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BASELINE SURVEY REPORT FOR THE KNOWLEDGE-BASED INTEGRATED SUSTAINABLE AGRICULTURE IN NEPAL II (KISAN II) PROJECT

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ABSTRACT

The survey collected quantitative information in KISAN II project's catchment areas to capture the baseline value of performance indicators. It also included a Resilience Module to track indicators related to market access, household exposure to shocks and stressors, social capital, and coping strategies.

The baseline survey team used a two-stage cluster sampling design with a systematic selection of participants. It collected data from 1,860 households across 21 districts using tablets with a structured questionnaire. The survey took place from September 3-27, 2018.

The surveyed households had an average of 0.55 hectares each (owned or leased), and no households had more than 5 hectares. Average yield (10.7 MT/Ha) and average annual sales (\$335) per household was highest for vegetables. Yield for vegetables in ZOI 2 (12.7 MT/Ha) was higher compared to ZOI 1 (9.4 MT/Ha). HHs in ZOI 2 had highest average sales value for vegetables whereas in ZOI 1 highest average sales value was for rice. Less than 5 percent of households that produced rice, maize, lentils, and goats had received support from the government, a project or the private sector in the previous 12 months about achieving increased yields or sales. Support was highest for vegetables (17%) and support received by HHs for vegetables in ZOI 1 (19%) was higher compared to ZOI 2 (15%). Only 12.7 percent of the households accessed formal agriculture finance. Lack of access to irrigation and limited knowledge of "how to achieve higher yields and sales" were found to be the major constraints in increasing yield and sales. Less than 10 percent of households accessed information on crop MPTs, market prices, and animal health and less than 20 percent of households accessed information on financial services, fertilizer, and seeds. The sampled households applied an average of 11.5 improved management practices and technologies (MPTs) from among 64 potential ones. There was no difference in use of average number of MPT across two ZOIs.

Almost all the households (97–100 percent) owned agricultural land, buildings (barns or storage) and hand tools (hoe, spade/shovel, rake, sickle, pickaxe, axe, pruning shears, etc.). Seventy four percent of households participated in at least one local group, with mothers' groups, savings and credit groups, and cooperatives being the most common ones (26–34 percent). Nearly two-thirds of households (63 percent) had been exposed to at least one shock or stressor (such as landslide, drought, illness, and flood) in the past 12 months. Severe impact on income (72 percent) and food consumption (51 percent) was reported by those exposed. The most commonly reported coping strategies (eight of the top ten) were either neutral or positive. Only 24 percent of households had used a negative coping strategy with the most common being selling livestock. Social capital was lower than expected, based on the relatively small percentage of households receiving or providing support during shocks or stressors. Such support was mostly from relatives living inside and outside of their community.

Conclusively, the survey delivered the baseline values of 20 KISAN II performance indicators including the findings that portray the current resilience capacities of the selected households.

**Baseline Survey Report
for the Knowledge-Based Integrated Sustainable Agriculture in Nepal project II
(KISAN II)**

May 2019

Contract Number AID-367-C-15-00001

Cover photograph: An enumerator administering the baseline survey questionnaire to a local farmer in the Palpa district. Photo credit: Khem Raj Neupane

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ABBREVIATIONS

ADS	Agriculture Development Strategy
AMS	Annual Monitoring Survey
BBS	Beneficiary-Based Survey
BFS	Bureau for Food Security, USAID
CAPI	Computer Aided Personal Interviews
CBS	Central Bureau of Statistics
CLA	Collaborating Learning and Adapting
CSV	Comma-Separated Values
CEAPRED	Centre for Environmental and Agricultural Policy, Research, Extension and Development
COR	Contracting Officer's Representative
DAG	Disadvantaged Group
DCOP	Deputy Chief of Party
DEPROSC	Development Project Service Centre
DM	Decision Maker
FGD	Focus Group Discussion
FINGO	Financial Intermediary Non-Governmental Organization
FTF	Feed the Future
FTFMS	Feed the Future Monitoring System
FY	Fiscal Year
GESI	Gender and Social Inclusion
GFSS	Global Food Security Strategy
GIS	Geographical Information System
GoN	Government of Nepal
HA	Hectare
HFIES	Household Food Insecurity Experience Scale
HH	Household
ICT	Information and Communication Technology
IM	Implementing Mechanism
IPM	Integrated Pest Management
KG	Kilogram
KISAN	Knowledge-Based Integrated Sustainable Agriculture in Nepal
M&E	Monitoring and Evaluation
MFI	Micro Finance Institution
MOALD	Ministry of Agriculture and Livestock Development
MOE	Margin of Error
MPT	Management Practices and Technologies
MUS	Multi-Use Water System
MT	Metric Ton
N	Population Size (statistical notation)
n	Sample Size (statistical notation)
N/A	Not Applicable
NRM	Natural Resources Management
NPR	Nepali Rupees

NSAF	Nepal Seed and Fertilizer (activity)
OSC	Overseas Consulting Ltd.
PAHAL	Promoting Agriculture Health and Alternative Livelihoods (activity)
PBS	Population-Based Survey
PIF	Partnerships and Innovation Fund
PII	Personally Identifiable Information
PIRS	Performance Indicator Reference Sheet
PMP	Performance Management Plan
PPR	Performance Plan and Report
REAL	Resilience Analysis, Evaluation and Learning Award
SABAL	Sustainable Action for Resilience and Food Security (activity)
SACCO	Savings and Credit Cooperative
SAMS	Selected Agriculture Market Systems
SEED	Social, Environment and Economic Development, USAID Nepal
SOW	Scope of Work
SPSS	Statistical Package for the Social Sciences
SPPM	Office of Strategic Planning and Performance Management, USAID BFS
TBD	To Be Determined
TOPS	Technical and Operational Performance Support Program
USAID	United States Agency for International Development
USD	United States Dollar
USG	United States Government
ZOI	Zone of Influence

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EXECUTIVE SUMMARY

The Nepal Monitoring, Evaluation, and Learning (MEL) Activity, which is implemented by CAMRIS International, Inc., conducted a household-level, baseline survey for the Knowledge-Based Integrated Sustainable Agriculture in Nepal (KISAN II) activity in 2018. The Full Bright Consultancy Pvt. Ltd. helped implement the survey's field activities.

BASELINE SURVEY PURPOSE

The survey includes two distinct modules. The Agriculture Module collected quantitative information on smallholder agriculture production to provide baseline values for 20 project outcome indicators that will be tracked in KISAN II's annual monitoring surveys (AMSs) and three Feed the Future (FTF) Zone of Influence-level resilience indicators. The Resilience Module comprised data related to market access (information, inputs, services, and buyers), household exposure to shocks and stressors, livelihoods diversification, social capital, coping strategies, and perceptions about current capacities to cope with future shocks and stressors.

PROJECT BACKGROUND

KISAN II is one of USAID/Nepal's flagship activities under the Feed the Future (FTF) initiative. The Mission awarded the five-year, \$32.7 million project implementation contract to Winrock International in July 2017. KISAN II facilitates market development by building private sector capacities to help smallholder farmers graduate to commercial agriculture by improving on-farm production, market linkages, and market infrastructure. The project focuses on the value chains of the targeted commodities that are important for food security (rice, maize, and lentils), are high-value (off-season vegetables and goats) and are nutrient-rich.

The project works primarily through private sector partners who apply for grants to implement market development activities. Consistent with the project's market-driven approach, partners identify the specific interventions, target areas, and farmers they will focus on within the parameters of the project's grant program. The project's initial 48 partners were the primary sources of information on catchment areas and for the expected number of project participants for this survey.

METHODOLOGY

In each sample household, the survey team interviewed the member who was most knowledgeable about agriculture. Only households that had produced at least one of the project's targeted commodities within the previous 12 months were included in the sample frame. Households were selected randomly after preparing the complete list of potential beneficiary households in KISAN II catchment areas by performing the household listing operation. The baseline survey team used a two-stage cluster sampling design with a systematic selection of participants. The data was collected from 1,860 households across 21 districts using tablets with a structured questionnaire that was customized in

“SurveyToGo” data collection software. The survey took place from September 3-27, 2018. The survey team captured the data, taking the reference period of the 12 months from September 1, 2017 to August 31, 2018. Box 0 lists the main data analysis questions. The questionnaire appears in Appendix V.

Box 0: Baseline Data Analysis Questions

Agriculture Module

- What are the baseline data for the project’s 20 Feed the Future (FTF) outcome indicators?

Resilience Module

- What have been the primary recent shocks and stressors in the survey area?
- How have households, communities, institutions, and systems responded to the shocks and stresses?
- What are the characteristics of asset ownership, proximity to markets, access to information and services, and group participation among the activity's target population?
- What are the high-level findings and conclusions about the current state of resilience capacities in the survey area?
- Which findings appear most important for informing potential modifications to the activity’s strategy, implementation approaches, and theory of change?
- Are there any important information gaps that should be considered in activity or Mission level learning agendas?

FINDINGS AND CONCLUSIONS

Agriculture

The survey team collected data for the 20 FTF outcome indicators. The interviews with household respondents took about 2.5 hours each.

Seventeen percent of vegetable-producing households had received support for achieving increased yields or sales from the government, a project or the private sector in the previous 12 months- compared to less than 5 percent of households that produced other targeted commodities (rice, maize, lentils and goats). Support received by HHs for vegetables in ZOI 1 (19%) was higher compared to ZOI 2 (15%).

Year round irrigation was found to be similar across ZOI 1 and 2. Spring or river (other than those managed by community) was the major source of irrigation water for both ZOIs, but higher proportion of HHs from ZOI 2 (89 percent) used it as the main source compared to ZOI 1 (68 percent).

Yield for vegetables (10.7 MT/Ha) was highest among all households. ZOI 2 had higher yields for rice (3.6 MT/Ha), maize (2.3 MT/ha) and vegetables (12.7 MT/Ha) compared to ZOI 1 whereas ZOI 1 had higher yield for lentil (0.6 MT/Ha). Average volumes produced

per farm were highest for rice and vegetables and lowest for lentils. Average yields per farm were highest for vegetables. Average annual sales per household were highest for vegetables (\$335), rice (\$322), and goats (\$181). There was difference in mean value of annual sales between ZOI 1 and 2 with ZOI 2 having higher average annual sales value (\$438 vs \$289). HHs in ZOI 2 had highest mean sales value for vegetables whereas in ZOI 1 highest mean sales value was for rice. Only 253 individuals in 236 households accessed formal agriculture finance¹, representing 12.7 percent of all households.

The top three constraints to increasing yields and sales of targeted commodities were reported to be lack of access to irrigation water, limited knowledge of how to achieve higher yields and sales, and lack of access to inputs.

Almost all the households (99 percent) had applied at least one out of 63 the improved management practices and technologies (MPT) in the last 12 months. The sampled households applied an average of 11.5 improved MPTs from among 63 unique potential ones. Vegetables and rice had the highest use of MPTs (10 and 6.7 MPTs/HH, respectively). Among ZOIs, average MPT use was similar; however, noticeably higher proportion of HHs in ZOI 1 had used irrigation (83 percent vs. 66 percent) and agriculture water management (60 percent vs. 45 percent) technology compared to HHs in ZOI 2.

Out of 7,624 individuals aged 15 or above in surveyed households, 2,848 individuals applied at least one MPT. There was very little use (11 percent of total households) of information and communications technologies (ICT) for accessing information on agriculture despite 55% owning a smartphone.

Resilience

Almost all the households (97–100%) owned agricultural land, buildings (barns or storage) and hand tools (hoe, spade/shovel, rake, sickle, pickaxe, axe, pruning shears, etc.).

More than 80 percent of households are within walking distance (5 kilometers or two hours) to communications signals, schools, health centers, electricity, agricultural inputs, extension services, and buyers.

Out of all 1860 households surveyed, only 1 percent went without eating for a whole day within the prior 30 days; 6 percent ate less than they thought they should, and 29 percent worried about not having enough food.

Almost two-thirds of households (63 percent) had been exposed to at least one shock or stressor (out of 18) in the past 12 months. The most common were livestock or crop diseases, pests and not enough rain. Of the 1,173 households that had been exposed to a shock or stressor in the past 12 months, up to 72 percent reported that the shock or stressor had severely impacted household income while up to 51 percent reported that it had severely impacted household food consumption.

¹ Finance accessed from Bank, Finance companies and Cooperatives.

The most commonly reported coping strategies (eight of the top ten) were either neutral or positive. Only 24 percent of households had used a negative coping strategy with the most common being selling livestock, and one could argue that this should be considered a “neutral to potentially negative” coping strategy, like using household savings.

Social capital was lower than expected, based on the relatively small percentage of households that had received (26 percent) or given (32 percent) support in response to a shock or stressor. The ability to recover from a shock or stressor is relatively high, based on household perceptions – 93 percent of households reported that their ability to meet current household food needs was better or the same as before exposure.

PURPOSE OF BASELINE SURVEY

The main purpose of this baseline survey was to collect quantitative information on smallholder agriculture production in the activity's catchment areas. The data provide baseline values for 20 indicators for USAID's Knowledge-Based Integrated Sustainable Agriculture in Nepal (KISAN II) activity. The survey's objectives appear in Box I. In addition, the survey included a resilience module to track indicators related to market access (information, inputs, services, and buyers), household exposure to shocks and stressors, livelihoods diversification, social capital, coping strategies, and perceptions about current capacities to cope with future shocks and stressors.

Box I: Baseline Survey Objectives

- Collect baseline data for KISAN II's 20 outcome indicators to support the **measurement of results**.
- **Characterize the activity's target population** to inform target setting, project design, and the implementation strategy.
- Collect baseline resilience data to support USAID Nepal's and KISAN II's **resilience research, learning, and storytelling**.

Farmers selected for the baseline survey reported information about practices and production for USAID fiscal year 2018 (1 October 2017–30 September 2018). The primary users of the baseline data will be the KISAN II activity team, their private sector partners, other FTF activities, and USAID/Nepal. Other stakeholders may use baseline data and findings, including the Government of Nepal (GON) and other non-USAID agencies.

I PROJECT BACKGROUND

KISAN II is one of USAID/Nepal's flagship activities under the Feed the Future (FTF) Initiative. The Mission awarded the contract to Winrock International in July 2017. KISAN II will contribute to the GON's Agricultural Development Strategy (ADS) and the USG Global Food Security Strategy (GFSS). This five-year \$32.7 million project will facilitate systemic changes in the agricultural sector including:

- Greater intensification of staple crops, diversification into higher value commodities, and wider application of climate-smart management practices and technologies.
- Strengthening local market systems to support more competitive and resilient value chains and agricultural related businesses.
- Improving the enabling environment for agricultural market systems development.

The activity is working in close coordination with the private sector and GON's Ministry of Agriculture and Livestock Development (MOALD).

In addition, Winrock International implements the activity in collaboration with three Nepali organizations as subcontractors: The Center for Environmental and Agricultural Policy, Research, Extension and Development (CEAPRED); the Development Project Service Center (DEPROSC), and Siddhartha Consulting Inc. Pvt. Ltd. (Siddhartha Inc.); as well as

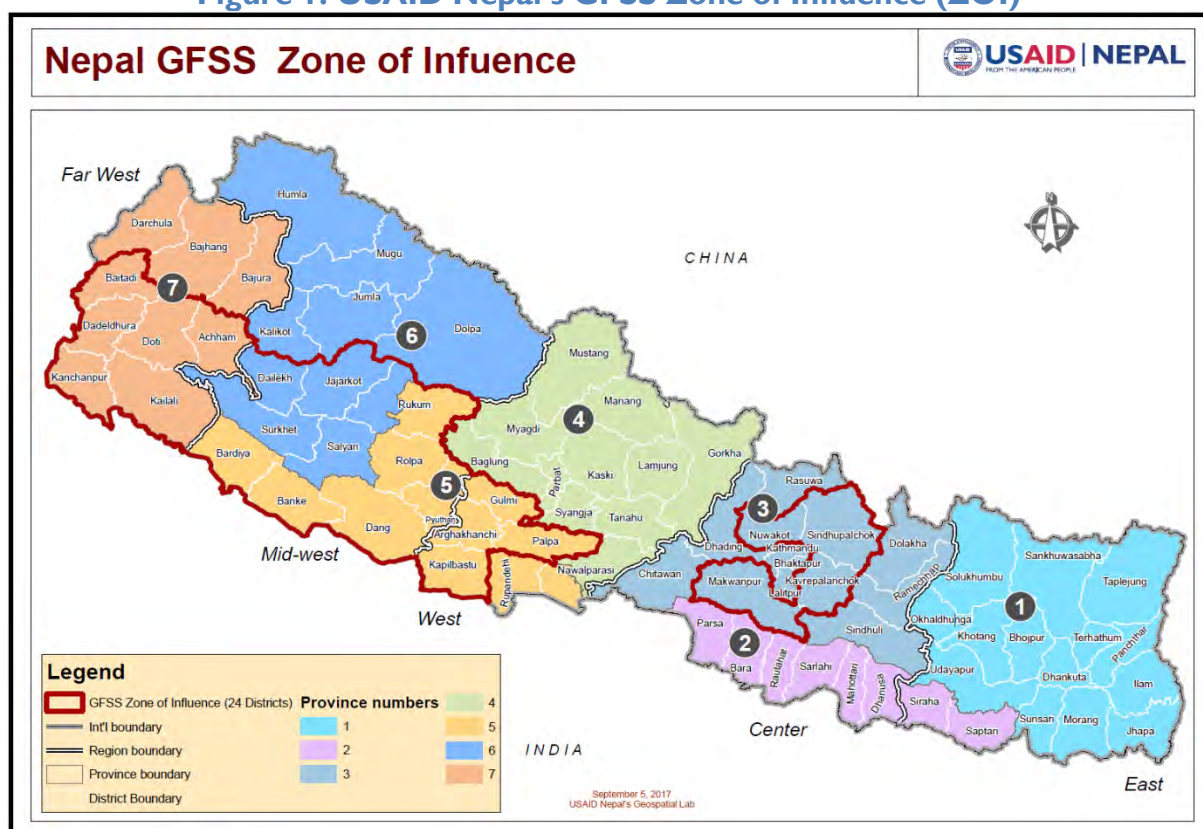
two international subcontractors: Digital Green Foundation and Overseas Strategic Consulting, Ltd. (OSC).

The project targets 200,000 households across 25 districts in the following four provinces:

- Province 3 (four districts): Kavrepalanchok, Makwanpur, Nuwakot, and Sindhupalchowk.
- Province 5 (seven districts): Arghakhanchi, Gulmi, Kapilvastu, Palpa, Banke, Bardiya, and East Rukum.
- Province 6 (eight districts): Salyan, Surkhet, Dailekh, Jajarkot, Dang, Rolpa, Pyuthan and West Rukum.
- Province 7 (six districts): Achham, Baitadi, Dadeldhura, Doti, Kailali, and Kanchanpur.

These 25 districts are regarded as USAID Nepal's Global Food Security Strategy Zone of Influence (ZOI) (Figure 1).

Figure 1: USAID Nepal's GFSS Zone of Influence (ZOI)



The project has the following five components:

- Component 1: Improved productivity of selected agricultural market systems.
- Component 2: Strengthened competitiveness, resilience, and inclusiveness of selected agricultural market systems.
- Component 3: Strengthened enabling environment for selected agricultural market systems.
- Component 4: Increased ability of vulnerable communities to act on business opportunities within selected market systems.

- Component 5: Collaborating, learning and adapting (CLA) applied to market systems.

KISAN II facilitates market development by building private sector capacities to help smallholder farmers graduate to commercial agriculture by improving on-farm production, market linkages, and market infrastructure. The project focuses on value chains of targeted commodities that are rice, maize, lentils high-value vegetables and goats, and the project works primarily through private sector partners, who apply for grants to implement market development activities. KISAN II will tailor its approach to empower and graduate farming households into more productive, reliable, and lucrative agricultural enterprises evolving from vulnerable to developing, to commercially-minded, and finally to competitive household agricultural enterprises.

The project's targeting strategy provided the basis for identifying representative farm households for the baseline survey. The project's initial 48 partners are the primary source of information on the catchment areas. The current strategy is to break down KISAN II's working area to "commercial" and "less commercial" areas, permit partners to select farmers within targeted wards, and then at the end of Year 2 and periodically thereafter analyze the population for the following: a) overlap with other KII partner farmers; b) overlaps with KISAN I population; c) vulnerable (based on commercial vs. non-commercial location); d) gender; e) inclusion. Based on the analysis and grantee performance, KII will make the targeting changes for Year 3.

2 SURVEY METHODOLOGY

2.1 METHODOLOGY

The documents used to guide the design and conduction of the survey are listed in Appendix II.

2.1.1 SAMPLING APPROACH

The sampling approach for the KISAN II baseline survey followed the “catchment area” approach, as mentioned in sampling guide for beneficiary based survey², which prescribes identifying the geographic area that defines the population to be reached by the market being strengthened and conducting a survey among that population of producers who are participating in the market and, thus, would be considered project participants. For this, KISAN II provided a list of target districts and wards (which it identified in consultation with its private sector partners), along with estimates of the expected number of future project participants in each catchment area. The baseline survey used a **two-stage cluster sampling design** with a systematic random selection of representative farm households, for which two separate clusters were required – wards and households. In the first stage, **93 wards** (primary sampling units or enumeration areas) were selected from KISAN II’s initial catchment areas. In the second stage, 20 representative farm households were selected per ward, resulting in a **sample population of 1,860 households**. To identify the household sampling frame, the enumerators first conducted a household listing of **potential project participants**, defined as households that met the project’s targeting criteria of:

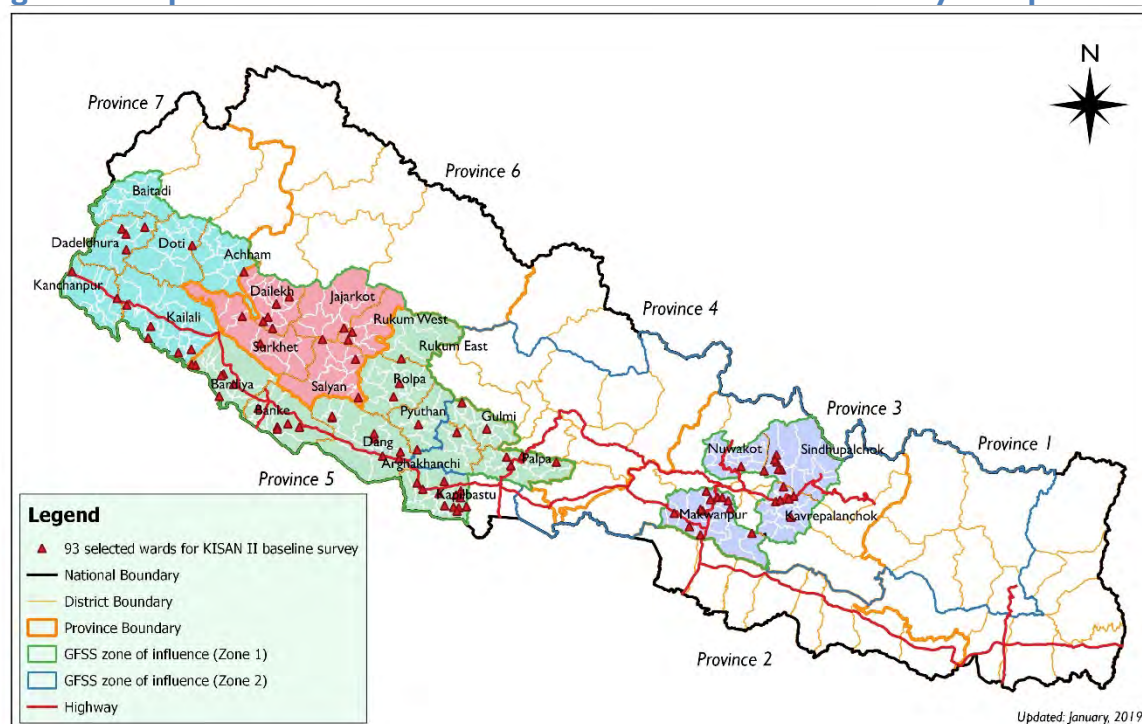
- Being currently engaged in farming.
- Having produced at least one of KISAN II’s target crops or livestock in the past 12 months.

The sample population calculations were based on guidance in the 2016 FTF Sampling Guide for beneficiary-based surveys and were provided in the scope of work (SOW) for the survey (see Appendix I). They reflect adjustments related to finite population correction, design effect, nonresponse rates, and minimum responses for each targeted commodity. This sample size is sufficient to measure a meaningful change for three key FTF indicators (the standard specified in FTF guidance) related to:

- The value of annual sales of targeted commodities.
- The number of hectares under improved management practices or technologies.
- The number of individuals who have applied improved management practices or technologies.

² <https://www.agrilinks.org/sites/default/files/resource/files/Sampling-Guide-Beneficiary-Based-Surveys-Feb2016.pdf>

Figure 2: Map of KISAN II Catchment Areas and Baseline Survey Sample Wards



Section 4.3a of the baseline survey’s scope of work indicates that the sample should be stratified by province. The calculation of the sample size provided in the scope of work did not reflect stratification, although it did allow for the disaggregation of data by commodity and province, which will likely be statistically significant. While preparing the sample frame, stratification was done by province, as all wards were systematically listed by province, district, rural or urban municipality, and ward in order of the Central Bureau of Statistics’ codes.

2.1.2 DATA COLLECTION

The survey team collected data between September 3 and 27, 2018 and the survey took the reference period of last 12 months from September 1, 2017 to August 31, 2018 to capture production, sales of targeted commodities etc.

Full Bright, a local research firm with experience conducting large-scale agriculture surveys, collected data using Samsung Galaxy tablets and “SurveyToGo”, a data collection software designed for computer-aided personal interviews (CAPI) on Android devices. Fifteen supervisors, 3 quality control staff, and 45 enumerators were trained in conducting interviews, data entry, and data quality checks. Full Bright was primarily responsible for the training with extensive oversight and support provided by the Nepal MEL Activity and additional support from KISAN II.

2.1.3 DATA ANALYSIS

The Nepal MEL Activity’s statisticians cleaned, processed, and analyzed the data. They exported the data to the Statistical Package for the Social Sciences (SPSS) and Stata for

analysis. Also, they performed mean, median, and range checks for numeric variables, and descriptive analysis for categorical variables as part of exploratory data analysis. The KISAN II indicator values were calculated in accordance with the FTF Indicator Handbook Performance Indicator Reference (PIRS) (March 2018) sheets for FTF indicators and the KISAN II MEL Plan (April 2018) for custom indicators.

The survey team calculated FTF indicator disaggregates in accordance with the FTF performance indicator reference sheet (PIRS) (except as noted in the data limitations table) and presented in the FTF Monitoring System (FTFMS) spreadsheet. Table I lists key disaggregates analyzed for this baseline survey report.

Table I: Disaggregates Featured in the KISAN II Baseline Data Analysis

DISAGGREGATES	DATA
Primary Decision Maker	- Commodities produced. - Application of improved management practices and technologies (MPTs). - Access to financial services (saving deposits and taking loans).
Commodity	- Number of households producing. - Number of hectares planted. - Number of MPTs used. - Volumes produced. - Yields. - Sales volumes and value.
Gender	- Primary decision makers. - Application of improved MPTs. - Prices received for commodities. - Top three production and marketing constraints. - Ownerships of assets.
Poverty Line	- Top three production and marketing constraints. - Household Food Insecurity Experience Scale (HFIES).
Geography	Exposure to shocks and stressors.

