Number of hectares under improved agricultural methods	TOTAL (Hectares)	1,141	1,617	133 ^{ab***}	18 ^{c***}	2,607	2,758		3,034
	<i>N (household)</i> ⁹	4,991	8,360	992	237	12,122	13,351		
9. OUTCOME 2.1.2: % of HH with access to sufficient seed to plant	Percent (%)	37.9	29.6	30.8 ^{a*}	57.7 ^{c*}	32.8	33.1 (26.9, 39.3)	1.93	58.1
	<i>n (household)</i>	379	545	69	15	840	924		
10. OUTCOME 3.1: Proportion of children 6-23 months of age who receive foods from 4 or more food groups	All (%)	22.9	16.9	8.8	31.5	19.6	19.3 (13.0, 25.5)	1.10	39.3
	Boy (%)	19.9	12.8	0.0	0.0	16.7	15.6 (8.3, 22.8)	1.04	35.6
	Girl (%)	27.1	22.6	19.4	56.7	23.6	24.4 (15.3, 33.4)	0.96	44.4
	<i>n (children)</i>	74	123	10	4	183	197		
11. OUTCOME 3.1.1: Proportion of infants 0-5 months of age who are fed exclusively with breast milk	All (%)	55.6	40.5	0.0	14.3 ^{c***}	51.0	45.7 (31.8, 59.7)	1.26	65.7
	Boy (%)	63.1	41.4	0.0	16.7	55.0	48.7 (31.2, 66.1)	1.18	68.7
	Girl (%)	45.7	39.3	0.0	0.0	45.7	41.6 (24.3, 58.9)	1.03	61.6
	<i>n (children)</i>	29	56	3	7	75	85		
12. OUTCOME 3.1.2: % of people targeted by the hygiene promotion program who know at least three (3) of the five (5) critical times to wash hands	All (%)	31.3	31.0	29.1	18.8	31.5	31.1 (24.6, 37.7)	2.14	51.1
	Male (%)						20.8 (14.2, 27.3)	1.60	40.8
	Female (%)						39.2 (31.3, 47.2)	1.81	59.2
	<i>n (person)</i>	379	545	69	15	840	924		

^a*p*<0.10, ^{**}*p*<0.05 and ^{***}*p*<0.01 **a:** statistically sig. FNM to MNF **b:** statistically sig. FNM to M&F and **c:** statistically sig. MNF to M&F

21% of interviewed households reported moderate to severe household hunger, which was consistent amongst returnees (20%), host community households (21%), and M&F households (21%) (**Figure 6**). However, percentages were higher among FNM (27 %) and MNF households (39 %). The target for the indicator **IMPACT ii** is -10% from baseline (i.e. 10.8 %) also seems ambitious. Therefore, it is suggested the targets for the indicators **IMPACT i** and **IMPACT ii** be reviewed, considering the current COVID-19 pandemic crisis, so that they can be revised and made achievable given the short duration of programming. According to qualitative interviews, Covid-19 movement restrictions caused fuel, food, and other commodity shortages in markets, causing price spikes. Many households have struggled during the pandemic because they do not have an emergency savings or food supply to cope during such times.

Results for **Outcome 1.2.1**, the reduced Coping Strategy Index (rCSI), were derived from the frequency and severity weights of five food-based coping strategies that households used in the past 7 days of the survey. The rCSI scale ranges from 0 to 56. The baseline found that the overall average household rCSI was 11.7, which was higher among the FNM households (13.9) than MNF households (10.9) – a difference which is statistically significant (*p*<0.05) (**Figure 8**). The logframe target (**Table 1**) of the indicator **OUTCOME 1.2.1** is 8.8, a 25% reduction from baseline (11.7), which seems to be achievable and realistic. The qualitative interviews explained that to cope during times of stress, households look to diversify their livelihoods (e.g., day labor, sending members to find work in cities or mines), harvest and sell firewood/charcoal, take part in winter cultivation, sell-off assets, and reduce food consumption.

⁹ Extrapolated for total 13,551 (13,360 farmers + 191 Pastoralist) RISING II project participants

Access to Natural Resources and Improved Natural Resources Practices: Data about year-round access to the five project-promoted natural resources (open/communally established water sources, open or shared pasture land/grazing land, sharecropping/lease and procuring agricultural land, and forest products and government/other-supported natural resources inputs) was collected to report on the indicator **OUTCOME 1.1**. It was found that community-level availability of these five natural resources ranges from 28% to 99% of households reporting availability in the community. However, smaller proportions of individual households reported having access (ranging from 19% to 79%) to the same natural resources (**Figure 13**). Overall, less than half of households (46%) reported that they had year-round access to at least three out of these five natural resources: water, fishing, livestock, and agricultural activities (**Table 1**). The logframe target for the indicator OUTCOME 1.1 was set at a +20% from baseline, (i.e., 65.9%), which may be realistic and achievable. The qualitative data show the most common natural resource conflict or problem for communities is related to the mixing of grazing and farming land. Shortage of water for people and animals was the next most important source of conflict, which was named as a pertinent issue in interviews in four of the five Darfur states. The use of forest resources can also be a contentious issue. All communities interviewed described a well-functioning community-based conflict resolution mechanism for such problems, led by community leaders.

OUTCOME 1.3.1 was measured based on the prevalence of the reported six improved natural resource practices: climate mitigation, crop culture, Farmer Managed Natural Regeneration (FMNR), permaculture, agroforestry, and water management. Overall, one-third (34%) of participants reported that they practiced at least two out of the six improved natural resource practices in the past 12 months. This percentage is consistent among host families, returnees, and others, but the rates of use within FNM households was significantly lower (18%) than M&F households (35%) (**Table 1**); this may be due to women farmers not having access to the irrigation pumps, ploughs, and inputs that would allow them to expand their crop types and techniques, as explained in qualitative interviews. The target for the logframe indicator OUTCOME 1.3.1 was +30% from baseline, (i.e., 63.8%), which seems to be an overly ambitious target. It is suggested to review and revise the target accordingly.

Use of Improved Agricultural Practices: One of the major activities of the RISING II project is to increase the use of agricultural practices by project participating households who are involved in agricultural activities. The project intends to track the progress of improved agricultural practice usage, as well as the number of hectares of land used for these improved practices through the indicator **OUTCOME 2.1.1**. The number of hectares of land used was computed for all RISING II farmers (13,551) and agro-pastoralists (191). Performance against this indicator depends on the use of improved practices. Only 21% of households (**Figure 18**) were found to be using at least three improved practices, which was even lower among M&F households (10 %) and host community households (17 %). This low ratio of improved agricultural practice brought down the overall indicator value to only 2,758 hectares under improved practices although farmers and pastoralists used a total of 36,020 hectares of land in the past 12 months (**Figure 19** and **Table 1**). Indeed, according to qualitative interviews, most communities were not aware of and practicing the full listing of improved agricultural practices such as those promoted under the project; but there was no data collected to explain these low rates among M&F and host households. The target for the logframe indicator OUTCOME 2.1.1 has been set to a +10% from baseline, (i.e., 3,034 hectares) which seems appropriate and achievable.

The indicator **OUTCOME 2.1** (number of months of HH food sufficiency) is interrelated with and heavily dependent on the performance of indicators **Outcome 2.1.1** (agricultural production using more farmland) and **2.1.2** (access to sufficient quality seeds). Only one-third (33 %) of households reported that they had access to sufficient seeds (OUTCOME 2.1) in the past 12 months (last season), which was consistent across all beneficiary categories. Although the RISING II project is trying to ensure access to

sufficient quality seeds by linking project beneficiaries to different sources, the target baseline is +25%, (i.e., 58.1%) for the indicator OUTCOME 2.1 appears ambitious. It is thus suggested to revise the target based on the status of activities that the project is currently implementing. The respondents reported that their average number of months of household food sufficiency from agricultural production was less than half of a year (4.6 months), which was relatively lower among FNM and returnee households (**Table 1**). The target of the logframe indicator OUTCOME 2.1 has been set to a 30% increase from baseline, (i.e., 5.9 months), which might be achievable, though subject to and dependent on the achievements against the indicators OUTCOME 2.1.2 and OUTCOME 2.1.1. The qualitative interviews revealed that farmers' saving the best seeds, or attempting to acquire improved seeds, was one of their main strategies for increasing production; yet, their production is also hindered by limited availability of agricultural land and issues with mixing with grazing land, as well as rainfall shortages across most states.

Livelihood Activities and Net Income: The main livelihood activities of the RISING II project participating households was farming/crop production and sales (78%), while only 8% pursued livestock production and sales, and 4% did handicrafts (**Figure 9**). Although crop production and sales were the main livelihood activities, the percentage of net income was found to be higher for livestock production and sales (84% reported positive net income) and handicrafts (88% reported positive net income) than crop production and sales (72% reported positive net income). Overall, 73% of respondents reported having net income from their income generating activities (**Figure 10**) and 67% reported that their overall income decreased over the past 12 months (**Figure 11**). Consequently, the target for the indicator **OUTCOME 2.2**, which had been set for a +20% from baseline (i.e., 92.9%) (**Table 1**), appears to be an overly ambitious target since most of the households are involved in crop production and sales. It is suggested to revisit and revise the target for this indicator. This can also be explored further through the qualitative data, which suggest that while crop production is the primary livelihood, most households also participate in some animal production, including goats, sheep, or cattle. Many women are also reported as participating in various forms of IGA, including handicrafts and perfume-making.

Infant and Young Child Feeding Practices: Diet diversity for children 6-23 months of age (OUTCOME 3.1) and exclusive breastfeeding for children 0-5 months (OUTCOME 3.1.1) are the practices measured for the Infant and Young Child Feeding (IYCF) activities. Only 19 % of children ages 6-23 months were fed four or more food groups (out of seven food groups) in the past 24 hours, while less than half (46 %) of children 0-5 months were exclusively breastfed (**Table 1**). Boys were found with relatively less (16 %) diet diversity than girls (24 %), and unfortunately, there is no qualitative data at baseline to explain this result. The reverse trend was found for exclusive breast feeding (boys at 49 % vs. girls at 42 %). It should be noted that the percentage of exclusive breastfeeding was found to be much lower than the percentage obtained in the RISING I baseline in 2019 (78.4 %). The target for the indicator OUTCOME 3.1.1 (exclusive breastfeeding) had been +20% from baseline (i.e., 65.7 %). The target for the indicator OUTCOME 3.1.1 is lower than the finding from the RISING I baseline and the Taadoud I 2019 Interim survey. Thus, this target seems achievable and is not required to be revised. The target for OUTCOME 3.1 (diet diversity) had been set for +20% above baseline, (i.e., 39.3 %) (**Table 1**), which appears ambitious and might not be achievable. Thus, it is suggested to review the target for the indicator OUTCOME 3.1. In addition to raised awareness on IYCF practices, the qualitative findings on this topic show that households and caregivers need an enabling environment for maternal and child health and nutrition practices: this includes access to affordable and diverse foods for mothers and children, access to local maternal and child health services, and strategies to support caregivers to adopt these practices.

Hygienic Practices: The **OUTCOME 3.1.2** indicator is the percentage of respondents familiar with three or more critical times for hand washing. Through the baseline, it was found that knowledge of

handwashing at all five critical times was found to be very poor (only 7%, **Figure 28**); though most of the respondents felt it important to wash their hands before eating (85 %), after defecation (46 %), and before food preparation (43 %) (**Figure 27**). Nearly, one-third (31 %) of respondents mentioned the importance of washing hand at least three critical times, where female respondents were found to perform significantly ($p < 0.01$) (39 %) better than male respondents (21 %) (**Figure 28**). The target for the logframe indicator **OUTCOME 3.1.2** has been set to increase +20% over baseline, (i.e., 51.1 %) (**Table 1**), which appears achievable given that this indicator measures only knowledge and not practice.

E. Summary of Qualitative Findings

The qualitative interviews reveal that the shocks of unpredictable rainfall (drought and floods) and emerging agricultural pests and diseases, combined with steadily-increasing market and fuel prices, have dramatically reduced households' production and their ability to engage with the market. Markets are difficult to access for both community members and traders due to lack of transportation and fuel costs, and it can especially restrict women's access to markets. As households have experienced low production and decreased sales, they have less income for livelihood inputs and less food supply to survive on during the seasonal hunger months. The result is food insecurity, poor diets and poor health. This challenging livelihood situation has been made tremendously worse by COVID-19 restrictions.

Households lack the basic enabling environment to maintain their health and productivity, namely access to water, sanitation, health and nutrition services. In terms of financial and business services, none of the interviewed community members or market actors were able to access formal services. No communities reported receiving early warning information for shocks. In all, communities do not perceive that supportive linkages exist with local government.

There are various community-based responses to these challenges and to recurrent shocks. Community members share costs for inputs or transportation, for example. Community leaders mobilize support for the most vulnerable of households. Community conflict resolution mechanisms are perceived as effective for handling disputes over natural resources. There are also various agricultural practices and techniques that households are currently using to attempt to improve their production, but which could be expanded.

Finally, many households lack awareness of IYCF practices and may hold cultural beliefs that inhibit the practices around breastfeeding in particular. For example, some communities believe that a new mother will suffer from exhaustion if she provides breastmilk just after birth, or another belief that children should be provided with a salt and sugar drink during their first six months. As with hygiene/handwashing messaging, returnee households may have more awareness of child nutrition because of information they received in the displacement camps. Apart from those returnees, no other interviews indicated that formal disease prevention, health, and nutrition messaging had reached the communities in past years. Yet, beyond the issue of awareness are the economic and resource barriers, including access to soap, water, and diverse foods, that strongly impede households from practicing such messages. See **Annex II** for the full Qualitative Summary Report, including key considerations for programming.

F. CONCLUSION AND RECOMMENDATIONS¹⁰

A large percentage of the RISING II project participating households have young children and adolescents. These children and adolescent are the future actors for their family's livelihood activities. Enhancing knowledge and skills of the adolescents might be useful to achieve better success in their future life as well as for their family. Therefore, it is recommended that the project emphasize

¹⁰ Details are given in the respective sections

adolescent and youth learning activities which can increase the awareness and practice of these improved practices at the household level and sustain their knowledge into the future. Also, it is suggested that the project build upon the improved techniques already employed by communities and prioritize agricultural practices that are essential to achieving these outcome indicators' targets.

In most cases, households with Adult Female and No Adult Male (FNM) were less likely to be utilizing improved natural resource practices or had relatively higher proportions of household hunger. It was also found that FNM households are less involved in income generating activities than other participant groups. FNM households are comprised of mostly female-headed households who are widowed, divorced, or separated. Thus, it is suggested to identify FNM households and provide them with additional technical and input support so that they may have increased income and are well-positioned to adopt improved practices. The RISING II project participants, including FNM households, need to be encouraged to adopt alternative IGAs in addition to crop production and sales, in order to increase their net income. Yet, adequate community support for these households must also exist to enable the FNM households who are mothers of young children to be able to focus on both their/and their children's health and nutrition needs as well as their livelihood development.

RISING II project participating households were found to have limited access to natural resources, despite the availability of the resources in the community. In some cases, natural resources seem to be under some level of local control or other influences, which in turn is limiting households from accessing these resources. Thus, it is suggested to identify gaps and to establish linkages for the households to the respected authorities and local community leaders, so that households can improve their access to existing natural resources in the community. Establishing such linkages are important for sustaining project impact for all sectors. The project design should ensure the sustainability of all project infrastructure and support systems long after the project has ended. This includes continued skills/knowledge promotion through agricultural extension or health workers, maintenance of water pump systems, micro-lending, or other systems that should continue long-term.

Some of the indicator targets in the logframe were found to be too ambitious and will likely be difficult to achieve during this short project duration. Targets for the following logframe indicators are suggested to be reviewed and revised based on the baseline findings and project activities: IMACT i, IMACT ii, OUTCOME 2.2, OUTCOME 1.3.1, OUTCOME 2.1 and OUTCOME 3.1. In addition, a market analysis and complete cash feasibility assessment should be conducted in each state before any cash or voucher assistance activity, with repeat assessments as the Covid-19 impacts on markets evolve.

INTRODUCTION

Recovery in Sudan for Improved Nutrition and Growth II (RISING II) is an 18-month project designed to build upon and leverage RISING I and Taadoud II activities from February 1, 2020 to June 30, 2021 with aim of “*Vulnerable communities in Darfur have enhanced food and nutrition security year-round*”. The RISING II project will meet the livelihood and nutritional needs of **28,060** households in **92** communities across all five states of Darfur, using mixed modalities and complementary activities to assist households to transition from emergency assistance to longer-term recovery programs. The three strategic objectives of RISING II are:

- i) Communities have inclusive institutions and governance of natural resources,
- ii) Livelihoods of food insecure people are improved, and
- iii) Households have improved nutrition behaviors.

RISING II will focus on mitigating the impact of shocks, preventing erosion of household assets and accelerating recovery for vulnerable returnee and resident households in the targeted communities. Activities will leverage the livelihoods, nutrition and conflict mitigation components of *Taadoud*. The goals and strategic objectives of both programs are aligned, and approaches are designed to be complementary. CRS will lead a consortium including World Vision International (WVI), Norwegian Church Aid (NCA) and the Catholic Agency for Overseas Development (CAFOD). The consortium is complemented by private sector partners; Haggag Group, DAL Innovative Agriculture Company (DIAC) and SAY Group, a learning partner, Tufts University and seven local implementing partners. *RISING II* will share management, partners and project structures with *Taadoud*.

TANGO International has been commissioned to conduct RISING II project baseline study that includes quantitative and qualitative study methodologies, survey instruments, quantitative and qualitative data collection support and analysis, dissemination of study findings and comprehensive report. This inception report includes RISING II baseline study design, tools, timeline and protocol. This report provides explanation and interpretation of the status of surveyed logframe indicators with associated quantitative and qualitative information for better and in-depth understanding of survey results. Based on the baseline findings, TANGO had made some recommendations that might be useful for program implementation decisions.

Different levels of disaggregated information were also important to learn about the status of relevant indicators so project staff can understand which groups need more intense programming or refined program interventions to achieve intended outcomes and impacts. Therefore, information was collected mainly disaggregated Gendered household types (FNM, MNF, M&F and CNA). But there were ways to get information disaggregated by household livelihood types (farmers, pastoralists, nomads) and household settlement status (returnees/host). There was no household with only children and no adults (CNA) in the sample. Therefore, the survey findings will be presented for FNM, MNF and M&F gendered household type disaggregation.

RISING II 2020 BASELINE STUDY

BASLINE STUDY PURPOSE AND OBJECTIVES

The overall purpose of the baseline was to determine the **baseline values** for the project outcome and impact indicators, **validate and strengthen** project targeting and implementation approach and identify the implementation **gaps and adjust indicator targets** and activities proposed to suit the context and review the proposed assumptions within Log-frame and provide **feasible recommendations**, with the following specific objectives:

- I. *Determine the baseline values of key impact and outcome level indicators in program logframe.*
- II. *Collect data comparable to what will be collected during the final evaluation to determine the level of change on key impact, outcome and output indicators between baseline and final evaluation.*
- III. *Provide baseline information to set benchmark/targets for the project logframe indicators.*
- IV. Analyze the current situation, market opportunities, gaps, and vulnerabilities and challenges to be addressed.
- V. Analyze and develop a comprehensive household's livelihood situation and their capacity in relation to cash for work/cash relief and voucher – including but not limited to an analysis of purchasing patterns, transport and distribution networks and market analysis relating to the functionality, rural market drivers and their role in creating enabling conditions for the different livelihood groups, covering contextual factors and identifying the gaps to be addressed.
- VI. Assess the most preferred and feasible cash transfer mechanisms in the project target areas.
- VII. Analyze what extent the communities have inclusive institution and governance of natural resources-including household's adoption on improved agriculture practices, access to financial and business services.
- VIII. Analyze household's current nutrition and hygiene behaviors and access to nutrition services.
- IX. Provide recommendations for programmatic approaches to address the immediate priorities with regards to strengthening and expanding livelihood opportunities and systems for both refugee and host communities.

The main focus of the baseline study was to capture quantitative information to obtain base values of the logframe indicators and setting out – year targets, with qualitative information to better explain the base values of the indicators. The specific objectives **IV to VIII** are recommended to be captured through separate assessments for current market system and opportunities analysis for specific groups, community consultation for program targeting and community resource mapping by the project implementing partners. However, there was an effort to capture information relevant to the objectives IV to VIII as much as possible through the qualitative data collection.

BASELINE STUDY METHODOLOGY AND IMPLEMENTATION

The RISING II project baseline information was collected mainly against the twelve logframe indicators (**Table 1**) that are related to food consumption, household hunger, food based coping strategies, livelihood activities, access to basic services, agricultural production and improved practices, equitable access to natural resources and health, nutrition and hygiene practices. The logframe indicators were mainly analyzed based on the RISING II project Performance Indicator Reference Sheet (PIRS). Additionally, FFP/OFDA, WFP and FANTA tools and guidelines were used for data collection and analysis of the indicators related to Food Consumption Score (FCS), Reduced Coping Strategy Index (rCSI), Household Hunger Scale (HHS) and hygiene. Two Infant and Young Child Feeding Practices (IYCF) indicators Outcome 3.1 (child diet diversity) and Outcome 3.1.1 (exclusive breast feeding) were analyzed using the WHO/UNICEF IYCF guidelines.

The Food for Peace (FFP)/Feed the Future (FTF) Participant Based Sample Survey (PaBS) guideline was used to estimate the indicator Outcome 2.1.1 (Number of hectares under improved agricultural methods) for the total of the RISING II project. This indicator information was extrapolated for the total farmers and pastoralists (13,551) following the FTF guideline. Thus, the FFP and FTF indicators handbooks¹¹ and RISING II project PIRS were used as guidance to collect information and analyze data

¹¹ FFP Indicators Handbook, Part I: Indicators for Baseline and Final Evaluation Surveys, FFP Indicators Handbook, Part II: Annual Monitoring Indicators

for RISING II logframe indicators. Details on indicator definition, data collection methods and calculation process for all 12 logframe indicators are provided in **Annex-I**.

BASELINE STUDY METHODOLOGY AND IMPLEMENTATION

The RISING II baseline study followed a mixed-method approach, gathering both quantitative and qualitative data, through both an inclusive Participant Based Sample Survey (PaBS) and Focus Group Discussions (FGDs) and Key Informant Interviews (KIs), respectively.

A. QUANTITATIVE

The RISING II baseline study intended to measure the status of the logframe indicators at the beginning of the project and to set or revise endline targets. The baseline sampling methodology was designed to measure the extent of changes of the impact and outcome level indicators at the endline with statistically precise estimates both at the baseline and endline. Therefore, an “adequacy study design” or non-experimental study design” was used for simple pre-post comparison of results to measure changes over the period of time by comparing information from baseline and endline surveys.¹²

A *two-stage cluster* sampling design was applied for the baseline study where the RISING II project “Communities” were considered as “Clusters” and a “Probability Proportional to Size (PPS)” procedure was applied to select the clusters. There was no stratification in this sampling design process and samples were selected across the five Darfur program states and localities. The estimated sample size was determined to be 980, which is representative to the project level estimates of the logframe indicators, but is not sufficient to provide disaggregated information by household status (returnees and hosts), program states, or implementing partners. The following three project indicators that were critical to measure RISING II project impact and outcome and were used to estimate the representative sample:

- Food Consumption Score (FCS): Percentage of households with poor, borderline, and adequate food consumption score.
- Reduced Coping Strategy Index (rCSI): Required: Mean, standard deviation, confidence interval (95%), and median.
- Household Hunger Score (HHS): Prevalence of households with moderate or severe hunger.

The estimated sample size 434 for HHS indicator is a sufficiently large sample to provide precise estimates of household level indicators. The sample size of 434 was estimated using the recent information from RISING I baseline and Taadoud II 2019 Interim surveys. The EFSP abbreviated SOW suggested sample size 678 households, which was calculated assuming 50% prevalence at baseline. The EFSP guideline also suggests to use actual proportion if available from recent surveys. However, it was necessary to inflate the 434 sample size to 980 for the two outcome-level nutrition indicators, in order to ensure a sufficient number of children 0-5 months and children 6-23 months are obtained from the sampled households to estimate the indicator values accurately:

1. Proportion of children 6-23 months of age who receive foods from four or more food groups.
2. Proportion of infants 0-5 months of age who are fed exclusively with breast milk.

¹² An experimental design with an appropriate control group was not considered due to the lack of availability of a true control group, lack of government concurrence, and security concerns that limit data collection teams’ access to the areas where the RISING II project was not working.

The final sample size calculation followed EFSP/USAID and FTF/FANTA sample size calculation guidelines¹³. Detailed sample size calculation procedure is laid out in **ANNEX VI**.

In two-stage sample selection process, 49 communities (clusters) were selected from all five Darfur program states using the PPS method in the first stage. In the second stage, 20 participating households were selected randomly from the list of RISING II project participating households sampling frame for interviews. Some of the communities were bigger for number of participants, such as Karumjji, than other communities. Therefore, in PPS sampling procedure, 2 clusters were selected from each of Wailang, Urokoum, Sani Deliaba, Terri, Khorabashi communities and four clusters were selected from the Karumjji community. Finally, 49 clusters were selected from 41 communities. The list of the PPS selected communities are provided in *Annex IV RISING II Baseline PPS Cluster Sample*.

In Month April 2020, RISING II project recruited five sets of data collection teams, one for each state. Each teams consisted of four interviewers and one Team Supervisor. One additional interviewer was placed on standby, as an emergency replacement or to join the team in order to finish data collection in a timely manner. The Team supervisor was responsible for area mapping, locating sample HHs and management of data collector's movement during data collection. The team supervisor took part in the practical training session as group facilitator. The supervisor was also responsible to ensure data quality by cross-checking interviews on sample basis. The data collection field work began on 2 week of May before the Eid-ul-Fitr vacation and was completed in mid-June 2020.

Due to the COVID-19 threat and travel restrictions TANGO and RISING II project decided to conduct distance training for the data collection teams online. TANGO organized an online training using Cisco WebEx from 7 - 16 May 2020. Initially, the training was planned for 5 days (5 hours/day), but due to being conducted virtually, it took 7 days to complete. The training facilitator took time to help enumerators understand the data collection tools and process clearly which included significant time to explain in Arabic. The mobile-based ODK form was simulated from the mobile phone directly and the training participants went through the survey questions one-by-one with the online training facilitator. Three participants from the Khartoum MEAL team and 6 - 10 participants from each of the five Darfur program offices joined the virtual training. The Darfur teams gathered in a meeting room with a multimedia projector and laptop to connect to the virtual meeting room, while the Khartoum MEAL team attended the training individually from their homes. Two Senior MEAL officers from Khartoum translated the training sessions into Arabic simultaneously with the TANGO training facilitator. The participants who gathered in a room at the state level maintained social distancing and wore masks through all the training. TANGO checked the data consistency of the online training vs the face-to-face training by comparing the RISING II baseline data with other recent indicators. The RISING II baseline data was consistent with other surveys, with no or very insignificant differences between the online and the face-to-face trainings.

A structured questionnaire was developed for the quantitative data collection mainly for the 12 logframe indicators with some key focused areas. The Taadoud II 2019 Interim Survey and RISING I 2019 Baseline Survey quantitative questionnaires were used as a template for the RISING II 2020 baseline survey. There were some additional indicators in the RISING II logframe (**Table 1**). Questions related to these additional indicators were developed based on the FFP/OFDA indicator guidelines. The questionnaire was designed with clarifications/instructions for each of the questions and built-in interview logic/constraints in ODK electronic questionnaire form at the back-end. However, a brief

¹³ Feed the Future Population-Based Survey Sampling Guide, Diana Maria Stukel, PhD, April 2018 ii) Addendum to FANTA Sampling Guide by Robert Magnani (1999): Correction to Section 3.3.1, Determining the Number of Households That Need to be Contacted, Diana Stukel Megan Deitchler, March 2012

guideline on some technical questions was developed too as a field manual. The questionnaire was translated in to Arabic and verified/adjusted with the data collection teams in the training.

Electronic data capture devices (Samsung cell phones) were used to collect data, complemented with ODK (Open Data Kit) software. The team also prepared for the possibility of having to use phone interviews in the case that the community access would have been restricted due COVID-19. However, the data collection teams were able to conduct face-to-face interviews without any COVID-19 related incidence.

There were two layers of data quality control: Team Supervisors and TANGO International. Firstly, field data collection team supervisors monitored the activities of each of the four interviewer in their team and reviewed the collected data daily to ensure data quality. The supervisors also re-interviewed at least one per day, based on a condensed survey limited to a subset of critical questions. Supervisors also verified that non-response households are unavailable, or truly opted out of participation. Although there was a plan that the central RISING II MEAL team also conducts data quality assessment at the field level, this was not possible due to COVID-19 travel restrictions for Darfur States. In addition, TANGO International monitored data consistency remotely throughout the ongoing data collection process, assessing data periodically downloaded from the server. They then provided feedback regularly to the field teams via email/telephone, in order to support real-time data quality assurance.

TANGO International developed an analysis and tabulation plan (**Annex II**) following the RISING II M&E guidelines and the PIRS of its 12 logframe indicators. The statistical software STATA 15.1 was used for ODK data conversion, editing and analysis. The analysis includes descriptive statistics and composite indicator computation with statistical hypothesis testing to compare differences for beneficiary categories. A 95% confidence interval with design effect was also computed for the 12 logframe indicators. The sampling design for the RISING II baseline was a two-stage cluster sampling design without any stratification. The clusters were selected using the PPS selection procedure across the five program states and localities. Therefore, sample-weight was not applicable to estimate totals. However, a non-response weight was applied to adjust non-responses by cluster.