The survey team submitted data in an iterative process that prioritized deliverables based on USAID Nepal and KISAN II deadlines for setting performance targets, updating the FTFMS, and reporting to Washington. Table 2 describes the deliverables and gives the dates they were submitted.

Table 2: KISAN II Baseline Data and Reports Submitted to USAID/Nepal and KISAN II

DATE	DELIVERABLES
15 Oct 2018	An unanalyzed raw and clean dataset in different file formats (SPSS or Stata and CSV) and the questionnaire codebook.
15 Oct 2018	Analyzed data presented in indicator tables, including disaggregates.
2 Nov 2018	Relevant data for USAID Nepal's Performance Plan and Report (PPR).
7 Nov 2018	KISAN II FTF indicators and disaggregates in a FTFMS spreadsheet.
16 Nov 2018	KISAN II custom indicators and disaggregates.
7 Dec 2018	Preliminary findings presented to KISAN II team focused on characterizing representative households rather than population estimates. See Appendix IX for a summary of the related discussion.

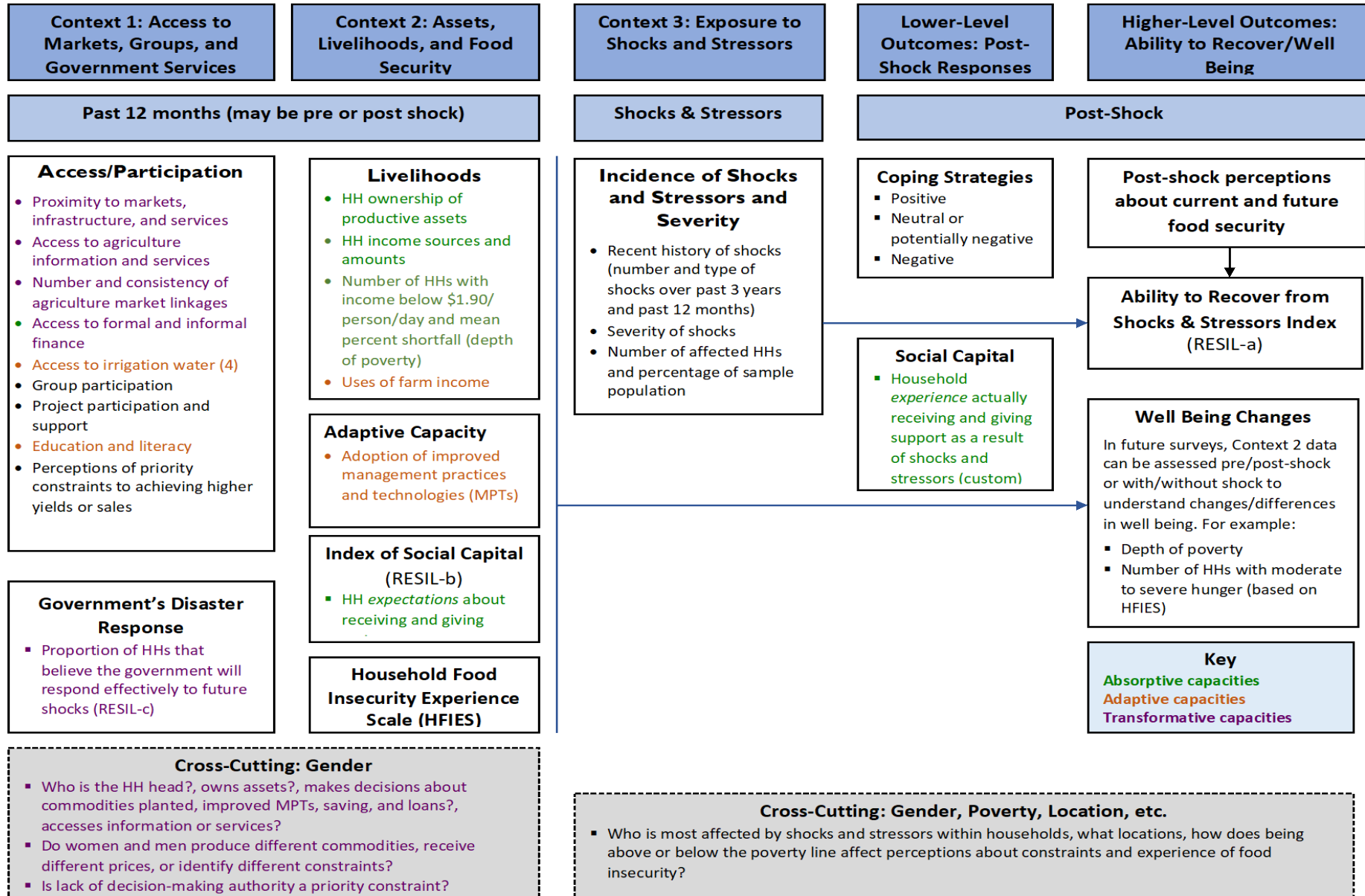
10 Dec 2018	Preliminary findings and recommendations again presented to USAID Nepal focused on characterizing representative households rather than population estimates. The survey team conducted substantial additional data analysis after the presentation. Refer to Appendix IX for a summary of the discussion and the list of additional data calculations.
18 Jan 2019	Draft baseline survey report.
28 Mar 2019	Final baseline survey report.

The survey team prepared a resilience data analysis framework to show how elements of the survey's agriculture and resilience modules would contribute to assessing resilience in the baseline sample population. The framework (see Figure 3) can be adapted for future resilience measurement efforts. USAID Nepal indicated that they were most interested in assessing findings and inter-relationships between the following categories of information:

- Access to markets, groups, and government services.
- Assets, livelihoods, and food security.
- Exposure to shocks and stressors.
- Coping strategies (post-shock responses).
- Well-being outcomes (ability to recover).

The Mission indicated it was less interested in categorizing absorptive, adaptive and transformative capacities, which were initial concepts in USAID's evolving resilience measurement framework. The bulleted topics in Figure 3 are color-coded to show where these resilience capacities are reflected in the framework (refer to key).

Figure 3: Resilience Data Analysis Framework



2.2 LIMITATIONS

Three data limitations are presented in Table 3. Two resulted from not fully capturing FTF disaggregation requirements in the survey questionnaire – these do not affect aggregate data for any of KISAN II's FTF indicators.

Table 3: Data Limitations

LIMITATIONS	RESPONSES
Firm size disaggregate calculations for farms/households – The FTF Indicator Handbook does not provide a definition for “employee” or specify using “full-time equivalents” for the following disaggregates: • “Type of producer/firm” for the value of annual sales of farms and firms (EG.3.2-26, Handbook page 101). • “Size of the recipient” for formal agricultural loans (EG.3.2-27, Handbook page 106). The survey team calculated the number of employees based on the number of unique individuals hired by smallholders on a seasonal or daily wage basis. The employee numbers, therefore, overstate the size of producers and loan recipients.	Evidence-based interpretation – When interpreting disaggregated results, it was more accurate to disregard the number of employees and assume the following: • All sellers were “producers,” not “firms” (defined as “non-farm enterprises”). Producers will be divided into “smallholders” and “non-smallholders” using the methodology described in the row below. The corrected disaggregate figures will be submitted to FTFMS. • All borrowers were “individuals/microenterprises” (employed less than 10 people in the previous 12 months), not “small,” “medium,” or “large” enterprises (employed 10-49, 50-249, or more than 240 people, respectively).
Smallholder goat producers – The FTF Indicator Handbook defines a smallholder engaged in goat production as one who holds a combined total of no more than five adult ewes and does (page 101). The questionnaire did not include a question about goat age and gender. This affects the calculation of smallholder disaggregates for FTF indicators related to the following data: • Use of improved technologies and management practices (e.g., .3.2-24,-25,-28, pages 92, 99, and 109). • Yields (e.g., 3-10,-11,-12, page 54). • Value of annual sales (e.g., .3.2-26, page 103).	The main purpose of this baseline survey was to capture values of 20 KISAN performance indicators and their desagregates which did not require calculating number of smallholder goat producers as an indicator or as a desagregate. However, this study recommends capturing this information to calculate FTF indicators in similar future survey.
Gender of producers, proprietors, and other decision makers – The FTF Indicator Handbook states, “If the enterprise has more than one proprietor, classify the firm as Male if all the proprietors are male, as Female if all the proprietors are female, and as Mixed if the proprietors are male and female” (page 102). At KISAN II's request, the questionnaire did not include an option for “Mixed” and instead asked respondents to identify the primary decision maker. KISAN II noted that approximately 90 percent of decisions were reported as “Joint” in KISAN I surveys, which obscured the role of gender in decision making. Neither approach enables the calculation of the total number of unique decision-makers nor adequately captures the role of gender in decision making. The decision to omit “Mixed” affected the calculation of gender disaggregates for indicators related to the	Supplemental focus group discussions – Given the inevitable trade-offs between identifying a single primary decision maker or mixed decision makers, the survey team recommends that household decision making be explored more fully through focus group discussions. Although such findings will not affect the calculation of FTF disaggregates, they would inform the project team's gender and social inclusion (GESI) strategy.

LIMITATIONS	RESPONSES
value of annual sales (EG.3.2-26, page 103) and formal agriculture loans (EG.3.2-27, page 106).	

Refer to Appendix III for a more detailed description of the survey methodology.

3 BASELINE FINDINGS

3.1 GENERAL FINDINGS ON THE SAMPLE POPULATION

This section characterizes the sample population with respect to size, socioeconomic characteristics, vulnerability; the percentage of households that produce and sell KISAN II's targeted commodities, hold arable land, received prior support for agriculture, have access to year-round irrigation, and report post-harvest losses; and the average prices received for commodities. These data are derived from questions under the Agriculture Module. It is not reported in FTFMS or progress reports but is useful for characterizing representative households in KISAN II catchment areas. Unless otherwise noted all the data in Chapter 4 reflect conditions over the 12 months from 1 September 2017 to 31 August 2018.

3.1.1 SUB-POPULATIONS

As noted earlier, the sample included 1,860 randomly selected households from KISAN II's catchment areas. Out of these selected households, less than 1 percent of the households had received support from KISAN I. Table 4 shows important sub-populations that are relevant to understanding who is counted in subsequent tables. These populations reflect the number of households, female-headed households, number of household members, and the number of individuals who were identified as the primary decision maker for each of the four types of decisions listed below.

Table 4: Sample Breakdown of KISAN II Baseline Survey Population

POPULATIONS	POPULATION
Total Households	1,860
Households in ZOI 1 ³	1,360
Households in ZOI 2 ⁴	500
Female-headed households	413 (22%)
Household members	10,447
HH members 15 years or older	7,624
Average household size (members/household)	5.6
Unique agriculture decision makers ⁵ who:	
• Applied improved management practices and technologies	2,848
• Produced commodities	2,560
• Participated in informal savings schemes	2,436
• Accessed informal and formal credit	823

³ 20 districts from West, Mid-West and Far-West Region

⁴ 4 districts from Central Development Region

⁵ We expect that agriculture decision makers tend to make decisions across multiple issues. It is not possible to calculate the total number of unique decision makers due to the number of decision-making variables in the sample. However, the number is estimated to be between 2,848 and 3,000 individuals.

3.1.2 SOCIOECONOMIC CHARACTERISTICS

An estimated 34 percent of the 2,560 commodity decision makers in the sample were illiterate (Table 5). These may or may not have been the heads of households. Not much difference was observed between two ZOI by education.

Table 5: Education Level of Commodity Decision Makers

EDUCATION LEVEL	PERCENTAGE OF COMMODITY DECISION MAKERS (TOTAL)	ZOI 1	ZOI 2
Illiterate and never attended school	34%	34%	36%
Literate but had never attended school	16%	16%	15%
Primary (Grades 1–5)	21%	21%	21%
Secondary (Grades 6–10)	22%	22%	22%
Higher secondary (Grades 11–12)	5%	5%	5%
Graduate or above	2%	2%	1%

A high percentage of households (78 percent) met at least one of USAID Nepal’s three vulnerability criteria (Table 6). Note that whether a member of a disadvantaged ethnic group is disadvantaged varies due to several factors (such as location), so 55 percent may be an overstatement of the incidence of vulnerability associated with ethnicity. In contrast, exposure to natural disasters may understate the actual vulnerability as it does not capture exposure to other significant shocks and stressors listed in Section 4.3.

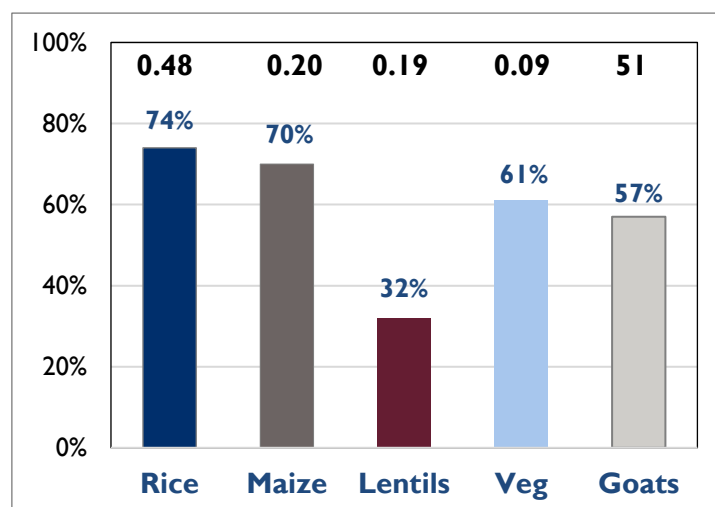
Table 6: Vulnerable Households

USAID NEPAL VULNERABILITY CRITERIA	PERCENTAGE OF HHS	MALE HEADED HH	FEMALE HEADED HH	ZOI 1	ZOI 2
Income: <\$1.90/day/person	26%	26%	28%	26%	28%
Disadvantaged group: Dalits, Janajatis & Muslims	55%	55%	54%	59%	43%
Affected by a natural disaster in the past 12 months	32%	32%	30%	34%	25%
Unique vulnerable households	78%	79%	77%	81%	72%

3.1.3 FARM CHARACTERISTICS

Most surveyed households were producing several of the targeted commodities (Figure 4 below). The number of hectares devoted to rice production was more than double the area devoted to each of the other commodities. Note that goat production was based on off-take, and not all households that owned goats in the past 12 months consumed or sold goats.

Figure 4: Percentage of Households Producing Targeted Commodities and Average Number of Hectares/HH of Crops or KG Off-take/HH of Goats



Across the 1,860 households, 1,412 households had sold at least one of the targeted commodities in the previous 12 months (Table 7). The households sold an average of 1.45 commodities each with vegetables and goats having the most sellers – roughly two-thirds or more of all sellers each. Average annual sales per household were highest for vegetables (\$334.92) followed by rice (\$321.94). In ZOI 1, average annual sales per household was highest for rice (\$346) whereas in ZOI 2, it was highest for vegetables (\$525). Overall, average sales per household was higher for ZOI 2 (\$438) compared to HHs in ZOI 1 (\$289).

Table 7: Number of Sellers of KISAN II Commodities

COMMODITIES	NUMBER OF HH PRODUCERS	NUMBER OF HH SELLERS	PERCENTAGE OF TOTAL SELLERS	AVERAGE ANNUAL SALES PER HH	ZOI 1-AVERAGE ANNUAL SALES	ZOI 2-AVERAGE ANNUAL SALES
Rice	1,383	457	33%	\$321.94	\$346.4	\$206.5
Maize	1,311	246	19%	\$67.79	\$53.7	\$96.5
Lentils	602	175	29%	\$73.18	\$73.2	-
Vegetables	1,334	770	58%	\$334.92	\$192.9	\$524.6
Goats	1,056	788	75%	\$180.89	\$172.5	\$194.6
Number of Unique Sellers	1,860	1,412	76%	\$408.67	\$289.1	\$437.8

Goats were by far the highest value commodity. Lentils were a higher value than vegetables. Female sellers received slightly higher average prices for lentils, vegetables, and goats than male sellers, although men received a slightly higher average price for rice (Figure 5 below).

Figure 5: Average Prices (USD/KG) Received for Commodities Disaggregated by Gender

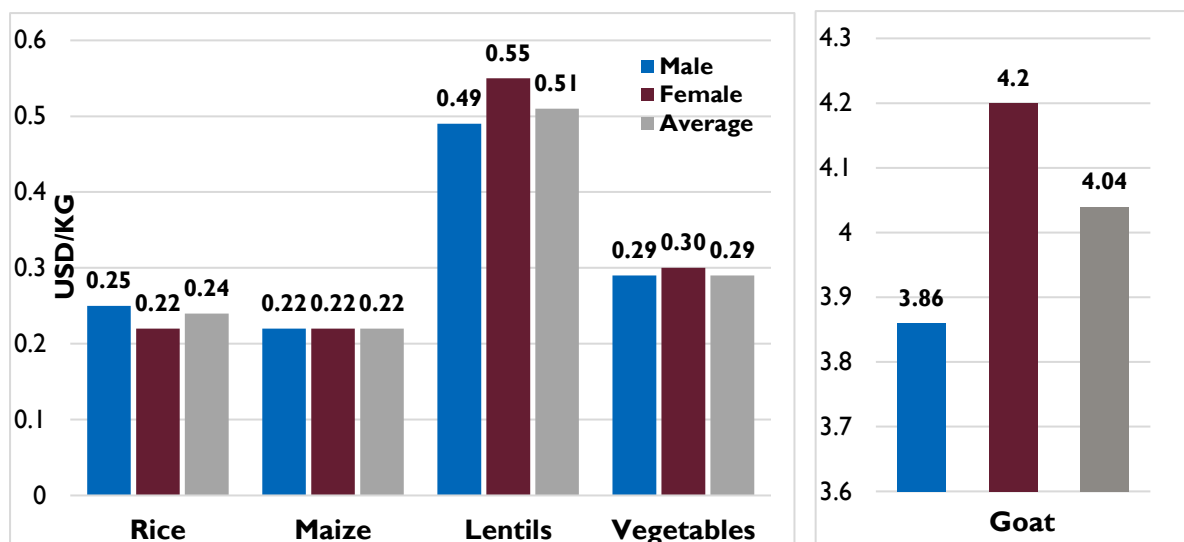
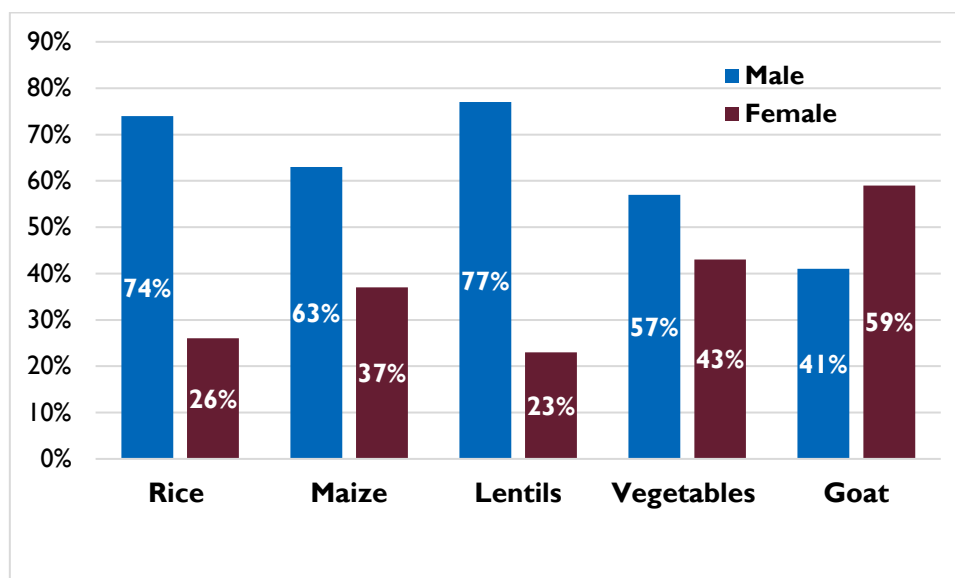


Figure 6 shows the percentage of sellers who were male or female for each commodity. Most sellers for rice, maize, lentils, and vegetables were men, and most goat sellers were women.

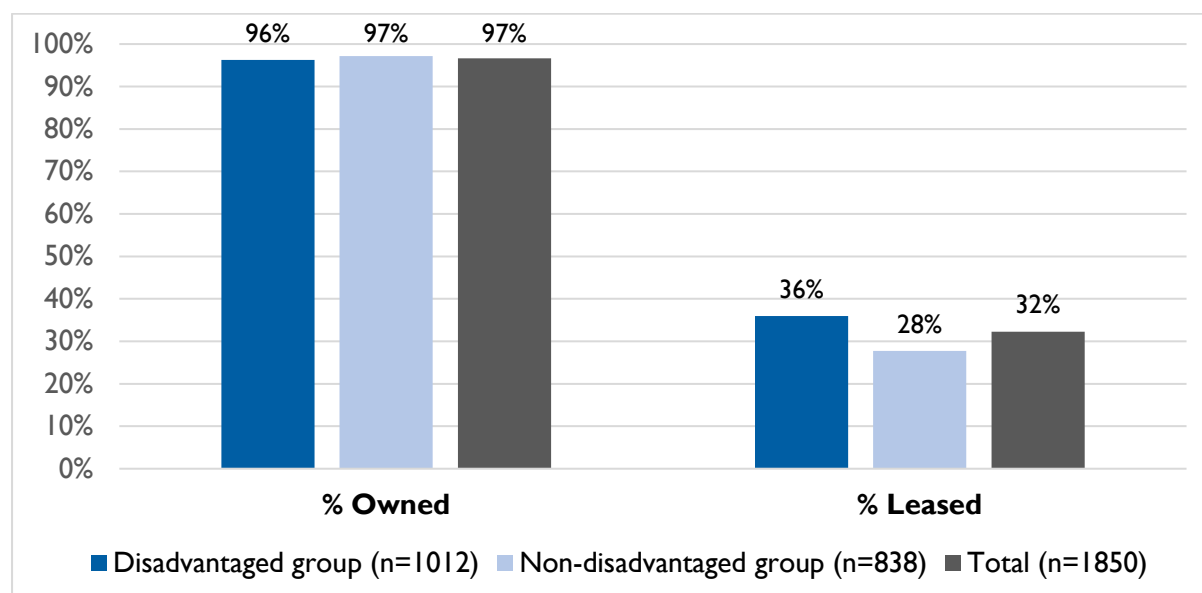
Figure 6: Sellers of Commodities, Disaggregated by Gender



As expected, almost all the households had access to agricultural land (owned or leased) since only households producing a targeted commodity were included in the sample (Figure 7). The less than one percent of households that did not have access to agricultural land were only producing goats. A similar proportion of DAG and non-DAG groups owned land whereas a higher percentage of DAG group leased (36 percent) compared to non-DAG

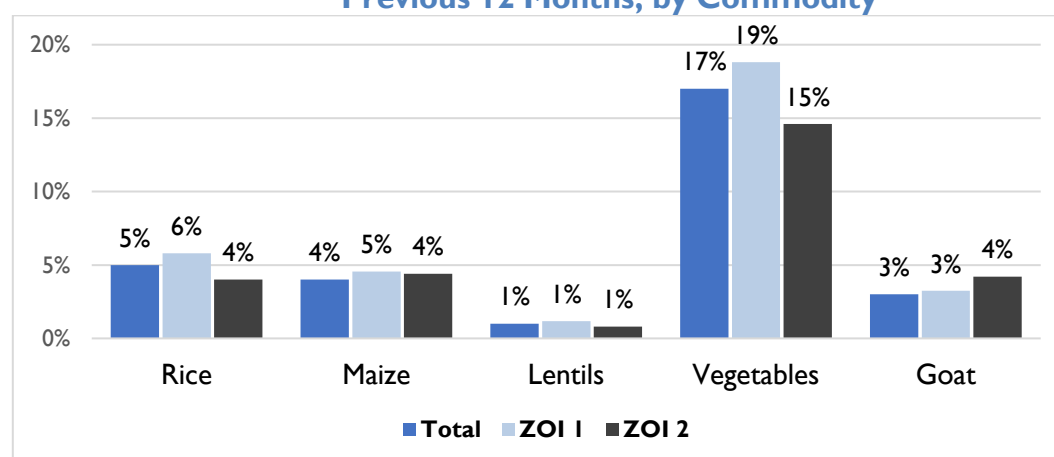
group (28 percent). The households had an average of 0.55 hectares each, and no households had more the 5 hectares, the FTF definition of a smallholder.

Figure 7: Percentage of Households Who Owned or Leased Agricultural Land, and Average ha/Household, by DAG and non-DAG groups⁶



Only 1–5 percent of households that produced rice, maize, lentils, or goats had received support from the government, a project or the private sector in the past 12 months for producing or marketing each commodity. Support was highest for households that produced vegetables (Figure 8). There wasn't much difference between two ZOIs, except for support for vegetables.

Figure 8: Percentage of Households that had Received Agricultural Support in Previous 12 Months, by Commodity



⁶ DAG and non-DAG groups are based on caste/ethnicity only. DAG group includes Dalit, Janajati and Muslim population whereas caste/ethnicities such as Brahmin/Chhetri, Madhesi, and Newars are kept in non-DAG group.

Of the 1,849 households who had harvested at least one targeted crop in the last 12 months, 44 percent had year-round access to irrigation water (Table 8). These households had irrigated an area of between 0.01 and 3.33 hectares each, with an average of 0.42 hectares each.

Table 8: Percentage of Survey Households with Year-round Access to Irrigation

ACCESS TO YEAR-ROUND IRRIGATION	NUMBER OF HHS	PERCENTAGE OF HHS	ZOI 1	ZOI 2
Yes	812	44%	44%	42%
No	1,037	56%	56%	58%
Total	1,849	100%	1,349	500

Most households that irrigated (68%) got their irrigation water from a spring or river that was not managed by a community. There was substantial difference in source of irrigation water between ZOI 1 and 2, with 61 percent of HHs in ZOI 1 using spring or river water for irrigation compared to 89 percent HHs in ZOI 2. Similarly, 27 percent HHs from ZOI 1 used groundwater or well and only 8 percent HHs from ZOI 2 used the same source to irrigate their land. Ten and one percent HHs from ZOI 1 and 2 used river managed by a community to irrigate their land, respectively.

Table 9: Percentage of Households with Year-Round Irrigation by Source of Water

SOURCE OF IRRIGATION WATER	NUMBER OF HHS WITH YEAR-ROUND IRRIGATION	PERCENTAGE OF HHS	ZOI 1	ZOI 2
• River managed by a community	59	7%	10%	1%
• Other spring or river	555	68%	61%	89%
• Reservoir, lake, or pond	18	2%	2%	2%
• Groundwater or well	180	22%	27%	8%

3.2 FINDINGS RELATED TO KISAN II PERFORMANCE INDICATORS

This section focuses on KISAN II's indicators. The sample-weighted population totals for each indicator required for the FTFMS have been provided in an Excel spreadsheet, including disaggregates. The corresponding aggregate-level data for each indicator appear in the KISAN II outcome indicator table at the beginning of each section (Tables 11, 16, and 20). All other figures and tables display alternative calculations of the same data including average per household or decision maker and percentage of households and decision makers to provide more meaningful data for understanding the behavior of representative households and decision makers.