B. QUALITATIVE

The main focus of the RISING II baseline study was to collect quantitative information pertinent to the logframe indicators. However, in order to add layers of meaning to those findings and/or triangulate those quantitative findings, some qualitative data also collected at the community level. This qualitative information was subject to an in-depth analysis and interpretation of different issues. The main focus of the qualitative data collection was for the specific objectives IV to IX of the baseline study (see Baseline Study and Purpose).

The qualitative study was designed and implemented through a Covid-19 pandemic-sensitive, streamlined approach. Specifically, the team conducted small focus group discussions (FGD, as possible), individual interviews, and key informant interviews (KII) with the community members and targeted households, including: CAG members, community leaders, farmers/ pastoralist, market actors, agricultural extension works (if they exist) and health center workers or community health promoters (CHP), who are potential/participants or stakeholders of the RISING II project intervention. The design of the qualitative field work was flexible to include FGDs if possible, but those could be replaced with in-depth interviews (IDI) with individual community members if group meetings were prohibited in that location. This plan considered the differences in livelihood systems in the five Darfur states and among returnees and host communities. In each program state, one returnee community and one host community were selected (total 10 communities), and for each of those communities the following interviews were conducted at minimum:

- 2 FGDs/IDIs with pastoralists/farmers
- 1 FGD/KII with community leaders, CAG members, or ag extension
- 1 KII with a trader/market value chain actor
- 1 KII with a health/nutrition stakeholder (health center worker, volunteer, promoter)

A minimum of 10 interviews were conducted per state or **50 FGD/KII** total, split between returnees and host communities, across all 5 Darfur states. TANGO developed a Topical Outline (TO) for each of the main interview topics with guidelines for the data collection process and training.

The aforementioned qualitative research was carried out among a sub-set of the 41 communities included in the quantitative sample. This ensured that qualitative data could help to provide some complementary explanations of results arrived through quantitative analysis. The community selection criteria for the qualitative component were to ensure diverse perspectives considering the following characteristics of the participating households/communities:

- Household status (returnee and host status)
- Livelihood category (farming and pastoralist)

The first step of the qualitative sampling was to select two communities per each Darfur state, one host and one returnee, based on the most updated information possible regarding the primary household/migration status of project participants in each community. However, for South Darfur, there were no returnee communities in the quantitative sample, so two host communities were selected in this case. These Darfur communities were selected using a random-number generator. This list includes alternates in the case that the selected communities were not accessible based on security and Covid-19 considerations. Secondly, consortium partners, with the qualitative team, worked to identify potential participants for FGDs and KIIs in each selected community. Priority placed on identifying key informants and focus group participants who were representative of the various livelihood groups and vulnerabilities (e.g., gender/age of household heads) of each community.

For each state, each qualitative team consisted of three data collectors; they worked in groups for FGD sessions (one facilitator, one note taker), while a third team member conducted individual interviews (IDI or KII). There were five teams with a total of 15 qualitative data collectors to conduct qualitative field work.

Given the Covid-19 risks and restrictions, TANGO conducted an intensive but concise four-day virtual training (16-19 June) for the qualitative data collectors. Because the training was not provided in-person, the design of the qualitative component was streamlined and simplified. In particular, the tools for the qualitative field work were designed to be quite simple and easy for the field researchers to understand with limited facilitation.

Each state's qualitative study team implemented their field work and summarized qualitative information into bullet form, English-language notes. Each team conducted approximately four total interviews (FGD, IDI, or KII) per day, transcribing their interview notes and summarized key information on the following day, also in English. The team shared electronic copies of interview notes and summaries with the central study team in Khartoum regularly, where it was quickly reviewed for quality and completeness before sending it on to TANGO for additional quality control and monitoring of remote data collection. This allowed TANGO, together with the supervisory team, to make adjustments and corrections as necessary during the fieldwork.

Qualitative data collectors relied on a matrix approach to record information consistently, in a manner that directly responds to key research areas, which in turn enabled the identification of important patterns in responses and specific contextual information. These qualitative data matrices also allowed

responses from community groups, key informants, households, and others to be triangulated to determine whether the information was reliable and representative of the project area. Before analysis of qualitative information began, the data was disaggregated by TANGO into two sets of qualitative data matrices: host vs. returnee status.

LIMITATION AND CHALLENGES

- 1. Data collection before and after Eid-ul-Fitr:** The data collection team training was organized during the time of Ramadan and one consortium partner (NCA, Central Darfur) started fieldwork after the training and before Eid-ul-Fitr. Most of the interviews were finished after the Eid holiday and questions related to household hunger, food-based coping strategies, and food consumption were collected for both the 30 days and 7 days recall periods. Thus, some of the data, in particular, past 30 days and 7 days recall for household hunger, food-based coping strategies and food consumption might be biased due to the influence of the Ramadan and Eid-ul-Fitr holiday. However, the survey findings on these indicators are consistent with other surveys (e.g. RISING I 2019 baseline and the Taadoud II 2019 interim survey).
- 2. Online/Virtual training for the data collection team:** The Survey Specialist could not travel to Sudan to conduct the data collection team training in person due to the COVID-19 travel restrictions during the pandemic. Instead, the survey teams were provided a 7-day online training session (although the training was originally planned for only five days). Since the participants joined the training remotely from various places, it is possible that the efficacy of the online training was limited due to the loss of interactions amongst participants. Also, some of the online training participants, particularly participants from East and West Darfur, were unable to join the training at times due to poor or disrupted internet access. Thus, some enumerators may have learned only partial concepts behind some of the questions due to internet disruptions. However, all the online training sessions were recorded so that participants could review the video recordings later. Additionally, the training sessions were conducted in both English and Arabic sequentially, so that training participants could fully understand the questionnaire and survey process clearly.
- 3. Participation in both quantitative and qualitative data collection:** Some of data collection team members (specifically, enumerators from CAFOD, North Darfur) were involved in both quantitative and qualitative data collection. In those cases, the qualitative data collection was delayed until the quantitative field work was completed in some areas. As a result, some of the team members' may not have summarized the qualitative findings exhaustively.
- 4. Fewer numbers of FGD participants/small qualitative study:** Due to COVID-19 social distancing restrictions, having more than five participants in a focus group discussion was prohibited. As a result, those FGDs conducted with five or fewer participants may have captured less comprehensive qualitative data on some topics. In addition, the qualitative sample was not large enough to make conclusions based on household status or gendered household type.
- 5. Data collection team:** Unfortunately, both the quantitative and qualitative teams were not gender-balanced, as cultural norms of the operational context make it very difficult for women to work as enumerators.

RISING II BASELINE FINDINGS

The baseline survey findings have been analyzed and disaggregated primarily by the gendered type household compositions (FNM, MNF, M&F and CNA) and sex of respondents (boy/girl for child health and nutrition related indicators). Analyzed data also presented in the detail analysis table is disaggregated by program states, household status (returnees and host), household livelihood types (farmers, pastoralist and nomads), and gender of the household head (male-headed and female-headed households). But the sample size was not representative for additional disaggregated information. Disaggregated information by all categories is provided in the detailed analysis tables in **Annex II**. Description and interpretation of the results is focused on the RISING II logframe indicators (**Annex I**).

A. BACKGROUND CHARACTERISTICS AND HOUSEHOLD DEMOGRAPHICS

The overall sample size for the RISING II baseline was estimated at 960, including 15 % attrition with a minimum required sample size 807. **Table 2** shows the overall non-response rate was only 6 %, where the non-response rate was highest in West-Darfur (29 %) than other program states and the anticipated non-response rate was 15%. But the overall response cases (924) are higher than the minimum required sample size (807). About three quarter of the

Table 2 RISING II Baseline Survey Sample and Non-Responses

SAMPLE AND NON-RESPONSES	PROGRAM STATE					ALL
	CAFOD (North)	CRS (East)	CRS (West)	NCA (Central)	WVI (South)	
Total number of beneficiaries	3,080	1,000	1,230	3,830	6,207	15,347
Target sample size (HHs)	200	60	80	240	400	980
No. of HHs interviewed	195	60	57	240	372	924
Non-response Rate (%)	2.5	-	28.8	-	7.0	5.7
REASONS OF NON-RESPONSE						
A. Interview incomplete	0.0	0.0	4.3	0.0	0.0	1.8
B. HH present, but no adult	0.0	0.0	4.3	0.0	17.9	10.7
C. HH absent	40.0	0.0	87.0	0.0	64.3	71.4
D. Interview postponed	0.0	0.0	0.0	0.0	3.6	1.8
E. Dwelling vacant	40.0	0.0	0.0	0.0	3.6	5.4
F. Dwelling not found	0.0	0.0	0.0	0.0	10.7	5.4
G. Other	20.0	0.0	0.0	0.0	0.0	3.6

reported non-responses (71 %) were due to the absence of the households during the time of survey filed work. This was 87 % in CRS-West Darfur, followed by 64 % in WVI-South Darfur and 40 % in CAFORD-North Darfur. One-in-ten non-responses (11 %) were due to the dwelling not being found or the dwelling were vacant, while 11 % of household were located but there were no adults available to be interviewed. The mean age of the respondents was 38 years old and about three-quarters (72 %) of the prime respondents were the household head (**Annex II, Table 5**).

The population pyramid generated from the household roster of the sample population (**Figure 1**). It shows the distribution of the RISING II project population is consistent with the typical pattern found in least developed countries. The overall sex-ratio was 100 with slightly higher percentages of males (50.1 %) than females (49.9 %). The sex-ratio for the 15-49 years of age category was found to be 93, far below than the overall sex-ratio (100). The percentage of males was lower (48 %) than the percentage of females (52 %) for the age group including 15-49 years, which is not same as the overall percentage for all age groups. This reveals that there is likely male outmigration (sex-ratio threshold 99.9)¹⁴ among this age group of project-participating households. Approximately half (47 %) of the population were children (ages 0-14 years), while only 3 % were elderly (65 years or above) with a dependency ratio of 101. The child dependency ratio of 95 % indicates that the population of RISING II participating households has a population distribution pattern that follows a similar pattern for least developed countries.

¹⁴ Demography learning module, The Harriet and Robert Heilbrunn Department of Population and Family Health, Columbia University

Approximately, half (46 %) of all households were found to have children under the age of 5 years, while more than a quarter (28 %) of households were found to have children under the age of 2 years. A large average family size of 6.6 people and a high population (46 %) of children (ages 0-59 months) suggests that family planning is not common among RISING II project participating households. On average, the overall family size was 6.6 members, which is greater than the national average of 5.7 members¹⁵ and slightly higher than the 2019 RISING I baseline (6.5 people) survey findings. Participant households with both adult males and females (M&F) were found to have higher than average number of family members (6.8 people) than the FNM households (4.8 people) and MNF households (4.7 people) (**Annex II, Table 6**). RISING participant households from the WVI program state had the highest average family size (7.1 family members) and participant households from the CRS program states had the least average family size (5.7 family members).

Approximately two-thirds (64 %) were male-headed and 71 % of household heads were between the ages of 15-49 years. There was no household head found below the age of 15 years or above 64 years (**Annex II, Table 6**). The household head's primary occupation is considered the household's main income source. **Figure 2** shows crop farming is the main occupation for household heads of the RISING II project participant households (94 %). This percentage is relatively higher among households with both adult male and female (95 %) members, followed by 88 % for households with FNM and MNF. Five % of FNM household heads reported having none of the occupations, while MNF household head reported 6 % were livestock rearing and 7 % doing daily wage labor. Three % of the FNM household heads also reported having small scale businesses.

More than one-third (39 %) of overall household heads did not have any education, which is higher among the FNM households (62 %), compared to 49 % of MNF household and 37 % of M&F households (**Figure 3**).

Figure 1 Sample Population Distribution by Age and Sex

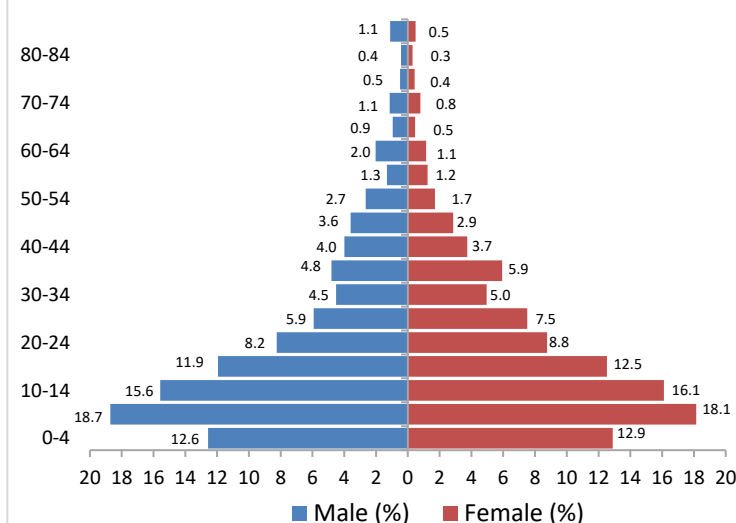
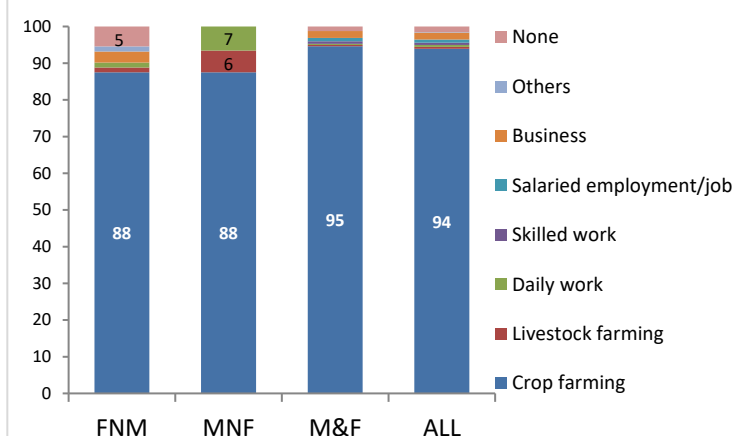


Figure 2 % of primary occupation of household head



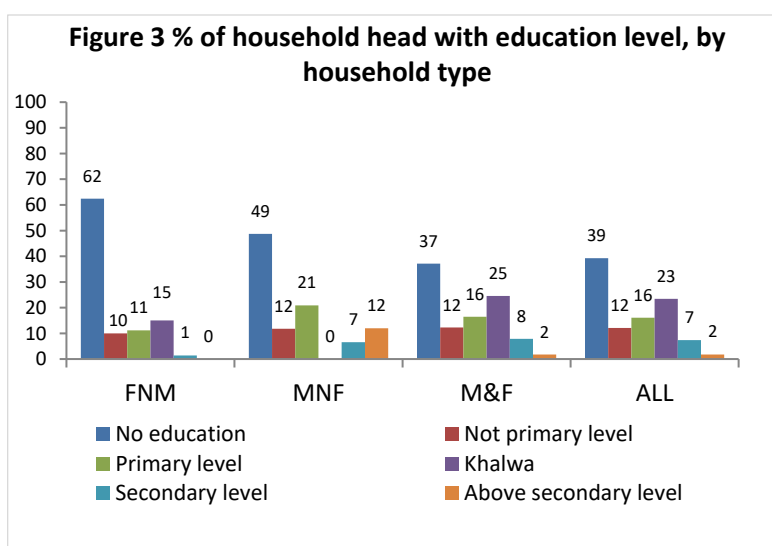
¹⁵ Source: Michael Bauer Research (2016). Household size calculated by dividing the household population by total households. Note: Latest Sudan Demographic and Health Survey 1989/1990 states the national average number of household members is 6.6 members (DHS 1989-90).

Although 61 % of household heads reported that they ever attended school, only 16 completed primary education and 12 % did not. The highest proportion (23 %) reported *khalwa* education. Percentages of education levels were found consistent across the gendered type households with slightly higher percentages among households with both adult males and females.

One-in-ten (10 %) of household heads reported they have a minor physical or mental impairment. Five % of household heads reported having a partial visual impairment, while 3 % have mobility or orthopedic problems (Annex II, Table 6).

Key Findings and recommendations:

- More than half (59 %) of the RISING II project participating households have young children, 31 % of which are ages 0-9 years old and youth comprise of 28 % (ages 10-19 years).
- The education level of household heads was found to be extremely poor.
- Thus, it is recommended that the RISING II project focus on adolescent life-skills training/orientation.



B. FOOD INSECURITY AND HOUSEHOLD FOOD CONSUMPTION

One of the main objectives of the RISING II project is to ensure improved food security and improved nutritional practices. Project's impacts and outcomes will be measured by tracking the progress of the following three impact and outcome level indicators:

1. Percentage of households with poor, borderline, and adequate Food Consumption Scores (FCS);
2. Prevalence of households with moderate or severe hunger Household Hunger Scale (HHS);
3. Reduced Coping Strategies Index (rCSI).

B1. Household Food Consumption Score (FCS):

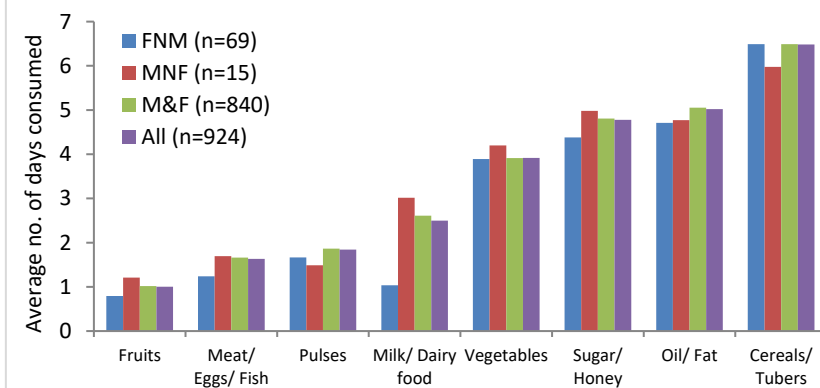
The Food Consumption Score (FCS) is computed based on household dietary diversity and food consumption frequency in the past 7 days. The FCS composite is obtained for the diversified food frequency and relative nutritional importance of different food groups. To measure this indicator the respondents were asked about the frequency of their households' consumption of 16 food or food groups over the previous seven days. The 16 food/food groups were then regrouped into 9 food groups. To compute the composite score for FCS, the consumption frequencies were weighted using the individual food group's nutritional weight and summed. The sample households were then classified into three groups based on their weighted scores – poor (FCS: 0-28), borderline (FCS: 28.5 to 42), or acceptable (FCS: >42) using the

NUTRITIONAL WEIGHTS	
4.0	1.Milk/Dairy foods
4.0	2.Meat/Eggs/Fish
3.0	3.Pulses/legumes
2.0	4.Cereals/Tubers
1.0	5.Vegetables
1.0	6.Fruits
0.5	7.Sugar/Honey
0.5	8.Oil/Fats
0.0	9.Condiments/others

World Food Program's recommended cutoff points.¹⁶ The cutoff points have been considered for the countries with daily consumption of sugar and oil.

Figure 4 shows the average number of days that the sample participating households consumed nine individual food groups in the past seven days. Households mostly consumed vegetables and cereals. The respondent

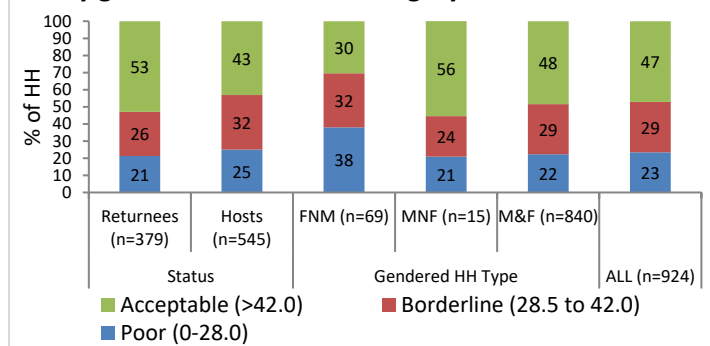
Figure 4 Consumption of 9 food groups in the past 7 days, by Gendered household types



households consumed both sugar and oil with an average of 5 days in the past 7 days. Therefore, FCS categories were computed using the thresholds for the country with daily consumption of sugar and oil. The consumption pattern is consistent across the gendered household categories across all food groups, except for milk/dairy consumption; where FNM households were found to have consumed this category for a relatively fewer number of days than MNF and M&F households.

Figure 5 shows the percentage of household with acceptable levels of FCS computed from these 9 food groups was much lower among the households with FNM (30%) than the households with MNF (56%) and M&F (48%). This difference is statistically significant ($p < 0.01$ FNM to FNM and $p < 0.01$ FNM to M&F). More than one-third (38%) FNM households were found with poor FCS which is higher than M&F households (22%) and MNF households, but the difference statistically significant FNM to M&F households

Figure 5 % of sample participant households with level of FCS by gendered household category



($p < 0.05$). Less than one-third (29%) of M&F households were found with borderline FCS, which was slightly higher among the FNM households (32%) followed by 24% among the MNF households. The differences of borderline FCS are not statistically significant. Returnee households were found to have better acceptable food consumption (53%) than households from the host communities (43%), though the difference is not statistically significant.

B2. Household Hunger Scale (HHS):

The Household Hunger Scale (HHS) is a food insecurity scale that measures the % of households experiencing hunger. The person in the sample participant household who usually prepares the daily food for the household was asked about the frequency with which these three events were experienced by any household member in the past 30 days¹⁷:

¹⁶ USAID Food for Peace. February 2019. Indicators for Emergency Program Performance Indicator Reference Sheets. P. 7.

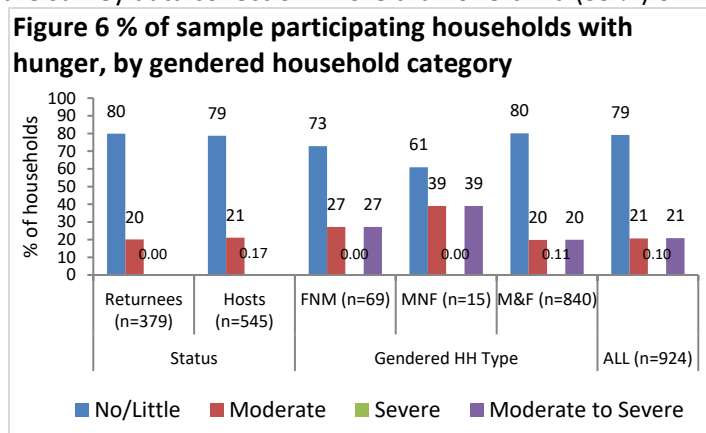
¹⁷ 1) USAID Food for Peace. February 2019. Indicators for Emergency Program Performance Indicator Reference Sheets. P. 12 2) FANTA Guideline: "Household Hunger Scale: Indicator Definition and Measurement Guide", August 2011, Terri Ballard, Jennifer Coates, Anne Swindale, Megan Deitchler

- There was no food to eat of any kind;
- Any household member went to sleep at night hungry; and
- Any household member went a whole day and night without eating anything at all.

The Household Hunger Scale (HHS) and the household hunger categories (no/little, moderate, and severe) were calculated based on the following responses from three hunger questions using the FANTA guideline:

- Rarely (1–2 times)
- Sometimes (3–10 times)
- Often (more than 10 times)

Overall, one-in-five (21 %) of RISING II project sample participant households were found with moderate to severe hunger during the past 30 days of the survey data collection. More than one-third (39 %) of MNF households reported having moderate to severe hunger, followed by 27 % of FNM households and 20 % of M&F households (**Figure 6**). There were no or very little households found to have severe hunger. The RISING II participating households who were MNF households had higher rates of household hunger compared to FNM and M&E households, but the M&F households were found to be better-off than FNM and MNF households. Household hunger was not found for households from both returnee and host communities categories.



B3. Average Reduced Coping Strategy Index (rCSI):

FIVE FOOD-BASED COPING STRATEGIES AND SEVERITY WEIGHTS	
4.0	1. Limit/reduce portion size at mealtimes
4.0	2. Reduce number of meals eaten per day
3.0	3. Borrow food or rely on help from friend or relatives
2.0	4. Rely on less expensive or less preferred foods
1.0	5. Reduce adult consumption so children can eat

The Reduced Coping Strategies Index (rCSI) is a proxy indicator for household food insecurity that is measured from a list of five food-based coping strategies. The index is computed counting both the frequency of each coping strategy (i.e., how many

times the coping strategy was used by any member of the household in the past 7 days) and severity weights (i.e., how serious the strategy). Information was collected for the five coping strategies that the household used in the seven days prior to the survey. The rCSI raw scores were computed by multiplying the frequency (number of days the household applied this strategy in the past 7 days) with which a behavior was used by a universally severity weight, then summing the weighted scores for each coping strategy.¹⁸ The changes in average rCSI score indicates whether household food security status is declining or improving. There was no universal threshold for rCSI, but the higher the rCSI score, the more severe the coping strategy applied by a household. The weighted rCSI score ranges from 0 to 56, i.e., a household that used all five strategies every day for the last 7 days would have a raw score of 56. Higher rCSI indicates a worse food security situation and vice versa.

¹⁸ USAID Food for Peace. February 2019. Indicators for Emergency Program Performance Indicator Reference Sheets. P. 10.

Figure 7 shows the % of households who used five food-based coping strategies in the past 7 days at least once ranges from 38 % to 61 %. The average number of days using the coping strategies in the past 7 days was two or less.

Figure 8 shows the overall rCSI average was 11.7, with ranges from 0 to 56. FNM households were found with a relatively higher average rCSI (13.9) than MNF households (10.9) and M&F (11.5) households, but the difference is statistically significant between FNM and M&F ($p < 0.05$). Returnee households were found with a slightly higher rCSI (12.5) compared to households from host communities (11.2), but this difference is not statistically significant.

B4. Key Qualitative Findings on Food Security and Coping:

According to households across the five Darfur states, the impacts of Covid-19 restrictions including reduced access to the market and increased prices have caused shortages of food for households. The traditional diet diversity is already limited for most households of this region, based on what they produce and the few supplemental food items they can afford to purchase. Interviews across the Darfur states emphasized their lack of access to diverse and nutritious foods like fruits and vegetables, due to these items being either unaffordable or unavailable in the market. During seasonal times of hunger, the households explain that their diets become even more restricted; they survive solely on a grain porridge and eat fewer and smaller meals. They perceive that this impacts the nutrition of the youngest children first, as well as pregnant and lactating women (PLW). “In times of hunger, we usually give priority to children for food. They are the ones who will mostly be affected. Children never endure hunger as adults,” reported a community member.

Key Findings and Recommendations: The FNM households were found to have lower levels of acceptable FCS and higher food-based coping strategies although they scored slightly better on household hunger than the MNF and M&F households. Project activities and targeting should focus on FNM participating households, as well as households with PLW and young children, to achieve targets of these three impact and outcome level indicators.

C. LIVELIHOOD AND INCOME GENERATING ACTIVITIES

Household livelihood and income generating information was collected to estimate baseline values for the indicator “*OUTCOME 2.2: Percentage of beneficiaries reporting net income from their livelihood*”. Net income is simply defined here as revenues greater than costs. It is synonymous with “profitability.” This indicator measures what percentage of people self-report that they are earning more from the

Figure 7 % of household used five coping strategies and average number of days used in the past 7 days

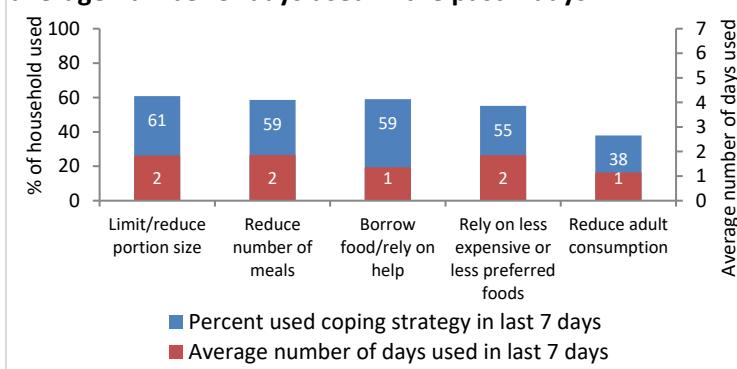
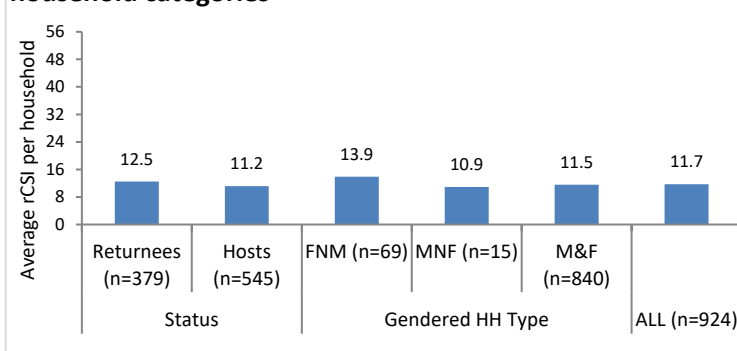


Figure 8 Average Reduced Coping Strategy Index (rCSI) by household categories



livelihood activity supported by USAID/OFDA than they are spending on expenses (i.e., inputs, rent, transport, fees)¹⁹. The sample households were asked about their livelihood or income generating activities for the past 12 months and whether they had net income, i.e., no loss excluding the all expenses from these income generating activities. RISING II supported livelihood activities including SILC and assets based saving supports, PSP activation, training on small scale business planning and linkage support to male and female headed households with the SILC and PSP groups and capacity building to farmers and pastoralists on value chain improvement, packaging, inputs supports and market linkages²⁰.

Figure 9 Percent% of household involved in the livelihood/income generating activities and net income (profit) in the past 12 months

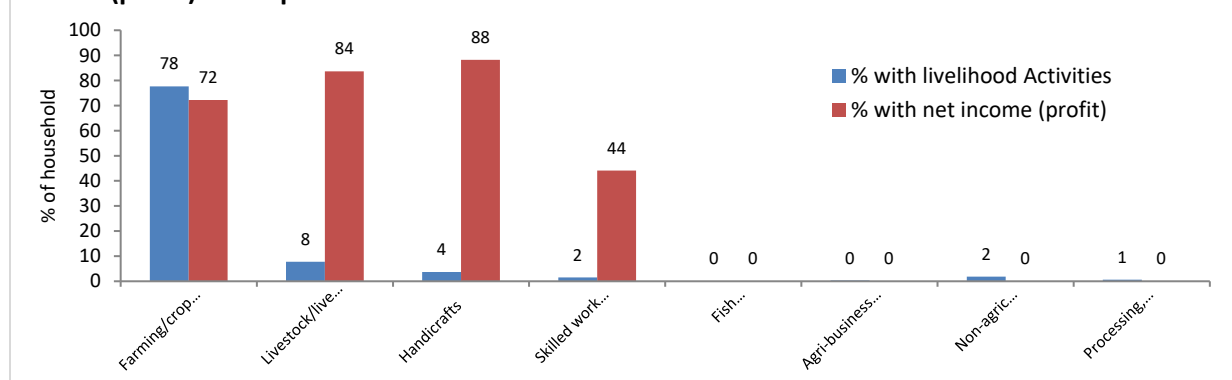


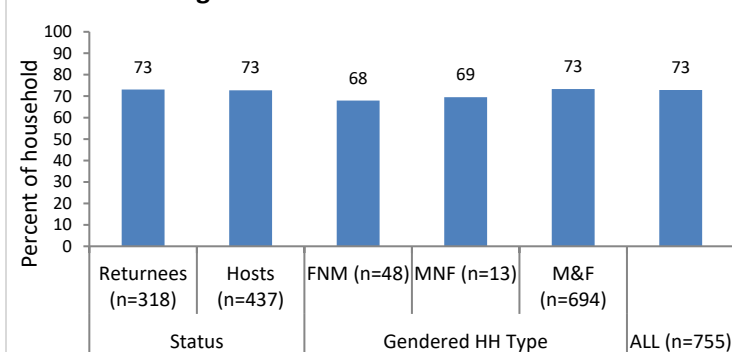
Figure 9 shows the % of households with livelihood/income generating activities in the past 12 months and % with net income (profit) from those income generating activities. Most of the respondent households (78 %) reported that they were in farming/crop production and sales activities. Very few reported either of the two other income generating activities including livestock production and sales (8 %) and handicrafts (4 %).

Although the % of income generating activities for livestock production and sales and handicrafts were much lower than crop production and sales the net income reported for these two activities are higher (84 % livestock production and sales and 88 % handicrafts) the net income for crop production and sales (72 %). Interestingly, 78 % reported the income generating activities for farming/crop production and sales, of them 72 % reported with net income. It means some of them did not have net income or loss.

Error! Reference source not found. shows, overall, more than two-thirds (73 %) of participants reported that they had net income in the past 12 months from the income generating activities that they were involved in. This was consistent across all participating household categories, except the FNM households. FNM households were found to be slightly lower (68 %) than other categories, but the difference is not statistically significant.

Two-thirds (67 %) of households reported that they had decreased net income over the past 12 months, where only 14 % reported having increased income during the same time period

Figure 10 % of households reported net income by household categories



¹⁹ USAID/OFDA Proposal Guidelines, Economic Recovery & Market Systems PIRS, February 2018. P.1.

²⁰ RISING II project PIRS

(Figure 11). This was consistent across household categories with slightly higher percentages reporting net income decreases among FNM households (76 %) and returnees (73 %).

C1. Key Qualitative Findings on Livelihood and Income Activities:

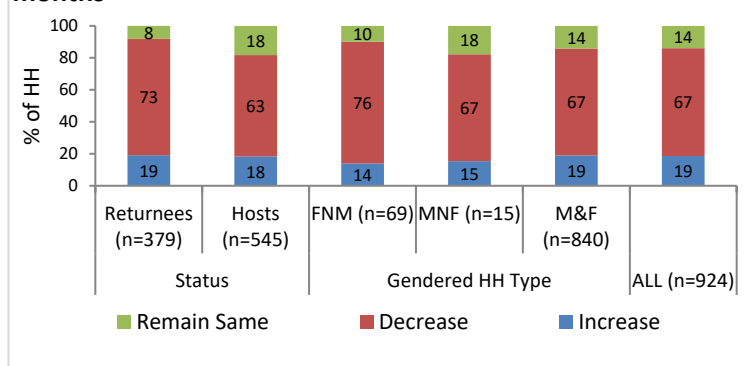
The qualitative research provides some insight into these quantitative findings on livelihood activities and income generation. Indeed, interviews with farmers/agro-pastoralists and community leaders described crop agriculture for consumption and for sale, as possible, as the primary livelihood. Youth and women also participate in farming, though may focus on different crops; some communities reported youth focus on cash crops, and that women are less likely to cultivate crops that require pumped water or high costs in inputs or labor. Other IGA and work opportunities are limited for most communities. Youth tend to do daily labor or migrate to work in mining or nearby towns. Women reportedly take part in various other IGA, including traditional handicrafts or perfume-making, reported by communities in at least three of the Darfur states. Thus, the prevalence of this IGA among women (e.g., selling hand-made traditional products) may be greater than what was reported at the time of the quantitative survey.

The quantitative finding that very few households report livestock production and sales is surprising given qualitative interviews specifying differently. Across the five Darfur states, the communities interviewed described livestock production as part of their livelihood, most commonly raising goats and sheep, as well as cattle. This may indicate that while most households own livestock, at the time of the quantitative survey when market access was limited due to Covid-19, their production and sale of the animals were exceptionally low.

Both hosts and returnees take part in farming, according to these interviews, with no differences reported in their crops based on this household status. Yet, the host communities may produce more animals while some returnee communities have fewer animals or tend to solely conduct farming activities; this is attributed to returnees losing their assets during displacement, assets such as land and animals, which have not been restored to pre-displacement levels. One returnee community explained why they no longer raise cattle: “We have goats and sheep as well as donkeys, but we don’t have cows because we fear from stealing or looting. Our cows were looted since the start of the war in the area and therefore we stopped rearing them.” This may explain why returnees reported a greater decrease in their net income compared to hosts, as found in the quantitative analysis, because returnees may not have as many large livestock to diversify their income sources.

The quantitative finding on the overall decrease in net income in the past year is not surprising given the qualitative study. Interviews across all five Darfur states confirmed that market prices for inputs and basic necessities were rising in past years, making it increasingly difficult for households to afford the transport to the market or the purchase of agricultural inputs for their livelihood activities. Then, Covid-19 caused a significant spike in prices, among other livelihood and market impacts (see further description in Annex II, Qualitative Summary). “The price trend of the last five years is the prices have increased gradually, but during this year the prices increased dramatically [due to Covid-19],” explained a community member, and another responding, “This has affected nearly everyone, even those who before could go to market.”

Figure 11 % Changes in net income over the period of last 12 months



Key Findings and Recommendations:

- Crop production and sales is the dominant income generating activity (IGA), but relatively fewer of the households engaged in this activity reported a positive net income in comparison with other activities, such as, livestock/livestock product production and sales and handicrafts.
- Thus, the RISING II project should put emphasis on IGAs that have more net income to increase overall household income. FNM and returnee households need more support on IGAs than other groups. Returnees also tend to have fewer animals and assets, which can be supported as part of their resilience.
- Both households and market actors lack access to financial services, and there is a relationship of increasing debt between households and traders. Cash-based programming that is deemed feasible and relevant for this project (pending future assessments) should also consider integrating community-based savings and loans. Savings groups should build from a traditional mechanism that exists, but with the inclusion of women's groups as well.

D. EQUITABLE YEAR-ROUND ACCESS TO NATURAL RESOURCES

Information was collected on the availability of natural resources in the RISING II project communities and whether project participating households have access to those resources year-round to obtain baseline values for the custom indicator *“OUTCOME 1.1: % of HHs with equitable and uninterrupted access to shared natural resources (water, pastures etc.) throughout the year”*. Additionally, information was also collected for some improved natural resources management practices to obtain baseline information for the indicator *“OUTCOME 1.3.1: % of HH using improved natural resources”*.

The **Outcome 1.1** indicator refers to every household in a community having equal choice to use, withdraw and manage the available shared or open natural resources and facilities with uninterrupted use by any individual or group²¹. The RISING II project considers the following natural resources that were used to compute this indicator:

- i. Open or communally established **water source** (water from the stream/river, borehole, check dam, watershed).
- ii. Open or shared **pastureland, grazing land** for agriculture production and livestock rearing.
- iii. Access to **sharecropping/lease and procuring** agriculture land.
- iv. Use **forest products** for livelihood and livestock.
- v. Participation in natural resources inputs supported by the Government and others.

A household with year-round (both dry and other seasons) access to at least 3 out of 5 natural resources was counted for this indicator. First, information was collected on whether the natural resources were available for the communities where the respondents were living. Second, the respondents were asked whether their household had access to those natural resources year-round without any interruptions (by any individual or groups).

²¹ Taadoud II M&E Guideline/RISING II PIRS

Figure 13 shows the household's year-round access to the natural resources and availability/accessibility of the resources to the community where the households are living. The differences between community accessibility and household year-round access were found statistically significant ($p < 0.01$) for all types of natural resources. More than three quarters (79%) of households reported that they have year-round access to water sources, while approximately two-thirds (61%) reported that they have access to share cropping/lease or procuring agricultural land. The accessibility for the other three natural resources was reported to be below 50% (44% pasture/grazing land, 45% forest product for livelihood and livestock and 19% government/others inputs supported natural resources).

Figure 13 Community and household access to the natural resources

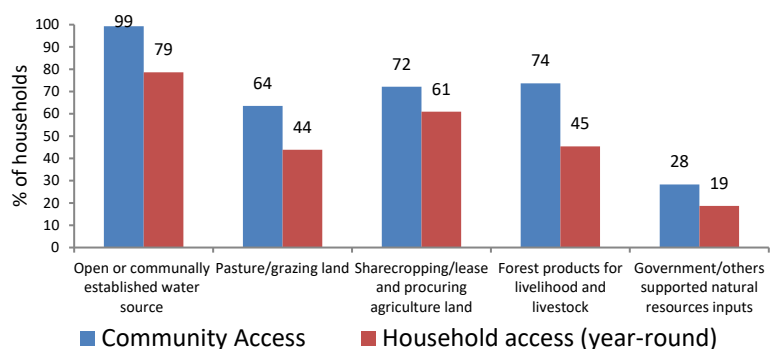
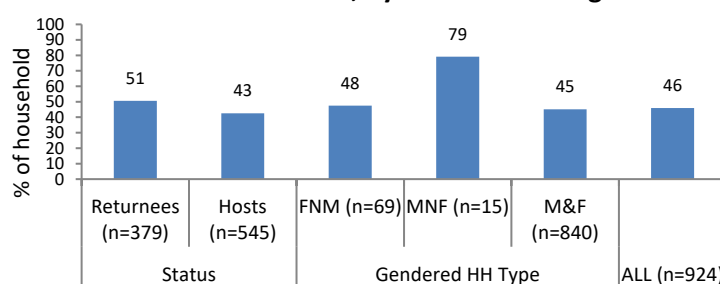


Figure 12 shows, approximately, half of all households (46%) reported that they had year-round access to at least three RISING II project defined natural resources, which was statistically significant ($p < 0.10$) higher among the returnee households (51%) than households from host communities (43%).

Figure 12 % of household reported year-round access to at least three natural resources, by household categories



The **Outcome 1.3.1** indicator

measures the percentage of households using/applying at least two of the RISING II project promoted improved natural resources in the past 12 months²². The improved natural resources are related to use of land or water or management innovations including those that address ecosystem restoration, climate change adaptation and mitigation. Following are the improved natural resources management practices are considered to calculate this indicator:

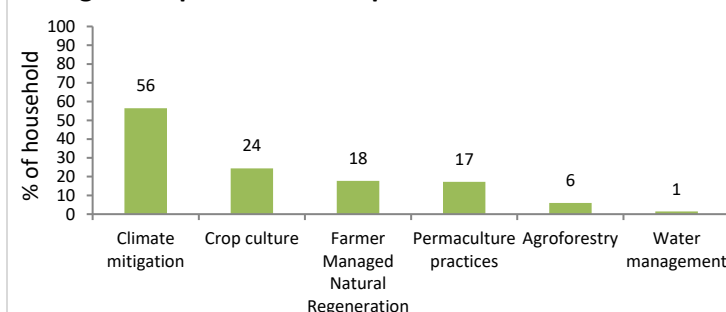
- i. **Crop culture:** seedling production and transplantation, intercropping, mulching, etc.
- ii. **Permaculture practices** (soil and water conservation): erosion prevention and control with mechanical and biological methods such use of gabions, vetiver grass, elephant grass, riverbank management.
- iii. **Agroforestry:** Integrating fodder and fruit trees production, other nitrogen fixing trees.
- iv. **Natural regeneration such as Farmer Managed Natural Regeneration (FMNR):** Regeneration of natural landscapes (reseeding), management of forest plantation (planting, cutting, pruning etc., sustainable harvesting of forest products (wood, firewood, charcoal production, etc.
- v. **Water management:** non-irrigation-based e.g., water harvesting, improved mechanical and physical land preparation such as building of swales or ditches, sub surface dams and watershed.

²² RISING II project PIRS

- vi. Climate mitigation:** technologies selected because they minimize emission intensities relative to other alternatives. Examples include low- or no-till practices and use alternative (e.g, could be solar) for irrigation.

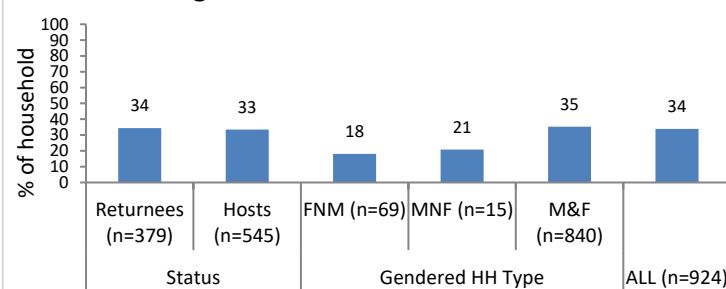
The survey respondents were asked whether they used the improved natural resources in the past 12 months. The individual improved natural resources grouped into six broader categories. A household was counted for this indicator calculation if the household reported that they used at least two of these six broader categories. **Figure 14** shows more than half of the respondent (56%) reported that they have used climate mitigation practices (one or one time plough land before planting and use of solar irrigation system), followed by 24% crop culture (mulching, crop rotation and seedling production and transplantation), 18% FMNR, and 17% permaculture (soil/water conservation techniques and planting vertiver/elephant grass) practices. Water management (1%) and agro-forestry (6%) practices were reported being used the least.

Figure 14 % of households used improved natural resource management practices in the past 12 months



Overall, one-third (34%) of households reported that they used at least two improved natural resource management practices in the past 12 months (**Figure 15**), which is consistent with the percentages for the households from returnee (34%) and host communities (33%). The lowest %age (18%) of FNM households reported that they used at least two practices, followed by 21% of MNF households and 35% of M&F households. The difference between FNM and M&F is statistically significant ($p < 0.01$).

Figure 15 % of households uses at least two project promoted natural resource management practices, by household categories



D1. Key Qualitative Findings on Natural Resource Management

The most common natural resource conflict or problem for communities is the mixing of grazing and farming land, due to unclear designation, the expansion of farming into grazing areas, or uncontrolled grazing that damages crops. Shortages of water for humans and animals was the next most important source of conflict, particularly as households and animal owners compete and negotiate for shared water sources, which was named as a pertinent issue in interviews in four of the five Darfur states.

The use of forest resources, including overcutting trees for charcoal, animal feeding, or to clear land for new farms, can also be a contentious issue. One community described how they received awareness sessions on the dangers of overcutting trees and small bushes, but there is a need for more deterrence measures to reinforce these ideals according to the community members.

All communities interviewed described a well-functioning community-based conflict resolution mechanism lead by community leaders and including key stakeholders. Interviews in one state did clarify, however, that women are not engaged in conflict resolution due to community norms.

Key Findings and Recommendations: Households have limited year-round access to natural resources although they are available for community use where the household is living. FNM households also have much lower access to natural resources than other household categories, and women’s participation generally in community management of natural resources and resource conflicts should be supported. It is suggested that the project conduct a situation analysis using community consultations and direct observation to identify gaps and solutions to ensure better access at the household level for all categories.

E. IMPROVED AGRICULTURAL PRODUCTION PRACTICES

The RISING II project promotes a number of improved agricultural methods/technologies so that the project participating households have better access to food and proper utilization of agricultural land that they have access. The following are the three outcome indicators that will be used to measure the outcome of this activity:

1. **OUTCOME 2.1:** Number of months of household food self-sufficiency as a result of improved agricultural production programming.
2. **OUTCOME 2.1.1:** Number of hectares under improved agricultural methods.
3. **OUTCOME 2.1.2:** % of households with access to sufficient seed to plant.

These indicators were calculated for the project participating households from farmers and pastoralist (agro-pastoralist) categories for those have access²³ to farmland. Most of the households (96 %) reported that they had access to farmland for agricultural activities, but land overall utilization rate in the past 12 months were found to be 83 % (Figure 16), which is consistent across all household categories. % access to farmland was to be found slightly lower for M&F households (88 %), but their land utilization was better than others.

RISING II is promoting 11 improved production practices, where the size of the land used for improved practices were collected for the first seven practices to report on indicator Outcome 2.1. These practices are shown in the list in Table 3.

Figure 17 shows that two-thirds (64 %) of households who had access to farmland practiced minimum tillage (ploughing land no or one time

Table 3: IMPROVED PRODUCTION PRACTICES

1	Quality seeds
2	Seedling preparation and transplantation
3	Crop rotation
4	Inter-cropping
5	Minimum tillage
6	Mulching
7	Integrated Pest management
8	Fertilizer tree plantation
9	Soil and water conservation
10	Vertiver/elephant grass plantation
11	Plant density

Figure 16 % of households with access to farmland and average land utilization rate, by household categories

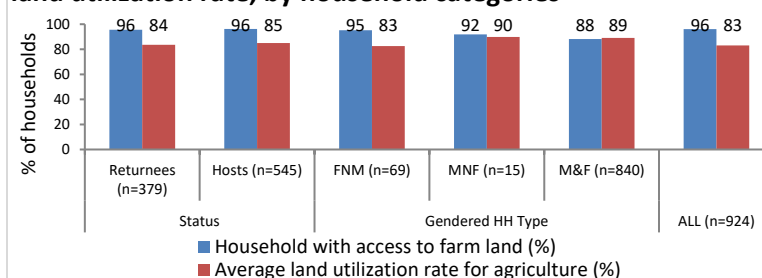
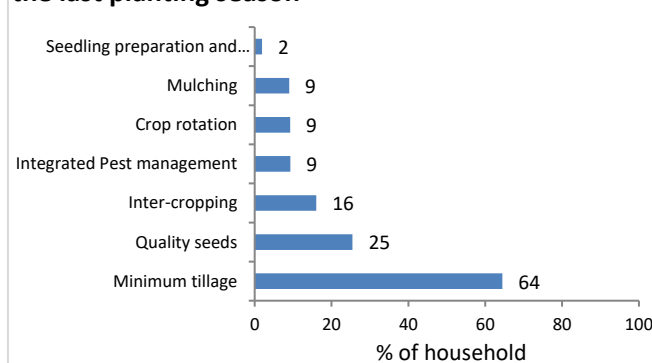
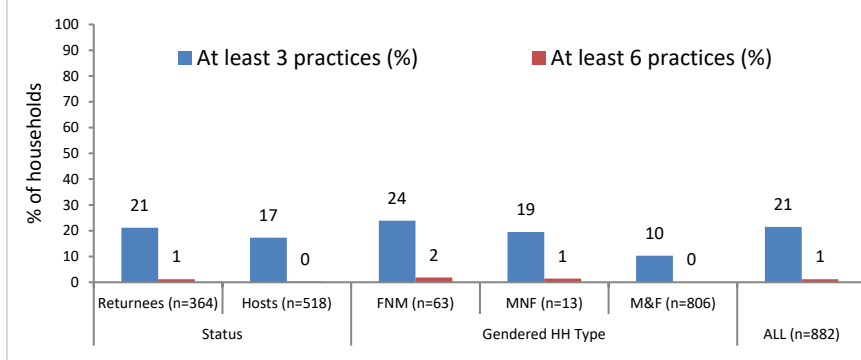


Figure 17 % of household with access to farmland practiced project promoted 7 improved practices in the last planting season



²³ Access to farm land is defined as “the farmer can use the land for farming irrespective of his or her own land or leased land or gift land”

Figure 18 % of farming households with at least 3 and at least 6 improved production practices, by household categories



before planting) and only a quarter (25 %) of households used quality seeds in the last season. The third highest (16 %) practice used was inter-cropping, followed by 9 % each for Integrated Pest management (IPM), crop rotation, and mulching practices. It seems seedling preparation and transplantation practices were not common among

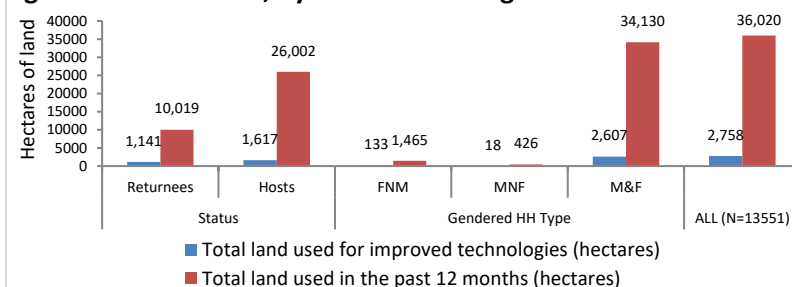
RISING II project participating households.

The eleven project promoted practices were combined and computed for both the use of at least three and at least six practices. **Figure 18** shows that less than a quarter (21 %) of households reported that they used at least 3 of the 11 project promoted practices in the last season, while only one % or none used at least 6 practices. FNM household were found with the highest percentage of using at least three practices (24 %) and M&F households had the lowest percentage (10 %). Returnees were found with a slightly higher %age of using at least three practices (21 %) than the households from host communities (17 %), but this difference is not statistically significant.

The **Outcome 2.1.1** indicator captures the total hectares of land with at least one RISING II project promoted technology or practice (out of seven, as mentioned above) applied in the last season or past 12 months. It does not matter how many total improved technologies or practices are applied to an area²⁴. Land with individual technologies or a practice was collected by first asking whether the farmer used or applied the specific technologies or practices in the last season or past 12 months. If the farmer answered “yes,” then he or she was asked how much land they used for this specific technology or practice in the reporting year. If the farmer applied promoted technologies to his or her plot several times in the year, the area of the plot was counted for the number of times used under this indicator. Since information for all of the seven practices was collected for the last season, it implies that the particular piece of land was used once in the reporting year for the any improved practices. The sum of the hectares of land used for individual technologies for all seven practices was obtained from sample households. Total hectares of land from the sample was extrapolated (weighted²⁵) for the total 13,551 (13,360 farmers and 191 agro-pastoralists) RISING II project participants.

Figure 19 shows the total number of hectares of land under improved agricultural technologies (2,758 hectares) was far below the total number of hectares of land used by farmers (36,020) in the same reporting period.

Figure 19 Number of hectares of land under improved agricultural methods, by household categories



²⁴ Feed the Future Indicator Handbook, October 2014

²⁵ Participant-Based Survey Sampling Guide for Feed the Future Annual Monitoring Indicators, Diana Maria Stukel, PhD, September 2018

This pattern was found to be consistent across all categories of households and the result corresponds to the percentage used of improved agricultural practices (Figure 17 and Figure 18).

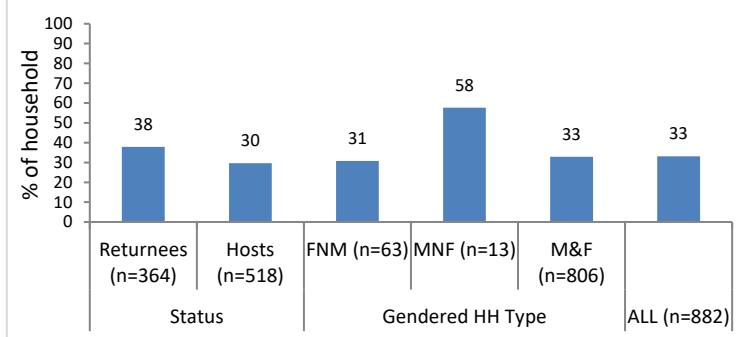
The **Outcome 2.1.2** indicator measures and tracks uninterrupted and sufficient seeds supply to the RISING II project participants. Access to sufficient seed means a household either has seed in hand (own stocks) or has the ability or

means to get it elsewhere (from neighbors, market, agro-dealers) timely planting according to the crop calendar. This is a general measure of seed security at the household level and takes into account the full range of channels through which farmers procure seeds to meet their household needs²⁶. One of these channels may be the receipt of relief seed. For RISING II the project seeds include millet, sorghum, groundnuts, and some vegetables and the project participating households should have access through the channels of RISING II project facilitated local vendors and private sectors through DiNER Fair with a voucher distribution system.

To compute this indicator, respondents were asked what crops and vegetables (project promoted) they produced in the past 12 months. Then they were asked if the seeds/seedlings supply was adequate, (more or less) of those individual crops and vegetables. **Figure 20** shows one-third (33 %) of participating households responded that they had adequate (or more) seed/seedlings supply when it was required for planting during the last season. Returnee households were found with relatively higher access to sufficient seeds (38 %) compared to households from the host community (30 %), but this difference is not statistically significant. Other household categories were consistent with the overall average, with the exception of MNF households. The sample size for MNF households in the sample was too small (only 13) to make any conclusion for this category.

The success of the outcome indicator “*OUTCOME 2.1: Number of months of HH food self-sufficiency as a result of improved agricultural production programming*” depends on the improvements of the indicators Outcome 2.1.1 and Outcome 2.1.2. Food self-sufficiency is defined as physical and economic access to adequate food for all household members. The number of months is an estimate of the ability to produce, purchase, store, or otherwise maintain a level of food consumption, without external assistance or inputs such that members of the household are not going hungry achieved with a degree of plausible attribution to USAID/OFDA-funded activities to improve food access²⁷.

Figure 20 % of HH with access to sufficient seeds to plant, by household categories

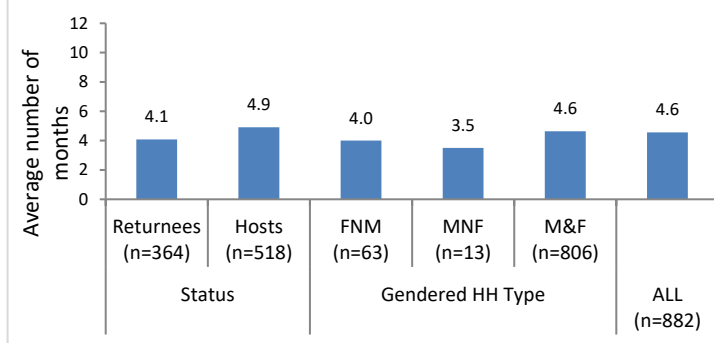


²⁶ OFDA Guideline/RISING II PIRS

²⁷ OFDA Guideline/RISING II PIRS from others.

The sample households were asked for how many months they expected to cover their household with adequate consumption from their own agriculture and livestock production and selling without support from others. The indicator was computed from the self-reported number of months that respondents believed to have food self-sufficiency. **Figure 21** shows, overall, the sample households believed that they would have only four and half months (4.6 months) of food sufficiency for all their household members from their own production or other sources without any supports. The average number of months was found to be relatively lower among returnees (4.1 months) than among households from host communities (4.9 months). The difference between returnees and hosts was statistically significant ($p < 0.01$). The MNF households were found with the least number of months (3.5 months) compared with FNM (4.0 months) and M&F households (4.6 months). The differences between M&F with FNM ($p < 0.10$) and MNF with M&F ($p < 0.01$) are statistically significant.