3.2.1 IMPROVED MANAGEMENT PRACTICES AND TECHNOLOGIES

Table 10 lists performance indicators and baseline data related to the application of improved management practices and technologies (MPTs). Two FTF indicators track 13 FTF-specified ‘technology type categories’ and focus on the number of individuals (EG.3.2-24) and hectares (EG.3.2-25). Four related indicators use disaggregated data to focus on a single technology type category; these are cross-referenced as EG.3.2-24^D.

Table 10: KISAN II Outcome Indicators Related to the Application of Improved MPTs

KISAN II AND GFSS INDICATOR NUMBERS		HOUSEHOLD-LEVEL OUTCOME INDICATORS	RESULTS
K4	Nepal 2.1.1-2 EG.3.2-24	Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance ⁷	Male: 1,484 (52%) Female: 1,364 (48%) Total: 2,848
K5	Custom 1	Average number of improved management practices or technologies applied per household with USG assistance.	11 MPTs/HH
K8	Nepal 2.1.1-1 EG.3.2-25	Number of hectares under improved management practices or technologies with USG assistance	1,139 ha
K12	EG.3.2-28	Number of hectares under improved management practices or technologies that promote improved climate risk reduction and/or natural resources management with USG assistance	334 ha
K13	Custom 1 Nepal 2.1.1-2 EG.3.2-24 ^D	Average number of climate-smart technologies or practices applied per farmer with USG assistance.	Mitigation: 1.0/HH Adaptation: 1.8/HH
K19	Nepal 2.1.1-2 EG.3.2-24 ^D	Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance – <i>related to marketing and distribution</i>	744 Individuals
K20	Custom 2	Percentage of USG-assisted farmers accessing information on improved technologies and practices through improved ICT channels or content	11%
K31	Nepal 2.1.1-2 EG.3.2-24 ^D	Number of farmers and others who applied improved management practices or technologies— <i>on food grading or safety</i>	1,946
K46	EG.11-6 Nepal 2.1.1-2 EG.3.2-24 ^D	Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance	Male: 678 Female: 386 Total: 1,064

The KISAN II project team anticipates that its private sector partners will promote 63 individual MPTs (within the 14 technology type categories). Almost all the households had applied at least one MPT (99%), and almost all hectares under production had at least one MPT applied. This is like the aggregate-level MPT indicator findings from KISAN I, which were not particularly meaningful and prompted the project to conduct additional data analysis to better understand the use of MPTs (for example, changes in the average number of MPTs per household). For this reason, the following Tables 12 to 15 present data

⁷ As the project has not reached the beneficiaries yet, it should be noted that they have been applying improved management practices or technologies without USG assistance

disaggregated by technology type category or by individual MPT. Some tables also disaggregate by commodity.

The application of improved MPTs varied substantially across commodities with respect to the percentage of households applying at least one of them and the number of individual MPTs applied (Table 11):

- Post-harvest handling, crop genetics, and irrigation were the most common (78-91 percent of households), specifically sorting, improved seeds, and low-tech irrigation methods such as hand-watering, drip, sprinkler, rainwater harvesting, etc. However, use of irrigation was noticeably higher in ZOI 1 (83 percent) compared to ZOI 2 (66%) (Annex Table 8). Similarly, use of agriculture water management (non-irrigation based) was higher in ZOI 1 (60 percent) compared to ZOI 2 (45 percent).
- Only half of the households had applied climate adaptation MPTs.
- ICT and value-added processing were the least common MPTs (11 and 3 percent of households). Among ZOIs, marginally higher proportion of HHs in ZOI 2 (13 percent) had used ICT compared to ZOI 1 (10 percent) (Annex Table 8).
- Most ICT users were aged 30–59 (80%) and were men (72%).

Note that irrigation MPT data is not comparable to access to irrigation data as the latter is related to the availability of irrigation water.

Table 11: Average Number of Individual MPTs Applied Per Household (Farm) and Number of Hectares with MPTs, Disaggregated by Technology Type

TECHNOLOGY TYPES	% OF HHS WHO APPLIED AT LEAST ONE MPT	POTENTIAL NO. OF MPTS	AVG. NO. OF MPTS PER HH	NUMBER OF HECTARES WITH AN IMPROVED MPT	AVERAGE NUMBER OF HECTARES WITH AN IMPROVED MPT
Post-harvest handling and storage	91%	6	1.7	n/a	n/a
Crop genetics	79%	2	1.4	623.1	0.42
Irrigation (drip, surface, sprinkler)	78%	4	1.3	715	0.49
Livestock management	62%	6	2.5	n/a	n/a
Soil fertility and conservation	62%	7	1.6	713.9	0.62
Cultural practices	59%	4	2	121.4	0.11
Agriculture water management	56%	3	1.1	434.1	0.42
Pest and disease management	50%	4	2	487.2	0.53
Climate adaptation	50%	7	1.8	495.6	0.53
Marketing and distribution	37%	6	1.5	n/a	n/a
Other	37%	5	1.7	n/a	n/a

TECHNOLOGY TYPES	% OF HHS WHO APPLIED AT LEAST ONE MPT	POTENTIAL NO. OF MPTS	AVG. NO. OF MPTS PER HH	NUMBER OF HECTARES WITH AN IMPROVED MPT	AVERAGE NUMBER OF HECTARES WITH AN IMPROVED MPT
Climate mitigation	12%	2	1	70.1	0.32
Improved ICT channels or content ⁸	11%	6	1.4	n/a	n/a
Value-added processing	3%	1	1.0	n/a	n/a
UNIQUE UNITS	POPULATION			UNIQUE HA	
Unique individuals	2,848	n/a	n/a	n/a	
Unique households	1,849	n/a	n/a	n/a	n/a
Unique hectares	n/a	n/a	n/a	1,139	n/a

The percentage of households using improved seeds was highest for rice (44 percent) and lowest for lentils (6 percent). Use of hybrid seeds was lower compared to improved seeds with 32 percent HHs using it for rice, 21 percent using it for Maize whereas only 1 percent used it for lentils (Table 12). Men accounted for 80 percent of decision makers for this improved MPT.

Table 12: Percentage of Households Using Hybrid and Improved Seeds for Staple Crops

COMMODITY	NUMBER OF PRODUCER HH	IMPROVED SEEDS		HYBRID SEEDS	
		N	%	N	%
Rice	1,383	602	44%	441	32%
Maize	1,311	300	23%	278	21%
Lentils	602	37	6%	9	1%

Almost all the households (99%) had applied at least one improved MPT in the previous 12 months (Table 13). The application of improved MPTs varied substantially by commodity with respect to the percentage of households that had applied at least one MPT and the number of individual MPTs applied (among those that had produced the commodity). Vegetables had the highest use of MPTs. It could be linked with higher support received by households for vegetables (17 percent of the households reported receiving support for vegetables compared to only 4-5 percent for other commodities). Note that all hectares with improved MPTs were classified as cropland.

⁸ Information and communications technologies (ICT) is a custom technology type category that includes Digital Green's ICT content and the use of text messages, extension videos and radio.

Table 13: Average Number of Individual MPTs and Hectares Per Household, Disaggregated by Commodity

COMMODITY	NO. OF HHs THAT PRODUCED EACH COMMODITY	% OF HHs THAT APPLIED AT LEAST ONE MPT	POTENTIAL NO. OF MPTs	AVERAGE NO. OF MPTs/HH	NO. OF HA WITH AN MPT	AVERAGE NO. OF HA/HH
Rice	1,383	74%	49	6.7	756	0.47
Maize	1,311	68%	49	3.8	220	0.15
Lentils	602	31%	48	3.3	53	0.09
Vegetables	1,140	61%	57	10.0	109	0.08
Goats	1,368	54%	27	3.7	n/a	n/a
Unique HHs, MPTs, Ha	n/a	99%	63	11.5	1,139	n/a

Access to information on improved MPTs through ICT channels was extremely low (10.7 percent of total households) and was mostly by men who were 30 years or older (non-youth) (Table 14). Brahmins, Chhetris, and Janajatis, had much higher use of ICT than members of other groups. The most common channels are radio and television. Less than 1 percent use text messages or mobile applications to access information on MPTs. Although slightly more than half of 2,848 decision makers are females, only 28% have access to improved ICT channels.

Table 14: Percentage of Households Accessing Information on MPTs Through Improved ICT Channels or Content

INDIVIDUAL ICTs	NO. OF HHs	% OF HHs
Radio	130	7.0%
Websites and television	104	5.3%
Extension videos	23	1.0%
Mobile applications	9	0.5%
SMS and text messaging	7	0.4%
Unique households	199	10.7%
	NUMBER OF INDIVIDUALS	DISAGGREGATE COMPOSITION (SUM=100%)
Gender		
Male	150	72%
Female	57	28%
Age		
15-29 years	22	11%
30+ years	185	89%
Caste and Ethnicity		
Dalits	20	10%
Brahmins & Chhetris	106	51%
Newars	8	4%

Janajatis	64	31%
*Other	9	4%

* Note: Other includes Terai, Madhesi and Muslim groups.

Appendix III gives a more detailed breakdown showing the percentage of households that applied each of the 63 MPTs, disaggregated by gender. This data will be useful for the KISAN II project team and its private sector partners.

3.2.2 ACCESS TO FINANCIAL SERVICES

The number of individuals and households with access to financial services was small, as was the total value of loans (Table 15). Note that the GDNR-2 and YOUTH-3 indicators are disaggregates of EG.4.2-7. Though the indicator titles are phrased inconsistently, they measure the percentage of participants in group-based savings, micro-finance, or lending programs who are women or youth.

Table 15: KISAN II Outcome Indicators Related to Access to Financial Services

KISAN II AND GFSS INDICATOR NUMBERS		HOUSEHOLD-LEVEL OUTCOME INDICATORS	RESULTS
K23	EG.3.2-27	Value of agriculture-related financing (USD) accessed as a result of USG assistance.	Male: \$77,729 Female: \$52,615 Total: \$130,345
K24	EG.4.2-7	Number of individuals participating in group-based savings, microfinance or lending programs with USG assistance.	Savings: 2,436 Credit: 823 Individuals: 1,437
K6	GNDR-2	Percentage of female participants in USG-assisted programs designed to increase access to productive economic resources.	73.2% of participants
K7	YOUTH-3	Percentage of participants who are youth in USG-assisted programs designed to increase access to productive economic resources.	22.4% of the participants
K25	Reporting 4	Value of household savings deposits of USG-assisted smallholders.	\$ 285,821
K26	Reporting 5	Value of the outstanding balance on agriculture loans of USG-assisted households.	\$ 94,924

Of the 2,848 individuals who made decisions about applying improved MPTs and were, therefore, most likely to use savings or seek credit to purchase inputs, 50 percent had participated in informal savings and credit groups in the last 12 months, including farmer groups, savings and credit groups, or other groups (Table 16). Participation in saving was much higher than access to credit. Note that individuals have been double-counted if they participated in more than one group.

Table 16: Participation in Informal Savings and Credit Groups

DISAGGREGATES	NO. OF PARTICIPANTS	% OF INDIVIDUALS ACCESSING FINANCIAL SERVICES AMONG MPT DECISION MAKERS
Number of unique individuals	1,437	50%
Saving ⁹	2,436	n/a
Credit ¹⁰	823	n/a
Disaggregates	Number	Percent
Gender		
Male	388	27%
Female	1,049	73%
Age		
15-29 years	316	22%
30+ years	1,121	78%

Only 253 individuals in 236 households accessed formal agriculture finance, representing 12.7 percent of all households (Table 17). Almost twice as many women farmers (163) had borrowed money than men farmers (90), but the women's average loan values across all types of financial institutions (\$323) was approximately one third that of the men's loans (\$864) and was consistently lower than the men's loans across all types of financial institutions.

Table 17: Average Formal Loan Value, Disaggregated by Type of Financial Institution and Gender

TYPE OF FINANCIAL INSTITUTION	ALL BORROWERS			MALE			FEMALE		
	N	TOTAL VALUE (USD)	AVG. VALUE (USD)	N	TOTAL VALUE (USD)	AVG. VALUE (USD)	N	TOTAL VALUE (USD)	AVG. VALUE (USD)
Cooperatives	112	\$55,929	\$499	52	\$30,862	\$594	60	\$25,067	\$418
Micro finance institutions	66	\$22,219	\$337	8	\$8,860	\$1,108	58	\$13,359	\$230
Banks	58	\$45,599	\$786	26	\$34,516	\$1,328	32	\$11,082	\$346
Finance companies	13	\$3,744	\$288	4	\$1,724	\$431	9	\$2,020	\$224
Other institutions	12	\$2,854	\$238	5	\$1,767	\$353	7	\$1,087	\$155
Total	253	\$130,345	NA	90	\$77,729	\$864	163	\$52,615	\$323

The average value of savings per male (\$232) was considerably higher than for females (\$91) (Table 18). The average outstanding loan value per male (\$751) was more than three times that of the females (\$232).

^{9,10} The same individual is counted twice if the individual is saving and taking loans

Table 18: Value of Household Savings Deposits and Outstanding Balance on Agricultural Loans of USG-assisted Smallholders (Individual)

DISAGGREGATES	SAVING DEPOSITS			OUTSTANDING BALANCE ON AGRICULTURE LOANS		
	VALUE IN \$	AVG SAVINGS DEPOSIT PER INDIVIDUAL	INDIVIDUAL (N)	VALUE IN \$	AVG OUTSTANDING BALANCE PER INDIVIDUAL (\$)	INDIVIDUAL (N)
Gender						
Male	142,006	232	610	62,371	751	83
Female	143,815	91	1,572	32,552	232	140
Age						
15-29 years	46,738	99	474	12,398	335	37
30+ years	239,083	140	1,708	82,525	444	186
Caste & Ethnicity						
Brahmins & Chettris	134,649	164	823	51,367	597	86
Janajatis	102,805	105	976	20,134	216	93
Newars	24,374	283	86	4,895	350	14
Dalits	15,875	75	211	3,691	217	17
Terai & Madhesi groups	7,832	109	72	4,597	383	12
Muslims	286	20	14	239	239	1
Total/average	285,821	131	2,182	94,923	426	223

3.2.3 PRODUCTION, YIELDS, AND SALES

The following data presents population estimates for FTF indicators related to production, sales, and consumption (Table 19).

Table 19: KISAN II Outcome Indicators Related to Production, Yields, and Sales

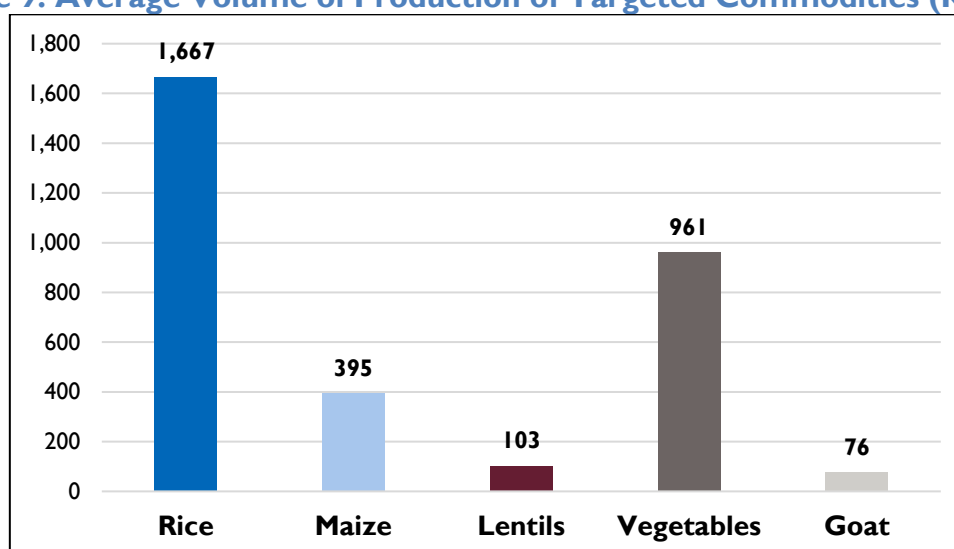
KISAN II AND GFSS INDICATOR NUMBERS		HOUSEHOLD-LEVEL OUTCOME INDICATORS	RESULTS
K9	Reporting I	Total farm-level volumes (MT) produced of targeted agricultural commodities with USG assistance (<i>rice, maize, lentils, vegetables, goats</i>).	Rice: 2,305.1 MT Maize: 517.7 MT Lentils: 62.3 MT Vegetables: 1,096.0 MT Goats: 54.5 MT
K10	EG.3-10/11/12	Yield of targeted agricultural commodities among program participants with USG assistance (<i>rice, maize, lentils, vegetables, and goats</i>) (MT/ha).	Rice: 3.5 MT/ha Maize: 2.0 MT/ha Lentils: 0.6 MT/ha Vegetables: 10.7 MT/ha Goats: 6.3 kg/goat
K17	EG.3.2-26	Value of annual sales of farms (and firms) receiving USG assistance (<i>rice, maize, lentils, vegetables, and goats</i>).	Rice: \$147,128 Maize: \$16,676

KISAN II AND GFSS INDICATOR NUMBERS		HOUSEHOLD-LEVEL OUTCOME INDICATORS	RESULTS
			Lentils: \$12,806 Vegetables: \$257,892 Goats: \$142,540
K18	Reporting 2	Volume of annual sales (MT) of farms receiving USG assistance (rice, maize, lentils, vegetables, and goats).	Rice: 607.9 MT Maize: 75.6 MT Lentils: 25.3 MT Vegetables: 890.0 MT Goats: 35.3 MT
K41	Custom 5	Quantity of nutrient-rich value chain commodities produced by direct beneficiaries with USG assistance that is set aside for home consumption (MT).	58.5 MT

The following charts feature household averages.

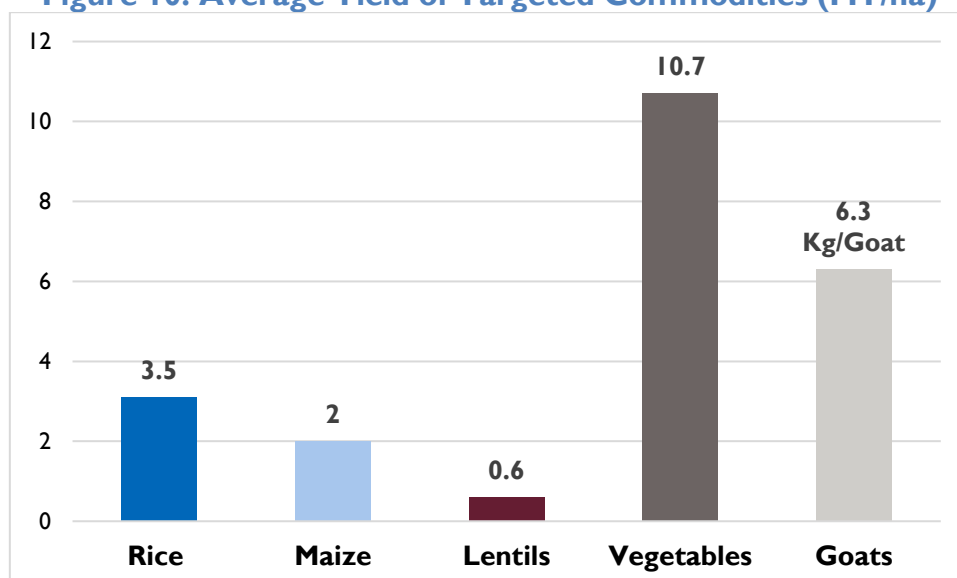
Average volumes produced per household were highest for rice and vegetables and lowest for lentils and goats (Figure 9).

Figure 9: Average Volume of Production of Targeted Commodities (KG/HH)



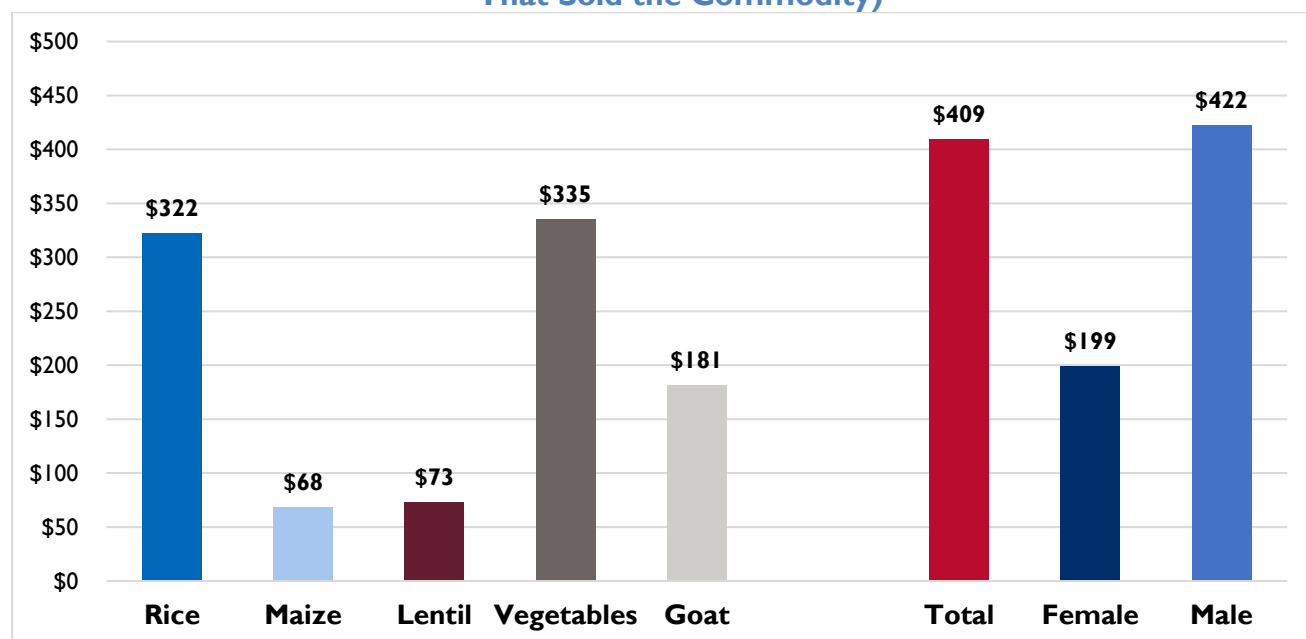
Average yields per farm were highest for vegetables and goats (Figure 10).

Figure 10: Average Yield of Targeted Commodities (MT/ha)



Average annual sales per household were highest for vegetables (\$335), rice (\$322), and goats (\$181). Males had higher sales than females, although women received higher prices, due to differences in the volumes sold by men and women.

Figure 11: Average Annual Sales by Commodity and Gender (Of Households That Sold the Commodity)



About 71 percent of the households produced nutrient-rich vegetables (okra, cabbages, cauliflowers, spinach, bitter gourds, carrots, broccoli, long beans, french beans, capsicums, pumpkins) and/or goats, and 57 percent of the households set aside some for home consumption (Table 20). On average they set aside only 12.5 percent of the total volume produced – preferring to sell because they are high value.

Table 20: Production and Consumption of Nutrient-rich Vegetables and Goats

BEHAVIORS	PERCENTAGE OF HOUSEHOLDS	KG/HH
Producing	71%	352
Consuming	57%	56
Top 4 Set Aside for consumption		
Cabbages	23%	35
Cauliflowers	23%	31
Pumpkins	12%	36
Goats	8%	14

3.3 BASELINE RESILIENCE FINDINGS

Consistent with the resilience data analysis framework presented earlier (Figure 3), this section organizes resilience findings by the following questions and sub-sections (Box 2).

Box 2: Resilience Analysis Questions

- *Context*: What are the characteristics of asset ownership and income diversification (3.3.1) and access to markets and services (3.3.2) in the sample population?
- *Exposure*: What are the primary shocks and stressors in the survey area (3.3.3)?
- *Coping strategies*: How do households, communities, institutions, and systems respond to shocks and stressors (3.3.4)?
- *Well-being outcomes*: Are households able to recover from shocks and stressors (3.3.6)?

Cross-Cutting

- What are the high-level findings and conclusions about the current state of resilience capacities in the survey area?
- Which findings appear most important for informing most potential modifications to the project strategy, implementation approaches and theory of change?
- Are there any important information gaps that should be considered in project or Mission level learning agendas?

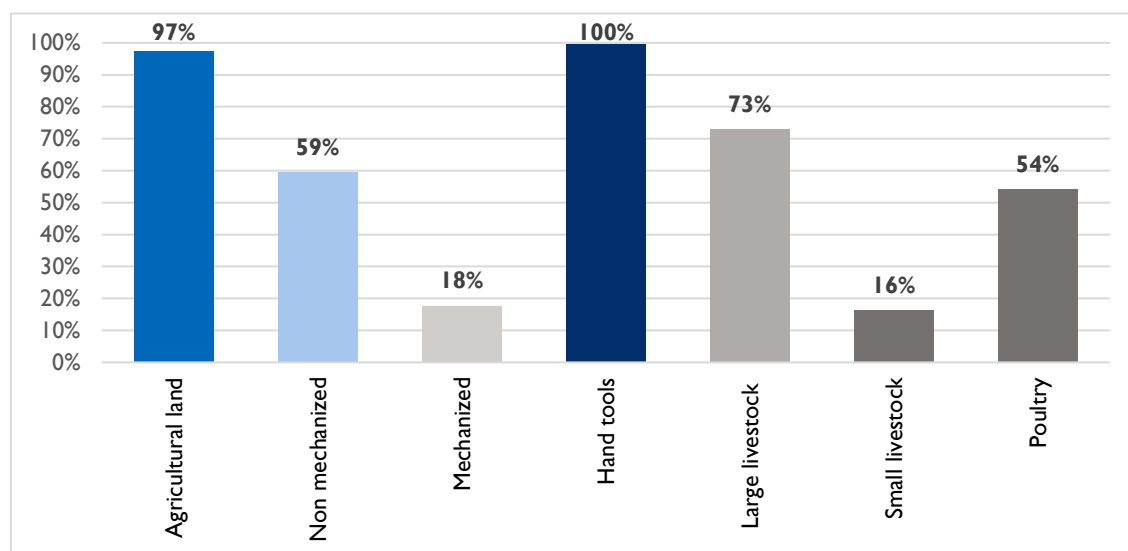
Note that questions throughout the Resilience Module do not ask about project interventions such as targeted commodities or improved technologies and management practices. Rather, they focus on characterizing the sample population according to the resilience analysis framework.

3.3.1 OWNERSHIP OF ASSETS AND INCOME DIVERSIFICATION

Almost all the households (97–100 percent) owned agricultural land, buildings (barns or storage) and hand tools (hoe, spade/shovel, rake, sickle, pickaxe, axe, pruning shears, etc.) (Figure 12). Far fewer (18 percent) owned mechanized farm equipment (mechanical or

motorized water pumps, tillers, tractors, corn shellers, motorized grain mills, tractor-drawn plows), which is expected as the size of smallholder farms does not support ownership of large equipment and farmers tend to rent them if they use them at all. Ownership rates were high for large livestock (73 percent of households owned cattle or oxen), but less for small livestock (16 percent of households owned pigs and/or sheep excluding goats). Note that the non-mechanized farm equipment mainly included *halo* and *juwa* (plows and bullock yokes), carts and wheelbarrows.

Figure 12: Percentage of Households Owning Productive Agricultural and Other Assets



On average, male farmers owned more assets than female farmers (Figure 13).

Disaggregation of asset ownership by type of asset (as done in Figure 12) would be needed to draw meaningful conclusions from this data.