Figure 21 Number of months of household food self-sufficiency, by household categories

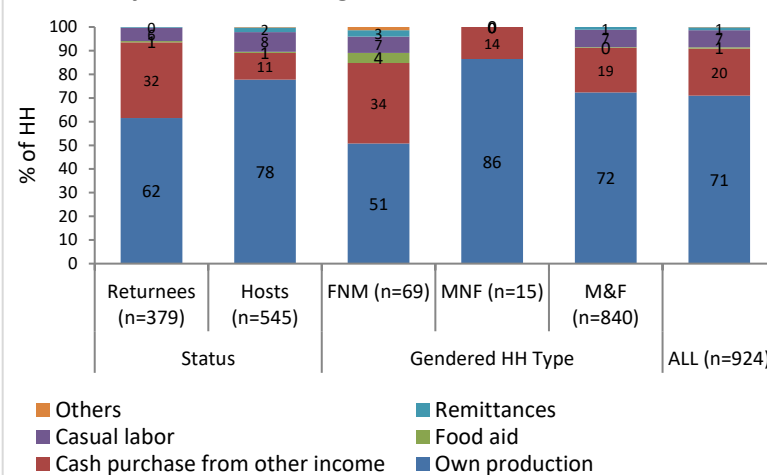


The average number of months was found to be relatively lower among returnees (4.1 months) than among households from host communities (4.9 months). The difference between returnees and hosts was statistically significant ($p < 0.01$). The MNF households were found with the least number of months (3.5 months) compared with FNM (4.0 months) and M&F households (4.6 months). The differences between M&F with FNM ($p < 0.10$) and MNF with M&F ($p < 0.01$) are statistically significant.

Figure 22 presents more than two-thirds (71 %) of households reported that the main source of food consumption was from their own production and one-fifth (20 %) from cash purchases from other income. The food source “own production” was found to be higher for MNF households (86 %) and households from host communities (78 %) and was found least for FNM households (51 %) and returnees (62 %). Households have more access to food their own production, (Figure 22)

(Figure 22) shows this positive relationship²⁸ with the number of months for household food sufficiency for all household members (Figure 21), while the main source “purchase food from other income” shows a negative relationship²⁹ with the number of months households report food sufficiency. Meaning the number of months households will be food sufficient is better when the main source of food is from their own production rather than from purchasing.

Figure 22 % of households with main source of food in the past 12 months, by household categories



1.1. Key Qualitative Findings on Improved Agricultural Practices

The qualitative interviews revealed some common themes across communities and states on the factors affecting their productivity. The main factors reducing farm productivity, presented by most commonly named factors first, are: rainfall shortages leading to lower yields; insects, birds or pests harming crops;

²⁸ Coefficient 0.902, $p = 0.011$ and $R^2 = 0.0186$

²⁹ Coefficient -1.598, $p = 0.000$ and $R^2 = 0.0452$

loss of soil fertility such as by repeat cultivation; poor seed quality; and limited agricultural land. The main factors reducing animal production are: shortages of fodder or grazing land; disease, exacerbated by lack of veterinary care and lack of access to vaccinations; and thieves.

Households have used various techniques to improve their production. For farming, the techniques reported to improve their production include early planting/cultivation to avoid attacks by pests, good weeding, and saving their best seeds or acquiring improved seeds. Community approaches include crop rotation and sharing a donkey plough to help each other cultivate more land. Some, though not all, community members interviewed were aware of the improved agricultural practices promoted under the project. The good practices employed by some for animal production include: ensuring good feeding by cultivating and storing fodder/grass; purchasing veterinary medicine and vaccination—though some doubt the quality of medicine in the market and mobile vaccinations provided by the government have only reached some areas; cross-breeding or raising improved animal types; and providing security against theft.

In all, the qualitative interviews reveal that the reality of unpredictable rainfall (drought and floods) and emerging pests and diseases (both plant and animal), combined with gradually-increasing prices, have dramatically changed households' production and their ability to engage with the market. The small markets or shops, if they exist, within the community do not offer many food options as households have low purchasing power to support these products. Households are also increasingly in debt to traders, hoping they can pay at harvest time. One respondent said of their purchases, "In the past, you may buy biscuits for your kids and the neighbors' children, but now only for your child." The increased prices for agricultural products are, of course, good for those who produce and sell. Yet, with the many production challenges facing these communities, many households do not produce enough to feed their families year-round, and thus, cannot afford supplementary food and necessities during the "hunger" months.

Key Findings and Recommendations:

- For better utilization of farmland that households have access to and use of, improved management practices and technologies are key for improved production, and these can build on the capacities and techniques already in use by many households. The RISING II project participants are not utilizing the land that they have access to fully and completely, but any farmland expansion must be done with the guidance of community leaders recognizing the competing need for grazing land.
- Farmers and agro-pastoralists are using minimum tillage practices relatively more than other improved practices. Other practices, such as the use of quality seeds, crop culture, and integrated pest management (IPM) are also important for better production. Indeed, lack of access to quality seeds was a strong theme among the qualitative interviews.
- Fewer participants have access to sufficient seed supply. Increased production can enhance household's food self-sufficiency. It is recommended that the RISING II project mobilize farmers and agro-pastoralists by linking them with local service providers for both technical and financial support in order to increase proper utilization of agricultural land.
- It is suggested that the project emphasize the improved practices of quality seeds, intercropping, IPM, seedling preparation and transplantation, crop rotation and mulching for improved production to achieve the three indicators related to this component.

F. WATER-SANITATION AND HYGIENE PRACTICES

Access to safe drinking water and hygienic sanitation facilities are important to ensure improved hygiene practices. This information was collected in addition to information on handwashing practices to report the RISING II logframe indicator “*OUTCOME 3.1.2: % of people targeted by the hygiene promotion program who know at least three (3) of the five (5) critical times to wash hands*”. Information for hand washing practices was collected for respondents

(disaggregated by gender) to estimate the indicator value for the % of people, although access to water and sanitation was collected for the household level. Approximately, one-third (29 %) of household reported that their main source of drinking water was “hand pump”, followed by 20 % using “unimproved hand dug wells”, 15 % “surface water” and 14 % “piped water into public places/donkey”, which is consistent across all household categories except for MNF households (**Figure 23**). Approximately half (45 %) of the MNF household rely on “unimproved hand dug well”.

Approximately, one-third (31 %) of the respondents realized that the water they used drinking was not safe (**Figure 25**). This percentage is consistent across the beneficiary categories with slightly higher percentages among the FNM households. Most participants (80 %) who reported the water to be unsafe, did not use anything to make the drinking water safe, while only 14 % use a filtration system to purify the drinking water (**Figure 24**). Other purification methods boiling and chlorine tablets were found to have very low percents (5.5%).

Figure 23 % of households with main sources for drinking water, by household categories

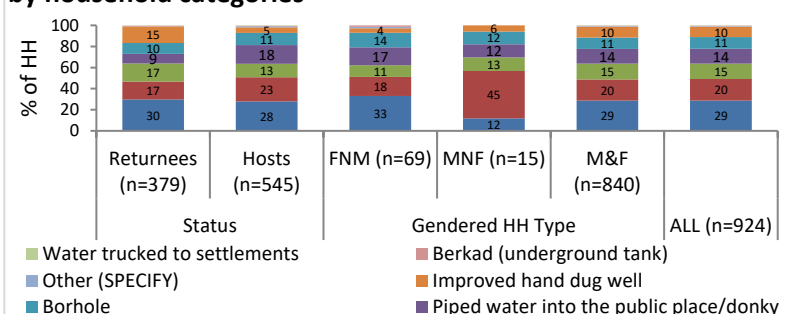


Figure 25 % of household reported that the drinking water they used was unsafe, by household categories

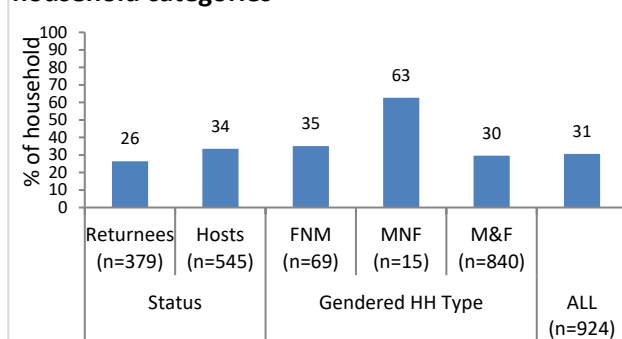
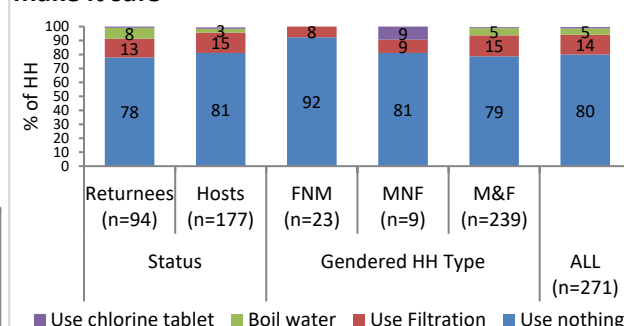


Figure 24 % of household who reported the drinking water was unsafe and used methods to make it safe



Ring-slab/Offset latrine (water seal), pit latrine (covered) and septic latrine are the three types of latrines considered to be improved latrines. **Figure 26** shows that only 19 % of households had access to improved latrines (15 % had covered pit latrines and 4 % had ring-slab/offset latrines with a water seal). More than half of the respondents (58 %) reported that they don't have any specific toilet facilities, which was reported by more than two-thirds among the FNM (68 %) MNF (70 %). Seventeen % of household reported having uncovered pit latrines and 6 % with had seal broken ring-slab/offset latrines, but these types of latrines are not considered to be improved latrines.

The indicator *OUTCOME 3.1.2* measures individuals' knowledge of hand washing practices at critical times which are most effective to prevent the spread of pathogens along the fecal-oral cycle. Information for hand washing practices was collected for respondents (disaggregated by male and female) to estimate the indicator value for % of people. The five critical times to wash hands are defined as:

1. After defecation/using the toilet;
2. Before eating;
3. After changing diapers or cleaning a child's bottom;
4. Before preparing food; and
5. Before feeding an infant.

The respondents were asked which occasions were important to wash one's hands. There were 10 occasions with five critical times that were included in the response list. Respondents who demonstrated that they knew at least three (3) of the (5) critical times to wash hands were counted in the calculation of the percentage for this indicator.

Figure 27 shows, most of the respondents perception on the importance of washing hands "before eating (85%)", while less than half also responded "after defecation (46%)" and "before food preparation (43%)". It seems "after cleaning baby's defecation (21%)" and "before feeding children (17 %)" were less important to respondents.

More than two-thirds (69%) of respondents reported the importance of hand washing for less than three critical times, where female respondents were found with slightly higher percentages for three or more critical times (**Figure 28**). Five percent of respondents did not mention any of the five critical times, where only 7% reported all five critical times. Nearly, one-third (31%) of respondents mentioned it is important to wash hands at least three critical times, where female respondents were found with relatively higher percentages (39%) than the male respondents (21 %) and this difference is statistically significant ($p < 0.01$) (**Figure 29**). The %ages for respondents from both host and returnees groups

Figure 26 % of households with toilet facilities, by household categories

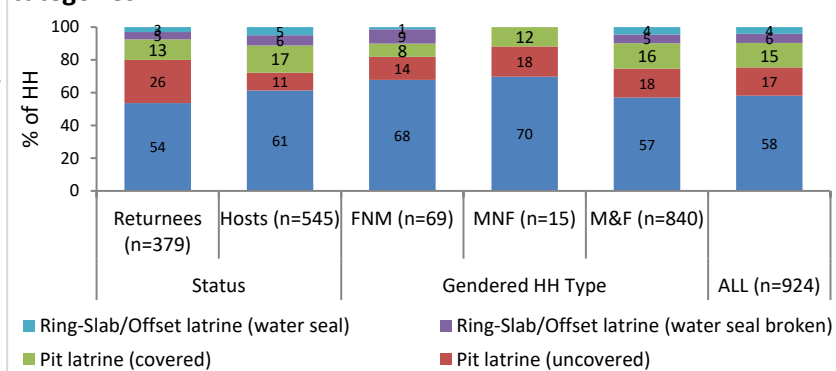


Figure 27 % of respondents with their perception on handwashing at 5 critical times

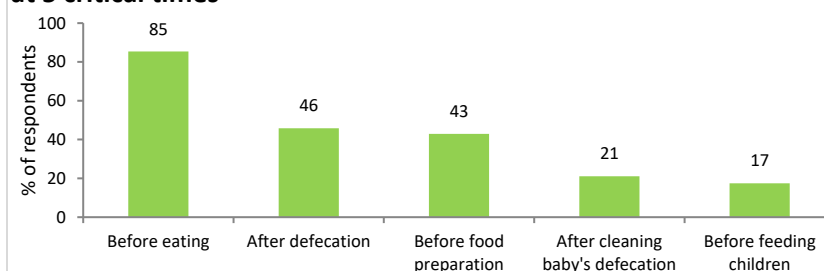
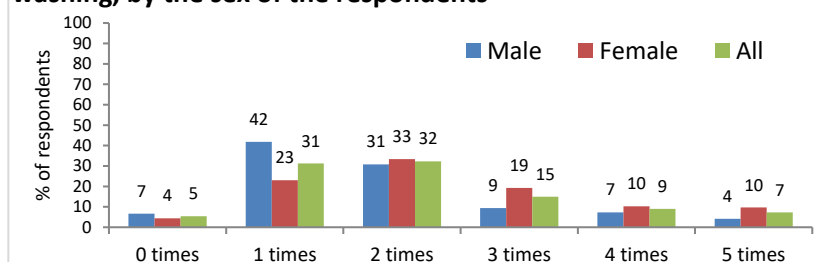


Figure 28 % of respondents on number of critical times for hand washing, by the sex of the respondents



were found to be consistent with overall average percentages, where respondents from FNM (29 %) and MNF (19 %) households were found with slightly lower percentages.

F1. Key Qualitative Findings on WASH

The qualitative data confirms that households face significant challenges with access to water

and sanitation. Most communities reiterated that they lack latrine or toilet facilities; equally, they lack access to adequate water sources. Two communities described how the hand pump for their water source was broken or dysfunctional for years, but the community had no mechanism to support the repair. In terms of latrines, one community member stated, “To be honest we don’t have sanitation facilities. We don’t have latrines. Almost all our households here defecate in the bush.” This has a profound impact on the health and nutrition of all community members, as they regularly face diarrheal and other disease.

Communities say they have some knowledge of hand-washing and its benefits, but they face various barriers to putting it into practice. Returnee households, according to qualitative interviews, are more likely to have awareness of hygiene practices because they were exposed to this information through health campaigns in the displacement camps. Yet, the barriers that exist still prevent the adoption of hygiene practices, namely the lack of water for washing and inability to afford soap. In a context of water scarcity, water is prioritized for drinking only. There may also be an attitudes/belief barrier to changing behaviors around hand-washing or hygiene, as explained in this quote by a community member: “We lack soap for hand washing. Although we received many awareness sessions [by NGO] on health messages focusing on hand washing, social distance, and not shaking hands [for Covid-19], culturally, we are still far behind in implementing all these messages.” However, the qualitative study finds the environmental barriers far exceed that of attitudes for WASH promotion.

Key Findings and Recommendations:

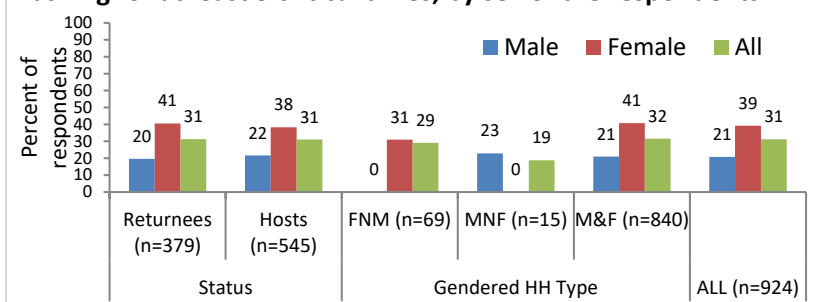
- Access to safe water and improved sanitation facilitation was found to be very poor.
- Knowledge on hand washing at critical times was also extremely low and communities lack access to soap and sufficient water for hand washing. People were found to not use any water purifying or safety methods to make drinking water safer although they reported drinking water to be not safe for consumption.
- The project is working on increasing access to water, but also needs to educate people on how to make drinking water safe, as well as how to improve their access to soap. Access to both water and sanitation facilities are crucial for the enabling environment of good nutrition and hygiene behaviors.

G. INFANT AND YOUNG CHILD FEEDING PRACTICES

Information was collected for children ages 0-23 months for the following two Infant and Young Child Feeding (IYCF) indicators for the RISING II baseline:

1. **OUTCOME 3.1:** Proportion of children 6-23 months of age who receive foods from 4 or more food groups.

Figure 29 % of respondents mentioned the importance of hand washing for at least 3 critical times, by sex of the respondents



2. **OUTCOME 3.1.1:** Proportion of infants 0-5 months of age who are fed exclusively with breast milk.

The WHO/UNICEF Infant and Young Child feeding guideline was used to collect information and compute these two outcome indicators.

OUTCOME 3.1:

Mothers or caregivers of children 6-23 months of age were asked about the food or food groups that the child was fed during the past 24 hours (previous day). Information was collected for 19 foods or food groups. These 19 foods or food groups were re-grouped into the following 7 food groups based on the WHO/UNICEF IYCF indicator guideline:

1. Grains, roots and tubers
2. Legumes and nuts
3. Dairy products (milk, yogurt, cheese)
4. Flesh foods (meat, fish, poultry and liver/organ meats)
5. Eggs
6. Vitamin-A rich fruits and vegetables
7. Other fruits and vegetables.

Consumption of any amount of food by children 6-23 months from each of the food groups is sufficient to “count”. i.e., there is no minimum quantity, except if an item is only used as a condiment. Children 6–23 months of age who received foods from four or more (≥ 4) food groups during the previous day were counted in the computation of this indicator.

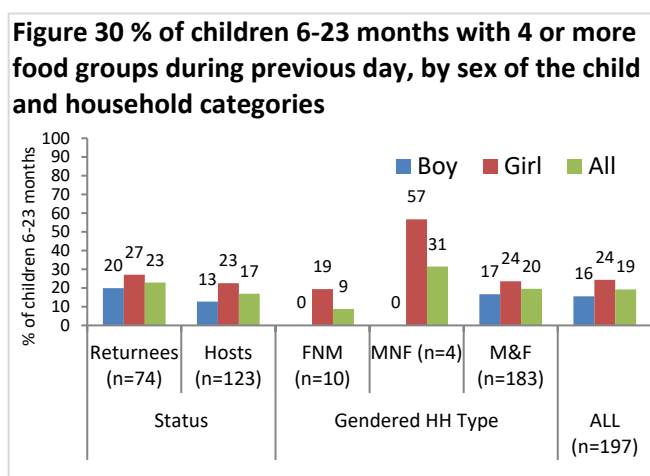


Figure 30 shows that only 19 % of children 6-23 months were fed four or more food groups during the previous day, where girl children were found to have a higher % (24 %) than boy children (16 %). This difference is statistically significant ($p < 0.10$). Children from Returnee households were found to have slightly higher diet diversity (23 %) than children from host community households (17 %), but the difference is not statistically significant. Percent of boys and girls from M&F³⁰ households were found consistent with overall percentages.

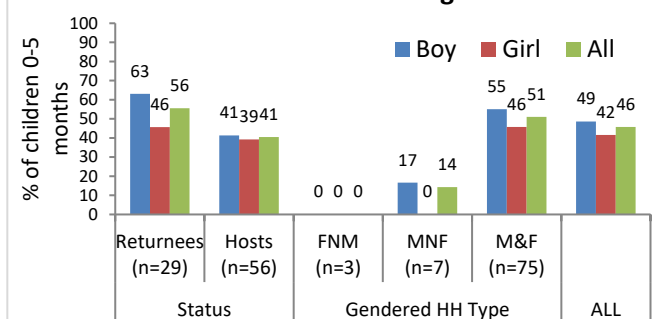
OUTCOME 3.1.1:

Child feeding information was also included for breast feeding children 0-23 months, but to compute this indicator the child feeding information was used for children ages 0-5 months. “Fed Exclusively” is defined for infants (0-5 months) that were fed breastmilk (including milk expressed from a wet nurse) and nothing else, not even water in the previous day (past 24 hours). The infants were also counted for this indicator if they had taken oral rehydration salts (ORS) and/or drops/syrups (vitamins, minerals, medicines). Thus, children 0-5 months who were fed only breastmilk with the exception of vitamins/minerals/medicine in the past 24 hours (previous day) were counted toward this indicator.

³⁰ Sample size for children 6-23 months is not enough for FNM and MNF households to report on this indicator.

Figure 31 shows, nearly, half (46 %) of children 0-5 months of age were fed exclusively breastmilk during the previous day, which was found to have a relatively higher percentage (49 %) for boys than for girls (42 %), but this difference is not statistically significant. Approximately, two-thirds (63 %) of boy children 0-5 months from returnee households were found to be exclusively breastfed, where less than half (41 %) of boy children were exclusively breastfed from the host community households. Overall, 56 % of returnee children were exclusively breastfed, while 41 % of host community children had the same, but the difference is not statistically significant. This % was slightly higher for both boys and girls among M&F³¹ households than overall averages.

Figure 31 % of children 0-5 months were exclusively breastfed during the previous day (past 24 hours), by sex of the child and household categories



G1. Key Qualitative Findings on IYCF

The challenges of child nutrition, as described through the qualitative interviews, may be grouped into two main categories: challenges regarding households' conceptual understanding of the practices and the enabling environment. First, households lack full awareness of IYCF practices and there are various cultural beliefs that inhibit the practices. Communities across the Darfur states noted that they lack knowledge of diverse feeding for children and how to best utilize the foods available to them. As with WASH messaging, returnee households may have more awareness of child nutrition because of information they received in the displacement camps. There are also many cultural beliefs, particularly around breastfeeding, that disrupt the practices of exclusive breastfeeding through six months and supplementary breastfeeding for two years. These beliefs are upheld by elders, grandmothers, and mothers, among other members of the community. For instance, one community described the belief that if a mother becomes pregnant, she must stop any current breastfeeding. Another community reported their belief that a mother will become too exhausted and her health will suffer if she begins immediate breastfeeding after birth, and that is good to give a child a salt and sugar drink during their first six months; or, another belief was described in which a newborn is given goat milk if the mother is having issues producing milk after birth. Multiple communities cited the increased problem of mothers not being able to produce milk, likely because of her nutritional deficiencies according to program staff. Further, most mothers do not receive pre/post-natal exams as they lack access to health centers (i.e., distance to the closest center is too far to access regularly), which was reported by all communities interviewed.

Second, households and caregivers need an enabling environment for child nutrition practices: this includes access to affordable and diverse foods for PLW and children, access to local maternal and child health services, and strategies to support caregivers to adopt these practices. Many mothers are reported to be busy with agricultural, household, and other IGA work in addition to their caregiving. Thus, this necessitates a household and community-wide response to understand the clear benefits of IYCF practices and to work together to enable their implementation.

³¹ Sample size for children 0-5 months is not enough for FNM and MNF households to report on this indicator

Key Findings and Recommendations:

- The prevalence of exclusive breastfeeding practices and diet diversity for infant and young children was found to be much lower than previous surveys (i.e., Taadoud II baseline, RISING I baseline, and the Taadoud II 2019 interim survey).
- This indicates that the RISING II project participants have a lack of knowledge of IYCF feeding practices as well as significant barriers to the practice (e.g., cultural beliefs, and enabling environment including access to health and nutrition services). The diet diversity also depends on the availability of diversified food at the household level.

It is suggested to target and register PLW and mothers to understand the importance of and barriers of IYCF practices, and to conduct regular follow-up with them to track the use of these practices and to provide basic maternal and child health promotion within the community. Further, the promotion of IYCF practices should focus on addressing cultural beliefs/barriers with PLW/mothers as well as other community members who uphold those beliefs.

Annex I Detail on RISING II Baseline Survey Indicators

Annex I Detail on RISING II Baseline Survey Indicators

INDICATOR	All			HH STATUS			HH LIVELIHOOD			GENDERED HH TYPE				HH HEAD SEX			AGENCY*				
	Total	95% CI	D. Eff.	Returnee	Host	Sig.	Farmer	Pastoralist	Sig.	Adult Female no Adult Male (FNM)	Adult Male no Adult Female (MNF)	Male and no Female Adults (M&F)	Child no Adults (CNA)	Female	Male	Sig.	CAFOD (North)	CRS (East)	CRS (West)	NCA (Central)	WVI (South)
7. OUTCOME 2.2: % of beneficiaries reporting net income from their livelihood.	72.9	(66.4, 79.4)	1.993	73.1	72.8		72.5	88.2	0.049	67.9	69.5	73.3		72.6	73.1		60.5	79.3	74.9	94.9	59.3
8. OUTCOME 2.1.1: Number of hectares under improved agricultural methods	2,758			1,141	1,617		2,703	55		133 ^{a(0.004), b(0.000)}	18 ^{c(0.000)}	2,607		790	1,968	0.000	747	59	59	622	1,271
Extrapolated for total 13,551 (13,360 farmers + 191 Pastoralist) RISING II project participants																					
Total land used in the past 12 months (hectares)	36,020			10,019	26,002		34,913	1,107		1465	426	34,130		11,521	24,499		14,765	2,501	1,691	5,277	11,786
% of HH with at least 3 practices	21.1			17.3	23.9		21.2	19.4		19.5	10.3	21.5		21.4	21.0		26.4	2.0	12.5	36.0	14.1
% of HH with at least 6 practices	1.2			0.3	1.8		1.2	-		1.5	0.0	1.2		2.9	0.2		-	-	-	4.8	-
%of HH access to farmland	95.6	(93.8, 97.4)	1.34	96.2	95.1		95.7	88.5		91.8	88.2	96.1		95.4	95.7		95.4	83.3	98.1	95.0	97.4
% of land utilization	83.6	(81.5, 85.7)	1.23	85.0	82.6		83.7	79.1		89.8 ^{b(0.012)}	89.1	83.0		86.0	82.2	0.019	79.2	77.3	84.0	85.5	85.4
n (unweighted)	882			364	518		868	14		63	13	806		325	557		186	50	56	228	362
9. OUTCOME 2.1.2: % of HH with access to sufficient seed to plant.	33.1	(26.9, 39.3)	1.93	37.9	29.6		33.3	20.9		30.8 ^{a(0.088)}	57.7 ^{c(0.083)}	32.8		26.1	37.1	0.001	14.9	46.0	41.1	35.5	37.3
10. OUTCOME 3.1: Proportion of children 6-23 months of age who receive foods from 4 or more food groups.	All	19.3	(13.0, 25.5)	1.10	22.9	16.9	19.6	0.0		8.8	31.5	19.6		12.0	23.4	0.064	22.5	10.5	27.8	16.9	16.7
	Boy	15.6	(8.3, 22.8)	1.04	19.9	12.8				0.0	0.0	16.7									
	Girl	24.4	(15.3, 33.4)	0.96	27.1	22.6				19.4	56.7	23.6									
	n	197			74	123	194	3		10	4	183		73	124		36	19	29	59	54
(unweighted)																					
11. OUTCOME 3.1.1: Proportion of infants 0-5 months of age who are fed exclusively with breast milk	All	45.7	(31.8, 59.7)	1.26	55.6	40.5	46.3	0		0.0	14.3 ^{c(0.000)}	51.0		39.3	49.2		45.3	0.0	26.9	44.4	57.0
	Boy	48.7	(31.2, 66.1)	1.18	63.1	41.4				0	17	55									
	Girl	41.6	(24.3, 58.9)	1.003	45.7	39.3				0	0	45.7									
	n	85			29	56	84	1		3	7	75		30	55		20	2	12	18	33
(unweighted)																					
12. OUTCOME 3.1.2: % of people targeted by the hygiene promotion program who know at least three (3) of the five (5) critical times to wash hands	All	31.1	(24.6, 37.7)	2.136	31.3	31.0	31.4	17.2	0.095	29.1	18.8	31.5		40.7	25.6	0.003	25.2	13.3	8.8	60.4	23.7
	Male	20.8	(14.2, 27.3)	1.598	19.7	21.6	20.9	13.5		0.0	22.8	20.9		14.1	21.3		23.9	11.5	6.2	52.3	8.8
	Female	39.2	(31.3, 47.2)	1.841	40.5	38.3	39.6	19.9		31.0	0.0	40.7		43.1	33.5	0.078	26.3	14.7	11.1	64.9	36.5
n (unweighted)		924			379	545	908	16		69	15	840	0	341	583		195	60	57	240	372
n (weighted)		980			402	578	963	17		73	16	891	0	362	618		200	60	80	240	400

*Sample size is not representative by agency

Annex II RISING II Baseline Survey Quantitative Analysis Tables and Qualitative Summary

Table 4 Survey sample and non-responses

INDICATORS	DARFUR PROGRAM STATE					GENDERED HH TYPE				HOUSEHOLD STATUS		LIVELIHOOD TYPE			HH HEAD GENDER		ALL
	CAFOD-NORTH	CRS-EAST	CRS-WEST	NCA-CENTRAL	WVI-SOUTH	FNM	MNF	M&F	CNA	Returnees	Host communities	Farmer	Pastoralist	Nomads	Female	Male	
1.1. Target Sample Size	200	60	80	240	400												980
1.2. Number of non-response cases	5	-	23	-	28												56
1.3. Non-response rate	2.5	-	28.8	-	7.0												5.7
1.4. Number of interviewed cases (n)	195	60	57	240	372	69	15	840	-	379	545	908	16	-	341	583	924
1.5. % of interviewed cases (weighted)	19.5	5.7	11.1	22.7	41.0	7.6	1.7	90.7	-	41.6	58.4	98.2	1.8	-	36.5	63.5	100