Figure 13: Average Number of Assets Owned, by Gender

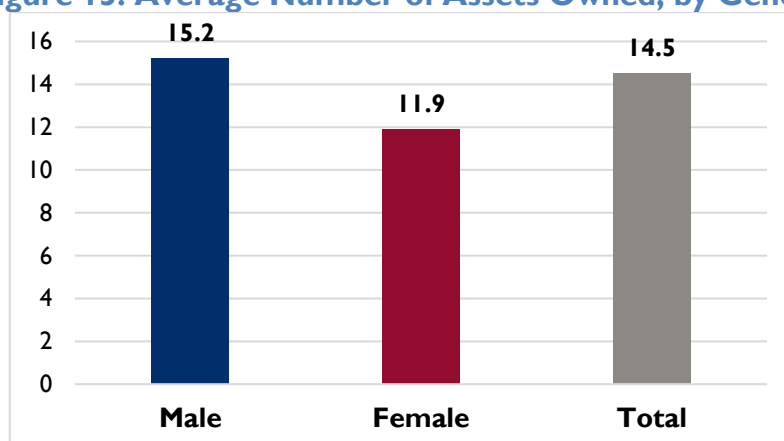


Table 21 ranks sources of household income by the number of surveyed households that earn income from that source. The sources are color-coded to indicate agricultural income (blue) and other income (gray). Except for the sales of KISAN II targeted 24 crops and

vegetables, 746 households (41.8 percent) reported earning income from selling other crops with an average annual income of \$277. Foreign remittances (\$2,098/HH), salaried work (\$2,010/HH), non-agricultural business (\$1,240/HH) and non-agricultural wage labor (\$766/HH) generated the highest average annual incomes per household. Crop sales (\$277/HH), livestock sales (\$303/HH), agricultural wage labor (\$162/HH), and fish sales (\$209/HH) generated the lowest average annual incomes per household.

Table 21: Share of Annual Household Income by Sources

SOURCES OF HOUSEHOLD INCOME	% OF HHs	NO. OF HHs	AVERAGE ANNUAL INCOME PER HH (NPR)	AVERAGE ANNUAL INCOME PER HH (USD)
Own crop sales	41.8	746	28,872	\$277
Non-agricultural wage labor	37.3	665	79,995	\$766
Own livestock sales (planned, not under stress)	25.2	449	31,583	\$303
Cash from HH members working in another country (foreign remittances)	24.3	433	219,003	\$2,098
Government allowances (senior citizen allowance, maternity allowance, etc.)	23.2	414	54,869	\$526
Salaried work	23.0	410	209,878	\$2,010
Agricultural wage labor	22.1	395	16,944	\$162
Non-agricultural business, trade, or self-employment	22.0	392	129,508	\$1,240
Rental of house or rooms	5.2	93	58,916	\$564
Agricultural business, trade, or self-employment	4.0	72	75,892	\$727
Rental of land	4.0	72	27,740	\$266
Sale of land and or assets (not under stress)	2.5	45	928,156	\$8,890
Fish sales	1.7	30	21,854	\$209

Households below the poverty line tended to have fewer sources of income – 64 percent of poor households had only one to two sources of income, compared to 26 percent of non-poor households (Table 22). Only 13 percent of poor households had four or more sources of income, compared to 41 percent of non-poor households. Income data is not available for 12 households probably due to enumerator data input errors.

Table 22: Number of Sources of Household Income Disaggregated by Income Level (Above and Below the Poverty Line of \$1.90 Day/Person)

NUMBER OF INCOME SOURCES	PERCENTAGE OF HOUSES		
	BELOW THE POVERTY LINE	ABOVE THE POVERTY LINE	TOTAL
Single source	26%	5%	201
Two sources	38%	21%	475
Three sources	23%	32%	552
Four sources	10%	24%	374
Five or more sources	3%	17%	246
Total	493	1,355	1,848

3.3.2 ACCESS TO MARKETS

The following table ranks proximity to market infrastructure and services based on the percentage of households within two hours walking distance or 5 kilometers. This is a relatively “low bar.” Consequently, a high percentage of households are considered within walking distance to most of the infrastructure and services listed below by this definition. Drawing meaningful conclusions from these findings is difficult.

Collection centers and warehouse facilities rank among the least accessible. Given that other forms of transport would generally be required to transport goods to these facilities, access would be better assessed using the method presented in Figure 14.

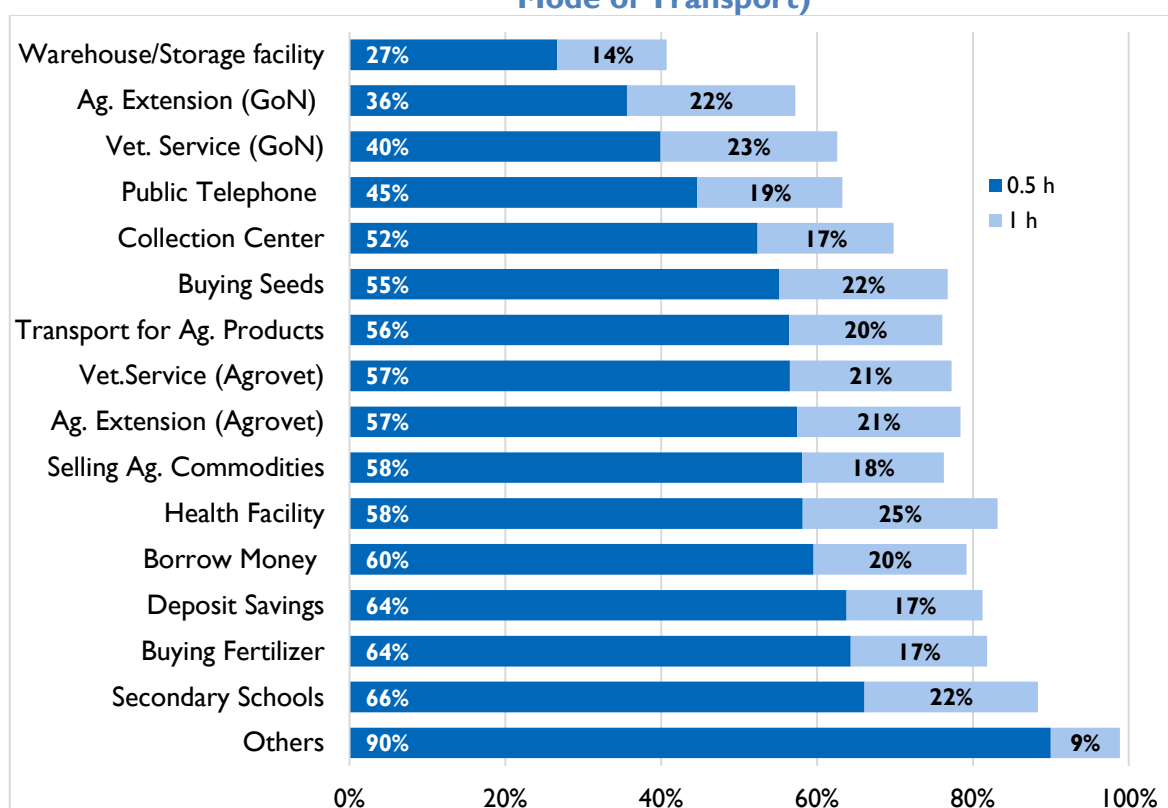
Table 23: Proximity to Market Infrastructure and Services – Percentage of Households Within Two Hours’ Walking or Five KM to Markets

PERCENTAGE OF HOUSEHOLDS	MARKET INFRASTRUCTURE AND SERVICES
>90%	- Communications: mobile phone signal, national and local TV signals, national and local FM radio signals. - A health facility. - A primary and secondary school. - Electricity.
80–89%	- Agriculture: fertilizer, private veterinary or agriculture extension services and places for selling agricultural commodities and buying seeds. - Finance: depositing savings and borrowing money.
70–79%	Agriculture: transportation for agricultural commodities and government veterinary services.
60–69%	- Agriculture: collection center and government extension agent - Communications: public telephone.
<50%	Warehouse or storage facility (42%).

Figure 14 assesses proximity to market infrastructure and services based on travel time (under a half and under one hour) using the respondents’ typical mode of transport. Both approaches to measuring proximity produce similar rankings. Proximity to warehouse facilities and government extension agents is less common (41 percent) and 58 percent respectively. Proximity to private sector agrovet (78 percent) is more common. Proximity

is most common for school-secondary (88 percent) and other services that included electricity (91 percent), local TV signal (92 percent), national TV signal (93 percent) and local FM radio signal each, national radio signal and mobile phone signal 99 percent each.

Figure 14: Proximity to Market Infrastructure and Services – Percentage of Households Under 0.5 and 1 Hour to Markets (Using Their Typical Mode of Transport)



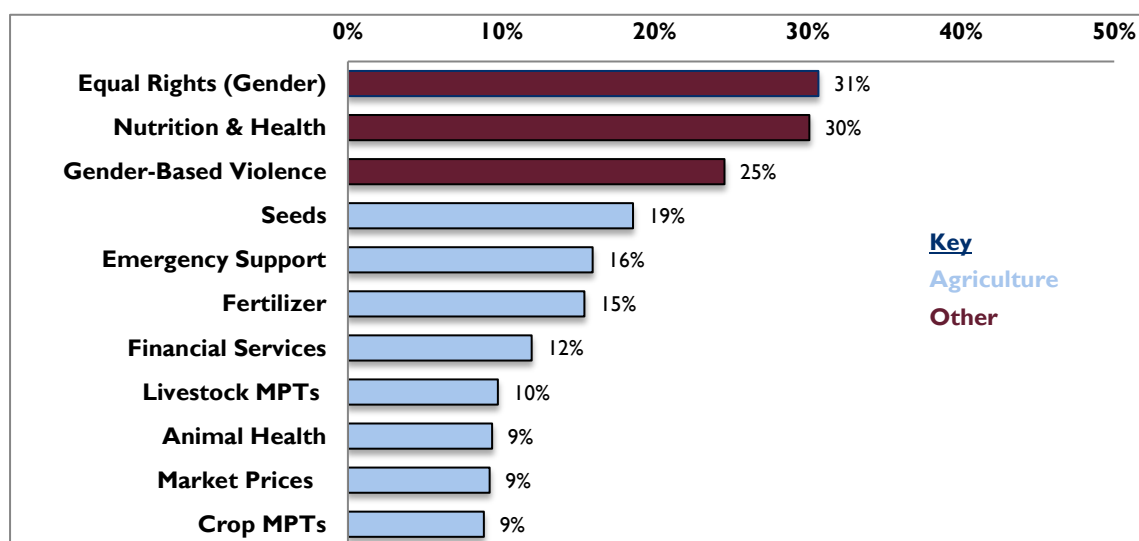
The survey team asked, “Did you or anyone in your household receive any information, training and/or services in the past 12 months?” and provided a list of topics and services to consider.

- The percentage of households that reported they had access to various *agriculture information* (indicated by gray bars in Figure 15 below) was 19 percent or lower – despite 92-99 percent reporting they had access to *radio, TV, and mobile phone signals* (Figure 14). This data is consistent with respondents citing “lack of knowledge of how to achieve higher yields and sales” as one of their top three agriculture-related constraints in a separate open-ended question.
- Households also had very low rates of access to the following: 6-7 percent of households had access to information about crop health, irrigation, natural resources management and early warning systems; and 5 percent or less of households had access to information about buyers, agriculture transport, market information via ICT, weather, post-harvest handling, and climate change (omitted from Figure 15 to simplify the figure).

- More than half of respondents said they had access to information about where to buy quality seeds and fertilizer (55 percent and 64 percent, respectively); however, respondents ranked the “availability of inputs” as the third most common constraint for increasing yields and sales in a separate open-ended question about their top three constraints to achieving increased yields and sales.

Measurement Issues. This question in the survey was complex, resulting in a data limitation. The respondents were not able to distinguish between whether they had received information, services, or both for any given topic in the prompt list. Research on the effectiveness of information channels or project information campaigns would be better conducted as a stand-alone M&E activity that uses best practice communications measurement techniques, rather than integrated into a comprehensive project baseline or Annual Monitoring Survey.

Figure 15: Percentage of Households That Received Information, Training, and/or Services



Half of the households that reported receiving information, training, or services related to at least one of the above topics said that neighbors, friends, and relatives were their most common source of information, followed by newspapers, the radio, and TV (Table 24). The internet, SMSs, and mobile apps were the least common sources of information.

Table 24: Most Significant Sources of Information, Training, and/or Services

SOURCE	NUMBER OF RECIPIENT HHs WHO CITED THE SOURCE	PERCENTAGE OF RECIPIENT HHs WHO CITED THE SOURCE
Neighbors, friends, relatives	629	54%
Newspapers, radio, TV	481	41%
Government	361	31%
Community groups	327	28%
NGOs or projects	302	26%
Agrovets	200	17%
Cooperatives	148	13%
Other private sector firms	116	10%
Internet, SMS, Mobile Apps	62	5%
Miller, processor, feed industries	13	1%
Unique households	1,173	n/a (multiple responses)

Less than half of the households reported being unable to access agricultural information (49 percent), inputs (33 percent) or a buyer (18 percent) at least once during the past 12 months (Table 25).

Table 25 Percentage of Households Unable to Access a Local Agricultural Advisor, Inputs, or a Buyer at Least Once in the Past 12 Months

MARKET LINKAGE CONSTRAINTS (CONSISTENCY OF ACCESS)	% OF HHs UNABLE TO ACCESS AT LEAST ONCE	NO. OF HHs
Unable to obtain agricultural information or advice because no local advisor was available.	49%	911
Unable to obtain agricultural inputs because no local supplier and/or inventory was available.	33%	614
Unable to sell produce because no buyer/trader was available.	18%	335

Two-thirds of the households had obtained quality inputs from an agrovets in the previous 12 months (Table 26). These households had interacted with an average of two agrovets each. Most households (72 percent) reported that input prices had increased over the previous year. Only 16 percent of households were not satisfied against 51 percent of households who were satisfied with inputs and/or services received from Agrovets.

Table 26: Farmers' Interactions with Agrovets

INTERACTIONS	PERCENTAGE OF HHs
Interacted with agrovets (advice or inputs)	67%
Average number of agrovets interacted with	1.9 agrovets
Obtained high-quality seeds or other inputs from an agrovets	65%
Change in prices paid for inputs compared to the previous year	
Increased	72%
Remained the same	21%
Decreased	2%
Did not know	5%
Satisfaction with inputs and/or services	
Not satisfied	16%
Somewhat satisfied	29%
Satisfied	51%
Very satisfied	3%

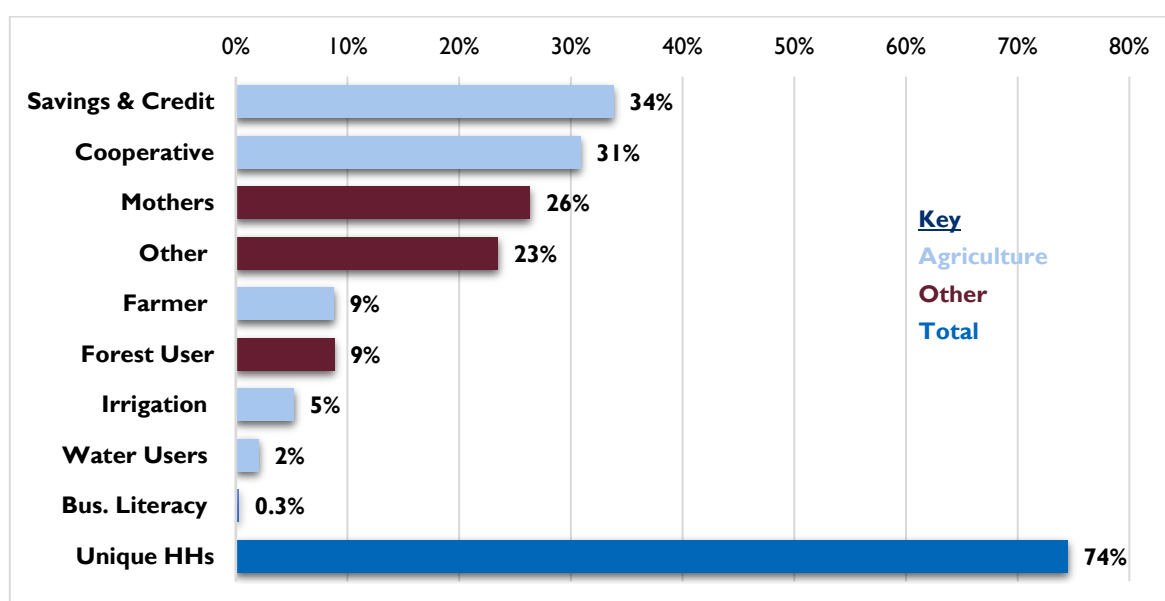
Table 27 below presents findings on farmers' interactions with all types of buyers. Fewer households had interacted with buyers (42 percent) than agrovets (67 percent). Approximately one-third of households had sold to a buyer and one fourth obtained quality seeds from a buyer. Households interacted with an average of 2.8 buyers each. Among those households who sold agricultural commodities, annual sales increased for 41 percent, remained the same for 24 percent, and decreased for 33 percent of them compared to the previous year. The reasons for these mixed findings are unknown. Most respondents reported that the prices they paid for inputs had increased over the previous year. It is unknown if farmers paid higher prices for the same inputs (indicating price inflation) or higher quality inputs (a desirable finding). Only 16 percent of respondents indicated that they were not satisfied whereas 35 percent were satisfied with the inputs or services received from commercial buyers, traders and wholesalers.

Table 27: Farmers' Interactions with Commercial Buyers, Traders, and Wholesalers

INTERACTIONS	PERCENTAGE OF HHS
Interacted with a buyer	42%
Sold commodities	37%
Obtained quality seed from a buyer	26%
Average number of buyers interacted with	2.8 buyers
Change in total value of sales compared to the previous year (n = 696)	
Increased	41%
Remained the same	24%
Decreased	33%
Did not know	2%
Change in prices paid for inputs by respondents compared to the previous year	
Increased	75%
Remained the same	20%
Decreased	2%
Did not know	3%
Respondents' satisfaction with prices received (n = 696, 37%)	
Not satisfied	22%
Somewhat satisfied	31%
Satisfied	43%
Very satisfied	3%
Satisfaction with inputs and/or services (n=181, 26%)	
Not satisfied	16%
Somewhat satisfied	48%
Satisfied	35%
Very satisfied	1%

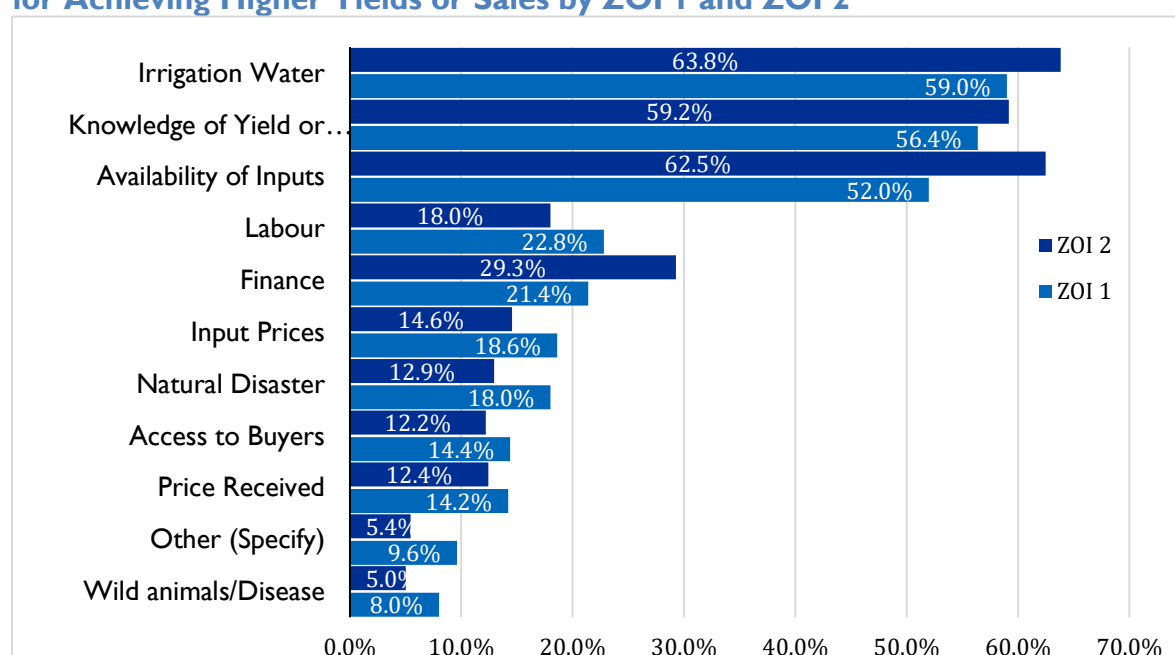
Participation in farmer and forest user groups was low relative to cooperatives because the project's catchment areas are in urban and semi-urban areas (Figure 16 below). Participation in business literacy programs was very low. Overall, 74 percent of the total households participated in at least one of the local groups.

Figure 16: Percentage of Households Participating in Local Groups



Respondents were asked the following open-ended question (and were not prompted on potential responses), “What are the top three issues that prevent you from achieving higher yields or sales, starting with the most important?” Figure 17 ranks constraints according to the percentage of households that listed them among their top three. Lack of access to irrigation water, limited knowledge of how to achieve higher yields and sales, and lack of availability of inputs were cited by households as top three constraints in both ZOIs. Out of the top three, lack of availability of inputs was cited by more households (a difference of 10%) as a constraint in ZOI 2 than in ZOI 1. Similarly, 29 percent households cited access to finance in ZOI 2 compared to 21 percent in ZOI 1.

Figure 17: Percentage of Households That Reported a Factor as a “Top 3” Constraint for Achieving Higher Yields or Sales by ZOI 1 and ZOI 2



3.3.3 EXPOSURE TO SHOCKS AND STRESSORS

The following figure ranks exposure to various shocks and stressors. Almost two-thirds of the households (63 percent) had been exposed to at least one agriculture-related shock or stressor in the past 12 months. The most common were livestock and crop diseases, pests and inadequate rain (Figure 18). The least common were death in the family and lack of access to livestock inputs (5 percent each); loss of land and erosion or landslide (4% each); and various forms of theft and earthquake (1 percent each)-omitted from Figure 18 to simplify the figure. Only 5-7 percent of households identified lack of access to crop or livestock inputs as a significant stressor. Gender disaggregation of exposure to shocks and stressors is given in Annex (Table 29).

Figure 18: Percentage of Households Exposed to Various Shocks and Stressors

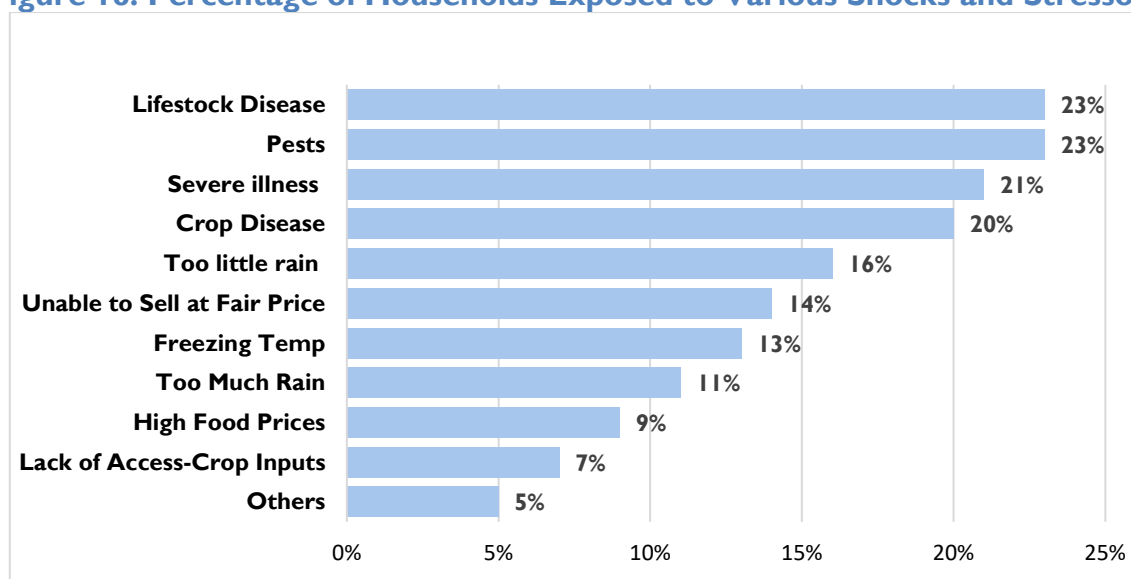
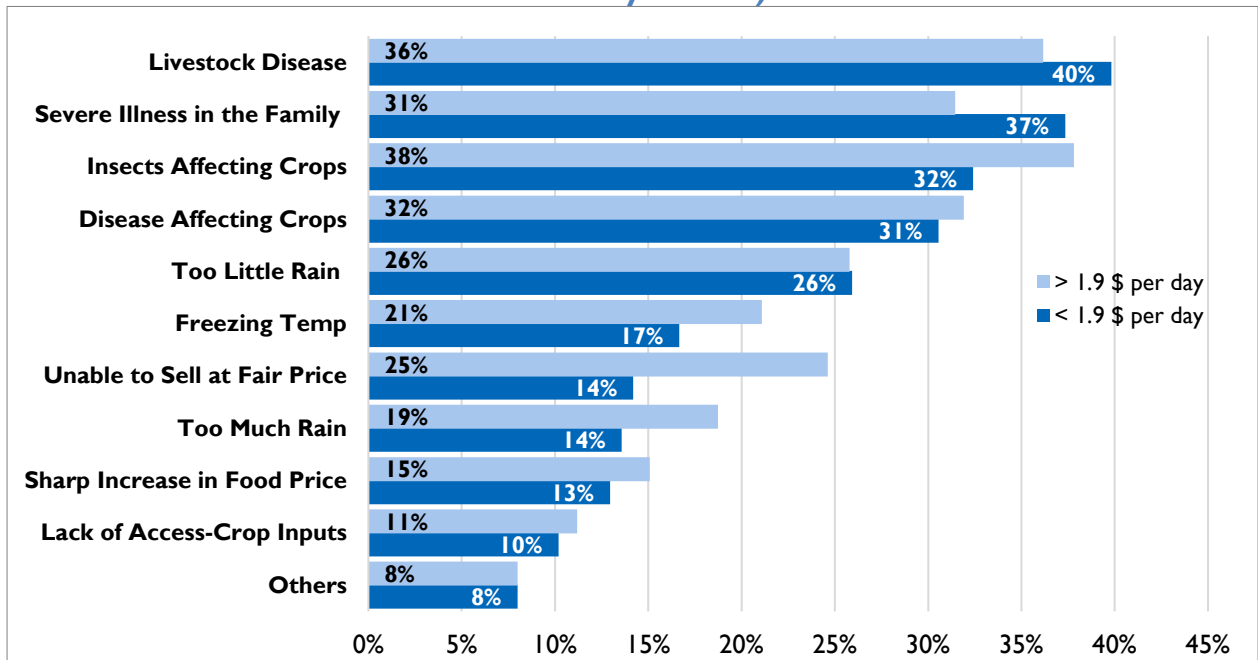


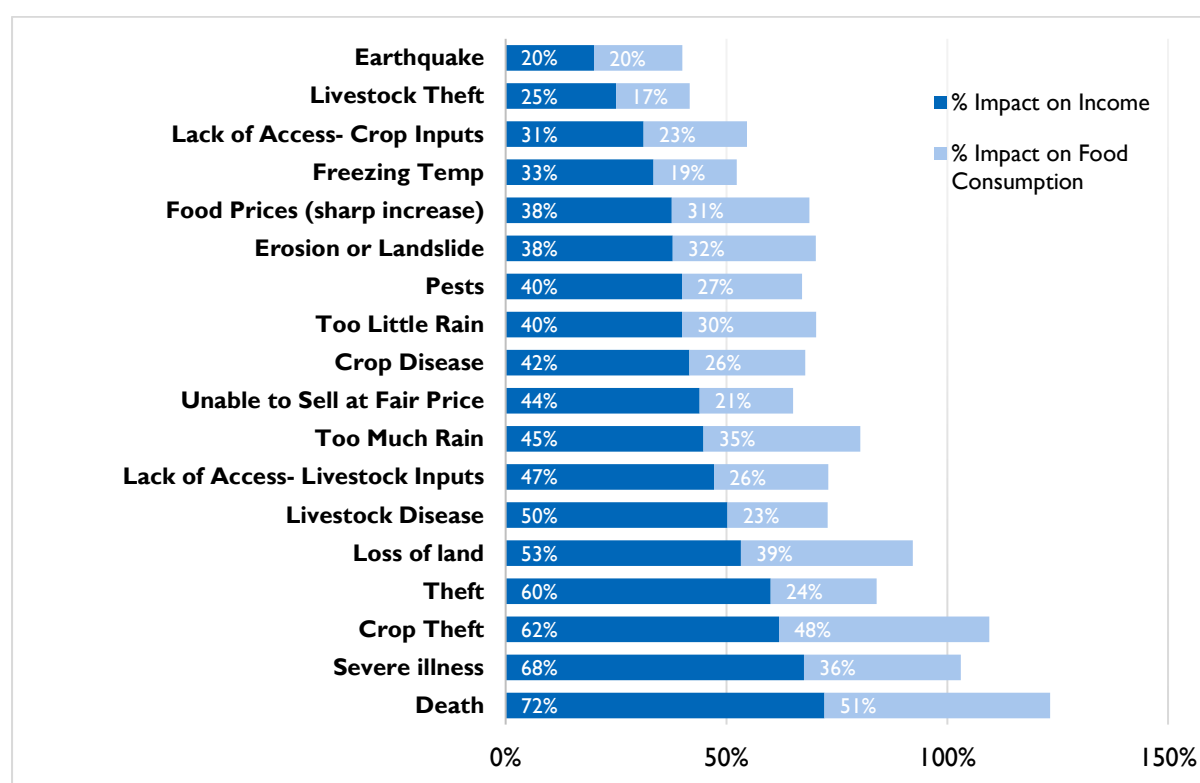
Figure 19 presents the data from Figure 18, disaggregated by households above and below the poverty line. Income levels do not appear to affect the ranking of exposure to shocks or stressors, although there are differences in the percentage of households exposed to some shocks and stressors. Notably, households with higher incomes report higher rates of exposure to the stressors, “unable to sell at a fair price” (25 percent vs. 14 percent), “insects affecting crops” (38 percent vs. 32 percent), and “too much rain” (19 percent vs. 14 percent), and slightly higher rates of exposure to “freezing temperatures,” “sharp increases in food prices,” and “lack of access to crop inputs”. The reasons for this are unknown.

Figure 19: Percentage of Households Exposed to Various Shocks and Stressors, Disaggregated by Income (Above and Below the Poverty Line of \$1.90 Day/Person)



Of the 1,173 households that had been exposed to a shock or stressor in the past 12 months, up to 72 percent reported that it had severely impacted their household incomes and up to 51 percent reported that it had severely impacted food consumption (Figure 20). Across all types of shocks and stressors, more households reported severe impacts on income than food consumption. Crop theft and death or illness in the family produced the most severe impacts. However, a significant percentage of households reported severe impacts across all other shocks and stressors (20-60 percent).

Figure 20: Percentage of Households Exposed to a Shock or Stressor That Reported Severe or Extremely Severe Impacts on Income and Food Consumption



The percentage of households exposed to a shock or stressor in the past 12 months varied by province (55–79 percent), but less so between ecological regions (60–65 percent) (Table 28). Among exposed households, the average number of shocks and stressors had ranged between 2.6 and 3.4 per household.

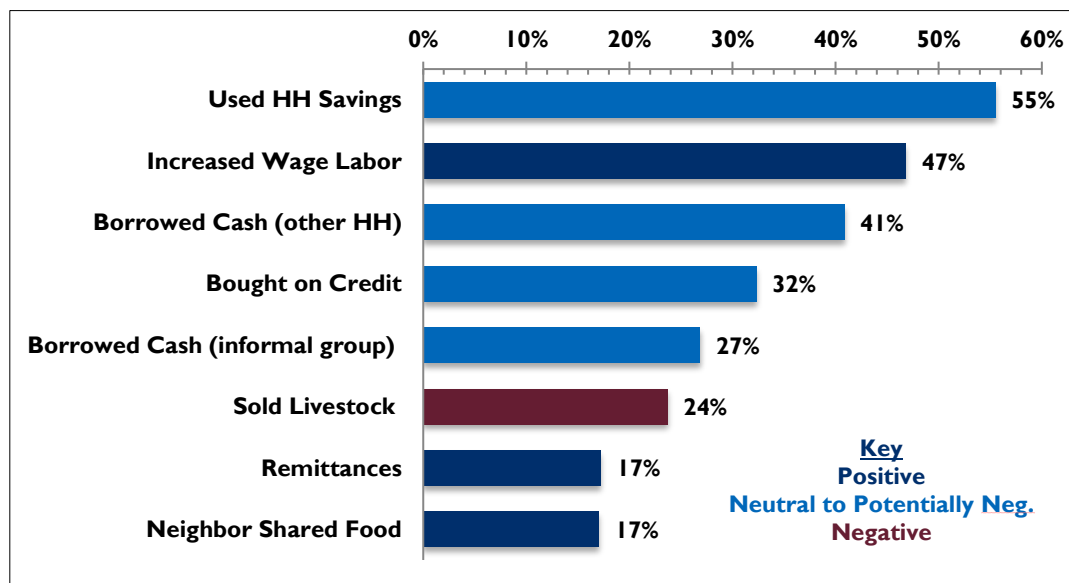
Table 28: Percentage of Households Exposed to a Shock or Stressor and Average Number of Shocks or Stressors, by Province and Ecological Region

	Percentage of HHs Exposed	Average Number of Shocks & Stressors Per HH
Ecological Region		
Terai	60%	2.8
Hills	65%	2.8
Province		
Province 3	65%	2.6
Province 5	55%	2.7
Province 6	79%	3.4
Province 7	68%	2.9

3.3.4 COPING STRATEGIES AND SUPPORT

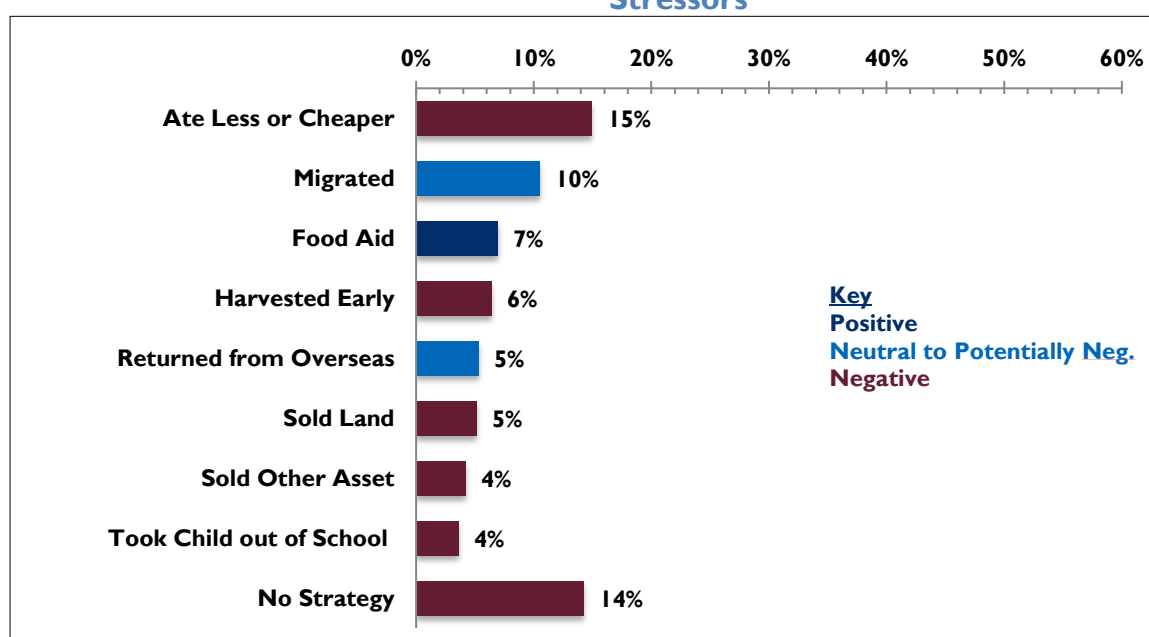
The households that reported experiencing a shock or stressor in the past year were asked if they had used any coping strategies from a list of 17. The most common coping strategies reported were neutral and positive strategies, making up eight of the top ten strategies (Figure 21). Twenty-four percent of exposed households reported using a negative coping strategy, the most common of which was to sell their livestock. A negative coping strategy is defined as one that can undermine the ability to recover from *future* shocks or stressors. However, selling livestock may more accurately be defined as a neutral to potentially negative coping strategy, like using household savings, as livestock is widely viewed as a form of saving in Nepal.

Figure 21: Most Common Coping Strategies Used by Households Exposed to Shocks and Stressors (n=1,173)



The most negative coping strategies were the least commonly used, making up six of the bottom nine strategies (Figure 22). Fourteen percent of households reported using no coping strategy – an unexpected negative finding.

Figure 22: Less Common Coping Strategies of Households Exposed to Shocks or Stressors



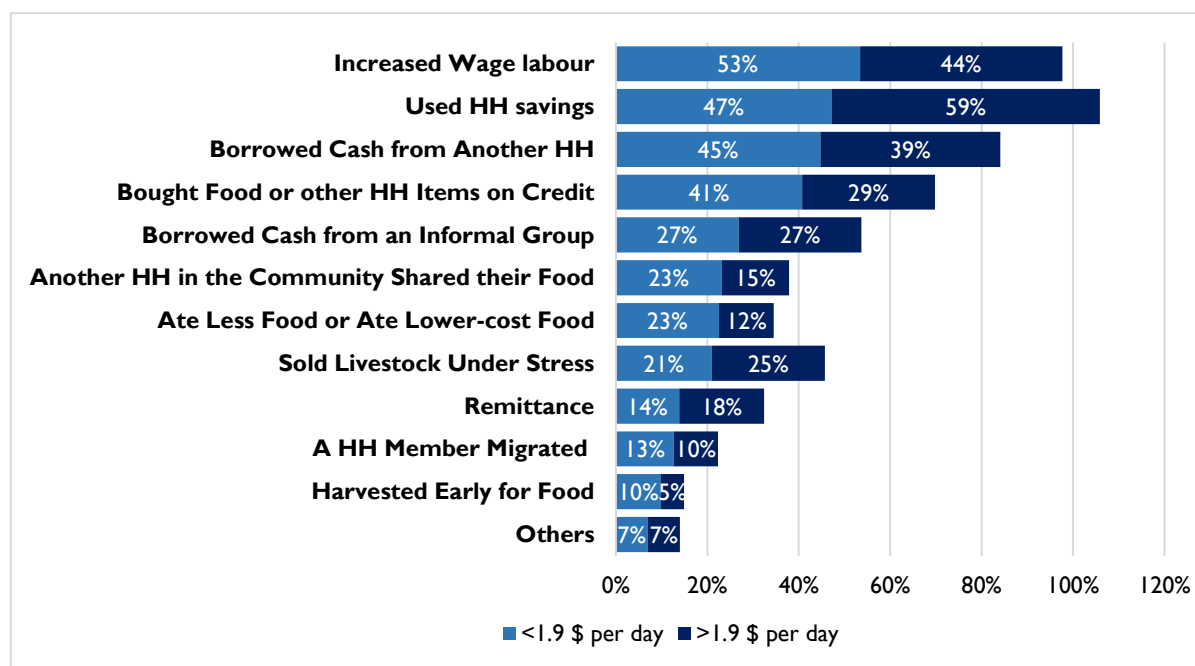
Of the 1,173 households exposed to at least one shock or stressor in the past year, 28 percent lived below the poverty line and 72 percent above it (Table 29). A high percentage of households within each group had applied at least one coping strategy (85–88 percent).

Table 29: Percentage of Households Exposed to a Shock or Stressor That Used At Least One Coping Strategy, Disaggregated by Households Above and Below the Poverty Line (\$1.90/Person/Day)

APPLIED A COPING STRATEGY	HHs BELOW THE POVERTY LINE		HHs ABOVE THE POVERTY LINE	
	NO. OF HHs	% OF HHs	NO. OF HHs	% OF HHs
Yes: Applied at least one	286	88%	720	85%
No: Applied none	38	12%	129	15%
No. of HHs exposed to a shock or stressor	324	28%	849	72%

The types of coping strategies used varied between households living above and below the poverty line. Households above the poverty line were more likely to have used household savings or sold their livestock. Households below the poverty line were more likely to have sought additional wage labor work, borrowed cash from another household, bought food or other items on credit, received food from another household in their community, eaten less or lower-cost food, had a household member emigrate overseas to earn money, harvested crops prematurely, or had a household member return from overseas to help. Note that in Figure 23 “others” includes received food aid from a relief organization, local group, or project (7 percent for both above and below the poverty line households), pulled one or more children out of school (5 percent versus 3 percent), sold land under stress (5 percent for both types), sold another asset under stress (5 percent versus 4 percent), and had a household member return from overseas to help (4 percent versus 6 percent).

Figure 23: Percentage of Households Exposed to a Shock or Stressor Who Used Various Coping Strategies, Disaggregated by Household Income Above or Below the Poverty Line (<\$1.90/Person/Day)



Only 26 percent of the exposed households reported that they had received support following exposure to a shock or stressor, indicating relatively low levels of social capital (Table 30). Most support came from relatives (95 percent) in the form of a cash loan (77 percent) or farm labor (21 percent). Sharing food was less common than expected (10%). Tables 30 and 31 complement the FTF RESIL-b Social Capital indicator, which focuses on *expectations* about receiving or giving future support rather than experience receiving or giving support.

Table 30: Percentage of Households Who Received Support, Disaggregated by Source and Type

DISAGGREGATES	PERCENT OF HHS WHO RECEIVED SUPPORT (BY SOURCE AND TYPE):
Support received from (source) (multiple responses)	
Relatives in community	66.6%
Relatives outside community	28.5%
Non-relatives in community	22.8%
Non-relatives outside community	2.3%
Type of support received (multiple responses)	
Cash loan	76.8%
Farm labor	20.5%
Food	9.9%
Other	6.0%
Housing	3.0%
Unique households	25.7%

Table 31 below shows the support given by households to other households that had suffered from a shock or stressor in the past 12 months. More households gave than received support (33% vs. 26%). Like the findings in Table 30, most support went to relatives (81%) as cash loans (71%).

Table 31: Percentage of Households That Gave Support to Others Exposed to Shocks & Stressors

DISAGGREGATES	PERCENT OF HHs WHO GAVE SUPPORT (BY SOURCE AND TYPE):
Support given to (multiple responses):	
Relatives in community	59%
Relatives outside	22%
Non-relatives in community	30%
Non-relatives outside	4%
Type of support given (multiple responses)	
Cash loan	71%
Farm labor	27%
Food	9%
Other	7%
Housing	2%
Unique households	32.7%

3.3.5 EXPERIENCE OF HUNGER

Figure 25 lists the households' experiences of hunger during the previous 30 days, in descending order of severity, using the Household Food Insecurity Experience Scale (HFIES). Red bars indicate eating less food. Blue bars indicate eating lower quality food or simply worrying about not having enough food. In accordance with the FTF PIRS, all households were included in the sample and *not* just those exposed to a shock or stressor. Note that this will understate seasonal variations in hunger, particularly since data was collected during a better than average harvest season and approaching the main annual festival season.

Figure 24: Percentage of Respondents Who Experienced Hunger in the Past 30 Days (HFIES)

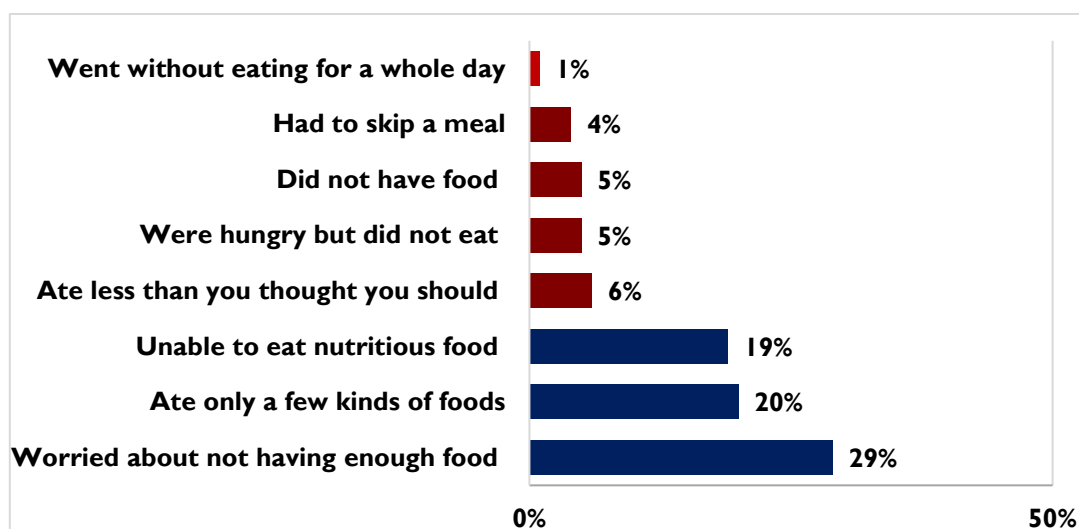


Table 32 presents the data from Figure 24, disaggregated by income and grouped in descending order of severity: worried, mild hunger, and moderate to severe hunger. The households below the poverty line had experienced substantially more hunger in the past 30 days across all categories than households above the poverty line.

Table 32: Percentage of Respondents Who Experienced Hunger in the Past 30 Days (HFIES) Disaggregated by Poverty Status (<\$1.90 per day)

EXPERIENCE OF HUNGER	% OF HHs BELOW THE \$1.90 POVERTY LINE	% OF HHs ABOVE THE \$1.90 POVERTY LINE
Perception		
Worried about not having enough food to eat	42%	23%
Mild Hunger		
Unable to eat healthy and nutritious food	29%	16%
Ate only a few kinds of food	31%	16%
Had to skip a meal	8%	3%
Ate less than they thought they should	12%	4%
Moderate to Severe Hunger		
Did not have food	9%	3%
Were hungry but did not eat	10%	3%
Went without eating for a whole day	2%	1%
Unique Households	493	1,355

3.3.6 POST-SHOCK PERCEPTIONS ABOUT THE ABILITY TO RECOVER

Post-shock perceptions about current and future food security are the primary indicator of households' ability to recover from a shock or stressor in the resilience data analysis framework (Figure 3).

A very high percentage of households said that they were either better off than before they had been exposed to a shock or stressor (45 percent) or the same as before (49 percent) (Table 33). This unexpected response likely reflects that interviews occurred just after a better than normal harvest. In addition, a high percentage of households (73 percent) reported that they believed that the government would respond adequately to future shocks and stressors; however, past experience conducting surveys in Nepal indicates that answers to questions related to satisfaction with services are often biased because many Nepalis are reluctant to speak negatively of others, especially to a stranger.

Table 33: Post-Shock Perceptions About Food Security and Future Local Government Responsiveness

PERCEPTIONS	% OF HHs
Ability to Meet Current HH Food Needs	
Better than before	45%
Same as before	49%
Worse than before	7%
Ability to Meet HH Food Needs in the Future	
Better than before	63%
Same as before	31%
Worse than before	6%
Responsiveness of Local Government During the Next Shock or Stressor	
Yes, local government will respond effectively	73%
No, local government will not respond effectively	26%
It is unlikely that I will need support	<1%

Survey participants were also asked the following questions:

- Will your household be able to lean on others for financial or food support during difficult times (shocks or stressors)?
- Will the same people that you will be able to lean on during difficult times also be able to lean on you for financial or food support during their difficult times (shocks or stressors)?

Similar to the patterns related to *actually* receiving and giving support (Tables 29 and 30), more households *expected* to give than receive support in response to future shocks or stressors; more households expected that support would be provided by relatives (rather than non-relatives), and relatively fewer households expected support from non-relatives from outside their communities (Table 34). Note that the table title and source descriptions reflect the FTF RESIL-b indicator title and terminology.

Table 34: Expectations About Social Capital

EXPECTED SOURCES OF SUPPORT	TYPE OF SOCIAL CAPITAL	HHS THAT EXPECT THEY WILL RECEIVE SUPPORT TO:		HHS THAT EXPECT THEY WILL GIVE SUPPORT TO:	
		N	%	N	%
Relatives living in your community	Bonding	1,582	85%	1,764	95%
Relatives living outside your community	Bridging	1,417	77%	1,625	88%
Non-relatives living in your community	Bonding	1,339	73%	1,598	86%
Non-relatives living outside your community	Bridging	716	40%	1,166	64%

4 CONCLUSIONS

The conclusions section summarizes key findings related to agriculture, resilience, and gender, as well as learning and recommendations for future FTF and resilience surveys.

4.1 AGRICULTURE MODULE

As noted earlier, the agricultural baseline data provides a basis for the Implementing Partner's target-setting exercise and future efforts to measure change. Findings that are unexpected and/or critical to KISAN II's theory of change are flagged for additional follow-up action.

Access to land: The households had an average of 0.55 hectares each, and no households had more than 5 hectares, the FTF definition of a smallholder.

Volumes and sales: Average volumes produced per farm were highest for rice and vegetables and lowest for lentils. HHs in ZOI 1 produced higher mean volume of rice and lentil compared to HHs in ZOI 2 whereas higher mean volume of vegetables, maize and goats was produced in ZOI 2 compared to ZOI 1. Average annual sales per household were highest for vegetables (\$335), rice (\$322), and goats (\$181). There was difference in mean value of annual sales between ZOI 1 and 2 with ZOI 2 having higher average annual sales value (\$438 vs \$289). HHs in ZOI 2 had highest mean sales value for vegetables whereas in ZOI 1 highest mean sales value was for rice.

Support: Less than five percent of households that produced rice, maize, lentils, and goats had received support from the government, a project or the private sector in the previous 12 months related to achieving increased yields or sales. Seventeen percent of vegetable-producing households had received such support. Higher proportion of HHs in ZOI 1 (19 percent) compared to ZOI 2 (15 percent) received support for vegetables. Marginally higher proportion of HHs in ZOI 1 had received support for rice (6 percent), maize (5 percent) and lentil (1 percent) compared to HHs in ZOI 2.

Nutrient-rich commodities: About 71 percent of the households produced nutrient-rich vegetables and/or goats and 57 percent of these households set aside some for home consumption. However, on average they set aside only 12.5 percent of the total volume produced, presumably selling because they are high value.

Constraints: The top three constraints to increasing yields and sales of targeted commodities were lack of access to irrigation water, limited knowledge of how to achieve higher yields and sales, and lack of availability of inputs. Out of the top three, lack of availability of inputs was cited by more households (a difference of 10%) as a constraint in ZOI 2 than in ZOI 1. Similarly, 29 percent households cited access to finance in ZOI 2 compared to 21 percent in ZOI 1. The data will be useful to share with the activity's potential private sector partners, as it points to unmet demand for agricultural inputs and services. Analysis of costs and benefits should be conducted to assess the conditions under which investments make economic sense and to identify potential financing requirements. Perceptions about the importance of finance are expected to change as farmers shift to higher value production, requiring higher levels of investment.

Access to information: Access to agricultural information is low, with less than 10 percent of households accessing information on crop MPTs, market prices, and animal health and less than 20 percent of households accessing information on financial services, fertilizer, and seeds. Neighbors, friends, and relatives were their most common source of information, followed by newspapers, the radio and TV (54% and 41% of households, respectively). The internet, SMSs, and mobile apps were the least common sources of information (5%).

Improved MPTs: Almost all households (99%) had applied at least one improved management practice or technology in the previous 12 months, with an average of 11.5 improved MPTs per household (out of 64 potential ones). The application of improved MPTs varied substantially with respect to the percentage of households applying them and the commodities to which they were applied. Vegetables and rice had the highest use of MPTs (10 and 6.7 MPTs/HH, respectively). Maize, lentils, and goats had only 3.3-3.8 MPTs/HH. It could reflect the higher level of support received for vegetables (17 percent), compared to only 4-5 percent for other commodities.

Post-harvest handling, crop genetics, and irrigation were the most common MPT categories (78-91 percent of households), specifically sorting, improved seeds, and low-tech irrigation methods such as hand-watering, drip, sprinkler, rainwater harvesting, etc. Use of irrigation was higher for HHs in ZOI 1 (83 percent) compared to ZOI 2 (66 percent). Similarly, use of water management technology was higher for HHs in ZOI 1 (60 percent) compared to ZOI 2 (45 percent). Only half of the households had applied climate adaptation MPTs. Few households used information and communications technologies (ICT) to access information on agriculture (11%), despite 55% owning a smartphone. Higher proportion of HHs in ZOI 2 (13 percent) had used ICT compared to ZOI 1 (10 percent). Value-added processing was the least common (3%).

KISAN II has already identified improving ICT channels and content and access to climate smart MPTs as priorities. In addition, it would be helpful to **track individual MPTs** (not categories of MPTs) to provide detailed feedback to the project team and the project's private sector partners, since the application of MPTs is the primary driver for achieving increased yields and sales in the project's theory of change. This level of detail is required to understand which MPTs are being used and to focus follow-up research on potential barriers to adoption.

4.2 RESILIENCE MODULE

Almost two thirds of households were exposed to a shock or stressor. Of households exposed, up to 72 percent reported that the shock or stressor had severely impacted household income and up to 51 percent reported that it had severely impacted household food consumption. Household perceptions of the ability to recover from a shock or stressor were unexpectedly positive – over 90 percent of households reported that their ability to meet *current* and *future* household food needs was better or the same as before the exposure. This can be attributed to using coping strategies that were largely positive or neutral. Giving and receiving support in response to a shock or stressor (“social capital”)

was less prevalent than expected. KISAN II interventions are expected to enhance resilience by improving agricultural incomes and use of climate-smart technologies and management practices through improved access to inputs, services, information, and buyers. Refer to the end of this section for recommendations related to resilience measurement.

4.2.1 CONTEXT

Literacy: An estimated 34 percent of commodity decision makers in the sample were illiterate, which limits their ability to access information, keep farm records, and transact. KISAN II will offer business literacy training.