Table 5 Respondent's profile

Indicators	DARFUR PROGRAM STATE					GENDERED HH TYPE				HOUSEHOLD STATUS		LIVELIHOOD TYPE			HH HEAD GENDER		ALL
	CAFOD-NORTH	CRS-EAST	CRS-WEST	NCA-CENTRAL	WVI-SOUTH	FNM	MNF	M&F	CNA	Returnees	Host communities	Farmer	Pastoralist	Nomads	Female	Male	
2.1. Mean age of respondents	43.8	39.0	35.3	32.6	39.0	39.4	32.9	38.1	-	36.2	39.5	38.0	42.9	-	38.0	38.1	38.1
2.2. Primary Respondent (% of sample)																	
Household Head	73.1	73.3	63.3	83.8	65.7	83.3	46.4	71.4	-	79.2	66.7	72.1	63.7	-	85.5	64.1	71.9
Spouse	4.1	-	-	4.2	0.6	-	-	2.3	-	1.7	2.4	1.9	12.7	-	4.8	0.5	2.1
Others	22.8	26.7	36.7	12.1	33.7	16.7	53.6	26.3	-	19.1	30.9	26.0	23.6	-	9.7	35.4	26.0
<i>n (unweighted)</i>	195	60	57	240	372	69	15	840	-	379	545	908	16	-	341	583	924

Table 6 Household demographics

Indicators	DARFUR PROGRAM STATE					GENDERED HH TYPE				HOUSEHOLD STATUS		LIVELIHOOD TYPE			HH HEAD GENDER		ALL
	CAFOD-NORTH	CRS-EAST	CRS-WEST	NCA-CENTRAL	WVI-SOUTH	FNM	MNF	M&F	CNA	Returnees	Host communities	Farmer	Pastoralist	Nomads	Female	Male	
3.1. Household size	6.9	6.6	6.2	6.3	6.7	4.8	4.7	6.8	-	6.2	6.9	6.6	6.1	-	6.1	6.9	6.6
3.2. Sex of the HH Head																	
Male	57.7	63.3	64.2	54.6	71.6	-	100.0	68.1	-	59.8	66.1	63.6	58.3	-			63.5
Female	42.3	36.7	35.8	45.4	28.4	100.0	-	31.9	-	40.2	33.9	36.4	41.7	-			36.5
<i>n (unweighted)</i>	195	60	57	240	372	69	15	840	-	379	545	908	16	-	341	583	924
3.3. Age distribution of HH head																	
below 10 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-15 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-49 years	61.5	73.3	68.6	77.9	70.8	74.9	74.3	70.2		73.8	68.4	71.2	41.7	-	77.4	66.8	70.6
50-65 years	38.5	26.7	31.4	22.1	29.2	25.1	25.7	29.8		26.2	31.6	28.8	58.3	-	22.6	33.3	29.4

Indicators	DARFUR PROGRAM STATE					GENDERED HH TYPE				HOUSEHOLD STATUS		LIVELIHOOD TYPE			HH HEAD GENDER		ALL
	CAFOD-NORTH	CRS-EAST	CRS-WEST	NCA-CENTRAL	WVI-SOUTH	FNM	MNF	M&F	CNA	Returnees	Host communities	Farmer	Pastoralist	Nomads	Female	Male	
65+ years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.4. Education of HH head																	
<i>No education</i>	27.3	56.7	58.8	39.2	38.8	62.4	48.7	37.1	-	40.8	38.1	39.1	46.8	-	62.8	25.7	39.3
<i>Not primary level</i>	26.8	15.0	6.9	0.4	12.3	10.0	11.8	12.3	-	9.4	14.0	12.1	11.5	-	8.7	14.1	12.1
<i>Primary level</i>	8.7	3.3	17.7	23.3	17.1	11.2	20.9	16.4	-	16.8	15.6	16.2	12.7	-	13.6	17.6	16.1
<i>Khalwa</i>	25.5	21.7	16.7	29.6	20.3	15.0	-	24.6	-	23.4	23.4	23.5	17.2	-	12.1	29.9	23.4
<i>Secondary level</i>	10.8	1.7	-	5.0	9.3	1.4	6.6	7.9	-	7.2	7.4	7.4	6.0	-	2.6	10.0	7.3
<i>Above secondary level</i>	1.0	1.7	-	2.5	2.2	-	12.0	1.8	-	2.3	1.4	1.7	5.7	-	0.3	2.7	1.8
<i>Other (SPECIFY)</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.6. Marital Status of HH head																	
<i>Married</i>	84.7	75.0	72.0	91.7	79.9	24.9	53.4	88.3	-	81.7	83.7	82.8	82.8	-	63.3	94.1	82.8
<i>Divorced/Separated</i>	1.0	3.3	5.4	4.6	5.4	23.9	11.8	2.4	-	4.2	4.2	4.3	-	-	9.2	1.3	4.2
<i>Widowed</i>	11.2	15.0	12.7	1.7	11.0	43.7	15.0	6.1	-	9.5	8.9	9.1	11.5	-	23.7	0.7	9.1
<i>Never married</i>	2.6	6.7	8.4	2.1	3.7	4.5	19.8	3.3	-	4.7	2.9	3.6	5.7	-	3.3	3.9	3.6
<i>Refused</i>	0.5	0.0	1.5	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.4	0.2	0.0	0.0	0.6	0.0	0.2
3.5. Primary Occupation of HH head																	
<i>Crop farming</i>	95.5	96.7	96.0	93.3	92.7	87.5	87.5	94.6	0.0	94.1	93.8	94.3	77.1	0.0	95.1	93.3	93.9
<i>Livestock farming</i>	0.0	0.0	0.0	1.7	0.3	1.3	5.9	0.3	0.0	0.5	0.5	0.2	17.2	0.0	0.6	0.5	0.5
<i>Daily work</i>	0.0	0.0	0.0	0.8	0.8	1.3	6.6	0.3	0.0	0.5	0.5	0.4	5.7	0.0	0.6	0.5	0.5
<i>Skilled work</i>	0.0	0.0	2.5	0.4	0.8	0.0	0.0	0.7	0.0	1.3	0.2	0.6	0.0	0.0	0.0	1.0	0.6
<i>Salaried employment/job</i>	0.0	0.0	0.0	2.5	0.5	0.0	0.0	0.9	0.0	1.3	0.5	0.8	0.0	0.0	0.3	1.1	0.8
<i>Business</i>	1.5	1.7	1.5	0.4	3.1	3.0	0.0	1.9	0.0	1.3	2.3	1.9	0.0	0.0	1.2	2.3	1.9
<i>Others (SPECIFY)</i>	0.5	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.3	0.0	0.1
<i>None</i>	2.5	1.7	0.0	0.8	1.8	5.4	0.0	1.3	0.0	1.0	1.9	1.6	0.0	0.0	2.0	1.3	1.6
3.6. Disability of HH head																	
<i>None</i>	83.6	90.0	81.4	94.2	92.9	84.1	84.0	90.8	0.0	93.6	87.8	90.2	88.5	0.0	89.1	90.9	90.2
<i>Partial visual impairment</i>	9.2	1.7	4.9	2.9	4.3	7.0	16.0	4.5	0.0	3.0	6.2	4.9	5.7	0.0	5.0	4.8	4.9
<i>Total visual impairment</i>	1.5	0.0	1.5	0.0	0.3	2.8	0.0	0.4	0.0	0.5	0.5	0.5	0.0	0.0	1.5	0.0	0.5
<i>Partial hearing impairment</i>	4.1	0.0	4.4	0.8	0.3	4.8	0.0	1.3	0.0	0.9	2.0	1.5	5.7	0.0	2.1	1.2	1.5
<i>Total hearing impairment</i>	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.3	0.0	0.1
<i>Mobility and orthopedic</i>	4.1	8.3	9.3	1.7	2.4	4.1	9.1	3.3	0.0	2.5	4.2	3.6	0.0	0.0	2.2	4.2	3.5
<i>Mental impairment</i>	0.5	0.0	5.4	0.0	0.0	0.0	0.0	0.6	0.0	1.1	0.2	0.6	0.0	0.0	1.5	0.0	0.5
<i>Other</i>	1.1	0.0	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.0	0.5	0.3	0.0	0.0	0.6	0.2	0.3
<i>Don't know</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Refused</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>n (unweighted)</i>	195	60	57	240	372	69	15	840	-	379	545	908	16	-	341	583	924

Qualitative Summary Report – Rising II Baseline

METHODS SUMMARY:

The RISING II baseline study took a Covid-19 pandemic-sensitive and streamlined approach focused on limited qualitative data collection at the community level. This qualitative information was used to conduct more in-depth context analysis and interpretation of issues in order to complement the quantitative analysis. The main focus of the qualitative data collection included: i) community market systems and livelihoods situation, including capacities, opportunities where gaps in service exist, and challenges (also brief discussion on feasibility of cash transfer mechanisms); ii) community governance and management related to natural resources and shocks; and iii) overview of nutrition and hygiene challenges and behaviors. This report is outlined around these three focus areas.

The qualitative study was comprised of small focus group discussions (FGD) and key informant interviews (KII) to gain both community and household level perspectives, including (if they exist in the community): CAG members, community leaders, farmers/agro-pastoralists, market actors, community agricultural extension works (CEW), and health/nutrition stakeholders or community health promoters (CHP), all of whom are potential participants and/or stakeholders of the RISING II project.

The qualitative research was carried out among a randomly selected sub-set of 10 communities out of the 41 communities included in the overall quantitative sample. In each program state, one returnee community and one host community were randomly selected (if both categories of household status were present), and for each selected community the teams sought to conduct the following four types of interviews: 2 FGD with agro-pastoralist/farmer households; 1 FGD or KII with community leaders, CAG members, or community extension worker; 1 KII with a trader/market value chain actor; and 1 KII with a health/nutrition stakeholder. Therefore, the qualitative study aimed to conduct 50 interviews total, split between returnees and host communities, across the five Darfur states.

The qualitative fieldwork resulted in 49 total interviews (131 male, 36 female) across 11³²

communities of Darfur. One limitation is that only three of the communities were returnee (one each from East, West, and Central states) due to mis-categorization of their status in the sample list; this means the ability to analyze the qualitative data to discuss differences between host and returnee status is limited. For other limitations to the qualitative study, please refer to the full inception report.

TANGO developed a Topical Outline (TO) for each of the main interview topics along with guidelines for the data collection process and training. The virtual training took place the week of 15 June, over four days with a 3-hour webinar session and “homework” each day; this was followed by the data collection for one week. The support team of CRS MEAL Khartoum assisted with the immediate oversight of data collection and coordination of the five state-based teams, while TANGO provided quality control and immediate feedback as qualitative notes were submitted. TANGO conducted the qualitative analysis and reporting, with the local team members providing feedback on preliminary analysis through a feedback session.

³² The South Darfur team was able to add the third community (selected as an alternate) during their fieldwork because of their time and availability.

RESULTS:

- i) *Community market systems and livelihoods situation, including capacities, opportunities where gaps in service exist, and challenges (also brief discussion on feasibility of cash transfer mechanisms)*

Livelihood and Income Activities: Interviews with farmers/agro-pastoralists and community leaders reported crop agriculture for consumption and sale as the primary livelihood. In one state, the community explained that farmers with more resources will also grow vegetables along with the staple crops like millet and sorghum. Youth and women also participate in farming, though may focus on different crops; some communities reported that youth focus on cash crops, and that women are less likely to cultivate crops that require pumped water or high costs in inputs or labor. Other income generating activities (IGA) and work opportunities are limited for most communities. Youth also tend to do daily labor or migrate to work in the mining industry or nearby towns. Women take part in various other IGA, including traditional handicrafts or perfume-making, which were reported by communities in at least three of the Darfur states. In addition, across the five Darfur states, the communities interviewed described livestock production as part of their livelihood, most commonly raising goats and sheep, as well as cattle.

Both host and returnee households take part in farming, according to qualitative interviews, with no differences reported in the types of crops produced based on this household status. Upon their return from displacement, some households explained that they found their previous land was used by others. In these cases, a community committee would identify land that could be gifted or temporarily loaned to the returnees. The differences between hosts and returnees in livelihoods, as perceived by a returnee and articulated below, is mostly related to asset ownership:

“HOWEVER, WE ARE RETURNEES, AND I THINK THE FOLLOWING MIGHT BE THE DIFFERENCES: FIRST, HOST COMMUNITIES MIGHT STILL HAVE THEIR LAND UNDER THEIR CONTROL WHILE SOME RETURNEES MIGHT HAVE HAD THEIR LANDS OCCUPIED BY OTHER PEOPLE WHILE THERE WERE IN THE DISPLACEMENT. THEREFORE, THEY FACE SOME PROBLEMS IN ORDER TO GET THEIR LAND BACK. SECOND, WE THINK THAT HOST COMMUNITIES ARE MORE RESILIENT THAN RETURNEES BECAUSE THEY DIDN’T LOSE THEIR PROPERTIES...AND HAVE MORE ASSETS COMPARED TO RETURNEE HOUSEHOLDS.” ~[RETURNEE] COMMUNITY MEMBER

Accordingly, the host communities may produce more animals while some returnee communities have fewer animals or tend to solely conduct farming activities; this is attributed to returnees losing their assets during displacement, assets such as land and animals, which have not been restored to pre-displacement levels. One returnee community explained that they no longer raise cattle because of the security risks involved (see quote below).

“WE HAVE GOATS AND SHEEP AS WELL AS DONKEYS, BUT WE DON’T HAVE COWS BECAUSE WE FEAR STEALING OR LOOTING. OUR COWS WERE LOOTED SINCE THE START OF THE WAR IN THE AREA, AND THEREFORE, WE STOPPED REARING THEM.” ~[RETURNEE] COMMUNITY MEMBER

Factors Reducing Production: The qualitative interviews revealed some common themes across communities and states on the factors affecting their productivity. The main factors reducing farm productivity, presented by most commonly named factors first, are: rainfall shortages leading to lower yields; insects, birds or pests harming crops; loss of soil fertility due to repeat cultivation; poor seed quality; and limited agricultural land. While most communities named lack of rain as a stress to their production, communities in at least one state face heavy rains and flooding that cause soil erosion and low production. The main factors reducing animal production are: shortages of fodder or grazing land; disease, exacerbated by lack of veterinary care and vaccinations; and theft. In addition, all household

production is affected by insufficient income and capital to acquire the necessary inputs or fuel for their production.

Pest and disease management were prevalent challenges described by both crop and animal producers. Many households report new and emerging pests and diseases affecting their production (see quote below).

“I BELIEVE THE LOSS [FROM BUDA PARASITE] WILL BE AT LEAST 30% OF THE WHOLE PRODUCTION ... THIS LOSS IS VERY HIGH FOR VULNERABLE FARMERS WITH LESS RESOURCES.” ~COMMUNITY MEMBER

Households feel they mostly deal with these challenges alone, receiving very little external livelihood assistance or technical support of any kind. However, one community leader interviewed reported that they received seeds from the government in the past, though the seeds arrived late. Another community reported that they received improved seeds and tools from the partner NGO³³. Some communities have experienced indirect benefits of NGO projects in nearby communities; for example, one community noted receiving vaccinations from nearby community animal health workers (CAHW) who were supported by the Taadoud project (UKAID/DFID-supported).

Improved Agricultural Practices: Households have used various techniques to improve their production. For farming, the most common techniques reported to improve their production include:

- early planting/cultivation to avoid attacks by pests;
- good weeding; and
- saving their best seeds or acquiring improved seeds.

Community approaches to improve production include coordinated crop rotation, sharing the cost of buying quality seeds, and sharing a donkey plough to help each other cultivate more land. Multiple interviews stated that it has become more common in recent years to use a plough. Some, though not most, of the communities interviewed were aware of additional improved agricultural practices such as those promoted specifically under the project, including: spacing plants for ventilation, tillage and reverse gradient, insecticides, diverting streams for gardens, composting of animal manure and plant leaves, etc. One community reported learning some of these techniques from NGOs, others report they are traditional practices.

“WE INHERITED THIS TECHNIQUE [PLANT SPACING] FROM OUR PREDECESSORS.” ~COMMUNITY MEMBER

The improved practices currently employed for animal production include:

- ensuring good feeding by cultivating and storing fodder/grass;
- purchasing veterinary medicine and vaccination—though some doubt the quality of medicine in the market, and mobile vaccinations provided by the government have only reached some areas;
- cross-breeding or raising improved animal types; and
- providing security against theft.
- Some households also report sharing the cost of buying livestock medicines or vaccinations.

Market Conditions (non-COVID-19-related): Interviews across all five Darfur states confirmed that market prices for inputs and basic necessities were rising in past years, making it increasingly difficult for households to afford the transport to the market or the purchase of agricultural inputs for their livelihood activities. The communities attribute the price increases to nationwide inflation, national fuel shortages, and increased demand—i.e., due to low supply/production and increased exports. Then,

³³ Specific NGOs intentionally not named to ensure community locations are anonymous.

Covid-19 caused a significant spike in prices, among other livelihood and market impacts (see next section). Overall, the main factors inhibiting households' access to markets are distance to the market and lack of transportation/or lack of affordable transportation, rain/floods, and security; but also, many households simply may not access the market because of lack of income or inability to trade. The community-based solutions to these market access issues include sharing the cost of transport, and for weather conditions, relying on the youth to make the difficult journey.

The small markets or shops, if they exist within the community, do not offer many food options as households have less purchasing power. Households are also increasingly in debt to traders, hoping they can pay at harvest time. The increased prices for agricultural products are, of course, good for those who produce and sell. Yet, with the many production challenges facing these communities, many households do not produce enough to feed their families year-round, and thus, cannot afford to buy supplementary food and other necessities (e.g., sugar, oil, tea, medicine) during the "hunger" months.

"IN THE PAST, YOU MAY BUY BISCUITS FOR YOUR KIDS AND THE NEIGHBORS' CHILDREN, BUT NOW ONLY FOR YOUR CHILD." ~COMMUNITY MEMBER

Communities from two different Darfur states explained that this situation of rising prices for inputs and transport has particularly affected women producers in recent years, who may have had smaller margins between expenses and profit. Thus, it has pushed some women producers and traders out of the market. This includes female-headed (FNM) households, according to a validation discussion with the qualitative researchers. In terms of general norms, there are no constraints for women in their access to the markets to buy/sell products, as agreed by all communities interviewed. The interviews also concurred that youth may have difficulty doing business in the market because they lack start-up capital and experience. One community leader noted they seek to provide mentorship for women and youth accessing the market.

Traders interviewed also spoke of the high competition in the markets, with many traders selling the same products, as well as their constant challenge of transportation.

"WE LOST CONFIDENCE IN THE MARKET DUE TO THESE DRAMATIC AND CONTINUOUS [PRICE] CHANGES." ~TRADER

COVID-19 Impacts: Covid-19 movement restrictions caused fuel, food, and other commodity shortages in markets, causing price spikes. This reduced production because households lacked fuel for their motorized irrigation pumps or because they could not access agricultural inputs, and it caused transportation costs to be prohibitively expensive to travel to the market (see quotes below). Many households have struggled during the pandemic because they do not have an emergency savings or food supply to cope during such times.

"THE PRICE TREND OF THE LAST FIVE YEARS IS THE PRICES HAVE INCREASED GRADUALLY, BUT DURING THIS YEAR THE PRICES INCREASED DRAMATICALLY [DUE TO COVID-19]."

"THIS HAS AFFECTED NEARLY EVERYONE, EVEN THOSE WHO BEFORE COULD GO TO THE MARKET."

~COMMUNITY MEMBERS

Some traders were restricted from travelling to markets all together in order to limit the spread of Covid-19, and cross-border trade was halted. In turn, job opportunities in the market are reduced and market actors have decreased income.

Access to Financial/Business Services: No qualitative interviews indicated access to formal financial or business services. Some communities could name an agricultural bank in a nearby town, but all reported that the loans or services could not be accessed due to the required conditions (e.g., property guarantees or bank account holdings). Thus, for capital, some households access loans from the wealthiest households in the community or from relatives working in urban areas.

“BANK CONDITIONS FOR GETTING CASH ARE BEYOND OUR REACH.”

“I HAVE THE ISSUE OF CAPITAL. I WANT TO EXPAND MY BUSINESS TO BRING VARIOUS TYPES OF GOODS [TO THE MARKET], BUT I HAVE LIMITED AMOUNT OF RESOURCES...I PREVIOUSLY SUBMITTED AN APPLICATION TO THE SAVINGS AND SOCIAL DEVELOPMENT BANK OF CENTRAL DARFUR, AND I WAS NOT ACCEPTED FOR THE LOAN DUE TO THE LACK OF GUARANTEES FROM MY SIDE.”

~TRADERS

In terms of savings groups, just two communities reported that a savings group exists: in one community the concept has been newly introduced for men and women (see quote below). According to the observations of the qualitative researchers, there are traditional savings groups that also exist in communities, but women do not typically participate.

“WE THINK IT IS A GOOD ACTIVITY FOR WOMEN TO SAVE MONEY AND USE IT FOR THEIR OWN NEEDS.”

~COMMUNITY MEMBER

Cash Background: The qualitative interviews provided some context on the cash economies of the project area, but a full cash feasibility and market assessment is needed. As described previously, access to capital for productive purposes is nearly non-existent. Further, poor production and low income in past years have meant that households rely on credit with traders. Therefore, market functioning is hindered due to the lack of cash and capital. Traders interviewed are familiar with some non-cash payments accepted by other traders such as a World Food Program (WFP) vouchers near the Mornei displacement camp, the seed vouchers of the DiNER fair, and the local form of ‘mobile money’³⁴. Interviews reported that traders prefer cash because there is no delay in payment. However, some explained they would be interested in vouchers or mobile money because there is a guaranteed customer base [i.e., via NGO project].

“WE HAVE BEEN SUFFERING A LOT FROM UNSTABLE PRICES OF GOODS FOR SEVERAL YEARS. OUR MONEY HAS NO VALUE. IF WE SELL CROPS, FOR EXAMPLE, THE AMOUNT WE RECEIVE DOESN’T MEET OUR NEEDS FOR BUYING HOUSEHOLDS GOODS DUE TO THIS DEVALUATION.” ~COMMUNITY MEMBER

None of the interviewed communities reported the existence of cash-based assistance programming. Generally, the community members who perform daily labor/cash-for-task jobs as their primary livelihood are the poorest members that do not have land or animals; it may also include those seeking cash for school fees, or women who take part in various IGA. According to the interviews (mostly male), women make decisions on spending and are culturally permitted to handle cash in the household, but this concept should be explored more through female focus groups.

If a household’s breadwinner cannot work, typically the elderly and people with disabilities, they receive in-kind help and support from family, neighbors, and the custom of Zakat. The communities believe it is the responsibility of the Zakat department to provide relief for the most vulnerable, yet, it is not regular. The qualitative researchers explain that the Zakat support received in this region is in-kind and disbursed once or twice per year.

³⁴ According to the qualitative researchers this refers to relatives out of the community sending money through the traders, who may take 10%.

ii) *Community governance and management related to natural resources and shocks*

Shocks and Coping: The main shocks facing the Darfur communities are i) price fluctuations; ii) insecurity or tribal conflict; iii) drought/water shortages; iv) floods, which can damage crops and contaminate water sources; and v) disease, affecting both humans and animals. To cope during times of stress, households look to diversify their livelihoods (e.g., day labor, sending members to find work in cities or mines), harvest and sell firewood/charcoal, take part in winter cultivation, sell-off assets, and reduce food consumption.

“TO COPE WITH THE CURRENT SITUATION [HEAVY RAINS DESTROYING CROPS] WE DEPEND ON OUR LIVESTOCK. WE SELL THE GOATS TO BE ABLE TO PAY FOR OUR HOUSEHOLD NEEDS.” ~COMMUNITY MEMBER

The community response to a shock involves leaders’ mobilizing support from within the village for the most-affected households. For a more widespread shock like insect infestation or conflict, the community leaders’ role is also to coordinate with and seek support from the government and aid agencies. Most communities perceive an overall lack of services and response from government. None of the interviewed communities report receiving early warning or disaster preparedness information for these shocks. The qualitative researcher observations also noted that the capacity level of community leaders can also affect the risk reduction and shock management activities of the community. In other words, some leaders have more experience and skill in the planning and coordination of a response.

“THERE IS NO COMMUNITY THAT IS ABLE TO MANAGE THE RISKS OR SHOCKS OR THAT IS MORE RESILIENT.”

**“THERE IS A GAP BETWEEN THE GOVERNMENT AND THE COMMUNITY.”
~COMMUNITY MEMBERS**

Natural Resource Management: The most common natural resource conflict or problem for communities is related to the mixing of grazing and farming land. This occurs due to unclear designations, the expansion of farming into grazing areas, or uncontrolled grazing damaging crops. Shortages of water for people and animals was the next most important source of conflict, which was named as a pertinent issue in interviews in four of the five Darfur states.

The use of forest resources, including overcutting trees for charcoal, animal feeding, or to clear land for new farms, can also be a contentious issue. One community described how they received awareness sessions on the dangers of overcutting trees and small bushes, but there is a need for more deterrence measures to reinforce these ideals according to the community members. What deterrence measures would be appropriate were not further discussed.

All communities interviewed described a well-functioning community-based conflict resolution mechanism lead by community leaders and including key stakeholders. Interviews in one state clarified that women are not engaged in conflict resolution due to cultural norms.

iii) *Community nutrition and hygiene behaviors*

Food Security: According to interviews across the five Darfur states, the impacts of Covid-19 restrictions including reduced access to the market and increased prices, have caused shortages of food for households. The traditional diet diversity is already limited for most households of this region, based on what they produce and the few supplemental food items they can afford to purchase. Interviews across the Darfur states emphasized their lack of access to diverse and nutritious foods like fruits and vegetables, due to these items being either unaffordable or unavailable in the market. During the lean

season, the households explain that their diets become even more restricted; they survive solely on a grain porridge and eat fewer and smaller meals. They perceive that this impacts the nutrition of the youngest children first, as well as pregnant and lactating women (PLW).

“IN TIMES OF HUNGER, WE USUALLY GIVE PRIORITY TO CHILDREN FOR FOOD. THEY ARE THE ONES WHO WILL MOSTLY BE AFFECTED. CHILDREN NEVER ENDURE HUNGER AS ADULTS.” ~COMMUNITY MEMBER

WASH: The qualitative data confirms that households face significant challenges with access to water and sanitation. Most communities reiterated that they lack latrine or toilet facilities; equally, they lack access to adequate water sources. Two communities described how the hand pump for their water source has been broken or dysfunctional for years, but the community had no mechanism to support the repair. Further, most communities do not have latrines or sanitation facilities. This has a profound impact on the health of all community members, as well as nutrition status, as they regularly face diarrheal and other infections.

**“WE DON’T HAVE LATRINES. ALMOST ALL OUR HOUSEHOLDS HERE DEFECATE IN THE BUSH.”
~COMMUNITY MEMBER**

Communities say they have some knowledge of hand-washing and its benefits, but they face many barriers to putting it into practice. Returnee households, according to qualitative interviews, are more likely to have awareness of hygiene practices because they were exposed to this information through health campaigns in the displacement camps. Yet, the barriers that exist still prevent the adoption of hygiene practices, namely the lack of water for washing and inability to afford soap. In a context of water scarcity, water is prioritized for drinking only. There may also be an aspect of an attitudes/belief barrier to changing behaviors around hand-washing or hygiene, as explained in the quote by one community member below.

“WE LACK SOAP FOR HAND WASHING. ALTHOUGH WE RECEIVED MANY AWARENESS SESSIONS [BY NGO] ON HEALTH MESSAGES FOCUSING ON HAND WASHING, SOCIAL DISTANCE, AND NOT SHAKING HANDS [FOR COVID-19], CULTURALLY, WE ARE STILL FAR BEHIND IN IMPLEMENTING ALL THESE MESSAGES.” ~COMMUNITY HEALTH STAKEHOLDER

IYCF and Nutrition: The challenges of child nutrition, as described through the qualitative interviews, may be grouped into two main categories: households’ conceptual understanding of the practices, and the enabling environment.

First, households lack awareness of IYCF practices and may hold cultural beliefs that inhibit the practices. Communities across the Darfur states noted that they lack knowledge of diverse feeding for children and how to best utilize the foods available to them. As with WASH messaging, returnee households may have more awareness of child nutrition because of information they received in the displacement camps. Apart from those returnees, no other interviews indicated that formal disease prevention, health and nutrition messaging had reached the communities in past years.

There are also many cultural beliefs, particularly around breastfeeding, that disrupt the practices of exclusive breastfeeding through six months and supplementary breastfeeding for two years. For instance, one community described the belief that if a mother becomes pregnant, she must stop any current breastfeeding. Another community reported their belief that a mother will become too exhausted and her health will suffer if she begins breastfeeding immediately after birth; or, another belief was described in which a newborn should be given goat milk if the mother is having issues producing milk after birth.