Vulnerability: A high percentage of households (78%) met at least one of USAID Nepal's three vulnerability criteria: household income less than \$1.90/day/person (26%), member of disadvantaged group (55%), and affected by a natural disaster in the past 12 months (32%). Vulnerability associated with being disadvantaged may be overstated since it varies by location, while vulnerability associated with exposure to shocks and stressors is understated because it only considered natural disasters. The Mission may consider revising the definition of "vulnerable" accordingly.

Household Food Insecurity Experience Scale (HFIES): Only 1 percent of households went without eating for a whole day within the prior 30 days; 6 percent ate less than they thought they should, and 29 percent worried about not having enough food. Note that the HFIES scale does not capture seasonal variations in hunger, particularly since data was collected during a better than average harvest season and approaching the main annual festival season. As expected, the gap between households above and below the poverty line is significant. Two percent of poor households went without eating for a whole day, compared to 1% of non-poor households. Forty-two percent of poor households worried about having enough food to eat, compared to 23 percent of non-poor households.

Asset ownership: Almost all the households (97–100%) owned agricultural land, buildings (barns or storage) and hand tools (hoe, spade/shovel, rake, sickle, pickaxe, axe, pruning shears, etc.).

Livelihood sources and diversification: Non-agricultural income from foreign remittances, salaried work, non-agricultural business, and non-agricultural wage labor (approximately \$750-2,000/HH/year each) far exceeded agricultural income from crop, livestock, and fish sales and agricultural wage labor (approximately \$160-\$300/HH/year each). Households below the poverty line tended to have fewer sources of income – 64 percent of poor households had only one to two sources of income, compared to 26 percent of non-poor households.

Access to markets: Over 80 percent of households are within walking distance (5 kilometers or two hours) to communications signals, schools, health centers, electricity, agricultural inputs, extension services, and buyers. Less than 80 percent of households have access to agricultural transport services, government veterinary services and extension agents, or a collection center. Only 42 percent of households have access to a storage facility.

Group participation: Overall, 74 percent of households participated in at least one local group. The most common were mothers groups, savings and credit groups, and cooperatives (26–34%). Participation in farmer and forest user groups was low (9% each) because the project’s catchment areas are in urban and semi-urban areas. Participation in business literacy programs was very low (0.3%).

4.2.2 EXPOSURE

Exposure to shocks and stressors: Almost two-thirds of households (63%) had been exposed to at least one of 18 ‘shocks or stressors’ in the past 12 months. The most common were livestock disease, pests, severe illness in the family, crop disease, inadequate rain, and unable to sell at a fair price (14–23% of households). Agriculture-related shocks and stressors will be directly addressed by KISAN II.

Income levels: Household income levels (above or below the poverty line) do not appear to affect the ranking of exposure to shocks or stressors; however, they do affect the percentage of households exposed by a few percentage points. Households *below* the poverty line had greater exposure to the most common shocks or stressors listed above. Households *above* the poverty line reported greater exposure to lack of access to inputs, sharp increases in food prices, too much rain, unable to sell at a fair price, and freezing temperatures. The reasons for this are unknown, particularly since the focus is on exposure (not impact), and exposure to market and weather- related shocks and stressors is not expected to vary by income level.

Differences between provinces and agro-ecological zones: The percentage of households exposed to a shock or stressor in the past 12 months varied by province (55% in Province 5 to 79% in Province 6), but less so between agro-ecological zones (60% in the Terai and 65% in the hills). Among exposed households, the average number of shocks and stressors ranged between 2.6 and 3.4 per household across provinces, and was 2.8 per household in both the Terai and hills.

Impacts: Of households exposed, up to 72 percent reported that the shock or stressor had severely impacted household income and up to 51 percent reported that it had severely impacted household food consumption. Crop theft, death, and severe illness in the family produced the most severe impacts. As noted earlier, KISAN II will mitigate cumulative impacts by directly addressing the other agriculture-related to shocks and stressors.

4.2.3 COPING STRATEGIES

Coping strategies: The most commonly reported coping strategies (seven of the top eight) were either neutral or positive: using household savings (55%), increasing wage labor (47%), borrowing cash from another household (41%), buying on credit (32%), borrowing cash from an informal group (27%), remittances (17%), and a neighbor sharing food (17%). Twenty-four percent of households had sold livestock, deemed a potentially negative coping

strategy by some resilience advisors because it is selling a productive asset, though it is similar to using household savings, a neutral coping strategy. The most negative coping strategies were the least commonly used, making up six of the bottom nine strategies: ate less or cheaper (15%), no coping strategy (14%), harvested early (6%), sold land or another asset (4-5%), and took a child out of school (4%).

Social capital: Social capital was lower than expected, based on the relatively small percentage of households that had received (26%) or given (32%) support in response to a shock or stressor. Respondents may have been confused about what constitutes support, since 41 percent reported being able to borrow cash from another household. Sixty-seven percent of exposed households received support from relatives within their community, the most common source of support. The most common forms of support were cash loan (77%) or farm labor (21%). Sharing food was less common than expected (10%).

4.2.4 WELL-BEING OUTCOMES

Post-shock perceptions: Household perceptions of the ability to recover from a shock or stressor were unexpectedly positive – 93 percent of households reported that their ability to meet *current* household food needs was better or the same as before exposure (45% and 49%, respectively). Similarly, 94 percent of households reported that their ability to meet *future* household food needs was better or the same as before exposure (63% and 31%, respectively). The reasons for why their ability to meet household food needs was better are unknown.

Expectations about social capital: Similar to the patterns related to *actually* receiving and giving support reported under coping strategies, more households *expected* to give than receive support in response to future shocks or stressors; more households expected that support would be provided by relatives rather than non-relatives, and relatively fewer households expected support from non-relatives from outside their communities.

4.3 GENDER

The survey data indicate that significant differences exist between men and women with respect to who makes decisions, ownership of assets, use of improved MPTs, and access to finance. As noted earlier, the decision to omit “mixed” decision makers as an option likely under-reports the role of women in decision making. Further research is warranted to better understand how to improve women’s access to information, services, productive assets, and buyers. Focus group research methods are recommended. Following is a brief summary of gender-related findings.

Household heads: Household heads are predominantly male (78%).

Decision-making authority: Only one percent of respondents cited lack of decision-making authority as a priority constraint; however, additional questions would be required to confirm that this is not an issue.

Ownership of assets: On average, male farmers owned more assets (15.2) than female farmers (11.2). Disaggregation of asset ownership by type of asset would be needed to draw meaningful conclusions from this data.

Improved MPTs: The average number of improved MPTs applied varied slightly between female-headed households (10.7) and male-headed households (11.7).

ICT use: Only 8 percent of farmers accessed information on improved MPTs through ICT. Most ICT users were aged 30–59 (80%) and were men (72.5%).

Participation in group-based savings, micro-finance, or lending programs: More women saved (27%) than men (10%). Of those who participated in a group-based savings program, 73 percent were women and 27 percent were men. The average value of savings deposits for females (\$91) was significantly lower than per male (\$232).

Access to agriculture-related finance: Only 12.7 percent of households had accessed formal agricultural finance. Almost twice as many women had borrowed money than men, but the women's average loan values (\$323) was approximately one third that of the men's (\$864), and was consistently lower than the men's across all types of financial institutions.

Prices: Female sellers received slightly higher average prices than men for lentils (\$0.55/kg versus \$0.49/kg), vegetables (\$0.30/kg versus \$0.29/kg), and goats (\$4.20/kg versus \$3.86/kg), although men received a slightly higher average price for rice (\$0.25/kg versus \$0.22/kg). The reasons for this are unknown.

Value of agricultural sales: Males reported higher average annual sales (\$442) than females (\$199), despite women receiving higher prices, because men sold larger volumes (80% of total volume).

APPENDIX I: BASELINE SURVEY SCOPE OF WORK

Note that Sections 1 and 2 of this scope of work (SOW) (purpose and background) are omitted here as they appear in the main body of the report.

3. Scope of the Baseline Survey

USAID Nepal is seeking services to undertake a baseline survey for the KISAN II project. The recommended time frame includes six weeks of preparatory work and twelve weeks of data collection, analysis, and reporting work, and can be modified with the contractor after the award.

The Contractor is responsible for the following tasks:

- Finalizing tools, protocols, and guidance for household level baseline data collection.
- Collecting quantitative baseline data related to the effectiveness and reach of KISAN II indicators.
- Analyzing collected baseline data and consolidating data into a report for use by KISAN II, other FTF implementing partners, Government of Nepal (GON), and US Government (USG) agencies.
- Submitting baseline values for the list of indicators included in this SOW.

The Contractor must apply instruments that ensure rigor and are representative of the target beneficiary population in KISAN II's operating area. Tools must remain consistent in content and implementation methodology throughout the period of work so that the data will be standardized. The Contractor is expected to use surveys and other interview tools for gathering quantitative information. The Contractor will be expected to follow USAID guidelines for sampling, questionnaire development and analysis according to the Feed the Future M&E guidance (<https://www.agrilinks.org/sites/default/files/resource/files/Sampling-Guide-Beneficiary-Based-Surveys-Feb122016.pdf>, <https://www.agrilinks.org/post/feed-future-indicator-handbook>).

4. Methodological and Technical Considerations

4.1 Indicators to be Reported

Feed the Future activity-level indicators

There are 20 KISAN II performance indicators to be measured through the KISAN II Baseline Survey. These are listed in Table AI.1. Detailed definitions for each indicator will be provided and are available for all standard FTF indicators in the Indicator Handbook, linked below.¹¹ Detail list of indicators with footnotes are included in Annex 2. This descriptive baseline survey will collect data from KISAN II participant households. All indicators collected by this survey will be collected and reported at the household level.

¹¹ The revised Feed the Future Indicator Handbook can be found at: <https://feedthefuture.gov/sites/default/files/resource/files/FTF-Indicator-Handbook-March-2018.pdf>.

Table A1.1: List of KISAN II Indicators to Be Collected Under this SOW

KISAN OR GFSS NO.		PROJECT COMPONENTS AND INDICATORS	TYPE	LOP TARGETS
Cross-cutting indicators				
K4	Nepal 2.1.1-2 EG.3.2-24	Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance (IM-Level)	Outcome	190,000
K5	Custom 1	Average number of improved management practices or technologies applied per household with USG assistance.	Outcome KPI	TBD
K6	GNDR-2	Percentage of female participants in USG assisted programs designed to increase access to productive resources	Outcome	TBD
K7	New YOUTH-3	Percentage of participants in USG-assisted programs designed to increase access to productive economic resources who are youth (15-29) (IM-Level)	Outcome	TBD
Component 1: Improve the productivity of SAMS				
	1.1	Facilitate intensification and diversification of farmers into higher-value commodities		
K8	Nepal 2.1.1-1 EG.3.2-25	Number of hectares under improved management practices or technologies with USG assistance (IM-Level)	Outcome KPI	114,000 ha
K9	Reporting 1	Total farm-level volumes (MT) produced of targeted agricultural commodities with USG assistance (<i>rice, maize, lentils, vegetables, goats</i>)	Outcome Reporting	n/a
K10	New EG.3-10, -11, -12	Yield of targeted agricultural commodities among program participants with USG assistance (<i>rice, maize, lentils, vegetables, goats</i>) (IM-Level) (MT/ha)	Outcome KPI	TBD
	1.2	Strengthen the capacity of input supply systems to deliver timely and affordable productivity-enhancing technologies		
	1.3	Increase the adoption of profitable, productivity-enhancing, and climate-smart technologies		
K12	New EG.3.2-28	Number of hectares under improved management practices or technologies that promote improved climate risk reduction and/or natural resources management with USG assistance (IM-Level)	Outcome	TBD
K13	Custom 1 Nepal 2.1.1-2 EG.3.2-24	Average number of climate-smart technologies or practices applied per farmer with USG assistance.	Outcome	TBD

KISAN OR GFSS NO.		PROJECT COMPONENTS AND INDICATORS	TYPE	LOP TARGETS
	Disaggregate			
Component 2: Strengthen competitiveness (C), resilience (R) and inclusiveness (I) of SAMS				
	2.0	Cross-cutting		
K17	New EG.3.2-26	Value of annual sales of farms (and firms) receiving USG assistance (<i>rice, maize, lentils, vegetables, goats</i>)	Outcome KPI	TBD
K18	New Disaggregate Reporting 2	Volume of annual sales (MT) of farms receiving USG assistance (<i>rice, maize, lentils, vegetables, goats</i>)	Outcome Reporting	n/a
	2.1	Strengthen the organization and coordination of SAMS		
K19	Nepal 2.1.1-2 EG.3.2-24 Disaggregate	Number of Individuals in the agriculture system who have applied improved management practices or technologies with USG assistance – <i>related to marketing and distribution</i>	Outcome	TBD
	2.2	Strengthen lead firms and other SMEs to support SAMS		
K20	Custom 2	Percentage of USG-assisted farmers accessing information on improved technologies and practices through improved ICT channels or content	Outcome	90%
	2.3	Enhance financial services markets that serve SAMS		
K23	New EG.3.2-27	Value of agriculture-related financing (USD) accessed as a result of USG assistance (IM-Level)	Outcome	TBD
K24	New EG.4.2-7	Number of individuals participating in group-based savings, microfinance or lending programs with USG assistance (IM-Level)	Outcome KPI	TBD
K25	Reporting 4	Value of household savings deposits of USG-assisted smallholders	Outcome Reporting	n/a
K26	Reporting 5	Value of the outstanding balance on agriculture loans of USG-assisted households	Outcome	TBD
Component 3: Strengthen the enabling environment of SAMS				
K31	Nepal 2.1.1-2 EG.3.2-17 Disaggregate	Number of farmers and others who applied improved management practices or technologies– <i>on food grading or safety</i>	Outcome	100,000
Component 4: Increase ability of vulnerable communities to act on business opportunities				

KISAN OR GFSS NO.		PROJECT COMPONENTS AND INDICATORS	TYPE	LOP TARGETS
	4.1	Literacy and business skills		
K41	Custom 5	Quantity of nutrient-rich value chain commodities produced by direct beneficiaries with USG assistance that is set aside for home consumption (MT)	Outcome	TBD
Component 5: Apply CLA to market systems development				
	5.1, 5.2, 5.3	Advance competitiveness, inclusiveness, and resilience		
K46	EG.11-6 Nepal 2.1.1-2 EG.3.2-17 Disaggregate	Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance	Outcome	57,000

Resilience Module

In addition to the list of indicators, the baseline survey will include a brief resilience module to collect baseline data on shock exposure, resilience coping strategies and perceived ability to cope with a shock. These will measure, more specifically:

- Number of types of shock exposure (covariate and idiosyncratic).
- Shock response behaviors, categorized by specific coping strategies (e.g., use of savings, use of formal loans, borrowing, use of assets, changes in food intake, livelihood diversity, etc.).
- Perceived ability to respond to and recover from a shock (see FTF indicator handbook: RESIL-a, RESIL-b, RESIL-c).

4.2 Geographical Focus of the Survey

The geographic focus area for this survey is the Feed the Future ZOI in Nepal, which covers 25 districts across four Provinces. The ZOI is the geographic area where Feed the Future programs are expected to have an impact on hunger, poverty, and nutrition.

These districts fall within Provinces 3, 5, 6, and 7:

- Province 3: Kavrepalanchok, Nuwakot, Makwanpur, and Sindhupalchok.
- Province 5: Kapilbastu, Palpa, Arghakhanchi, Gulmi, Banke, Bardiya, and Rukum (East).
- Province 6: Surkhet, Dailekh, Jajarkot, Salyan, Rukum (West), Dang, Rolpa and Pyuthan
- Province 7: Baitadi, Kailali, Kanchanpur, Doti, Achham, and Dadeldhura.

KISAN II is operating through private sector partners across these 25 districts and will use the farmers who are already buying from their private sector partners as the sampling frame within these districts. The Contractor will need to coordinate with KISAN II to understand their approach and the catchment areas of the private sector partners to more closely define the wards and villages where intended farmer beneficiaries are.

4.3 Sampling

4.3a Sampling Design

The sampling design described here follows the Feed the Future Sampling Guide for Beneficiary Based Surveys, 2016. The KISAN II Baseline Survey will use a random sample representative of the beneficiary households in KISAN II operational areas. The baseline survey will use a two-stage cluster sampling design with a systematic selection of participants¹², for which two separate sampling frames (Cluster ward level frame and Frame of participants) are required.

In the first stage, the Contractor shall randomly select Wards, which will serve as the cluster, from a sampling frame composed of all Wards served by KISAN II (Refer pages 53-55 of the sampling guide, 2016). The second stage participant frame consists of the list of participants served by KISAN II in the selected wards. Per the sampling guide, direct participants are those who come in direct contact with KISAN II interventions; for KISAN II, participants include any farmer who receives direct training by KISAN II or its sub-grantees or partners; and/or individuals who purchased and used targeted improved inputs or services from KISAN I-affiliated sub-grantee/partner. Indirect beneficiaries will not be included in the sampling frame. KISAN II will provide a detailed definition of “participants.” Among those identified project Wards, households are randomly selected.

The sample should be stratified by the four provinces and by crops: rice, maize, lentils, tomatoes, cauliflower, cucumber, bitter gourd, and goats. The Contractor shall prepare the project participants list by strata and allocate the sample proportionally based on the population of each stratum (provinces 7, 6, 5, and 3) by systematic random sampling. The contractor shall then divide the sub-samples by the number of households to be interviewed per Ward to compute the number of Wards to be visited per stratum.

Table AI.2: Sampling Methods for Each Stage of Sampling

	STAGE 1: SELECTION OF WARDS	STAGE 2:	
		SELECTION OF HOUSEHOLDS	SELECTION OF INDIVIDUALS
Method of sampling	Systematic Random Sampling	Simple random sampling	Household head or member who is a projected participant from a set of project implementation clusters or primary sampling unit

¹² Diana Maria Stukel and Gregg Friedman. 2016. *Sampling Guide for Beneficiary-Based Surveys for Select Feed the Future Agricultural Annual Monitoring Indicators*. Washington, DC: Food and Nutrition Technical Assistance Project, FHI 360, pages 32-35.

4.3b Sample Size

The Baseline Survey sample size has been calculated following guidelines developed by the Bureau for Food Security. The final sample size for the baseline survey should be 1,850 households after adjustments of finite population correction, design effect, nonresponse and minimum response required for each targeted commodity. This sample size should be sufficient to capture a meaningful change for the three Feed the Future indicators for farm level changes among participating households in:

- Value of annual sales.
- Number of hectares under improved technologies or management practices.
- Number of individuals who have applied improved technologies or management practices.

The general recommendation is that the sample size for all key indicators from among the indicators being collected in the survey be calculated and that the largest sample size resulting from all candidate sample sizes computed be chosen. See Table A1.3 OR A1.4 for sample size calculations according to the three indicators listed above.

Table A1.3: Parameters Used to Calculate the Initial Sample Size

INDICATORS	N	MAX	MIN	S	P	TOTAL VALUE OF INDICATOR 2018	MARGIN OF ERROR	Z	N SAMPLE SIZE	FINITE POP CORRECTION	FINITE CORRECTION NEEDED, IF MORE THAN 5 %	DESIGN EFFECT	FINAL SAMPLE SIZE ADJUSTI NG NON- RESPON SE	FINAL SAMPLE SIZE ROUN DED
	POP. OF BENEFICIA RIES	ESTIMATE OF THE MAXIMUM	ESTIMATE FOR THE MINIMUM	STANDARD DEVIATION	ACCEPTABLE % OF ERROR			CRITICAL VALUE						
	(N)	(FOR S)	(FOR S)	(S)	(FOR MOE)	(FOR MOE)	(MOE)	1.96				2	5%	
Number of farmers who have adopted improved technologies or practices	30,000	1.00	0	0.50	10	28,500	2,850	1.96	107	1.3%	Not required	214	226	230
Number of ha under improved technologies or practices	30,000	4.06	0.002	0.68	10	14,250	1,425	1.96	780	2.6%	Not required	1,560	1,643	1,643
Reporting year sale (USD)	30,000	1960	0.74	326.54	10	13,000,000	1,300,000	1.96	219	1.3%	Not required	438	462	470

1. The Initial sample size was calculated as follows: $n = N2 * Z2 * S2 / MOE2$, where N is the total number of beneficiaries, Z=Critical value for normal distribution, S=Standard deviation of the distribution and MOE is the margin of error. The standard deviation of the distribution of beneficiary is taken from last year's survey. Adjustment to the sample will be made for a finite population (> 5%), design effect (2) and nonresponse (5%) as suggested by FTF guide. The sample size is also adjusted for analysis by crop and geographical zones (Hills and Terai).
2. The recommended practice is to calculate the final sample size from among at least three agriculture indicators and then choose the largest sample size from among the computed.
3. As the sample size of 1,643 is the largest sample size among the three FTF indicators computed above, it exceeds the requirement.
4. It exceeds the minimum sample size recommended by FTF sampling guidelines, 2016. It ensures precision for the FTF disaggregates, compensates possible diminished sample size and ensures precision for different strata (e.g., hills and Terai) (Source: FTF Sampling guide, 2016).

5. Calculation for value for incremental sales (VIS) is based on reporting year total sales as recommended by the FTF sampling guide and email response of 27 May 2016 by Diana Stukel on some questions raised during webinar of 24 May 2016.

The starting values and expected meaningful changes (targets) for the three selected indicators were obtained from the KISAN MEL Plan, 2018 as mentioned below in Table A1.4. A 95 percent confidence level and 10 percent margin of error were used across the board. The anticipated non-response rate (5%) used here to adjust the sample size mirrors the non-response rate obtained in the 2017 KISAN survey. The initial sample size is recommended to adjust by finite population correction, design effect, nonresponse, and the minimum number of respondents required for each targeted commodity. The three adjustments are made in Table A1.4.

The fourth adjustment is proposed to have a minimum number of households per commodity. For this, the estimated values for percent of households involved in each commodity are obtained from the KISAN annual survey, 2017 results. Adjustment to the number of households engaged in cultivating targeted crops or raising goat is made with the assumptions that at least 150 samples are available for the interview, which is statistically sufficient for crops outcome analysis (Table A1.4).

Table A1.4: Adjustments from the Initial Sample Size to the Final Sample Size

COMMODITY	PERCENT IN THE BENEFICIARY HH AS PER 2017 KISAN SURVEY	NUMBER OF ESTIMATED HH ENGAGED BY COMMODITIES IN NEW SAMPLE SIZE	NUMBER OF HH PER STRATA (S=7)	NUMBER OF HH REQUIRED TO MAKE AT LEAST 150 PER STRATA BY CROPS	PERCENT REQUIRED TO ADJUST SAMPLE SIZE (+)
Rice	46	756	108	42	5.6
Maize	43	706	101	49	6.9
Lentils	34	559	80	70	12.6
Vegetable	53	871	124	26	2.9
Goats	NA	NA	NA	NA	NA

As the percentage required to adjust the sample size of lentils is highest (12.6%) among others, the total sample size has to be increased by 12.6% (i.e., it should be 1,850). FTF suggests clusters include 15-35 households; given geographic variation, USAID Nepal suggests clusters of fewer households, but the Contractor may determine the most appropriate design for cluster size. For example, the sample may be divided by approximately 20 households per cluster, resulting in a selection of a total of at least 93 clusters, or Wards.

3. Proposal for Baseline Design

To be considered for this baseline survey, the Offeror must submit a proposal with a comprehensive overview of the proposed baseline survey design. The technical proposal is limited to **20 pages** and shall be written in English and typed on standard A4 or 8 1/2" x 11" paper (216 mm by 297 mm paper), single-spaced, 12 pt. Times New Roman font with no smaller than 1-inch margins with each page numbered consecutively. **Pages that exceed**

the page limitation will not be evaluated. Proposal content should focus on the baseline survey and not extensive background discussions of the socio-political environment in Nepal.

This proposal overview must describe data collection and analysis and project management. The overview must include:

- A. Detailed plan of the processes and systems for data gathering, data cleaning, and analysis, including the type of design; clustering and sampling methodology/criteria/sizes; the mix of data collection methods and sources; and plans for data storage, cleaning, and analysis.
- B. Summary and description of the instruments and tools that will be used in data collection and the plan for their testing. USAID Nepal requires that data collection be conducted using tablet computers or Personal Data Assistants (PDAs). If the Offeror does not have these items available, tablet computers and accessories will be procured and provided by USAID Nepal. The Offeror's proposal must describe the number of devices and the technical specifications of tablet computers, survey software, information platforms, and other accessories required for baseline field data collection and transmission. USAID Nepal will have final approval on the devices and software selected. This equipment must be returned to USAID Nepal after completion of the baseline survey.
- C. Sampling methodologies for identifying and selecting households to be surveyed – For quantitative sampling size, the number of households will be 1,850. In the 25 FTF districts, the Contractor must cover a sampling of KISAN II's target Wards based on information provided by the KISAN II Team. In the FTF focus districts, the Contractor must conduct a random sampling of Wards. Please refer to Section 4.2 above for the ZOI FTF Nepal focus districts.
- D. Detailed description of the quantitative and qualitative approaches to data collection.
- E. Tools used for data analysis, which may include, but are not limited to, Statistical Package for the Social Sciences (SPSS), other statistical packages, and Geographic Information System (GIS).
- F. Plan and process to be used for data quality analysis.
- G. Plans for training data enumerators and processors on tablets and surveys.
- H. Team composition with positions and responsibilities. Suggested structure is recommended in Annex I.

4. Deliverables

The Contractor must complete the following key deliverables:

4.1. Work Plan

The Contractor must complete a detailed work plan which will be approved by USAID Nepal before beginning the baseline survey. The work plan must include sufficient time for enumerator training, piloting, and revising tools before the data collection.

4.2. Data Collection Design Protocol

The Contractor shall submit a Survey Study, Protocol (including the questionnaire and all translated versions), which will be approved by USAID Nepal. The protocol will include a description and justification of the selection of the tools, sampling strategies, survey questionnaires, and sampling sizes to be used for gathering quantitative and qualitative information from key informants and focus groups. These tools must remain consistent in content and implementation methodology throughout the baseline survey so that the data will be standardized.

4.3. Data Set

The contractor should submit the datasets along with the final report. The dataset should include both raw and cleaned data set in different file formats (SPSS or STATA and CSV). The contractor should also submit edit rules for cleaning data; data dictionary/codebook; syntax for all data analysis and variable transformations; sampling weights at each stage, final sampling weights used to tabulate the aggregate-level estimates for the indicators, if any, and appropriate metadata for open data purposes (DDL).

4.4. Baseline Survey Reports (in multiple drafts)

The Contractor must collect, prepare, and analyze the baseline data. The Contractor must submit a draft report containing the findings and conclusions to USAID Nepal. The baseline report must be in a font size no smaller than 12 pt. and must be written or comprehensively edited by a fluent, experienced English writer.

The report must include signed disclosures of conflict of interest from each member who worked on any part of the reporting process. When applicable, the report must include statements regarding any significant unresolved differences of opinion on the part of the funders, implementers and/or members of the evaluation team. And the format for the baseline survey report must be as follows:

Table of Contents:

- Executive summary.
- Table of contents, including abbreviations.
- Background information.
- Survey approach and methodology.
- Summary of indicator results.
- Survey findings.
- Conclusions.

Annexes:

- Demographic and other tables.
- Indicator values table, with disaggregates as required in PIRS.
- Survey tools and instruments.
- Bibliography and interview lists.

- Questionnaires.