Second, households and caregivers need an enabling environment for maternal and child health and nutrition practices: this includes access to affordable and diverse foods for PLW and children, access to

local maternal and child health services, and strategies to support caregivers to adopt these practices. Multiple communities cited the increased problem of mothers not being able to produce milk, likely because of her nutritional deficiencies related to access to food/markets, according to the qualitative researchers. Most mothers do not receive pre/post-natal exams as they lack access to health centers (i.e., distance to the closest center is too far to access), which was reported by all communities interviewed. Finally, many mothers are reported to be busy with agricultural, household, and other IGA work in addition to their caregiving. Thus, this necessitates a household and community-wide response to understand the clear benefits of IYCF and nutrition behaviors and the motivation to work together to enable their implementation.

CONCLUSIONS FROM QUALITATIVE FINDINGS:

In all, the qualitative interviews reveal that the recurrent shocks of price fluctuations, unpredictable rainfall (drought and floods), and emerging agricultural pests and diseases, combined with steadily-increasing market and fuel prices, have dramatically reduced households' production and their ability to engage with the market. Markets are difficult to access for both community members and traders due to lack of transportation and fuel costs, and this can push women in particular out of the market arena. As households have decreased their production and sales, they have less income for livelihood inputs and less food supply to survive during the seasonal hunger months, which results in food insecurity, poor diets and health. This challenging livelihood situation has been intensified by COVID-19 restrictions. Households also lack the basic enabling environment to maintain their health and productivity amidst these shocks and stressors. This includes the systems for water, sanitation, health and nutrition services, as well as their lack of access to financial and business services and to disaster risk reduction and response. Further, the main household coping strategies may lead to other negative consequences, as they involve reducing food consumption, relying on forest resources (e.g., selling firewood), and youth migration to find other work.

There are community-based responses to these challenges and to recurrent shocks. Community members share costs for inputs or transportation, for example. Community leaders mobilize support for the most vulnerable of households. Community conflict resolution mechanisms are perceived as effective for handling disputes over natural resources. There are also various agricultural practices and techniques that households are currently using to improve their production.

The qualitative findings suggest the following key considerations and recommendations for RISING II programming:

- Some farmers and agro/pastoralists are aware of and practicing some improved production techniques, but these can be greatly expanded among the target communities.
- Support for returnee households in restoring their assets is important for their resilience.
- There is need for specialists to assess the new and emerging pests and diseases affecting the communities' production in recent years.
- The project should continue to explore community-based savings and loans for both men and women, and to include women in community natural resource management and conflict resolution mechanisms, building on the existing community systems for these mechanisms.
- Price fluctuations as the primary shock facing communities should be of great concern for any cash-based activity - A market analysis and complete cash feasibility assessment should be conducted in each state before any cash or voucher assistance activity, with repeat assessments as the Covid-19 impacts on markets evolve.

- Some community leaders may welcome the opportunity to learn strategies to better manage risks/shocks and to facilitate better connections with local government.
- Mothers/caregivers should be supported with access to information and resources for better nutrition, but interventions around nutrition/vegetable gardens must consider the burdens of time (when women engage in multiple IGA) and the barrier of water shortages.
- Access to sustainable water and sanitation facilities are priorities for the enabling environment of good nutrition and hygiene behaviors.
- Promotion of breastfeeding practices should focus on addressing cultural beliefs/barriers with mothers as well as other community members, but must be combined with sustainable access to maternal and child health promotion and services.
- The project can learn from the returnee communities who have already received information on nutrition and hand-washing in order to learn more on the effectiveness of this messaging and the barriers to practice.
- Finally, the project design should focus on the sustainability of project infrastructure and support systems long after the project has ended. This includes ensuring that WASH, nutrition, health, livelihoods and market interventions (e.g., agricultural extension or health promotion workers, water pump systems, micro-lending, etc.) will continue long-term.

Other recommendations are integrated within the main recommendations of the report provided at the end of each findings section.

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Qualitative fieldwork – June 2020



Annex III RISING II Baseline Indicators Tabulation and Analysis Plan

Indicator	Type of respondents	Main Disaggregation	Method	Question Number	Target	Data Tabulation/Analysis
1. Impact i: % of HH with poor, borderline, and adequate Food Consumption Score (FCS).	Household member who is primarily responsible for food preparation and distribution	• HH composition (FNM, MNF, M&F, CNA) ³⁵	- The Food Consumption Score (FCS) is a composite score based on dietary diversity, food frequency, and the relative nutritional importance of different food groups. To collect FCS data, a questionnaire is used to ask respondents about the frequency of their households' consumption of 16 food groups over the previous seven days. - Sixteen food groups regrouped into 9 main categories: Main staples, Pulses, Fruits, vegetables, Meat/Fish/eggs, Milk, Sugar/honey, Oil and condiments. - To calculate the FCS, the consumption frequencies (number of days in last 7 days) are summed and multiplied by the standardized food group weight (Main staples 2, Pulses 3, Fruit 1, vegetables 1, Meat/Fish/Eggs 4, Milk/Milk products 4, Sugar/honey/products 0.5, Oil/fats/butter 0.5 and condiments 0), and households are then be classified into three groups based on their weighted scores – poor (FCS 0-28), borderline (FCS 28.5 to 42), or acceptable (FCS >42) - using the World Food Program's/EFSP indicator guideline recommended cutoff points. - Reference: FFP/ WFP/FAO Guideline, FFP/EFSP Indicator guideline and RISING II PIRS	B101	- Poor: 0% - Adequate: BL+15%	16 foods/food groups <i>B101A</i> to <i>B101O</i> are re-grouped into 9 food groups with maximum number of days consumed in 7 days for any food in each food group. For example: Cereals/grain consumed 7 days (<i>B101A2</i>) and roots/tubers consumed 5 days (<i>B101B2</i>). Main staples = $\max(B101A2, B101B2) = 7$ days - Weighted consumption is obtained multiplying number days consumed by the respective food group weights. - Weighted total of 9 food groups yield FCS score.
2. Impact ii: Prevalence of HH with moderate or severe hunger (Household Hunger Scale, HHS)	Household member who is primarily responsible for food preparation and distribution	• HH Composition (FNM, MNF, M&F, CNA)	- The HHS is a food deprivation scale that measures the % of households experiencing hunger. To collect data for this indicator, the person in the household in charge of food preparation is asked about the frequency with which three events were experienced by any household member in the last four weeks: 1. No food at all in the house 2. Went to bed hungry 3. Went all day and night without eating - If the event is reported as having not been experienced in the last four weeks, the response is coded as “never” (value = 0). - If the event is reported as having been experienced in the last four weeks, a frequency of occurrence question is asked to determine how often the event was experienced. - For each <u>frequency of occurrence</u> question, the following responses are possible: “rarely” (value = 1), “sometimes” (value = 2), and “often” (value = 3). For tabulation purposes, the responses are then recoded into three frequency categories: “never” (new recoded value = 0),	B102-B104	- RISING I 2019 BL: 23.4% - BL-10%	- If B102, B103 and B104 “No=2” recoded to “0” and “Don’t know=3” recoded to system missing. - B102, B103 and B104 “Yes=1”, recoded variables B102a, B103a and B104a for the responses Rarely 1=1, Sometimes 2=1 and Often 3=2. - Sum of the recoded variables B102a, B103a, B104a is HHS score. - If recoded all B102 & B103 & B104=0, HHS score=0.

³⁵ Adult Female no Adult Male (FNM), Adult Male no Adult Female (MNF), Male and Female Adults (M&F), Child no Adults (CNA)

Indicator	Type of respondents	Main Disaggregation	Method	Question Number	Target	Data Tabulation/Analysis
			“rarely or sometimes” (new recoded value = 1), and “often” (new recoded value = 2). - Values for the three questions are summed for each household, producing a HHS raw score ranging from 0 to 6. The raw scores are then tabulated into the following categories: HHS score 0-1 = little to no hunger HHS score 2-3 = moderate hunger HHS score 4-6 = severe hunger - FFP requires reporting of the % of households with a score of “moderate” to “severe” hunger. - Reference: FFP/FANTA Guideline, RISING II PIRS			
3. Outcome 1.1: % of HHs with equitable and uninterrupted access to shared natural resources (water, pastures etc.) throughout the year.	Household head and other knowledgeable HH members	• HH Composition (FNM, MNF, M&F, CNA)	- The indicator ‘households have equitable and uninterrupted access to shared resources’ refers to every household in a community should have equal choice to use, withdraw and manage the available shared or open natural resources and facilities that will be not interrupted by any individual or group. - Each household in a community if want to use natural following resources without any interruption year-round (dry and other seasons): vi. Open or communally established water source (water from the stream/river, borehole, check dam, watershed) vii. Open or shared pastureland, grazing land for agriculture production and livestock rearing viii. Access to sharecropping/lease and procuring agriculture land ix. Use forest products for livelihood and livestock x. Use of ponds or open waterbody for fishing xi. Participation in natural resources inputs supported by the Government and others. % of household with uninterrupted access to shared natural resources year-round will be reported to this indicator. - Reference: Taadoud II M&E Guideline/RISING II PIRS	D101-D105	- Taadoud II 2019 IS: 17.2% - BL+20%	- Access to water: if (D101b1=1 & D101b2=1) and/or D101c=1 - Access to pastureland: if D102a1=1 & D102a2=1 - Access to share-cropping/leasing/procuring agricultural land: if D103a=1 - Access to forest/forest product: if D104a=1 &/or D104b=1 - Government/Others inputs supported natural resources: if D105a=1 - Sum of the 5 access score ranges from 0 to 5. - A household with at least 3³⁶ out of 5 access scores will be counted for this indicator.
4. Outcome 1.2.1: Reduced Coping Strategies Index (rCSI).	Household member who is primarily responsible for food preparation and distribution	• HH Composition (FNM, MNF, M&F, CNA)	The rCSI is a proxy indicator of household food insecurity that is based on a list of behaviors (coping strategies). The index reflects both the <i>frequency</i> of each behavior (i.e. how many days over the last 7 days the coping strategy was used by any member of the household) and <i>severity</i> (i.e. how serious the strategy). The rCSI is based on a list of five food-related coping strategies (Rely on less preferred/less expensive food, Borrow food or rely on friends/relatives, limit portion size at	B105	• BL*75%	- rCSI1=0 if B105a1=2 and rCSI1=B105a2 - rCSI2=0 if B105b1=2 and rCSI2=B105b2 - rCSI3=0 if B105c1=2 and rCSI3=B105c2

³⁶ The threshold “at least 3” is not mentioned in PIRS. This need to be confirmed by the RISING II project MEAL team prior to start data analysis

Indicator	Type of respondents	Main Disaggregation	Method	Question Number	Target	Data Tabulation/Analysis
			mealtime, restrict adult consumption and reduce number of meals in a day) that the household used in the seven days prior to the survey. - The rCSI raw scores are calculated by multiplying the frequency (number of days) with which a behavior was used by the universal severity weight (Less preferred/less expensive food 1, Borrow food or rely on others 2, limit portion size 1, restrict adult consumption 3 and reduce number of meals in a day 1), then summing the weighted scores for each coping strategy. - The maximum raw score for the rCSI is 56, i.e. a household that used all five strategies every day for the last 7 days would have a raw score of 56. - Mean of rCSI score will be used for this indicator. - Reference: FFP/WFP Guideline, RISING II PIRS			- rCSI4=0 if B105d1=2 and rCSI4=B105d2 - rCSI5=0 if B105e1=2 and rCSI5=B105e2 - Weighted rCSlwi scores obtained multiplying individual rCSli score by the respective severity weights - Sum of rCSlwi is the composite rCSI score
5. Outcome 1.3.1: % of HH using improved natural resources.	HH Head and others knowledgeable HH members	• HH Composition (FNM, MNF, M&F, CNA)	- This indicator measures % of households using/applied at least two of the RISING II project promoted improved natural resources in the past 12 months. - The improved natural resources are related to use of land or water or management innovations including those that address ecosystem restoration, climate change adaptation and mitigation. Following are the improved natural resources management practices are considered to calculate this indicator: vii. Crop culture: seedling production and transplantation, intercropping, mulching etc. viii. Permaculture practices (Soil and water conservation): erosion prevention and control with mechanical and biological methods such use of gabions, vetiver grass, elephant grass, riverbank management ix. Agroforestry: Integrating fodder and fruit trees production, other nitrogen fixing trees. x. Natural regeneration such as Farmer Managed Natural Regeneration: Regeneration of natural landscapes (Reseeding), Management of forest plantation (planting, cutting, pruning etc., Sustainable harvesting of forest products (wood, firewood, charcoal production etc. xi. Water management: non-irrigation-based e.g., water harvesting, improved mechanical and physical land preparation such as building of swales or ditches, sub surface dams and watershed	E301b, E304, E308	BL+30%	- Crop culture: if E301b=1 or E304=1 or E308=1 - Permaculture: if (E318=1 or E318=2 or E318=3 or E318a=4 or E318=5 or E318=6) or E318a=1 - Agroforestry: if E320=1 - FNMR: if E320=2 or E320=3 or E320=4 - Water management: if E321=2 or E321=3 or E321=4
6.		•		E318, E318a		
7.		•		E320A		
8.		•		E302B-E302D		
9.		•		E321 (A,B,D)		

Indicator	Type of respondents	Main Disaggregation	Method	Question Number	Target	Data Tabulation/Analysis
10.		•	xii. Climate mitigation: technologies selected because they minimize emission intensities relative to other alternatives. Examples include low- or no-till practices and use alternative (e.g, could be solar) for irrigation	E307, E321		• Climate mitigation: if E321=3 or E307=1
11. Outcome 2.1: Number of months of HH food self-sufficiency as a result of improved agricultural production programming	HH Head and others knowledgeable HH members	• HH Composition (FNM, MNF, M&F, CNA)	• Food self-sufficiency is defined as physical and economic access to adequate food for all household members. The number of months is an estimate of the ability to produce, purchase, store, or otherwise maintain a level of food consumption, without external assistance or inputs such that members of the household are not going hungry achieved with a degree of plausible attribution to USAID/OFDA-funded activities to improve • The household will be asked for how many months they expect to cover their household with adequate consumption from own agriculture and livestock production and selling without supports from others. • The average number of months will be reported for this indicator. • Reference: OFDA Guideline/RISING II PIRS	E207	• BL*130%	• Average from E207
12. Outcome 2.2: % of beneficiaries reporting net income from their livelihood.	HH Head and others knowledgeable HH members	• Sex: Male and Female	• ERMS/New Livelihoods Development activities aim to help people start an activity they have not done before to help them earnings. • Livelihoods Restoration activities, by contrast, help people to resume the activities they were doing pre-disaster or were already practicing to earn a living. • Net income is simply defined here as revenues greater than costs. It is synonymous with “profitability.” • This indicator measures what % of people self-report that they are earning more from the livelihood activity supported by USAID/OFDA than they are spending on costs (i.e., inputs, rent, transport, fees). • This indicator should be measured at or near the end of the USAID/OFDA-supported project. Example: Someone who was earning a net income shortly after receiving inputs halfway through the project period, but is no longer earning a profit, should not be counted as profitable. • RISING II supported livelihood activities are SILC and assets based saving supports, PSP activation, training on small scale business planning and linkages supports to the male and female headed households with the SILC and PSP groups and capacity building to the farmers and pastoralists on value chain improvement, packaging, inputs supports and market linkages.	C102A and C103	• BL+20%	• HH will be counted with increased income if C102a1 to C102h1=1 and C103=1 • Denominator (C101): Total number of HH reported with livelihood activities for agriculture, livestock and other income generating activities in the past 12 months.

Indicator	Type of respondents	Main Disaggregation	Method	Question Number	Target	Data Tabulation/Analysis
			• % of households with increased net income (profit) from the RISING II project supported livelihood activities will be reported for this indicator. • Reference: OFDA Guideline/RISING II PIRS			
13. Outcome 2.1.1: Number of hectares under improved agricultural methods	HH member who is involve/ knowledgeable in agriculture and farming activities	• No disaggregation mentioned in Logframe	• This indicator measures the number of hectares that receive treatment using improved agricultural methods due to USAID/OFDA-funded activities. • For USAID/OFDA, the designation of “improved agricultural method” indicates methods to enhance productivity and at the same time soil/water/nutrient quality with the goal of long-term system protection. • These may include soil and water conservation measures (e.g., low till, no till, conservation agriculture), mechanical treatment or application of soil improvements or enrichments. • This indicator captures the total hectares of land with at least one RISING II project promoted technology or practice applied in the past 12 months. It does not matter how many total improved technologies or practices are applied to an area. • Land with individual technologies or a practice will be collected by first asking whether the farmer used or applied the specific technologies or practices in the past 12 months. If the farmer answered “yes,” he or she will then be asked how much land had been used for this specific technology or practice and how many times the land was used in the reporting year. If the farmer applied promoted technologies to his or her plot several times in the year, then the area of the plot would be counted for the number of times used under this indicator³⁷. • The sum of the hectares of land that was used for individual technologies is the indicator value and thus the same land could be reported more than one times in some cases. • Reference: FFP/OFDA Guideline/RISING II PIRS	E301-E301a E301b-E301c E302-E303a E304-E305a E306-E307a E308-E309a E313a-E313b	• BL*110%	• If a HH applied correct practice will be counted for this indicators • Mukhamas of land will be converted in hectares • Sum of land that was used with correct practices will be reported to this indicator
14. Outcome 2.1.2: % of HH with access to sufficient seed to plant.	HH member who is involve/ knowledgeable in agriculture and farming activities	• HH Composition (FNM, MNF, M&F, CNA)	• Access to sufficient seed indicates that a household either has seed in hand (own stocks) or has the ability or means to get it elsewhere (from neighbors, market, agro-dealers) in a timely manner to plant the farmer’s normal intended planting area. • This is a general measure of seed security at the household level and takes into account the full range of channels through which farmers	E204, E204a	• BL+25%	• HH with responses 1 (adequate) or 2 (more) in E204a will be counted for this indicator. • Denominator: HH with production of crops in the past 12 months reported in E204

³⁷ Feed the Future Indicator Handbook, October 2014

Indicator	Type of respondents	Main Disaggregation	Method	Question Number	Target	Data Tabulation/Analysis
			procure seed to meet their household needs. One of these channels may be the receipt of relief seed. - For RISING II the seeds promoted are millets, sorghum, groundnuts, and some vegetables and shall access from the channels of local vendors and private sectors which the project will facilitated through DiNER Fair with a voucher distribution program. - Reference: OFDA Guideline/RISING II PIRS			
15. Outcome 3.1.1: Proportion of children 6-23 months of age who receive foods from 4 or more food groups.	Mother/Caregiver of children 6-23 months	Sex: Male and Female	- Information will be collected for 19 foods or food groups for children 0-23 months. These 19 foods or food groups will re-groups into following 7 food groups based on the WHO/UNICEF IYCF indicator guideline: - Grains, roots and tubers - Legumes and nuts - Dairy products (milk, yogurt, cheese) - Flesh foods (meat, fish, poultry and liver/organ meats) - Eggs - Vitamin-A rich fruits and vegetables - Other fruits and vegetables. - Consumption of any amount of food by children 6-23 months from each food group is sufficient to "count". I.e., there is no minimum quantity, except if an item is only used as a condiment. - This is based on recall of the previous day. - Children 6-23 months of age who received foods from ≥4 food groups during the previous day will be counted to compute %age to report this indicator. - Reference: WHO/IYCF Indicator Guideline, RISING II PIRS	G113	- RISING I 2019 BL: 14.2% - BL+20%	- Recode 1 if "yes" in g113a to g113t and 0 if "no". 19 foods are grouped into 7 food groups and are coded with 1 if any of the items in the individual group is with code 1, otherwise 0. - Sum of the 7 food groups will have scores ranges from 0 to 7. - If the some of the score is greater than or equal to 4 will be counted for this indicator. - Denominator: Number of children 6-23 months in the sample.
16. Outcome 3.1.1: Proportion of infants 0-5 months of age who are fed exclusively with breast milk	Mother/Caregiver of children 0-5 months	Sex: Male and Female	- Fed exclusively: Infant is fed breast milk (including milk expressed from a wet nurse) and nothing else, not even water. - Infants may be given ORS, drops, syrups (vitamins, minerals, medicines). - This is based on recall of the previous day - Children 0-5 months fed only breastmilk with an exception of vitamins/minerals/medicine in the past 24 hours will be counted to calculate % for this indicator. - Reference: WHO/IYCF Indicator Guideline, RISING II PIRS	G106, G109, G112 and G113	BL+20%	"Yes" for G106, G109 and "No" for G112 and no food was fed listed in G113 in the past 24 hours - Denominator: number of children 0-5 months in the sample
17. Outcome 3.1.2: % of people targeted by the hygiene promotion	All Adult HH members	Sex: Male and Female	- This indicator measures individuals' knowledge of the hand washing practices which are most effective at preventing the spread of pathogens along the fecal-oral cycle. The five critical times to wash hands are defined as 1. After defecation/using the toilet;	F111, F111a	BL+20%	Each of the 5 critical times will be coded with 1 if the respondent mention as critical time for handwashing in f111

Indicator	Type of respondents	Main Disaggregation	Method	Question Number	Target	Data Tabulation/Analysis
program who know at least three (3) of the five (5) critical times to wash hands			2. Before eating; 3. After changing diapers or cleaning a child's bottom; 4. Before preparing food; and 5. Before feeding an infant. • Respondents who demonstrate that they know at least three (3) of the (5) critical times to wash hands will be counted to calculate % for this indicator. • Reference: OFDA Guideline, RISING II PIRS			• Sum of the score for 5 critical times will ranges from 0 to 5. • Respondent with score 3 or more will be counted for this indicator • Denominator: Total number of respondent for the question F111 • Disaggregation: sex of the respondent from F111a

Annex IV RISING II Baseline PPS Cluster Sample

PARTNER	STATE	LOCALITY	NUMBER OF PARTICIPANT	SAMPLE SIZE
CAFOD-NORTH-DARFUR	North Darfur	Rural AL- Fasher	38	20
CAFOD-NORTH-DARFUR	North Darfur	Rural AL- Fasher	100	20
CAFOD-NORTH-DARFUR	North Darfur	Rural AL- Fasher	256	20
CAFOD-NORTH-DARFUR	North Darfur	Rural AL- Fasher	218	20
CAFOD-NORTH-DARFUR	North Darfur	Rural AL- Fasher	69	20
CAFOD-NORTH-DARFUR	North Darfur	Rural AL- Fasher	90	20
CAFOD-NORTH-DARFUR	North Darfur	Rural AL- Fasher	346	20
CAFOD-NORTH-DARFUR	North Darfur	Rural AL- Fasher	186	20
CAFOD-NORTH-DARFUR	North Darfur	Rural AL- Fasher	180	20
CAFOD-NORTH-DARFUR	North Darfur	Rural AL- Fasher	102	20
CAFOD TOTAL				200
CRS-EAST-DARFUR	East Darfur	Assalaya	100	20
CRS-EAST-DARFUR	East Darfur	Elferdous	100	20
CRS-EAST-DARFUR	East Darfur	Elferdous	100	20
CRS-EAST TOTAL				60
CRS-WEST-DARFUR	West Darfur	Forbarnga	130	20
CRS-WEST-DARFUR	West Darfur	Krienick/Mornei	100	20
CRS-WEST-DARFUR	West Darfur	Krienick/Mornei	260	20
CRS-WEST-DARFUR	West Darfur	Krienick/Mornei	170	20
CRS-WEST TOTAL				80
NCA-CENTRAL-DARFUR	Central Darfur	Wadi Salih	377	20
NCA-CENTRAL-DARFUR	Central Darfur	Wadi Salih	389	20
NCA-CENTRAL-DARFUR	Central Darfur	Wadi Salih	190	20
NCA-CENTRAL-DARFUR	Central Darfur	Wadi Salih	294	20
NCA-CENTRAL-DARFUR	Central Darfur	Wadi Salih	66	20
NCA-CENTRAL-DARFUR	Central Darfur	Wadi Salih	520	40
NCA-CENTRAL-DARFUR	Central Darfur	Zalingei	114	20
NCA-CENTRAL-DARFUR	Central Darfur	Zalingei	410	20
NCA-CENTRAL-DARFUR	Central Darfur	Zalingei	176	20
NCA-CENTRAL-DARFUR	Central Darfur	Zalingei	524	40
NCA TOTAL				240
WVI-SOUTH-DARFUR	South Darfur	Alsalam	196	20
WVI-SOUTH-DARFUR	South Darfur	Alsalam	663	40
WVI-SOUTH-DARFUR	South Darfur	Edalfursan	130	20
WVI-SOUTH-DARFUR	South Darfur	Edalfursan	268	20
WVI-SOUTH-DARFUR	South Darfur	Edalfursan	158	20
WVI-SOUTH-DARFUR	South Darfur	Edalfursan	118	20
WVI-SOUTH-DARFUR	South Darfur	Kabum	305	20
WVI-SOUTH-DARFUR	South Darfur	Kabum	304	20
WVI-SOUTH-DARFUR	South Darfur	Kabum	307	20
WVI-SOUTH-DARFUR	South Darfur	Kabum	334	20
WVI-SOUTH-DARFUR	South Darfur	Kabum	400	40
WVI-SOUTH-DARFUR	South Darfur	Nittega	303	20
WVI-SOUTH-DARFUR	South Darfur	Nittega	1002	80
WVI-SOUTH-DARFUR	South Darfur	Nittega	699	40
WVI TOTAL				400
TOTAL				980

A. QUANTITATIVE SURVEY QUESTIONNAIRE

FINAL
6/23/2020

Baseline Survey Questionnaire

(Questionnaire for the Randomly Selected Sample Project Participating Households)

Recovery in Sudan for Improved Nutrition and Growth (RISING II)

Funded by



Implemented by



Technical Supports by



INTRODUCTION AND CONSENT

Guidance for introducing yourself and the purpose of the interview:

Assalamualaikum/Hello! My name is _____ and I am representing [_____].

- [Partnership Member] is implementing USAID (FFP/OFDA) funded RISING II project activities and you are one among the project participating households. Now we are conducting the survey at the beginning of the project to obtain information that can be used as a baseline to be able to determine RISING II project outcomes and impacts after 18 months when the project is planned to end.
- You have been selected ***by chance*** for this interview. Your participation in the survey is ***voluntary***.
- The information that you (and your family) give will be ***confidential***. It will be used to prepare reports but will not include any specific names. There will be no way to identify that you gave this information.
- Could you please spare some time (around one hour) for the interview?

At this time, do you want to ask me anything about the survey?

May I begin the interview now?

RESPONDENT AGREES TO BE INTERVIEWED 1 →START

RESPONDENT DOES NOT AGREE TO BE INTERVIEWED 2 →Fill-up SAMPLE IDENTIFICATION→END

Name of the interviewer : _____ Date: - -
dd mm 2020

Signature of the interviewer: _____

SAMPLE IDENTIFICATION

- A. Sample Household Code :
- B. Consortium Code :
- C. Locality Code :
- D. Community Code :
- E. Team Code :
- F. Interviewer Code :

MODULE – AA: RISING II PROJECT PARTICIPATING HOUSEHOLD CHARACTERISTICS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
AA101	Household Status	Returnees 1 Host communities 2	
AA102	Household livelihood type	Farmers 1 Pastoralist.....2 Nomads 3	
AA104	How many persons (household members) in total are there in this household (including the HH Head)? [PLEASE COUNT THE HOUSEHOLD MEMBERS WHO LIVES IN THE SAME HOUSE UNDER THE SAME ROOF AND TAKE MEAL TOGETHER BY COOKING IN THE SAME POT. HOUSEHOLD MEMBERS LIVE OUTSIDE FOR MORE THAN 6 MONTHS SHOULD BE EXCLUDED FROM NUMBER OF HOUSEHOLD MEMBER COUNTING]	Persons	
AA105	Gendered Household type	Adult Female no Adult Male (FNM) 1 Adult Male no Adult Female (MNF) 2 Male and Female Adults (M&F) 3 Child no Adults (CNA) 4	

MODULE-A: HOUSEHOLD DEMOGRAPHICS [HOUSEHOLD ROSTER]

[INSTRUCTION: PLEASE ASK THIS QUESTION FOR THE HOUSEHOLD MEMBERS WHO LIVES IN THE SAME HOUSE UNDER THE SAME ROOF AND TAKE MEAL TOGETHER BY COOKING IN THE SAME POT. HOUSEHOLD MEMBERS LIVE OUTSIDE FOR MORE THAN 6 MONTHS SHOULD BE EXCLUDED FROM NUMBER OF HOUSEHOLD MEMBER COUNTING].