After review and discussion during the presentation of findings, the contractor will submit a second draft that incorporates written and verbal feedback from USAID and CAMRIS. The contractor will be responsible for revising the report until it meets USAID requirements for quality.

4.5. Presentation on Baseline Survey Findings

The Contractor must conduct a PowerPoint (or similar) presentation on the important findings and conclusions of the baseline survey to an audience of USAID Nepal staff and implementing partners. This presentation must be conducted after the submission of the draft baseline survey report and before submission of the final version of the baseline survey report.

5. Coordination

The Contractor must survey households in a sampling of the wards under rural and urban municipalities in 25 districts where KISAN II is operating. The Contractor must coordinate with KISAN II implementing partner on the identification of municipalities and palikas to be surveyed. Final selection of municipalities and palikas will be determined by the Contractor and is subject to approval by USAID Nepal.

6. Timeline

The timeline for this SOW is four months. This includes six weeks of preparatory work, enumerator training, and survey testing followed by 12 weeks of data collection, data cleaning and analysis, and reporting work.

Table A1.5: Timeline of KISAN II Baseline Survey

ESTIMATED TIME	ACTIVITIES
2 weeks	Work plan preparation, documentation review and planning, baseline data collection methodology (survey design, sampling plan) and tools.
4 weeks	Enumerator recruitment and training, testing of survey questionnaires and equipment.
4 weeks	Field data collection, data entry system design.
4 weeks	Data cleaning and analysis.
1 week	Debriefing presentation on major findings, recommendations to USAID Nepal and comment incorporation.
2 weeks	Draft report and data set submission to USAID Nepal.
1 week	Submission of the final report and raw data to USAID Nepal.

USAID Nepal will provide comments within 10 working days of the submission of the draft report. A revised final draft will be submitted within 10 working days after receipt of comments from USAID Nepal. The baseline survey report will be final after it is approved in writing by USAID Nepal.

7. Logistics and USAID Nepal Participation

The Contractor is responsible for managing all logistics required for completing the baseline survey. This includes, but is not limited to, arranging for transportation, meeting venues, and appointments. USAID Nepal will provide key documents and background materials.

APPENDIX II: LESSONS FOR FUTURE SURVEY

While designing and implementing the survey, the team encountered certain issues and learned valuable issues that provided good directions for similar future surveys and which appear below in Table A2.1.

Table A2.1: Issues and Lessons Learned from the KISAN II Baseline Survey

ISSUES	LESSONS LEARNED
Measurement Approaches	
Questionnaire length – The interviews took about 2.5 hours each. Long interview times diminish the accuracy of responses. The resilience questions were most likely affected as they were asked later in the interviews than the agriculture questions. Participants' lack of a stake in the survey may have also influenced the quality of reflection and answers, particularly as the interview length extended.	Data reliability – Reduce the time needed to administer questionnaires to enhance data reliability and cost-effectiveness and minimize the burden on respondents and enumerators. Relevance and other question selection criteria – Agree on and adhere to clear criteria on what to include, starting with identifying a specific, actionable use of the data generated by each question. Refer to Appendix VII for an example of an analytical framework developed during the post-test phase of the survey instrument design process to reach agreement on the final set of questions. Mixed methods. Explore topics using “best fit” methods to reduce the burden on annual monitoring survey interviews and produce more reliable, in-depth evidence for project learning. See specific recommendations below.
Reliance on quantitative data – In accordance with the SOW, the questionnaire relied on quantitative closed-ended questions. This approach is well suited for capturing results data, which was the primary focus of the Agriculture Module. However, it does not capture complex, in-depth information that is helpful for understanding constraints, decision making (“why” or “why not”), behavior change, and resilience – which are important for understanding both agriculture and resilience outcomes and informing project interventions. This conclusion is noted for learning purposes.	Use mixed methods for data collection: • Use focus group discussions to better understand gender, resilience, and behavior change, rather than closed survey questions. • Use GIS mapping to provide a better decision support tool for market actors and project teams than asking about proximity to markets. • Assess communications-related results in a separate measurement activity (outside of the annual monitoring survey), using techniques designed specifically for this.
Firm-level data – The survey did not include data from firms because its scope of work (SOW) focused exclusively on households. Two of the KISAN II FTF indicators listed in the SOW require data from firms: • value of annual sales of farms and firms (EG.3.2-26, page 101) • formal agricultural loans (EG.3.2-27, page 106).	Survey of firms – As indicated in the KISAN II MEL Plan, data from firms will be collected in a separate firm-level survey for relevant FTF indicators. Market system development indicators and mixed methods – KISAN II would benefit from identifying a small set of relevant, custom market system development indicators and updating their 2018 MEL Plan accordingly. The market linkage questions considered to date are provided in Appendix VI for reference. Additional discussion is warranted, as the fast pace of the baseline survey design process did not allow for adequate reflection and consensus on this important issue.

ISSUES	LESSONS LEARNED
FTF complexity. FTF indicator definitions are complex and require repeated, iterative reviews of the FTF Indicator Handbook to ensure compliance. Some definitions may also require consultations with the Bureau for Food Security (BFS) to ensure correct interpretation and/or address gaps in guidance. Even though the survey team reviewed the handbook on an almost daily basis to check and recheck definitions and requirements, a few errors were made at the survey instrument design phase, reflecting the difficulty of achieving full compliance.	Survey oversight – As done for the KISAN II Baseline Survey: • Ensure all FTF survey teams include an individual with in-depth knowledge and experience of FTF indicators. • Engage the implementing partner’s technical and NMEL staff in survey design, enumerator training, and data interpretation phases to ensure that survey questions accurately reflect the targeting strategy, project interventions, and theory of change. Data quality knowledge management: • Document data quality measures for FTF survey teams and implementing partners in a format that can be readily replicated or adapted across the FTF portfolio in Nepal. Refer to Appendix VIII of this report and Annex B of the KISAN II MEL Plan for examples. • Refer to the next row for recommendations on capturing learning related to using tablets for data collection and quality control.
Analyzing who makes decisions – At the project’s request, the survey team identified the primary decision maker for a large set of decisions (for example, each improved MPT applied by the household rather than the set of MPTs). This significantly complicated data analysis without significantly enhancing understanding of gender aspects of household agricultural decision making.	• Simplify – In calculations designed to characterize households (not designed to provide results for FTF indicators), identify no more than two key agricultural decision makers at the household level. • Understand the data limitations of identifying a single decision maker. • Alternative method – Use focus group discussions with male and female farmers to better understand gender in agricultural decision making.
Storytelling constraints – During the presentation of preliminary results, USAID Nepal asked: “How can we better tell the story about resilience?” Although outside the scope of this survey, the survey team offers a few observations and recommendations. • Existing USAID reporting templates are not designed for telling stories. • References to results frameworks and performance indicators are useful for reporting results up to the chain of command to Washington, DC. But they are not sufficient for fostering compelling stories.	Storytelling tips • Audience needs – Projects have multiple audiences, including internal audiences (project staff) and external audiences (project partners and participants, etc.). Most writing is oriented toward USAID, Congress, and/or other US stakeholders. Understand your audiences and frame stories accordingly. • Participant-centered research – Whether the focus is on households, communities, firms or market systems; there is no substitute for interviewing participants in ways that allow for discussion and engage them in identifying what matters most from their perspective. • Mixed methods – “Stories are data with a soul” (quote from Brene Brown’s TED Talk about her research on vulnerability). Use both quantitative and qualitative research methods. Appreciative inquiry research methods can more fully capture individual stories and a deeper understanding of behavior change and participants’ perspectives of what interventions and outcomes could make a significant contribution to their well-being and resilience. • Photographs – Images make stories and individuals more relatable. They convey large amounts of information about participants and context in a way that is easier to take in than data and narratives.

ISSUES	LESSONS LEARNED
	• Focus on participant and project learning over successes – Learning from setbacks is central to developing resilience. “Success stories” often focus on end results without describing the twists and turns it took to get there. The description of obstacles and setbacks make for much better storytelling and learning than truncated, sanitized accounts. • Knowledge management – Encourage implementing partners, CORs and others to share examples of compelling stories. Examples help build storytelling capacities and signal that stories are valued.
Agriculture Module	
Actionable Findings for KISAN II – The most significant agricultural findings for the implementer are 1) those related to the application of improved management practices and technologies (MPTs), for which detailed information is provided in Appendix III, and 2) respondents’ perceptions of their top three constraints to achieving increased yields and sales. The use of ICT by farmers for accessing information was extremely low and lack of knowledge related to achieving increased yields and sales ranked as a top three constraint. KISAN II has already identified improving ICT channels and content as a priority intervention. The findings support this strategy.	Track individual MPTs – Analyze information on the use of improved MPTs at the level of individual MPTs (not types or categories of MTPs) to provide detailed feedback to the project team and the project’s private sector partners. The application of MPTs is the primary driver for achieving increased yields and sales in the project’s theory of change. This level of detail is required to understand which MPTs are being used and to focus follow-up research on potential barriers to adoption.
Actionable Findings? • A large share of the resilience findings are not actionable for KISAN II’s private sector partners. They may help tell a general resilience story, but not a story about resilience outcomes that are directly attributable to project interventions.	Focus of resilience measurement • Focus resilience measurement activities on aspects that the project can influence via its private sector partners (such as market linkages) and that are most likely to strengthen the firms’ business models. For example, firms will focus on addressing the shocks and stressors that generate revenues for the firm, such as the sale of improved MPTs. A possible next step is to identify a smaller set of resilience questions of potential interest to the project’s private sector partners and to vet these questions with partners to solicit their input. Refer to additional recommendations below. • Instead of household panel surveys, use more suitable mixed methods to measure resilience. For example, most of the shocks and stressors that have implications for market systems can be tracked through standard news channels such as newspapers and radio, and therefore do not warrant collection of household survey data.

ISSUES	LESSONS LEARNED
Resilience information gaps? • The Resilience Module generated more data than it is feasible to analyze. There is a greater need to simplify and focus resilience data collection than to identify ways to expand it. • The primary data gaps are indicators of the resilience of market systems, which are the primary focus of KISAN II's interventions.	A practical approach to resilience measurement • <i>Applying a resilience lens</i> is feasible and strategic for all USAID Nepal projects. The Mission should continue to encourage implementing partners to focus on this by 1) considering how project interventions affect the resilience of households, communities, and market systems, and 2) monitoring shocks and stressors and responding as appropriate to mitigate potential impacts on project outcomes. • See recommendations in the row above.

APPENDIX III: DETAILED METHODOLOGY

I. Baseline Survey Design Process

I.1 Survey Team Members and Responsibilities

Table A3.1: Survey Team Composition and Responsibilities

POSITIONS	NO. OF STAFF	RESPONSIBILITIES
NMEL Team		
Kshitiz Shrestha, Evaluation Specialist (Senior Level)	1	- Oversee the entire survey effort. - Plan and manage all survey stages. - Provide overall guidance on survey quality, activities and timeline.
Ganesh Sharma, Statistician and Data Analyst	1	- Conduct sample selection. - Prepare a data analysis plan. - Conduct data analysis and quality control.
Swadesh Gurung, M&E Specialist and Data Analyst	1	Conduct data analysis and quality control.
Ram Khoju, Application Programmer	1	- Develop the data entry program in SurveyToGo. - Conduct spot checks for quality assurance. - Support training and fieldwork activities on tablets as needed - Quality control of data.
External Consultant		
Lorene Flaming, Team Leader	1	- Provide technical guidance and strategic support to the baseline survey team. - Review and finalize the draft baseline survey methodology (including sampling methodology) and work plan. - Review and revise the draft questionnaire in consultation with the NMEL Team, USAID Nepal, and KISAN II, comprising both an agriculture module and resilience module. - Prepare a table for the initial enumerator training and instrument test that identifies interview questions that require feedback on clarity, content, and/or interview time involved - Contribute to programming instructions related to skipping functions and data quality. - Review the field manual prepared by the research firm and help prepare data collection quality control checklists. - Advise on data analysis and the resilience analysis framework - Present a PowerPoint (or similar) presentation on important survey findings, conclusions, and recommendations to USAID/staff and implementing partners. - Write the draft and final baseline survey reports.
Research Firm		
Survey Manager/Agriculture Specialist	1	- Serve as the primary contact point for the survey firm - Survey quality assurance. - Lead data collection activities and overall logistical management for successful completion of fieldwork.
Research Officer/Assistant	1	- Monitor survey progress on a day-to-day basis - Checking data - Ensuring that all aspects of survey operations are implemented according to protocol. - Helping lead the coordination and management of field operations.

POSITIONS	NO. OF STAFF	RESPONSIBILITIES
Data Manager	1	- Help the Data Programmer develop the data entry program in SurveyToGo. - Training field teams on tablets. - Version control of the data entry program at all stages of the survey. - Checking data. - Editing, cleaning, and submitting raw and clean datasets to the NMEL team.
Data Assistants	3	- Train field teams on using tablets. - Conduct data checks. - Handle tablet related logistics during training and fieldwork as required.
Quality Controllers	3	- Participate in pre-test and trainings. - Accompany the teams in the field to ensure that all survey protocols are properly followed and that the teams are doing their best to ensure that the quality of survey data is maintained at the highest level possible.
Supervisors	15	- Participate in pre-test and training sessions. - Lead the data collection teams in the field. - Overall logistics management (including lodging, transportation, and security of team members). - Supervise fieldwork. - Conduct daily review meetings to share issues and learning.
Enumerators	45	- Complete fieldwork training and field practice on the survey instrument. - Conduct field interviews and record data using tablets. - Maintain data quality. - Participate in daily review meetings with team members to share issues and learning.

I.2 Methodology ¹³

The baseline survey methods and tools will comply with the following USAID guidelines for sampling, indicator measurement (“who” and “what” counts”), survey questions, and data analysis to ensure rigor:

- FTF Sampling Guide for Beneficiary Based Surveys (February 2016) ¹⁴.
- FTF Survey Implementation Document: Sampling Guide for Population-Based Surveys (April 2018).
- FTF Survey Implementation Document: Household Listing Manual for ZOI Surveys (February 2018).

¹³ Note that this writeup was written before the survey was carried out and thus had the appropriate tense for then.

¹⁴ The baseline survey SOW cites the FTF Sampling Guide for Beneficiary Based Surveys (2016) because at the time it was written USAID Nepal and KISAN II believed information would be available to identify a beneficiary sampling frame. The survey design has since been modified to reflect a population based survey for reasons explained under “Sample Size and Approach”.

- FTF Indicator Handbook (April 2018).
- TOPS Household Resilience Measurement Options (October 2017).

Also, the survey team considered the performance indicator reference sheets in KISAN II's MEL Plan (April 2018). Most of the survey questions in the Resilience Module are not linked to a project performance indicator and therefore do not have a PIRS or indicator title (except for the four FTF resilience indicators). The survey team will not specify indicator titles or PIRS for these indicators; however, it will list data analysis requirements for all survey questions in a separate Data Analysis Plan.

The methods and tools will remain consistent throughout the project implementation period so that data will be comparable across multiple surveys.

Sample Size and Approach

To minimize bias, the baseline sampling approach seeks to identify a sample that is representative of KISAN II's life-of-project (LOP) household participant population. The Baseline Survey SOW indicated that KISAN II would provide a list of project participants (or the specific households its private sector partners had already identified and planned to enroll in the project), in time to create a sampling frame for a beneficiary-based survey (BBS). As of late July 2018, the partners had not progressed to a point in their implementation process to produce this list. Instead, KISAN II has provided a list of the target districts and wards (aka "catchment areas") and proposed number of project participants its partners plan to focus on within the ZOI. Hence, the baseline survey enumerators will need to do a household listing of "potential project participants". The enumerators, accompanied by the KISAN II field team, will identify the eligible households by administering the screening questions before randomly selecting households in each ward. This sampling approach lies somewhere between a BBS and a population-based survey (PBS), and is best considered a **modified PBS**. The 2016 FTF Sampling Guide for BBS confirms that conducting a PBS within catchment areas is a valid sampling approach for projects that work through the private sector to support farmers, as KISAN II does.¹⁵ It states that in such cases, all farmers within the catchment area can be considered *direct beneficiaries*¹⁶ (aka *project participants*). To ensure a representative sample, the sampling frame will include only **potential project participants** that meet the project's targeting criteria, hereafter referred to as **"representative farm households."**

¹⁵ "Alternatively, the project could define the catchment area served by the value chain actors that they are facilitating, consider all the farmers within the catchment area as direct beneficiaries, and conduct a PBS within that catchment area (page 15, footnote 18).

¹⁶ For KISAN II, a *direct beneficiary* (aka *project participant*) is any farmer who receives direct training or market linkages support by the KISAN II project team or its sub-grantees or partners; and/or individuals who purchase and use targeted improved inputs or services from a KISAN II-affiliated sub-grantee/partner. In the context of the baseline survey, conducted before participants have been identified, farmers that meet the project's targeting criteria can be considered *potential project participants*.

The baseline survey will use a **two-stage cluster**¹⁷ **sampling design** with a systematic random selection of representative farm households, for which two separate clusters are required: wards and households¹⁸. In the first stage, **93 wards** (primary sampling units or enumeration areas) from KISAN II's initial catchment areas will be selected¹⁹. In the second stage, 20 representative farm households per ward will be selected, resulting in a **sample population of 1,860 households**. The calculations for these numbers are based on guidance provided in the 2016 FTF Sampling Guide for BBS. They were provided in the Scope of Work (SOW) for this baseline survey and are presented in Annex A. They reflect adjustments of finite population correction, design effect, nonresponse, and minimum response required for each targeted commodity. This sample size is sufficient to measure a meaningful change for three key FTF indicators (the standard specified in FTF guidance) related to the value of annual sales, the number of hectares under improved technologies or management practices, and number of individuals who have applied improved technologies or management practices. Based on KISAN I project data about production patterns in the ZOI, we anticipate that the sample size is also sufficient to capture at least 150²⁰ farm households per commodity, the threshold required for statistical significance at the commodity disaggregate level (as noted in the sample calculation in the SOW). Goats are a possible exception, as goat production is not as prevalent as the project's other target commodities.

The narrative in the SOW (Section 4.3a) indicates that the sample should be stratified by province.²¹ The calculation of the sample size in the SOW does not reflect stratification; however, it does allow for **disaggregation of data by commodity and province** that will likely be statistically significant. While preparing the sample frame, stratification was done by province, as all wards were systematically listed in order of the Central Bureau of Statistics (CBS) codes by province, district, rural or urban municipality, and ward.

First Stage: Ward Selection

The first stage frame consists of 588 target wards that comprise the **catchment areas** identified by KISAN II's initial set of 58 private sector partners. These are **production pockets** with high market potential for the project's targeted commodities. Wards will be identified using the location codes and ward numbers established by the CBS. A total of 93 wards were selected to serve as clusters. The Probability Proportionate to Size (PPS)

¹⁷ 2018 FTF HH Listing Manual (section 1.4): The cluster is the smallest area unit selected for a survey. Clusters can take many forms. If the sampling frame is the latest population census conducted in the country, then a cluster could be an enumeration area as defined by the census. If the sampling frame is the roster of villages, in the case of rural areas, then the cluster could be an entire village, a segment of the village, or a group of villages.

¹⁸ Diana Maria Stukel. Feed the Future Survey Implementation Document, Feed the Future Population-Based Survey Sampling Guide. Washington, DC: Food and Nutrition Technical Assistance Project, FHI 360.

¹⁹ Refer pages 53-55 of the 2016 FTF Sampling Guide for BBS.

²⁰ This number was specified in the Baseline Survey SoW prepared for the NMEL project.

²¹ Stratification is warranted by province if results are expected to vary significant between provinces.

method was used for ward selection to ensure that the sample is allocated proportionally to the eligible households of the sampling frame (based on the initial targets set by project partners for the number of household project participants). Refer to Annex B for a list of randomly selected wards and additional details on ward selection.

Second Stage: Household Listing, Screening, and Selection

The second stage frame consists of representative farm households in the wards selected in the first stage. As noted earlier, the survey team will need to conduct a household listing in consultation with the KISAN II field team and administer a screening exercise to identify farming households. The household listing approach reflects the 2018 FTF Household Listing Manual for ZOI Surveys and seeks to make the exercise as logistically feasible as possible given the tight survey timeline, added work associated with the listing, and geographical variations that are unique to Nepal.

Since most wards will have many households, a listing of all households would require more time than is feasible within the survey implementation timeline. In such cases, the wards will be divided into smaller segments, only one of which will be randomly selected for household listing.

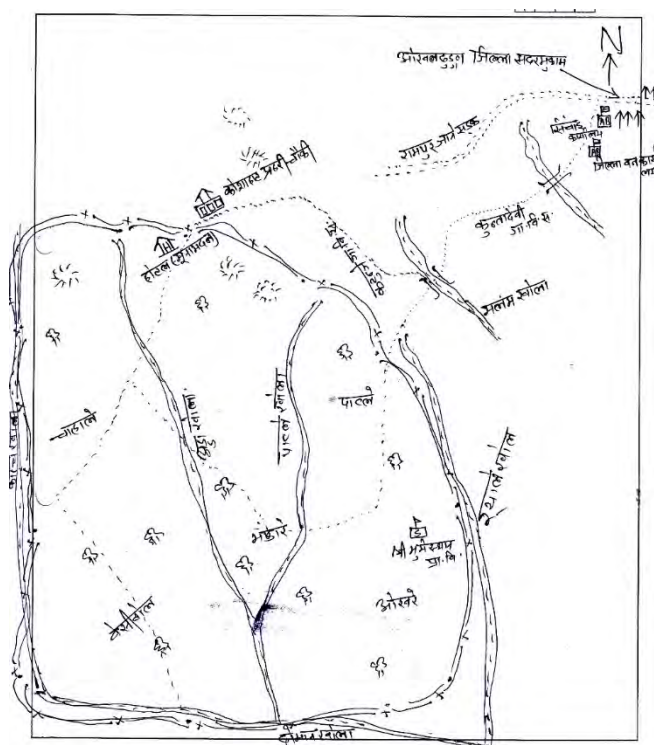
To identify the sampling frame and expedite the listing process, KISAN II will provide the following information:

- Before fieldwork, the project will provide a spreadsheet that identifies the catchment area-based ward frame (588 wards) and the expected number of household participants for each ward.²² Based on this, the survey team will randomly select the wards for the survey and begin making travel arrangements for fieldwork.
- Ideally, the project will generate ward-level GIS maps for segmentation purposes, showing ward boundaries, landmarks, geographic features, infrastructure, and settlement areas. These maps would draw from the data layers KISAN II used for its production pocket mapping activities.

Upon arrival in the field, the survey teams will coordinate with KISAN II field staff present in each ward. Using the GIS ward map, the team, local ward representative, and/or KISAN II focal person will jointly decide where segmentation boundaries should be drawn to produce roughly equivalent segment populations of farming households. The purpose is to minimize bias associated with unequal distribution of farming households in segments, if any. The team will draw sketch maps that show major landmarks (public buildings, markets, main roads

²² On July 25th, KISAN II provided an Excel spreadsheet with the following information: List of wards in catchment areas, ward numbers, palika type (municipality or rural municipality), ward household population based on 2011 Central Bureau of Statistics census data, estimates of the number of farm households in each ward engaged in producing at least one of the project's target commodities (column N), sum of the farm household target numbers identified by project partners in each ward - with possible double-counting of some households across multiple partners (column P, a subset of N), and the number of targeted households disaggregated by commodity -- rice, maize, lentil, vegetables, and goats (columns Q-U).

For efficiency and accuracy considerations, NMEL proposes segmentation if the ward has 120 or more households. This results in a segment size of 60 or more households. The rationale is that the sampling frame size should be at least three times the required sample size of 20 representative farm households per ward.



The field teams will use a screening form to capture the following information on all households in selected segments: 1) identifiers like name and address and 2), whether any member of the household is currently engaged in farming; and 3) whether the household has produced at least one of KISAN II's target crops or livestock in the past 12 months. This information is sufficient to determine if the household meets the targeting criteria for at least one of the four categories of potential project participants shown in Table A3.2.²³

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The field teams will list the qualifying farm household's number in a separate column (column B), which will serve as the frame for household selection (refer to Table A3.2). Once all the households are listed in a segment, the survey team will determine if the sample size requirement of 20 qualifying households has been met. The teams will calculate the sampling interval by dividing the total number of qualifying households by the required number of samples in the ward (20). The first index household will be selected randomly, the second household will be selected by adding the interval to the first household, the third household will be selected by adding the interval to the second household, and so on. If an interview for a household is not successful for any reason, the field team will identify a replacement household using the following process. For example, if the selected household number is 15, the team will move first to household number 14. If that is not successful, the team will move to household number 13. If that is not successful, the team will be to household number 16, followed by number 17 until the interview is successful.

Table A3.2: Household Listing and Screening Form

DISTRICT NAME:						TEAM NO:					
RURAL/ URBAN MUNICIPALITY NAME:						SUPERVISOR NAME:					
WARD NO.:											
A	B	C	D	E	F	G	H	I	J	K	
Initial household number	Revised household number, if selected "Yes" in any one among columns G-K	Selected household number	Village/Community/Tole name	Location description	Name of the household head/Most knowledgeable person	Did this household harvest rice from Bhadra 01, 2074 to Shrawan 31, 2075 (if yes, go to next household), No = 2(go to maize)	Did this household harvest maize from Bhadra 01, 2074 to Shrawan 31, 2075 (if yes, go to next household), No = 2(go to lentil)	Did this household harvest lentil from Bhadra 01, 2074 to Shrawan 31, 2075 (if yes, go to next household), No = 2(go to vegetables)	Did this household harvest vegetables from Bhadra 01, 2074 to Shrawan 31, 2075 (if yes, go to next household), No = 2(go to goat)	Did this household harvest goat from Bhadra 01, 2074 to Shrawan 31, 2075 ?	Yes= 1 No = 2

I.3 Survey Instruments

Survey instruments will comprise two modules: An Agriculture Module that focuses on KISAN II's outcome indicators (listed in Table A3.3)²⁴ and a Resilience Module that captures additional data for resilience monitoring and learning purposes.

Table A3.3: KISAN II Household-level Outcome Indicators

KISAN II AND GFSS INDICATOR NUMBERS (P=DISAGGREGATE)		HOUSEHOLD-LEVEL OUTCOME INDICATORS
K4	Nepal 2.1.1-2 EG.3.2-24	Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance.
K5	Custom 1	Average number of improved management practices or technologies applied per household with USG assistance.
K8	Nepal 2.1.1-1 EG.3.2-25	Number of hectares under improved management practices or technologies with USG assistance.
K9	Reporting 1	Total farm-level volumes (MT) produced of targeted agricultural commodities with USG assistance (rice, maize, lentils, vegetables, and goats).
K10	EG.3-10/11/12	Yield of targeted agricultural commodities among program participants with USG assistance (rice, maize, lentils, vegetables, and goats) (MT/ha).
K12	EG.3.2-28	Number of hectares under improved management practices or technologies that promote improved climate risk reduction and/or natural resources management with USG assistance
K13	Custom 1 Nepal 2.1.1-2 EG.3.2-24 ^D	Average number of climate-smart technologies or practices applied per farmer with USG assistance.
K17	EG.3.2-26	Value of annual sales of farms (and firms) receiving USG assistance (rice, maize, lentils, vegetables, and goats)
K18	Reporting 2	Volume of annual sales (MT) of farms receiving USG assistance (rice, maize, lentils, vegetables, and goats).
K19	Nepal 2.1.1-2 EG.3.2-24 ^D	Number of Individuals in the agriculture system who have applied improved management practices or technologies with USG assistance – related to marketing and distribution.
K20	Custom 2	Percentage of USG-assisted farmers accessing information on improved technologies and practices through improved ICT channels or content.
K23	EG.3.2-27	Value of agriculture-related financing (USD) accessed as a result of USG assistance.
K24	EG.4.2-7	Number of individuals participating in group-based savings, microfinance or lending programs with USG assistance.
K25	Reporting 4	Value of household savings deposits of USG-assisted smallholders.
K26	Reporting 5	Value of the outstanding balance on agriculture loans of USG-assisted households.
K31	Nepal 2.1.1-2 EG.3.2-17 ^D	Number of farmers and others who applied improved management practices or technologies– on food grading or safety.