INTRODUCTION: Now I would like to ask you about the household, members living in this household and the livelihood of your household

ID	Name of the HH member [First HH member must be the HH head]	[NAME]'s Age (in complete years) 0 = age<1 year 888 = DNK 999 = Refused	[NAME]'s Sex 1 = Male 2 = Female 3 = Other	What is [NAME]'s relationship to HH Head [ENTER CODE]	IF AGE IS 5 YEARS OR OLDER		IF AGE IS 15 YEARS OLDER				
					Has [NAME] ever attended School? YES=1 NO=2	What is the highest grade [ID] has completed? [ENTER CODE]	[NAME]'s Marital status? 1=Married 2=Divorced/ Separated 3=Widowed 4=Never married	[NAME]'s Primary Occupation [ENTER CODE]	[NAME]'s Disability Status [ENTER CODE]	Is [NAME]'s Prime respondent? YES=1 NO=2	Is [NAME]'s participates RISING II Activities? YES=1 NO=2
A101	A102	A103	A104	A105	A106	A107	A108	A109	A110	A111	A112
01											
02											
03											
04											
05											
06											
07											
08											
09											

CODE LIST

CODE FOR A105

01=Household Head
02=Husband
03=Wife
04=Son
05=Daughter
06=Daughter-in-law
07=Son-in-law
08=Father
09=Mother
10=Mother-in-law
11=Father-in-law
12=Brother/Brother-in-law
13=Sister/Sister-in-law
14=Grandson
15=Granddaughter
16=Adopted/step son
17=Adopted/step daughter
18=Other (Specify)
99=Don't know

CODE FOR A107

1=No education
2=Primary level
3=Khalwa
4=Secondary level
5=Above secondary level
6=Other (SPECIFY)

CODE FOR A109

1=Crop farming
2=Livestock farming
3=Daily work
4=Skilled work
5=Salaried employment/job
6=Business
7=Remittance
8=Others (SPECIFY)

CODE FOR A110

01=None
02=Partial visual impairment
03=Total visual impairment
04=Partial hearing impairment
05=Total hearing impairment
06=Mobility and orthopedic
07=Mental impairment
08=Other
99=Don't know
88=Refused

MODULE-B: HOUSEHOLD FOOD CONSUMPTION, HOUSEHOLD HUNGER AND REDUCED COPING STRATEGY (rCSI)

[INSTRUCTION: Ask this module to the female decision-maker or whoever is most knowledgeable about food preparation and/or consumption of household members] [INTRODUCTION: Now I would like to discuss about household food consumption for last 7 days]

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
B101	FOOD CONSUMPTION (7 DAYS) Over the past seven days, how many days did your household consume the following food items? [INTERVIEWER: I will ask each food items one by one. Please remember that this for 7 days food consumption in your household. Count if anyone in your household consumed in last 7 days] FOOD/FOOD GROUPS [Ask each food item one by one]	Did your household consume in past 7 days? 1= Yes 2= No → Next Item How many days consumed in Past 7 days	
1	A. Cereals and grain: Any bread, rice, pasta, noodles, injera (chapra), biscuits, or other foods made from barley, millet, sorghum, maize, rice, wheat etc.	☐	☐
	B. Roots and Tubers: Any foods made with potatoes, yams, sweet potatoes, irish potatoes, manioc, cassava, plantains etc.	☐	☐
2	C. Orange Fleshed Vegetables (Vitamin-A rich vegetables): carrot, red-pepper, pumpkin, butternut, orange sweet potatoes etc.	☐	☐
	D. Green Leafy Vegetables: spinach, broccoli, and/or other dark green/red leaves, cassava leaves, lettuce, girgir etc.	☐	☐
	E. Other Vegetables: onion, tomatoes, cucumber, cauliflower, egg-plant, okra etc.	☐	☐
3	F. Orange Fleshed Fruits (Vitamin-A rich fruits): ripe mango, ripe papaya, apricot, peach etc. (<u>excluding citrus fruits</u>)	☐	☐
	G. Other Fruits: ripe banana, apple, lemon, oranges, avocado, guava etc.	☐	☐
4	H. Pulses, legumes and Nuts: cowpeas, groundnuts, cashew nuts, lentils, soybeans, pigeon peas and/or other nuts etc.	☐	☐
5	I. Meat/beef/Poultry/Offal/organ meat	☐	☐
	J. Eggs (Chicken/duck/quail etc.)	☐	☐
	K. Fish/Sea food	☐	☐
6	L. Dairy Products: milk, yoghurts, cheese and milk products	☐	☐
7	M. Oil/Fats/butter	☐	☐
8	N. Sugar/Sugar product/Honey	☐	☐
9	O. Spices, tea, coffee, salt, fish powder, small amounts of milk for tea		
10	P. Others (specify)	☐	☐
	HOUSEHOLD HUNGER SCALE (HHS) [INSTRUCTION: Ask these questions to the female decision-maker or whoever is most knowledgeable about the food preparation and/or consumption of household members. Remember that the answers of the questions are from last 30 days. Please ask these questions to the respondent in a non-crowded place so that he/she] [Now I would like to ask you some questions about your household hunger in the LAST 30 DAYS]		
	HOUSEHOLD HUNGER [30 DAYS RECALL ONLY] <i>[These questions need be collected carefully during Ramadan, in particular, question B104]</i>		
B102	During the past 30 days or 4 weeks, was there ever no food to eat of any kind in your house because of lack of money or other resources to get food?	Yes 1 No 2 Don't know 3	2,3→B103
B102a	How often did this happen during the past 30 days or 4 weeks?	Rarely (1–2 times) 1	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
		Sometimes (3–10 times).....2 Often (more than 10 times).....3	
B103	<i>During the past 30 days or 4 weeks</i> , did you or any household member go to sleep at night hungry because there was not enough food?	Yes 1 No 2 Don't know 3	2,3→B104
B103a	How often did this happen in the past [4 weeks/30 days]?	Rarely (1–2 times) 1 Sometimes (3–10 times).....2 Often (more than 10 times).....3	
B104	<i>During the past 30 days or 4 weeks</i> , did you or any household member go a whole day and night without eating anything at all because there was not enough food?	Yes 1 No 2 Don't know 3	2,3→B105
B104a	How often did this happen in the past [4 weeks/30 days]?	Rarely (1–2 times) 1 Sometimes (3–10 times).....2 Often (more than 10 times).....3	
REDUCED COPING STRATEGIES (rCSI) <i>[These questions need be collected carefully during the time of Ramadan, in particular, question B105b]</i>			
	[INSTRUCTION: Ask this module to the female decision-maker or whoever is most knowledgeable about food preparation and/or consumption of household members] [INTRODUCTION: Now I would like to discuss about coping strategies food crisis that you did in the past seven days]		
B105	During the <u>last 7 days</u> , were there days when your household had to employ one of the following strategies to cope with a lack of food or money to buy it?		
	COPING STRATEGIES (Circle one answer per strategy)	Did your HH use this Strategy in the past 7 days to cope with a lack of food or money?	How many days did your HH use this strategy in the past 7 days?
	a. Limit/reduce portion size at mealtimes?	Yes 1 No 2 → b	☐
	b. Reduce number of meals eaten per day?	Yes 1 No 2 → c	☐
	c. Borrow food or rely on help from friends or relatives?	Yes 1 No 2 → d	☐
	d. Rely on less expensive or less preferred foods?	Yes 1 No 2 → e	☐
	e. Reduce adult consumption so children can eat?	Yes 1 No 2 → C101	☐

MODULE-C: HOUSEHOLD LIVELIHOOD/INCOME GENERATING ACTIVITIES

[INSTRUCTION: Ask this module to the Household Head with other knowledgeable household members]

[INTRODUCTION: Now I would like to discuss about your household's last 12 months **(May 2019 to April 2020)** livelihood activities and income from some of the activities]

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
C101	What were your household's last 12 months livelihood/income generating activities? [MULTIPLE RESPONSE] [READ RESPONSES]	A. Farming/crop production and sales 1 B. Livestock/livestock product production and sales 2 C. Handicrafts 3 D. Skilled work (Driver, tailor, carpenter, mechanic etc.) 4 E. Fish farming/fish culture and sales 5 F. Agri-business (buying/selling agric products and inputs) ... 6 G. Non-agric business (grocery, mini/mobile restaurant, petty trade etc.) 7 H. Processing, packaging and selling products to the market.. 8 I. Agricultural daily wage labor 9	1-8 →C102 ELSE

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES		SKIP
		J. Non-Agricultural daily wage labor 10 K. Salaried work (agricultural)..... 11 L. Salaried work (non-agricultural) 12 M. Sale of wild/bush products (e.g., honey, charcoal) 13 N. Childcare/domestic work (paid) 14 O. Cash-for-work 15 P. Food-for-work 16 Q. Pensions 17 R. Remittances 18 S. Begging 19 T. Others (Specify) 20 U. No livelihood activities; rely on Govt./other supports 21		9-21→C104
C102	How much did your household earn income from the livelihood activities/income generating activities and if your household made profit from these activities in the past 12 months?	Did you have any profit from this income activity (excluding all expenses) in the past 12 months? 1=Yes, 2=No (A)	How much did you earn (profit/loss) from this activity in the past 12? (excluding all expenses) In Cash (SDG) (B) In-Kind (equivalent SDG) (C)	
	A. Farming/crop production and sales	☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	B. Livestock production and sales	☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	C. Handicrafts	☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	D. Skilled work (Driver, tailor, carpenter, mechanic etc.)	☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	E. Fish farming and sales	☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	F. Agri-business (buying/selling agric products and inputs)	☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	G. Non-agric business	☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	H. Processing, packaging and selling products to the market	☐	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
C103	Overall: Do you think your household's net income (excluding expenses) from the above activities increased or decreased or remain same over the period of last 12 months?	Increased 1 Decreased 2 Remain same 3		
C104	During the past 12 months (from May 2019 – April 2020), what was your household's MAIN SOURCE of FOOD ? [SINGLE RESPONSE]	Own production..... 1 Cash purchases from household income 2 Purchases from cash transfers (humanitarian assistance) 3 Food aid (humanitarian assistance)..... 4 Casual labour for food 5 Remittances 6 Other (specify) 7		

MODULE D: EQUITABLE ACCESS TO YEAR ROUND NATURAL RESOURCES

[INSTRUCTION: This module is to be asked to **ALL SAMPLE BENEFICIARY HOUSEHOLDS**. This is household level information. The household head and the RISING II Project participant should be the prime respondents of this module. He/she can get help from other household members to respond to this module.]

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	i. ACCESS TO WATER SOURCES		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																					
D101	Does your community have access to the following water sources? [MULTIPLE RESPONSE]	A. River/Canal/Stream 1 B. Pond/ditch/conserved natural water/Dam 2 C. Borehole..... 3 D. Check dam..... 4 E. Watershed 5 F. Don't know..... 8 G. Refused 9	8,9→D102																					
D101a	Does your household have access to the water sources? [MULTIPLE RESPONSE]	Yes=1, No=2 A. River/Canal/Stream ☐ B. Pond/ditch/conserved natural water/Dam ☐ C. Borehole..... ☐ D. Check dam..... ☐ E. Watershed ☐ F. Not applicable (has own water source for HH)..... ☐																						
D101b	Can your household collect/use water from the water sources year-round without any interruption (by any individual or group)?	<table border="1"> <thead> <tr> <th>Water sources</th><th>DRY Season</th><th>OTHER seasons</th></tr> </thead> <tbody> <tr> <td>A. River/Canal/Stream</td><td>☐</td><td>☐</td></tr> <tr> <td>B. Pond/ditch/conserved natural water/Dam</td><td>☐</td><td>☐</td></tr> <tr> <td>C. Borehole.....</td><td>☐</td><td>☐</td></tr> <tr> <td>D. Check dam.....</td><td>☐</td><td>☐</td></tr> <tr> <td>E. Watershed</td><td>☐</td><td>☐</td></tr> <tr> <td>F. Not applicable</td><td>☐</td><td>☐</td></tr> </tbody> </table>	Water sources	DRY Season	OTHER seasons	A. River/Canal/Stream	☐	☐	B. Pond/ditch/conserved natural water/Dam	☐	☐	C. Borehole.....	☐	☐	D. Check dam.....	☐	☐	E. Watershed	☐	☐	F. Not applicable	☐	☐	
Water sources	DRY Season	OTHER seasons																						
A. River/Canal/Stream	☐	☐																						
B. Pond/ditch/conserved natural water/Dam	☐	☐																						
C. Borehole.....	☐	☐																						
D. Check dam.....	☐	☐																						
E. Watershed	☐	☐																						
F. Not applicable	☐	☐																						
D101c	[IF 1 OR 2 SELECTED IN D101a] Can your household use ponds or open water bodies for fishing?	Yes..... 1 No 2 Not applicable (don't fishing) 3																						
ii. ACCESS TO PASTURELAND/GRAZING LAND																								
D102	Does your community have access to an open or shared pastureland or grazing land for agricultural production and livestock rearing?	Yes 1 No 2	2→D103																					
D102a	Can your household use this open or shared pastureland or grazing land for agricultural production and livestock rearing year round without any interruption (by any individual or group)?	Yes=1, No=2 DRY Season..... ☐ OTHER Seasons ☐																						
iii. ACCESS TO SHARE-CROPPING/LEASING/PROCURING AGRICULTURAL LAND																								
D103	Does anyone in this community purchase/ lease agricultural land or involve in share-cropping?	Yes..... 1 No 2	2→D104																					
D103a	Can your household purchase/lease agricultural land or can involve in share-cropping without any interruption (by any individual or group)?	Yes..... 1 No 2																						
iv. ACCESS TO FOREST/FOREST PRODUCT																								
D104	Does your community have access to a forest?	Yes..... 1 No 2	2→D105																					

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
D104a	Can your household collect forest products (honey, fire-woods, others) for your livelihood use or selling to the market without any interruption (by any individual or group)?	Yes..... 1 No 2	
D104b	Does your household have access to the forest to use for your livestock?	Yes..... 1 No 2 Not applicable (HH does not have livestock)..... 9	
V. GOVERNMENT/OTHERS INPUTS SUPPORTED NATURAL RESOURCES			
D105	Does your community have access to a Government/others inputs (installed, rehabilitated, maintenance and management groups etc.) supported natural resources (Borehole, watershed, conserved natural water sources, dam, pasture/grazing land, forest etc.)?	Yes..... 1 No 2	2→E101
D105a	Does your household have access to the Government or others inputs supported natural resources?	Yes.....1 No 2	

MODULE E: AGRICULTURE AND LIVESTOCK PRODUCTION

[INTRODUCTION: Now I would like to discuss about rainfall and your household's current practice on agriculture and livestock activities. We will also ask about agriculture and livestock assets that the household currently have]

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1. RAINFALL INFORMATION			
E101	How do you rate the rainfall in your area for this year (2019 and 2020 season)? [SINGLE RESPONSE] [DO NOT READ RESPONSES] [PROBE]	Good (sufficient) 1 Moderate (Average) 2 Poor rain (insufficient) 3 Poor and flooding 4 Good (sufficient) but flooding 5	
E102	How was the rainfall for 2019/2020 compared to last year (2018 season)?	Better.....1 The same (average) 2 Less 3	
2. AGRICULTURAL PRODUCTION			
E201	Does anyone in your HH have access to farm land now? [DEFINITION: "Access to farm land" is defined as "the farmer can use the land for farming irrespective of his own land or leasing land"]	Yes 1 No 2	2→E401
E202	How much <i>Mukhamas</i> of agricultural land do all members of this HH have access?	A. Own land : . Mukhamas B. Lease land : . Mukhamas C. Gift land : . Mukhamas	
E203	How much <i>Mukhamas</i> of agricultural land that you have used for planting in last 12 months?	. Mukhamas	
E204	What are the cropps that you produced in the agricultural land in last 12 months? [MULTIPLE RESPONSE POSSIBLE] [DO NOT READ THE ANSWER]	A. Sorghum 1 B. Millet.....2 C. Ground nuts.....3 D. Soybeans.....4	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																																																															
		E. Sweet potato 5 F. Vegetables 6 G. Others (Specify) 7																																																																
E204a	How was the seeds/seedlings supply (from all sources) when it was required for the crops that you cultivated in the last planting season? <i>[Please ask for the crops ONLY that responded in Question E204]</i>	1 = Adequate 2 = More 3 = Less																																																																
		A. Sorghum ☐ B. Millet..... ☐ C. Ground nuts..... ☐ D. Soybeans..... ☐ E. Sweet potato ☐ F. Vegetables ☐ G. Others (Specify) ☐																																																																
E205	What was the production and use of the following crops that was harvested in most recent harvesting? <i>[Please ask for the crops ONLY that responded in Question E204]</i>																																																																	
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	Code for C205_5: 1 = Better and sufficient rainfall 2 = Better resources available in this season 3 = Application of new or improved technologies/practices 4 = Others (SPECIFY) 5 = Don't know	Code for C205_6: 1 = Poor/insufficient/excessive rainfall 2 = Less resources available in this season 3 = Application of traditional technologies/practices 4 = Others (SPECIFY) 5 = Don't know																																																																
E206	Plant density: How much seed did you plant per Mukhams for the following crops in the last planting season?	Sorghum ☐ ☐ Kg/Mukhams Millet ☐ ☐ Kg/Mukhams Ground-nut..... ☐ ☐ Kg/Mukhams																																																																
E207	For how many months would you expect to cover your household adequate consumption from your household own agriculture and livestock production and selling without supports from others?	☐ ☐ Months																																																																
E208	[IF "YES" FOR VEGETABLES IN E204a]	A. Tomato 01 B. Okra 02																																																																

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																																																	
	What were the following vegetables did you produced in the past 12 months?	C. Cucumber 03 D. Water cress.....04 E. Green pepper.....05 F. Eggplant.....06 G. Cow bean 07 H. Raddish 08 I. Others (SPECIFY) 09 J. None 99																																																		
IMPROVED AGRICULTURAL AND NATURAL RESOURCES MANAGEMENT PRACTICES																																																				
E301	Quality Seeds: From where did you get seeds of sorghum/millet/ ground-nut/vegetables for cultivation in the last planting season? [PROBE: Any other? Any other?] [MULTIPLE RESPONSE POSSIBLE] [DO NOT READ THE ANSWER BUT PROBE]	A. Registered seed Stockers.....01 B. NGOs.....02 C. Government.....03 D. Research seed station.....04 E. Own seeds 05 F. Purchased from the market.....06 G. Borrowed 07 H. Community seed bank 08 I. Agro-dealers 09 J. DiNER Fair 10 K. Others (SPECIFY) 11																																																		
E301a	In how much land did you use seeds that you received from registered stockiest/NGOs/ Government/ Seed research station/ Community seed bank/agro-dealers/ DiNER Fair?	Mukhamas																																																		
E301b	Did you involve in seedling production and transplantation in the last planting season?	Yes 1 No 2																																																		
E301c	In how much land did you apply seedling production and transplantation in the last planting season?	Mukhamas																																																		
E302	Crop Rotation: Did you rotate/change the crops grown on a particular piece of land during this season?	Yes 1 No 2	2→E304																																																	
E303	Which crops did you rotate in last season? [INSTRUCTION: ASK THE QUESTION FOR EACH CROP ONE BY ONE. CIRCLE ONLY ONE RESPONSE FOR EACH CROP] Rotated: A. Sorghum with B. Millet with C. Ground-nut with D. Soybean with E. Sweet potato with F. Others (SPECIFY) with	SELECT ONE <table border="1"> <thead> <tr> <th>Sorghu m</th><th>Millet</th><th>Ground nut</th><th>Soybean</th><th>Potato</th><th>Others</th><th>None</th></tr> </thead> <tbody> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> </tbody> </table>	Sorghu m	Millet	Ground nut	Soybean	Potato	Others	None	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
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E303a	In how much land did you apply crop rotation technique in the past 12 months?	Mukhamas																																																		
E304	Inter-cropping: Did you plant two or more crops same time in the same crop field systematically in last season?	Yes 1 No 2	2→E306																																																	
E305	Which of the crops did you use for intercropping with sorghum/millet in the last season? [MULTIPLE RESPONSE POSSIBLE] [DO NOT READ THE ANSWER]	A. Beans 1 B. Green peas.....2 C. Cow peas.....3 D. Sweet potatoes.....4 E. Sunflower.....5																																																		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
		F. Ground-nut 6 G. Pigeon peas.....7 H. Others (SPECIFY) 8	
E305a	In how much land did you apply crop rotation technique in the past 12 months?	☐ ☐ . ☐ ☐ Mukhamas	
E306	Minimum tillage: Did you plough your land before cultivation in the last season?	Yes 1 No 2	2→E308
C307	Which approaches did you use for ploughing in the last season for planting? [MULTIPLE RESPONSE POSSIBLE] [INSTRUCTION: DO NOT READ THE]	A. No or plough land one time before planting 1 B. Plough land two times before planting 1 C. Plough land more than two times before planting 2 D. Use of planting basins 3 E. Use ripper/two wheel tractor 4 F. Others (SPECIFY) 5	
E307a	In how much land did you apply ploughing technique in the past 12 months?	☐ ☐ . ☐ ☐ Mukhamas	
E308	Mulching: Did you use mulch in your garden/crop field to cover the soil in last season? [INSTRUCTION: USE LOCAL NAME OF MULCH]	Yes 1 No 2 [Read introduction before starting C310]	2→E310
E309	What materials did you use for mulching in the last season? [MULTIPLE RESPONSE POSSIBLE] [INSTRUCTION: DO NOT READ THE OPTIONS]	A. Dried grass.....1 B. Plant leaves 2 C. Crop/plant residues.....3 D. Compost 4 E. Others (SPECIFY) 5	
E309a	In how much land did you apply mulching technique in the past 12 months?	☐ ☐ . ☐ ☐ Mukhamas	
INTRODUCTION: I would like to discuss with you about the pest management technologies that you have applied in last season on your crops.			
E310	Did you have problems with your crops affected by diseases in the last season?	Yes 1 No 2	2→E312
E311	What did you do to control the crop diseases in the last season? [MULTIPLE RESPONSE POSSIBLE] [DO NOT READ THE OPTIONS]	A. Did nothing 1 B. Burn crop residue after harvest 2 C. Turn crop residue under soil after harvest.....3 D. Rotate crops every year 4 E. Plant disease resistant varieties 5 F. Plant treated seed 6 G. Apply fungicides 7 H. Others (SPECIFY) 8	
E312	Did you have problems with your crops affected by insects in the last season?	Yes 1 No 2	E312=2 & 2→E314
E313	What did you do to decrease insects attack in the last season? [MULTIPLE RESPONSE POSSIBLE] [DO NOT READ THE OPTIONS]	A. Did nothing 1 B. Crop rotation 2 C. Plant a trap crop 3 D. Hand picking 4 E. Insecticides (applied on a regular schedule) 5 F. Insecticides (only applied when counts of insects suggest that they will seriously damage the crop)....6 G. Burning previous crop residue 7 H. Others (SPECIFY) 8	
[INTERVIEWER: ASK 313a QUESTION IF C310=1 or C312=1]			
E313a	Integrated Pest Management (IPM): Did you follow the process of scouting, identification,	A. Inspection (scouting) 1 B. Identification 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	monitoring, appropriate pest/disease control based on monitoring (action) and evaluation after the action?	C. Monitoring 3 D. Action (pest/disease control) 4 E. Evaluation.....5 F. None of the above.....6	
E313b	In how much land did you apply IPM technique in the past 12 months?	. Mukhamas	
E314	Fertilizer tree: Did you plant fertilizer tree on your crop land in last season?	Yes 1 No 2	2→E315
E314a	What types of fertilizer tree did you planted in last season?	A. Faidherbia albida 1 B. Luceana leucocphla 2 C. Acacia senegal 3 D. None 4	
E315	Did you use any fertilizers in your crop fields in last season?	Yes 1 No 2	2→E317
E316	What kind of fertilizers have you used in the last season? [MULTIPLE RESPONSE POSSIBLE] [INSTRUCTION: DO NOT READ THE OPTIONS]	A. SAMADI (Phosphate) 1 B. MILIH (Nitrogen/Urea) 2 C. Thulathi (NPK) 3 D. Compost 4 E. Manure: Livestock urine or dung 5 F. Others (SPECIFY) 6	
E317	Did you apply soil and/or water conservation techniques : contour ridges, box ridges, gabions, bunds and river bank management in the last season?	Yes 1 No 2	2→E318a
E318	Which soil and water conservation techniques have you used in the last season? [MULTIPLE RESPONSE POSSIBLE]	A. Contour ridges.....1 B. Box ridges 2 C. Half-moon 3 D. Bunds.....4 E. Gabions.....5 F. River bank management 6	
E318a	Did you plant Vertiver grass/ Elephant grass on the hedges/bunds in last season?	Yes 1 No 2	2→E320
E319	How was the ridges laid out in your field(s)? [MULTIPLE RESPONSE POSSIBLE] [DO NOT READ THE OPTIONS]	A. Down the slope.....1 B. Along the contour across the slope.....2 C. Small rectangles alongside with contour.....3 D. Others (SPECIFY) 4	
E320	Farmer Managed Natural Regeneration (FMNR): Did you use the following natural resources management practices in the past 12 months? [MULTIPLE RESPONSE] (READ RESPONSES)	A. Agroforestry (integrating fodder and fruit trees production, other nitrogen fixing trees)..... 1 B. Regeneration of natural landscapes (Reseeding)..... 2 C. Management of forest plantation (planting, cutting, pruning etc.) 3 D. Sustainable harvesting of forest products (wood, firewood, charcoal production etc.) 4	
E321	What types of irrigation system did you use for cropping in the past 12 months? [MULTIPLE RESPONSE] (READ RESPONSES)	A. Did not use any irrigation system, rely on rain..... 1 B. Harvest water from surface (dam/river/canal), watershed or building of swales/ditches..... 2 C. Used solar irrigation system 3 D. Used other irrigation system (specify) 4	
3. LIVESTOCK			
E401	Does anyone in your HH rear livestock now?	Yes 1	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES				SKIP
		No 2				2→E501
E402	Livestock production and selling					
	Livestock type	Does your HH currently own [Asset]? 1= Yes, 2=No 2→3	How many owned currently? [Number]	Did your HH sell [Asset] in last 12 months? 1= Yes, 2=No 2→next asset	How many sold in last 12 months? [Number]	
		1	2	3	4	
	a. Oxen	☐	☐ ☐ ☐	☐	☐ ☐ ☐	
	b. Cattle	☐	☐ ☐ ☐	☐	☐ ☐ ☐	
	c. Goats	☐	☐ ☐ ☐	☐	☐ ☐ ☐	
	d. Sheep	☐	☐ ☐ ☐	☐	☐ ☐ ☐	
	e. Donkey/mule	☐	☐ ☐ ☐	☐	☐ ☐ ☐	
	f. Chicken/duck	☐	☐ ☐ ☐	☐	☐ ☐ ☐	
	g. Turkey	☐	☐ ☐ ☐	☐	☐ ☐ ☐	
	h. Pigeon	☐	☐ ☐ ☐	☐	☐ ☐ ☐	
	i. Camels	☐	☐ ☐ ☐	☐	☐ ☐ ☐	
	j. Horses	☐	☐ ☐ ☐	☐	☐ ☐ ☐	
	k. Others (specify)	☐	☐ ☐ ☐	☐	☐ ☐ ☐	
E403	Did you use any of the following practices when you cared for the livestock during the [PAST 12 MONTHS]? [READ RESPONSES] [MULTIPLE RESPONSE]	A. Improved Animal shelters.....01 B. Vaccinations.....02 C. Deworming 03 D. Castration 04 E. Dehorning 05 F. Homemade animal feeds made of locally available products 06 G. Animal feed supplied by stockfeed manufacturer.....07 H. Artificial insemination.....08 I. Pen feeding.....09 J. Fodder production and/or veld reinforcement with legumes 10 K. Used the services of community animal health workers/paravets 11 L. Did not practice any of these.....99				
E404	If you purchased drugs or medicines to give to livestock during the past 12 months, where did you primarily purchase the drugs? [READ RESPONSES] [MULTIPLE RESPONSE]	A. Veterinarian 1 B. Community Animal Health Worker (CAHW)/paravet 2 C. Agri-dealer.....3 D. Other.....4 E. Did not purchase drugs or medicines 9				
E404a	Did you or your household receive any animal health services from the Community Animal Health Workers (CAHW) for your livestock in the past 6 months?	Yes 1 No 2				
4. ACCESS TO MARKET						
E501	What is the distance and how long does it take to reach in the closest market or trading center from your home?	a) Distance : ☐ ☐ Km [00 <1km] b) Walking time to get to there: ☐ ☐ ☐ minutes				
E502	What type of market is there? [SINGLE RESPONSE]	For livestock only 1 For agricultural products only 2 For both livestock and agricultural products 3 For other goods only 4				

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
		For livestock, agricultural products and others 5	
E503	How easy or difficult is it for you to access to the main market where you buy and sell products? [SINGLE RESPONSE]	Very difficult 1 Somewhat difficult 2 Easy 3 Very easy 4	

MODULE-F: ACCESS TO WATER AND SANITATION

[INTRODUCTION: Now I would like to ask you about the household access to water and sanitation]

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1. ACCESS TO WATER			
F101	What is the main source of drinking water for your household in the dry season? [SINGLE RESPONSE]	Surface water (pond, river, canal)..... 01 Unimproved hand dug well..... 02 Improved hand dug well 03 Piped water into the HH compound 04 Piped water into the public place/donkey 05 Berkad (underground tank)..... 06 Hand pump..... 07 Water trucked to settlements with permanent water source..... 08 Borehole 09 Other (SPECIFY) 10	
F102	How long does it take you to fetch water for household use in the dry season? [INSTRUCTION: ROUND TRIP – TO GO AND RETURN BACK ONLY, QUEUING TIME NOT INCLUDED]	a. Round trip Minutes b. Queuing time Minutes	
F103	How far is the water point from your home to fetch water in the dry season?	km [RECORD 00 IF LESS THAN 1 KM]	
F104	Do you think the water source that you are using for household consumption for drinking is safe?	Yes 1 No 2	
F105	How do you treat your drinking water? [MULTIPLE RESPONSE POSSIBLE] [DO NOT READ THE ANSWERS BUT PROBE]	A. Do nothing 1 B. Boil 2 C. Add bleach/chlorine (Jik/water guard) 3 D. Strain it through a cloth 4 E. Use a water filter (ceramic, sand, composite etc.) . 5 F. Solar disinfection..... 6 G. Let it sand and settle..... 7 H. Add water treatment tablet..... 8 A. Others (Specify)..... 9	
F106	How do you store the water? [OBSERVE]	Keep water COVERED in the container 1 Keep water UNCOVERED in the container..... 2	
F107	What type of latrine do most members of your household usually use? [SINGLE RESPONSE]	Ring-slab/offset latrine (water seal)..... 1 Pit latrine (covered)..... 2 Ring-slab/offset latrine (water seal broken) 3 Pit latrine (uncovered) 4 Septic latrine 5 Hanging/open latrine 6 No toilet facility 7	7 → F111
F108	Do you share this facility with other households?	Yes 1 No 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
F109	Where do you dispose of the chronically ill household member's feces? [SINGLE RESPONSE] [INSTRUCTION: DO NOT READ THE ANSWERS BUT PROBE]	Latrine 1 Just throw outside..... 2 Burying under the earth 3 Burning and covering with dirty/ash..... 4 Others (specify) 5 No Chronically ill household member 9	
F110	Where do you dispose of your children's (under 5 years of age) feces? [INSTRUCTION: DO NOT READ THE ANSWERS] [SINGLE RESPONSE]	Latrine 1 Just throw outside..... 2 Burying under the earth 3 Burning and covering with dirty/ash..... 4 Others (specify) 5 No Children U5 in the household 9	
F111	Please state all of the occasions when it is most important to wash one's hands: [DO NOT READ RESPONSES] [MULTIPLE RESPONSE]	A. Before food preparation 01 B. Before eating..... 02 C. After eating 03 D. Before feeding children..... 04 E. After feeding children 05 F. After defecation 06 G. After cleaning baby's defecation..... 07 H. When hands are dusty/dirty 08 I. After coming back from outside..... 09 J. Others (specify) 10	
F111a	ENUMERATOR: Please select the sex of the respondent for the previous question F111	Male 1 Female..... 2	

MODULE – G: HEALTH AND NUTRITION

[INSTRUCTION: VERIFY IF THE HOUSEHOLD HAS CHILDREN UNDER 5 YEARS OR NOT. IF THE HOUSEHOLD HAVE CHILDREN U5 THEN INTERVIEW HEALTH AND NUTRITION PART [MODULE - G]

[INSTRUCTION: ASK THIS QUESTION DIRECTLY TO THE MOTHER/CARE GIVERS OF CHILDREN UNDER 5 YEARS OR JOINTLY WITH THE RESPONDENT]

[INTRODUCTION: Now we will talk about your children of age under 5 years. We will discuss about their feeding practices, illness and care seeking of your children]

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	INFANT AND YOUNG CHILD FEEDING PRACTICES		
G101	INSTRUCTION: Verify A103 and confirm if the household have children under 5 years of age?	Yes..... 1 No..... 2	2→END
G102	How many children are U5 years in the HH? [CONFIRM THE RESPONSE WITH A103]	a. Number of children 0-23 months : b. Number of children 24-59 months :	
G103	What are the ages of children U5? [Instruction: Please ask the name of the children and note in your notebook]	1 st child (last birth) months 2 nd child (next to 1 st child) months 3 rd child (next to 2 nd child)..... months 4 rd child (next to 3 rd child) months 5 rd child (next to 4 th child) months	All>23m →G114
PLEASE ASK THE FOLLOWING QUESTIONS FOR ALL CHILDREN OF AGE 0-23 MONTHS			
		1 st child 0-23 months [NAME] 2 nd child 0-23 months [NAME] 3 rd child 0-23 months [NAME]	
G104	Age of the child?	months	
G105	Sex of the child?	Boy 1 Girl..... 2	
G106	Did you ever breastfed [NAME]?	Yes..... 1	2→G112

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES			SKIP
		No.....2	No.....2	No.....2	
G107	How long after birth did you first put (NAME) to the breast?	a.Days ☐ ☐ b..... ☐ ☐ ours ☐ ☐ c.Minutes	a. Days ☐ ☐ b. Hours ☐ ☐ c. Minutes ☐ ☐	a. Days ☐ ☐ b. Hours ☐ ☐ c. Minutes ☐ ☐	
G108	Did you give (NAME) the colostrum (the first milk which is yellow sticky fluid secreted the few days after delivery)?	Yes.....1 No.....2 Don't know.....3	Yes.....1 No.....2 Don't know.....3	Yes.....1 No.....2 Don't know.....3	
G109	Are you still breastfeeding?	Yes.....1 No.....2	Yes.....1 No.....2	Yes.....1 No.....2	
G110	In the first three days after delivery, was (NAME) given anything to drink other than breast milk?	Yes.....1 No.....2	Yes.....1 No.....2	Yes.....1 No.....2	2→G112
G111	What was (NAME) given to drink? [PROBE: Any other? Any other?] [INSTRUCTION: DO NOT READ THE OPTIONS] [MULTIPLE RESPONSE POSSIBLE]				
	A. Milk (other than breast milk) ☐	1	1	1	
	B. Plain water ☐	2	2	2	
	C. Sugar/glucose water..... ☐	3	3	3	
	D. Sugar-salt-water solution ☐	4	4	4	
	E. Fruit juice..... ☐	5	5	5	
	F. Infant formula ☐	6	6	6	
	G. Tea/infusions..... ☐	7	7	7	
	H. Coffee ☐	8	8	8	
	I. Honey ☐	9	9	9	
	J. Others (SPECIFY) ☐	9	10	10	
G112	Did (NAME) drink anything from a spoon/cup/bottle with a nipple yesterday or last night?	Yes.....1 No.....2	Yes.....1 No.....2	Yes.....1 No.....2	
G113	Now I would like to ask you about liquids or foods that (NAME) had yesterday during the day or at night. I am interested in whether your child had the item I mention even if it was combined with other foods. [INSTRUCTION: ASK ABOUT ALL FOODS/FOOD GROUPS ONE BY ONE]				
	A. Plain water	Yes.....1 No.....2	Yes.....1 No.....2	Yes.....1 No.....2	
	B. Fresh Juice or juice drinks	Yes.....1 No.....2	Yes.....1 No.....2	Yes.....1 No.....2	
	C. Milk such as tinned, powdered, or fresh animal milk?	Yes..1 No..2 If yes, how many times? ☐ ☐	Yes...1 No....2 If yes, how many times? ☐ ☐	Yes....1 No...2 If yes, how many times? ☐ ☐	
	D. Infant formula (e.g. leben el um, Lactogen)?	Yes..1 No..2 If yes, how many times? ☐ ☐	Yes...1 No....2 If yes, how many times? ☐ ☐	Yes....1 No...2 If yes, how many times? ☐ ☐	
	E. Any other liquids?	Yes..1 No..2 If yes, how many times? ☐ ☐	Yes...1 No....2 If yes, how many times? ☐ ☐	Yes....1 No...2 If yes, how many times? ☐ ☐	
	F. Yogurt?	Yes..1 No..2 If yes, how many times? ☐ ☐	Yes...1 No....2 If yes, how many times? ☐ ☐	Yes....1 No...2 If yes, how many times? ☐ ☐	
	G. Any commercially bio-fortified baby food like Cerelac?	Yes.....1 No.....2	Yes.....1 No.....2	Yes.....1 No.....2	
	H. Bread, rice, noodles, porridge, or other foods made from grains?	Yes.....1 No.....2	Yes.....1 No.....2	Yes.....1 No.....2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES			SKIP													
	I. Pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside?	Yes 1 No 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2														
	J. White potatoes, white yams, manioc, cassava, or any other foods made from roots?	Yes 1 No 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2														
	K. Any dark green, leafy vegetables (eg. rudu or tamleka)	Yes 1 No 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2														
	L. Ripe mangoes, papayas, jackfruit or other Vitamin A rich fruits?	Yes 1 No 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2														
	M. Any other fruits like banana, grapes, apple, guava or other?	Yes 1 No 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2														
	N. Liver, kidney, heart or other organ meats?	Yes 1 No 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2														
	O. Any meat, such as beef, camel, lamb, goat, chicken, or duck?	Yes 1 No 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2														
	P. Eggs?	Yes 1 No 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2														
	Q. Fish, seafood, shellfish?	Yes 1 No 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2														
	R. Any foods made from beans, peas, lentils, or nuts?	Yes 1 No 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2														
	S. Cheese or other food made from milk?	Yes 1 No 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2														
	T. Any other foods (SPECIFY)?	Yes 1 No 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2														
	U. How many times did (NAME) eat solid, semi-solid, or soft foods other than liquids yesterday during the day and at night as meal or snacks?	How many times? 	How many times? 	How many times? 														
INSTRUCTION: Ask this question the mother/caregiver of children under 5 years of age.																		
G114	When do you wash your hands and what do you use to wash your hand? [INSTRUCTION: DO NOT READ THE OPTIONS] [PROBE: Any other? Any other?] [MULTIPLE RESPONSE POSSIBLE]	When do you wash hand: (Critical time) Yes = 1, No = 2 <table border="1"> <thead> <tr> <th>1</th><th>2</th></tr> </thead> <tbody> <tr> <td>A. Before food preparation ☐ 1→</td><td>☐</td></tr> <tr> <td>B. Before eating..... ☐ 1→</td><td>☐</td></tr> <tr> <td>C. Before feeding children ☐ 1→</td><td>☐</td></tr> <tr> <td>D. After defecation ☐ 1→</td><td>☐</td></tr> <tr> <td>E. After cleaning baby's defecation ☐ 1→</td><td>☐</td></tr> <tr> <td>F. Others (Specify)..... ☐ 1→</td><td>☐</td></tr> </tbody> </table>	1	2	A. Before food preparation ☐ 1→	☐	B. Before eating..... ☐ 1→	☐	C. Before feeding children ☐ 1→	☐	D. After defecation ☐ 1→	☐	E. After cleaning baby's defecation ☐ 1→	☐	F. Others (Specify)..... ☐ 1→	☐	What do you use to wash hand: 1= Soap or detergent 2= Ash, 3= Sand, 4=Nothing	
1	2																	
A. Before food preparation ☐ 1→	☐																	
B. Before eating..... ☐ 1→	☐																	
C. Before feeding children ☐ 1→	☐																	
D. After defecation ☐ 1→	☐																	
E. After cleaning baby's defecation ☐ 1→	☐																	
F. Others (Specify)..... ☐ 1→	☐																	

END

Thank you very much for your participation and valuable information that you gave!!!!!!
[INSTRUCTION: After the interview thank the respondent for giving you his/her time and for the co-operation in providing the information. 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.]

B. QUALITATIVE TOPICAL OUTLINES

Topical Outline (TO) for the FGD/IDI with - Farmers and Pastoralists (male or female, mixed as appropriate) ~ Household level perspectives

A. Livelihood situation

1. **What are the main livelihoods in this community?**
 - a. How do the crops or livestock produced by women in your community differ from men? Are there differences for youth? For returnees or host community members?
2. **What are the top 3 factors that limit your production [crop or livestock], and why? [Is COVID-19 a factor?]**
i.....ii.....iii.....
 - a. What would help with these limited production issues? (prompt: resolved by community, your household, private sector, government?)
3. **What are the top 3 factors that have enhanced your production [crop or livestock], and why? i...ii.....iii... (Prompt: Factors can be improved practices, inputs, information ,etc.)**
 - a. Who provided/or supported those factors? (i.e. community, your household, private sector, government?)

B. Market situation/access to markets

1. **Have there been any changes in the sales of your products [crop or livestock] over the last 5 years?**
 - a. If so, why have these changes taken place?
2. **What are the main constraints to accessing markets for your community to *sell* products? (e.g., transport, security, people don't have cash to buy, etc.) [Is COVID-19 a factor, what about before Covid-19 restrictions?]**
 - a. How does your community address these challenges to market access? What has worked/what has not?
 - b. Are the constraints for accessing markets to *buy* products the same or different as those for selling? Why?
3. **Are there any major shortages of certain productive inputs, food products, or other necessities that you want at the market? What products? Why? [Is COVID-19 a factor, what about before Covid-19 restrictions?]**
 - a. In the past year, have there been major price fluctuations in the food products and other household necessities you buy in the market?
4. **Do women access the markets?**
 - a. Do they sell/trade at the market?
 - b. What about youth?
 - c. What can be done to support women/youth with better access to markets?

C. Cash and financial services

1. **Apart from selling crop/livestock products, what are the other activities for earning income in this community? (e.g., what kind of cash for work schemes, daily labor jobs exist?)**
 - a. Are there certain groups in your community that tend to do more of the cash-for-work or daily labor jobs? What their characteristics?

2. **Are there households in the community that are not able to be productive or do any income-earning activities?**
 - a. If yes: What types of households/and how do they survive?
3. **Is anyone receiving direct cash relief/assistance in your community? If yes: Who/how did they qualify, to their understanding?**
 - a. Cash from what organization? And in what form? (card, voucher, mobile money?)
 - b. How is this perceived in the community? (Prompt: can women handle the cash and spending? How was the cash modality itself perceived?)
4. **What are the main ways that women in your community earn income? Have there been any changes in women earning cash over last 5 years?**

Now changing the topic to financial/business services:

5. **If households in your community need a loan to support livelihood or business activities, where do they normally go?**
 - a. Are there any formal financial/business service providers in/near this community?
 - b. If yes: what barriers to using these services?
6. **Are you aware of any group-based lending or saving in your community (e.g., SILC, VSLA)?**
Who participates in these groups? (mostly men, mostly women, mix of both...)

D. *NRM access and management, including DRM*

1. **What are your biggest challenges/barriers to utilizing natural resources near your community:**
[water, pastureland/grazing, cropping/agricultural land, forest/forest products? FOCUS on the issues relevant for this area]
2. **What are the differences across groups within the community in terms of access to water and communal land?**
3. **What conflicts arise over water or land use (trends over last 5 years)?**
 - a. How are they resolved, and by whom? (e.g., CAGs, ajawids, etc.)
 - b. Do these conflict resolution groups include all the necessary stakeholders?
 - c. How does conflict affect ACCESS/USE of common natural resources? How does it affect disaster risk mitigation (DRM) efforts? (provide examples of this)
4. **What are the top 3 shocks/stresses your community has faced in the past 5 years?** (Including both man-made shocks like conflict (or market fluctuations, etc.) or natural/environment shocks (drought, flood, etc.) Prompting description of these shocks; for each shock:
 - a. What are the impacts of this shock on different types of households?
 - b. What are the main ways households cope with this shock? (how do livelihood activities, access to water and land change because of it), do different types of households cope in different ways?
 - c. Is any early warning information provided about this shock? If yes, what and from whom?
 - d. Has the government/or community/or other provided support to help community members prepare for, or cope with, the shocks?
 - i. If so, how effective have these supports been to address needs of community members? (e.g., what are the constraints, solutions)

E. *Nutrition and hygiene behaviors*

1. **What are the biggest challenges/barriers for mothers/caregivers in your community to:**
 - a. Feed young children diverse and healthy foods?

2. **What are the biggest challenges for household members to wash hands multiple times during the day?** (lack of water, lack of soap or ash, not willing because don't understand the benefits)

Topical Outline (TO) for the FGD/KII with Community leaders, CAG members, or Agriculture Extension Workers for the community (mixed FGD, male and female) ~ Community level perspectives

A. Livelihood situation

1. **What are the top 3 factors that limit community members' production [crop or livestock], and why?** *[Is COVID-19 a factor, what about before Covid-19 restrictions?]* i.....ii.....iii....
 - a. What would help with these limited production issues? (prompt: resolved by community, your household, private sector, government?)
2. **What are the top 3 factors that have enhanced community members' production [crop or livestock], and why?** i.....ii.....iii... (Prompt: Factors can be improved practices, inputs, information ,etc.)
 - a. Who provided/or supported those factors? (i.e. community, your household, private sector, government?)

B. Market situation/access to markets

1. **What are the main constraints to accessing markets for your community to sell products?** (e.g., transport, security, etc.) How have they changed in the last 5 years, and why? *[Is COVID-19 a factor, what about before Covid-19 restrictions?]*
 - a. How does your community address these challenges to market access? What has worked/what has not?
2. **Are there any major blockages/or shortages that limit the community's access to certain productive inputs, food products, or other necessities?** What products? Why? *[Is COVID-19 a factor, what about before Covid-19 restrictions?]*
 - a. In the past year, have there been major price fluctuations in the food products and other household necessities in the market? What products? Why?
3. **Do women access the markets?**
 - a. Do they sell/trade at the market?
 - b. What about youth?
 - c. What can be done to support women/youth with better access to markets?

C. Cash and financial/business services

1. **Apart from selling crop/livestock products, what are the other activities for earning income in this community?** (e.g., what kind of cash for work schemes, jobs exist?)
 - a. Are there certain groups in your community that tend to do more of the cash-for-work or daily labor jobs? What are their characteristics?
2. **Are there people in the community that are not able to be productive or do any income-earning activities?** If yes: Who/and how do they survive?
 - a. Is anyone receiving direct cash relief/assistance in your community? If yes: Who/how did they qualify, to their understanding?
 - b. Cash from what organization? And in what form? (card, voucher, mobile money?)
 - c. How is this perceived in the community? (both the aid and the modality)
3. **Do women in your community handle cash and spending in the household?**

Now changing the topic to financial/business services:

4. **If someone in your community needed a loan to support livelihood activities, where would they go?**
 - a. Are there any formal financial/business service providers they can access?
 - b. If yes: what barriers to using these services?
5. **Is there any group micro-lending or saving in your community (e.g., SILC, VSLA)?**

D. NRM access and conflict management – CL adjusted

1. **What conflicts arise over water or land use?** (intra-community or between communities?)
 - a. How are they resolved?
 - b. And by whom? What is the role of different stakeholders? (e.g., leaders, CAGs, ajawids, religious leaders, women, youth, local authorities, private sector, etc.)
 - c. Are some groups/or people within the community excluded from participating in conflict negotiations? Why?
 - i. Or, Are some groups/or people invited to participate in conflict management, but do not seem interested/willing?

E. Community Leader perspective

1. **Are there communities that you think manage risks (are more resilient) than others?** Why are they better able to manage risks?
2. **What are the Government structures (administrative offices/) within the community?** What types of information/support do you get from this government structures? How do you get this information?
3. **How would you describe the cooperation between the community and government when there is a threat or crisis in the community?** With NGOs? With other decision-makers? (all levels)
 - a) Who do you as community leader(s) reach out beyond the community for help?
4. **When many families in the community are affected by a threat or a crisis, what actions do leaders take to respond to the threat/crisis?**
 - a) If so, how effective have these supports been to address needs of community members? (e.g., what are the constraints, solutions)**key question to elaborate

Topical Outline (TO) for the KII with Traders/Market Actors (male or female)

A. Market situation/access to markets – trader adapted

4. **What are current conditions of market access for:** (relevant for informant: agricultural commodities, livestock, agricultural and livestock inputs, food and other HH necessities) ? [Is COVID-19 a factor, what about before Covid-19 restrictions?]
 - a. What have been trends over last 5 years?
2. **What are the main constraints to accessing markets that you engage in?**
 - a. How do you or other traders address these challenges to market access? What has worked/what has not?
3. **Do you know of traders in the market that accept various forms of payment:** card (like from NGO), voucher, mobile money transfer?
 - a. If no: explore why not and if traders would be willing to adapt to any other modality. If yes: explore how this is perceived by the traders, is it liked or not (why), any problems?
 - b. Does the local market mostly operate in cash or in trading?
4. **How do the markets change for different seasons, and why?**
5. **Do women access the markets?**

- a. Do they sell/trade at the market?
- b. What about youth?
- c. What can be done to support women/youth with better access to markets?

For commodity traders: *[identify what types of commodities they are talking about]*

1. What have been trends in prices over last 5 years? Causes?
2. What are challenges in finding buyers that offer good prices?

For input suppliers: *[identify what types of inputs they are talking about]*

1. Challenges in getting access to inputs, at reasonable cost:
2. Challenges in finding buyers willing to pay reasonable price:

B. Financial/business services

1. **What are the challenges you face in getting access to cash for your business?**
2. **Are there any business services you need that you cannot find support for?** (What services, from whom have they tried to find support, what are the barriers?)

Topical Outline (TO) for the KII with Nutrition/Health Community Stakeholders (female):

A. Questions for Health workers

1. **What are the main health and nutrition problems in the community?** Changes because of Covid-19? Trends in past 5 years? Explain.
 - a. Probe for main health/nutrition problems **for different groups:** women, pregnant and lactating women, men, elderly, infants, children and youth/adolescents, or female-headed households, households with adult male (no female)
2. **What is the nutrition status of children under 5 in this community?** *(may have been mentioned in previous question)*
 - a. What factors affect child nutrition? Why? What activities in the community to improve child nutrition are working well, or not, to address these factors?
 - b. Trends in child nutrition and services in last 5 years?
3. **When a household is experiencing times of hunger, how have you seen this impact the nutrition of the youngest children in the household?** Ex: Does it impact them first, or are they still fed well when the adults skip meals?
4. **What changes in nutrition health services like ³⁸ have you seen over last 5 years?** **Changes in services recently because of Covid-19?** Explain.
 - a. What are the biggest gaps? How has the community tried to address the nutrition/health service gaps?

B. MCHN Behavior & Belief Questions

1. **What are the biggest challenges that you perceive for mothers/caregivers in this community to:**
 - a. Feed young children diverse and healthy foods?
 - b. If pregnant or lactating, to ensure mothers are eating enough food, and good kinds of foods?
 - c. Exclusively breastfeed children under 6 months old?
2. **What prevalent attitudes or beliefs hinder mothers from providing breastmilk just after birth? Or exclusively for the baby's first 6 months?**
 - a. Where/who do these attitudes come from? (Family member support? Different messages from others in the community? Who/what messages?)
3. **What do households do when a child gets diarrhea?**

³⁸ May present some examples of those nutrition health services that the government system is required to deliver.

- a. Are households adequately informed and supported to handle common illnesses of young children like diarrhea, pneumonia, cough/cold and malaria?
 - b. Does decision-making power in the household affect when they seek medical advice/treatment for the child? Or for a pregnant mother?
- 4. What are the biggest challenges for this community in accessing sanitation facilities? Are there other challenges in disposing of children's feces?**
 - a. Does the community use the latrines that exist? Why or why not?
- 5. What are the biggest challenges for members in this community to wash hands during the day?**
 - a. Are they washing hands at the 5 critical times³⁹? Why or why not? (issues accessing soap or ash?)

³⁹ 5 critical times: after defecation, before preparation food, before eating, before feeding child, after cleaning baby (during baby's defecation).

Annex VI *RISING II* Baseline Survey Sample Size Estimation

The following three project indicators that are critical to measure *RISING II* project impact and outcome:

- Food Consumption Score (FCS): Percentage of households with poor, borderline, and adequate food consumption score
- Reduced Coping Strategy Index (rCSI): Required: Mean, standard deviation, confidence interval (95%), and median
- Household Hunger Score (HHS): Prevalence of households with moderate or severe hunger

The sample size estimated for FCS and HHS indicators will provide sufficiently large samples to provide precise indicators for the other household level indicators. Also following are the two outcome level nutrition indicators that are important to measure for children 0-5 months and 6-23 months.

3. Proportion of children 6-23 months of age who receive foods from 4 or more food groups.
4. Proportion of infants 0-5 months of age who are fed exclusively with breast milk.

The SOW indicates FFP/OFDA

recommended following sample size estimation formula and parameters with a fixed sample size 678 households. The

$$n_{\text{initial}} = D_{\text{est}} \left[\frac{z_{1-\alpha} \sqrt{2P(1-P)} + z_{1-\beta} \sqrt{P_{1,\text{est}}(1-P_{1,\text{est}}) + P_{2,\text{est}}(1-P_{2,\text{est}})}}{\delta} \right]^2$$

recommended estimation procedure used to measure 10 %age-points change from baseline to endline and assume 50% prevalence at baseline (if such an estimate is not available from prior surveys).

Where:

n_{initial} = is the initial sample size required by the surveys for each of the two time points.

- $\delta = P_{1,\text{est}} - P_{2,\text{est}}$ = minimum effect size to be achieved over the time frame specified by the two surveys.
- $P_{1,\text{est}}$ = represents a survey estimate of the true population proportion P_1 at baseline [If such an estimate is not available from prior surveys, 0.5 will be used].
- $P_{2,\text{st}}$ = represents a survey estimate of the true population proportion P_2 at evaluation.
- $\underline{P}$ = mean of $P_{1,\text{est}}$ and $P_{2,\text{st}} = 0.5$
- $z_{1-\alpha}$ is the value from the normal probability distribution corresponding to a confidence level $1-\beta$. For $1-\beta = 0.95$, the corresponding value is $z_{0.95} = 1.64$ (two-tailed test).
- $z_{1-\beta}$ is the value from the normal probability distribution corresponding to a power level of $1-\beta$. For $1-\beta = 0.80$, the corresponding value is $z_{0.80} = 0.84$.
- D_{est} is the estimated design effect (DEFF) of the survey.

Also, the finite population correction factor $F_{\text{PC}} = 1 / (1 + n_{\text{initial}}/N)$, where n_{initial} is the initial sample size and N is the total population of beneficiaries, should be used to adjust the final sample size if initial sample size (n_{initial}) is greater than 5% of the total population of beneficiaries (i.e. n_{initial}/N is greater than 5%).

The FFP/OFDA estimated sample size 678 used the proportion 0.5 for P_1 , if information not available from other recent surveys. However, information for the three indicators: HHS, exclusive breast feeding, and child diet diversity, is available from both Taadoud II 2019 interim and *RISING I* 2019 Baseline surveys. Thus, actual proportions for these indicators will be used from *RISING I* 2019 baseline survey to calculate the sample size using the FFP/OFDA recommended formula. Also, based on the experience from Taadoud II and *RISING* surveys, non-response rates were found much higher (about 25%) than 10% used by FFP. We would recommend to consider at least 15% non-response rate.

The estimated sample size for household level indicators needs to be inflated for the two nutrition indicators (exclusive breast feeding and child diet diversity), so that the number of households to be interviewed will ensure the required child sample sizes for children 0-5 months and 6-23 months will be

attained. The approach involves inflating the required sample size using the following formula that the proportion of households that have at least one eligible child⁴⁰.

$$n_{\text{child}} = n_{\text{initial}} \times \left[A \times \frac{1}{(1 - e^{-\gamma})} \right] + 0.5 \left[(1 - A) \times \frac{1}{1 - e^{-\gamma}} \right]$$

Where,

γ = eligible children per household (children 0-5 months=0.078, children 6-23 months=0.182)⁴¹

$$A = (1 + \gamma) \times e^{-\gamma}$$

Using the parameters given in **Table 7**, following are the estimated sample sizes for five critical indicators that are used to decide the final sample size for the RISING II baseline survey.

Table 7: Sample size by five critical outcome indicators

Indicators	Baseline ($P_{1,\text{est}}$)	Assumed for endline ($P_{2,\text{est}}$)	$Z_{1-\alpha}$ at 95% CI level	$Z_{1-\beta}$ 80% power	Design effect (D_{est})	n_{initial}	Inflation factor	Non Response (%)	Sample HHs (n) ^d
1. % of households with poor, borderline, and adequate food consumption score	0.50 ^a	0.65	0.165	0.84	2.0	266		15%	313
2. % of households with moderate or severe hunger	0.234 ^b	0.134	0.165	0.84	2.0	369		15%	434
3. % of children 0-5 months who are exclusively breastfed	0.784 ^c	0.984	0.165	0.84	2.0	61	13.31	15%	958
4. Proportion of children 6-23 months of age who receive foods from 4 or more food groups	0.142 ^c	0.342	0.165	0.84	2.0	111	05.97	15%	780

^a Assumed and project logframe target BL+15%

^b Actual from RISING I 2019 baseline Survey and logframe target BL-10%

^c Actual from RISING I 2019 baseline Survey and logframe target BL+20% for both

^d The initial estimated sample sizes n_{initial} were found below 5% of the total beneficiary households 28,060. Finite Population Correction Factor is not applicable.

The maximum estimated sample size for two household level indicators is **434**. But the required sample size for children 0-5 months is **958** households. Therefore the final sample size is rounded to **980**, which will be the final sample size for RISING II baseline survey. According to the PaBS guideline⁴² the range of cluster sample size is 15 to 35. Including larger cluster sample size would produce larger design effect. Also greater number of clusters in the sample ensures greater statistical efficiency. Thus, 20 beneficiary households will be selected randomly from the list of RISING II Beneficiary sampling frame in each of **49** PPS sample clusters (out of 92 communities) to survey 980 households across all five Darfur program states and localities.

⁴⁰ i) Feed the Future Population-Based Survey Sampling Guide, Diana Maria Stukel, PhD, April 2018 ii) Addendum to FANTA Sampling Guide by Robert Magnani (1999): Correction to Section 3.3.1, Determining the Number of Households That Need to be Contacted, Diana Stukel Megan Deitchler, March 2012

⁴¹ Calculated from Taadoud II 2019 Interim Survey: Beneficiary family size 6.5 and beneficiary population proportions for children 0-5 months 1.2% and 6-23 months 2.8%, i.e. $\gamma = 6.5 \times 1.2\%$ for children 0-5 months and $\gamma = 6.5 \times 2.8\%$ for 6-23 months

⁴² Feed the Future "Participant-Based Survey Sampling Guide for Feed the Future Annual Monitoring Indicators", Diana Maria Stukel, PhD, September 2018