²⁴ The SOW listed two output indicators that have been omitted from this table because they do not require baseline data: GNDR-2 Percentage of female participants in USG assisted programs designed to increase access to productive resources; and YOUTH-3 Percentage of participants in USG-assisted programs designed to increase access to productive economic resources who are youth (15-29) (IM-Level).

KISAN II AND GFSS INDICATOR NUMBERS (^D =DISAGGREGATE)		HOUSEHOLD-LEVEL OUTCOME INDICATORS
K41	Custom 5	Quantity of nutrient-rich value chain commodities produced by direct beneficiaries with USG assistance that is set aside for home consumption (MT).
K46	EG.11-6 Nepal 2.1.1-2 EG.3.2-17 ^D	Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance.

For the Agriculture Module, the Nepal MEL Activity will adapt existing KISAN I questionnaires as needed to:

- Comply with the new 2018 FTF Indicator Handbook's Performance Indicator Reference Sheets (PIRS) for relevant Implementing Mechanism-level outcome indicators (indicator numbers beginning with "EG" in Table A3.3).
- Incorporate non-GFSS indicators that are new for KISAN II ("reporting" or "custom" indicators in Table A3.3).

Most of the Resilience Module comprises household resilience questions from the USAID TOPS Resilience Measurement Household Questionnaire (October 2017) or FTF ZOI Survey Core Questionnaire (June 2018) that have been adapted to reflect KISAN II's project design and conditions in Nepal. Resilience-related questions will be grouped by theme and sequenced to follow a logical flow:

- Market access and systems development (information, inputs, services, buyers).
- Exposure to shocks and stressors and coping strategies.
- Women's decision making and economic empowerment.

It incorporates within these sections three FTF ZOI-level indicators that use data from households that experienced a shock or stressor within the past 12 months. Refer to Table A3.4.

Table A3.4: FTF ZOI-level Indicators Related to Resilience and Women's Empowerment

KISAN II AND GFSS INDICATOR NUMBERS		ZOI-LEVEL INDICATOR TITLES	DESCRIPTION
TBD ²⁵	RESIL-a	Ability to recover from shocks and stressors index	A “shock exposure corrected” index the shocks or stressors to which a household is exposed, the perceived severity of the shock on household income and food consumption, and perceptions of their ability to meet current and future food needs.
TBD	RESIL-b	Index of social capital at the household level	Expectations about receiving or giving support in response to a future shock or stressor
TBD	RESIL-c	The proportion of households that believe the local government will respond effectively to future shocks and stresses	Self-explanatory. Local government responsiveness can refer to either local leaders and/or institutions.

Typically, ZOI-level indicators are not collected at the Implementing Mechanism (IM aka project) level. However, collecting it at the project level for KISAN II will allow comparisons between changes among household project participants and the general population of households. All four indicators use household data the project had already planned to capture, so they do not increase the data collection requirements.

At the request of the Suaahara Project and USAID Nepal, the draft KISAN II baseline survey questionnaire incorporates several questions from Suaahara's survey instrument related to their nutrition and health interventions. Note that the household sample for the KISAN II baseline survey is not representative of Suaahara's target population. Before finalizing the survey instrument, the survey team will seek to reach consensus with stakeholders on which health and nutrition data is most relevant and prioritize and streamline survey questions accordingly.

Refer to Annex C for the draft survey questionnaire (submitted separately). All survey questions will be tested for clarity and the interview time required before fieldwork. Questions will be modified or omitted as needed to ensure that the total interview time is feasible, given the survey schedule and resources. The length of time respondents can be expected to participate in an interview is also an important consideration, particularly since the survey sample is of representative households, not actual project participants (who would have a clearer stake in the project). Based on past experience conducting surveys, the survey team recommends that interviews require no more than two hours to complete per household.

²⁵ The four indicators in Table A3.4 will be added to KISAN II's MEL Plan in their next annual update and assigned project indicator numbers at that time.

2. Data Collection

Full Bright, a local research firm with past experience conducting large-scale agriculture surveys, will perform data collection using Computer Aided Personal Interviews (CAPI) on tablets. They will use a Samsung Galaxy tablet A and SurveyToGo, a data collection software designed for CAPI methods on Android devices, with which the MEL Activity has experience. This requires more design time up front but less time entering and checking data.

The composition of Field Teams: The MEL Activity plans to deploy approximately 15 teams in the field for data collection, comprised of three enumerators and one supervisor each. Also, approximately three quality control staff from Full Bright will accompany the teams in the field to ensure that all survey protocols are properly followed and that the teams are doing their best to ensure that the quality of survey data is maintained at the highest level possible.

Selection and Recruitment of Field Staff: Enumerators, supervisors and quality control staff will be recruited based on the following criteria: 1) past experience with large-scale agriculture surveys and tablet-based data collection, 2) references verifying successful past performance on survey assignments and no evidence of poor performance, and 3) gender balance in the field team. Also, qualified individuals with fluency in a relevant local language to help mitigate any gender and language issues that may arise.

Training of Supervisors and Quality Controllers and Pre-testing of Survey

Instruments: Full Bright will train 15 supervisors and 3 quality control staff on the questionnaires and tablets. The MEL Activity will oversee the training, and KISAN II staff may attend to be available to answer questions about farming practices or survey areas. The training is expected to take about a week. Immediately after, the initial trainees will pre-test the survey instruments and tablet programs in a nearby non-sample area for finalization. The MEL Activity will identify a farming community with some developing and commercial farmers (as described in the project's farmer evolution model) so that the test location is as similar as possible to the sample wards. The MEL Activity will facilitate post-test feedback sessions with the instrument test team to identify any changes that are required in the interview questions or tablet programs to enhance clarity, correct program bugs, and/or streamline. The MEL Activity will subsequently finalize the instrument, and Full Bright will modify the Field Guide and training materials as needed.

Training of Enumerators: Full Bright will prepare and deliver a two-week training course for 45 enumerators, with the MEL Activity providing oversight. Enumerators will first be trained on paper on the interview questions, and then on data entry in the tablets. Full Bright will maintain daily attendance sign-in sheets to ensure that all enumerators sent to the field have not missed more than two consecutive training days. The MEL Activity will conduct periodic exams to assess how well participants have understood the content of the training. Before mobilizing for fieldwork, the enumerators will engage in two days of field practice to make sure they are comfortable and confident interviewing farm households and collecting data in tablets. Trainees that do not demonstrate proficiency with survey instruments and

processes will not be mobilized for fieldwork. Extra enumerators will be trained to allow for some attrition.

3. Quality Assurance

The MEL Activity will ensure that data quality is maintained at the highest level feasible. Specifically:

- The **tablet-based questionnaire** will provide detailed instructions, prevent enumerators from progressing through the data collection fields if data is missing, catch values that are outside expected range or conflict with other responses, limit responses to a unique set of codes, and other measures designed to catch data entry errors in real time so that they can be addressed before completion of the interview.
- **Datasets will be thoroughly checked** every day, and logs/records of errors and inconsistencies will be maintained and updated regularly.
- The survey team leader (consultant) and the MEL Activity will prepare a list of **data quality queries**, and the data quality team at the research firm will check data every day based on the list.
- The research firm will be responsible for ensuring and verifying that there are **no backlogs in the server** and the data is thoroughly checked every day for consistency. However, the MEL Activity will oversee this process and instantly communicate with the research firm in case of any inconsistencies or backlogs.
- The MEL Activity will conduct **periodic monitoring visits** in the field to ensure that **quality controllers** are thoroughly checking the work of enumerators and supervisors every day, identifying issues and problems, suggesting corrective actions, and sharing learning across all enumerator teams.
- If too many mistakes or inconsistencies are found in the dataset, the MEL Activity will have the right to ask enumerators to **redo interviews** without additional cost. Any field staff who does not maintain data quality will be replaced by one of the back-up enumerators trained to allow for attrition.

4. Data Submission

After completing data collection, the MEL Activity will submit datasets at three different times:

- Approximately the fourth week of October (immediately after Dashain holidays), the unanalyzed dataset will be submitted to USAID Nepal and KISAN II, including both raw and clean data in different file formats (SPSS or STATA and CSV) and the questionnaire codebook.
- Approximately the first week of November (two weeks after submitting the clean dataset), the analyzed data will be submitted to USAID Nepal and presented in indicator tables, including disaggregation.
- Within 90 days of submitting the final report, edit rules for cleaning data, final data dictionary (codebook), syntax for all data analysis and variable transformations, sampling

weights at each stage, final sampling weights used to tabulate the aggregate-level estimates for the indicators, if any, and appropriate metadata will be submitted to Development Data Library (DDL) to comply with the U.S. Government's Open Data Policy.

5. Data Analysis and Reporting

Data cleaning will begin as soon as they start uploading on the server. The MEL Activity's statistician will clean, process, and analyze the data. Data will be exported to SPSS/Stata for analysis. Mean, median, range checks for numeric variables, and descriptive analysis for categorical variables will be performed as part of exploratory data analysis. Values for 20 key indicators will be calculated based on the indicator definition and method of calculation specified in relevant FTF PIRSs and the KISAN II MEL Plan (April 2018), and presented in the main body of the survey report. Indicators related to yields and sales will be disaggregated by commodity. Other disaggregated values will be presented in an annex (age, gender, caste/ethnicity), etc. Refer to Table A3.5 for the baseline survey report outline.

Table A3.5: Baseline Survey Report Outline

MAIN BODY	ANNEXES
• Executive summary • Acronyms • Table of contents • Background • Survey approach and methodology • Summary of indicator results • Survey findings • Conclusions	• Table showing links between interview questions and indicators • Demographic tables • Indicator values tables with disaggregates as required in PIRS • Survey tools and instruments • Bibliography and interview lists • Questionnaires • Conflict of interest statements

6. Presentation on Baseline Survey Findings

The team leader will provide a PowerPoint (or similar) presentation on the important findings and conclusions of the baseline survey approximately 1-2 weeks before the submission of the draft baseline survey report. Presentations may be iterative, starting with the KISAN II team followed by USAID Nepal or a joint presentation. The MEL Activity envisions the presentation to be conducted by the team leader and the MEL Activity survey team members.

APPENDIX IV: ADDITIONAL DATA TABLES WITH DISAGGREGATES AGRICULTURE AND RESILIENCE MODULES

5.1 GUIDE TO INTERPRETING THE DATA TABLES

This appendix contains the complete data tables for all agriculture outcome indicators, including all disaggregates. Tables are organized to present the following information:

- **Table title.** Clearly describes the data. The wording may differ from the indicator title for clarity and/or to reflect differences between the baseline sample population and USG-assisted project participants.
 - **Performance indicator number and title.** As shown in the KISAN II MEL Plan.
 - **The number of individuals or households in the sample,** disaggregated. In all cases, these are smallholder households.
 - **Sample composition (sum=100 percent).** The percentage share of each individual disaggregates within each disaggregate category (for example, 22.2 percent female and 77.8 percent male for the sex category). However, a few tables and graphs might include multiple responses that do not add up to 100%.
 - **Indicator baseline estimates for the sample population.** Baselines are calculated in accordance with the FTF Indicator Handbook and KISAN II MEL Plan. The corresponding sample-weighted population estimates are not provided in this report but are available in a separate Excel spreadsheet.
- Table notes.** Provided as needed below the table to clarify calculation rules related to “who” and “what” counts and/or cases where double-counting is allowed.

5.2 DEMOGRAPHIC CHARACTERISTICS OF SAMPLE POPULATION

The sample included 1,860 households comprised of 10,447 individuals. The following tables present demographic data on the sample population. This data is used for calculating the cross-cutting performance indicator disaggregates presented in the following sections -- related to the province, sex, education, caste/ethnicity, age, and commodities produced.

Within the sample, 14 percent are youth (age 15-20), 51 percent are female, 60 percent are from a disadvantaged caste or ethnic group (Dalit, Janajati, and Muslim), 26 percent live on less than \$1.90 per person per day, and 100 percent are smallholders, defined as owning or leasing 5 hectares or less of arable land or five adult female goats (does) or less (source: 2018 FTF Indicator Handbook, p. 50). The average household size is 5.6 people.

As the sample focused on smallholder households (in accordance with the SOW), “firm size” disaggregates that capture the number of employees are based on the number of unique individuals hired by smallholders on a seasonal or daily wage basis (the FTF Indicator Handbook does not provide a definition for “employee” or reference “full-time equivalent”). The employee numbers, therefore, overstate the “firm size.” Data on firms will be collected in a separate firm-level baseline survey. Refer to the Handbook p. 101 for the “firm size” definition.

References to “participants” or “UGS assistance” in the indicator titles apply to future Annual Results Surveys only. The table titles have been adjusted to reflect that this is a population-based survey (PBS) conducted before enrollment of project participants. In this context, what is being measured is the number of individuals or households that produce KISAN II targeted commodities who are applying technologies, producing, selling, or accessing finance, etc.

TABLE I. CHARACTERISTICS OF FARMS AND HOUSEHOLD HEADS

Household Characteristics	Number of Households (1,860 HHs)	Sample Composition (Sum=100%)
Province		
Province 3	500	26.9%
Province 5	840	45.2%
Province 6	280	15.1%
Province 7	240	12.9%
Household Land Ownership Status		
Owned only	1,250	67.2%
Leased only	52	2.8%
Both	548	29.5%
None	10	0.5%
Average Arable Land Size	0.56 Hectares	
Size of Firm (Farm)		
None employed	939	50.5%
Micro-enterprise (1-10 employees)	357	19.2%
Small (11-49 employees)	450	24.2%
Medium (50-249 employees)	109	5.9%
Large (>250 employees)	5	0.3%
Household Head Characteristics		
Sex		
Female	413	22.2%
Male	1,447	77.8%
Education Level		
Illiterate and never attended school	551	29.6%
Literate but never attended school	239	12.9%
Primary (1-5)	479	25.8%
Secondary (6-10)	476	25.6%
Higher secondary (11-12)	81	4.4%
Graduate and above	34	1.8%
Education level (four categories)		
Illiterate and never attended school	551	29.6%
Literate but never attended school	239	12.8%
Primary and secondary	955	51.3%
Higher secondary and above	115	6.2%
Caste/Ethnicity		
Brahmin/Chhetri	666	35.8%
Dalit	194	10.4%

Household Characteristics	Number of Households (1,860 HHs)	Sample Composition (Sum=100%)
Janajati	786	42.3%
Muslim	37	2.0%
Newar	74	4.0%
Tarai/Madhesi	103	5.5%

TABLE 2. CHARACTERISTICS OF HOUSEHOLD MEMBERS

Demographic Characteristics	Number of Individuals (10,447)	Sample Composition (Sum=100%)
Province		
Province 3	2,536	24.3%
Province 5	4,878	46.7%
Province 6	1,466	14.0%
Province 7	1,567	15.0%
Sex		
Female	5,336	51.1%
Male	5,111	48.9%
Caste		
Brahmin/Chhetri	3,469	33.2%
Dalit	1,084	10.4%
Janajati	4,542	43.5%
Muslim	298	2.9%
Newar	368	3.5%
Tarai/Madhesi	686	6.6%
Age		
Less than 5	822	7.9%
5 to 14	2,001	19.2%
15-24	2,418	23.1%
25 to 34	1,630	15.6%
35 to 44	1,196	11.4%
45 and above	2,380	22.8%

Demographic Characteristics	Number of Individuals (10,447)	Sample Composition (Sum=100%)
Education level for members more than 5 years of age	9,444	
Illiterate and never attended school	1,900	20.1%
Literate but never attended school	708	7.5%
Primary (1-5)	2,295	24.3%
Secondary (6-10)	3,227	34.2%
Higher secondary (11-12)	994	10.5%
Graduate and above	320	3.4%
Migration**	Number	Percent
HHs with at least one migrant	421	23%
Male migrants (individuals)	494	-
Female migrants (individuals)	63	-
HH with male migrants	400	22%
HH with female migrants	56	3%
**Migration includes those HH who has at least one member currently living outside Nepal and/or at least one member who has returned from outside in last 12 months		

The sample population varies across indicators, depending on the unit of measurement for each indicator. Subsets of the household sample are listed in descending order.

TABLE 3. SAMPLE POPULATIONS

Unit of Measurement	Definition	Number in Sample
Households	Family members that live together in the same dwelling. As noted earlier, the household sample was randomly selected from KISAN II's catchment areas, based on a listing of households that produced KISAN II's targeted commodities.	1,860
Smallholders	Households with 5 ha or less arable land and 5 goats does or less – owned or leased (source: FTF Indicator Handbook p. 101)	1,860
Household Members	All household members within the HH sample	10,447
Household Members >15 years	Only household members age 15 years and higher	7,624
Agriculture Decision Makers (aka Farmers)	Decision makers within households for at least one KISAN II targeted commodity (aka "individuals in the agriculture system").	2,848

TABLE 4. VULNERABLE POPULATIONS

Criteria for Vulnerable or Disadvantaged	Number of HHs in Sample (of 1,860)	Percentage of HHs in Sample
Living on less than \$1.90/day/person	488	26.2%
Disadvantaged caste, ethnic, or religious group (Dalit, Janajati, or Muslim)	1,017	54.7%
Affected by a natural disaster within the past 12 months	587	31.6%
Total Number of Unique Households	1,458	78.4%

Within the sample population of smallholder households, 74 percent produce rice, 71 percent produce maize, 33 percent produce lentil, 61 percent produce vegetables, and 74 percent produce goats. This indicates that farmers are producing multiple crops plus goats. Variations in the prevalence of individual crops across provinces reflect differences in agro-ecological conditions.

TABLE 4.1 INCOME AND AVERAGE SALES BY YEAR-ROUND IRRIGATION

Income and Average value of sales	Year-round irrigation	
	Yes	No
Income		
Less than \$1.9 per day	198 (41%)	290 (59%)
More than \$1.9 per day	607 (45%)	743 (55%)
Average value of sales	\$ 429.3	\$ 393.1

TABLE 5. NUMBER AND DISTRIBUTION OF HOUSEHOLDS AND FARMERS BY COMMODITY AND PROVINCE

Commodity and Province	Number of Households (1,860)	Sample Composition (Sum=100%)	Percentage of HHs That Produced Each Commodity	Number of Farmers (2,560)
Rice				
Province 3	315	22.8%	63.2%	
Province 5	653	47.2%	77.7%	
Province 6	185	13.4%	66.1%	
Province 7	230	16.6%	95.8%	
Rice Total	1,383	100%	74.4%	1,383
Maize				
Province 3	459	35.0%	91.8%	
Province 5	483	36.8%	57.5%	
Province 6	252	19.2%	90.0%	
Province 7	117	8.9%	48.8%	
Maize Total	1,311	100%	70.5%	1,311
Lentil				
Province 3	8	1.3%	1.6%	
Province 5	401	66.6%	47.7%	
Province 6	82	13.6%	29.3%	
Province 7	111	18.4%	46.3%	
Lentil Total	602	100%	32.4%	602
Vegetables				
Province 3	270	23.7%	54.0%	
Province 5	494	43.3%	58.8%	
Province 6	184	16.1%	65.7%	
Province 7	192	16.8%	80.0%	
Vegetables Total	1,140	100%	61.3%	1,334
Goat				
Province 3	314	29.7%	62.8%	
Province 5	454	43.0%	54.0%	
Province 6	171	16.2%	61.1%	
Province 7	117	11.1%	48.8%	
Goat Total	1,056	100%	56.8%	1,056

TABLE 6. NUMBER AND DISTRIBUTION OF HECTARES BY COMMODITY AND PROVINCE

Disaggregates	Number of Hectares	Sample Composition (Sum=100%)
Province		
Province 3	231.4	20.3%
Province 5	623.1	54.7%
Province 6	117.2	10.3%

Disaggregates	Number of Hectares	Sample Composition (Sum=100%)
Province 7	168.4	14.8%
Commodity		
Rice	660.0	57.9%
Maize	264.4	23.2%
Lentil	113.1	9.9%
Vegetables	102.6	9.0%
Total	1140.1	100.0%

5.3 TECHNOLOGY ADOPTION PERFORMANCE INDICATORS

The following tables present information on the number of households or individuals applying improved management practices or technologies (MPTs) (Tables 5-11) and the number of hectares on which MPTs have been applied (Tables 12-13).

Total of 2848 individuals applied at least one MPT. Note that “double counting” of individuals occurs across disaggregates because individuals can be counted under more than one commodity and under more than one MPT type. Also, individuals can be counted more than once for the same individual MPT if it falls under more than one type. Double counting does not occur within demographic disaggregates.

TABLE 7. NUMBER OF INDIVIDUALS WHO HAVE APPLIED IMPROVED MANAGEMENT PRACTICES OR TECHNOLOGIES (MPT), COUNTED AT THE TYPE CATEGORY LEVEL

Indicator K4/Nepal 2.1.1-2/EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance (IM-Level)	
Indicator K19/EG.3.2-24 subset: Marketing and distribution	
Aggregate Results	Number of Farmers Who Applied an MPT (of 2,560)
Total number of unique farmers applying at least one MPT	2,848
Commodity Disaggregates	
Rice	1,913
Maize	1,598
Lentil	723
Vegetables	1,551
Goats	1,544
MPT Type Categories	
Crop genetics	2,519
Cultural practices	1,294
Livestock management	1,157
Pest and disease management	1,166
Soil-related fertility and conservation	2,136
Irrigation	2,358
Agriculture water management (non-irrigation based)	1,574
Climate mitigation	311

Indicator K4/Nepal 2.1.1-2/EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance (IM-Level)

Indicator K19/EG.3.2-24 subset: Marketing and distribution

Climate adaptation/climate risk management	1,486	
Information and communications technologies (ICT)	1,361	
Marketing and distribution	4,771	
Post-harvest handling and storage	88	
Value-added processing	1,663	
Other	1,166	
Demographic Disaggregates	Number of Farmers Who Applied an MPT (2,848)	Percentage of Total Who Applied (Sum=100%)
Value Chain Actor Type		
Smallholder Producers	2,848	100%
Non-Smallholder Producers	0	0%
People in Government	0	0%
People in Private Sector Firms	0	0%
People in Civil Society	0	0%
Others	0	0%
Age		
15 to 29 (Youth)	363	12.7%
30 to 45	1,189	41.7%
46 to 59	905	31.8%
Above 59	391	13.7%
Sex		
Female	1,484	52.1%
Male	1,364	47.9%
Caste-ethnicity		
Brahmin/Chettri	1,027	36.1%
Dalit	292	10.3%
Janajati	1,216	42.7%
Muslim	51	1.8%
Newar	109	3.8%
Others (Terai/Madhesi)	153	5.4%

Single-Counting Rules (refer above table for double-counting rules):

- Count everyone who applies an MPT.
- Count individuals no more than once per year for gender, age, and commodity disaggregates.
- Individuals applying an MPT Type more than once in the same year can only be counted once for the MPT Type Category.
- Count an individual once per Type Category regardless of how many specific MPTs within it they applied.

Types of Individuals

- Farmers, producers.
- Private sector: entrepreneurs, input suppliers, traders, processors, manufacturers, distributors, service providers, wholesalers, and retailers.
- Government: policy makers, extension workers, and natural resource managers.
- Civil society: researchers, academics, NGO, and CBO staff.

Almost all households apply at least one MPT (99.4 percent). Table 8 shows the average number of individual (unique) MPTs applied per household to better assess behavior change related to the increased application of improved MPTs.

TABLE 8. AVERAGE NUMBER OF IMPROVED MPTS APPLIED PER HOUSEHOLD, COUNTED AT THE INDIVIDUAL MPT LEVEL

Indicator K5/Custom I: Average number of improved management practices or technologies applied per household with USG assistance.			
Commodity and Type Disaggregates	Number of Households Who Applied an MPT (of 1,860)	Potential Number of MPTs	Avg. Number (±SD) of Individual MPTs Applied Per HH
Aggregate Results			
Total Number of Unique Households and MPTs	1,849	63	11.5 (±6.5)
Disaggregates			
Commodity			
Rice	1,383	49	6.7 (±3.3)
Maize	1,260	49	3.8 (±2.5)
Lentil	575	48	3.3 (±2.3)
Vegetables	1,133	57	10 (±6)
Goats	1,012	27	3.7 (±2.1)
MPT Type Category			
Crop genetics	1477	2	1.4
Cultural practices	1101	4	2
Livestock management	1160	6	2.5
Pest and disease management	928	4	2
Soil related fertility and conservation	1154	7	1.6
Irrigation	1459	4	1.3
Agriculture water management (non-irrigation based)	1036	3	1.1
Climate mitigation	222	2	1
Climate adaptation/climate risk management	929	7	1.8
Information and communications technologies (ICT)	199	6	1.4
Marketing and distribution	691	6	1.5
Post-harvest handling and storage	1684	6	1.7
Value-added processing	62	1	1
Other	692	5	1.7
Demographic Disaggregates			
Province Disaggregates			
Province 3	499		11.6 (±6.7)
Province 5	832		10.4 (±5.9)
Province 6	278		11.6 (±7.3)
Province 7	240		14.4 (±6.1)
Sex (HH Head)			
Female	409		10.7 (±6.1)

Indicator K5/Custom I: Average number of improved management practices or technologies applied per household with USG assistance.			
Commodity and Type Disaggregates	Number of Households Who Applied an MPT (of 1,860)	Potential Number of MPTs	Avg. Number (±SD) of Individual MPTs Applied Per HH
Male	1,440		11.7 (±6.6)
Caste (HH Head)			
Brahmin/Chhetri	664		12.9 (±6.9)
Dalit	193		11.4 (±7.1)
Janajati	779		10.7 (±5.9)
Muslim	37		6.2 (±3.3)
Newar	74		12.2 (±6.8)
Tarai/Madhesi	102		9.4 (±5.2)
Age (HH Head)			
15-24	31		10.1 (±6.8)
25 to 34	270		11.1 (±6.6)
35 to 44	434		11.7 (±6.3)
45 and above	1,114		11.5 (±6.6)
Education Level (HH Head)			
Illiterate and never attended school	545		9.9 (±5.5)
Literate but never attended school	238		11.8 (±6.7)
Primary (1-5)	478		11.5 (±6.6)
Secondary (6-10)	474		12.5 (±6.8)
Higher secondary (11-12)	81		14.9 (±7.3)
Graduate and above	33		12.4 (±7.5)
Use of MPT by ZOI			
ZOI 1	1,350		11.4 (±6.7)
ZOI 2	499		11.6 (±6.7)
Use of ICT by ZOI			
ZOI 1	137		10%
ZOI 2	63		13%
Use of Irrigation by ZOI			
ZOI 1	1,125		83%
ZOI 2	329		66%
Use of Agriculture water management (non-irrigation based)			
ZOI 1	809		60%
ZOI 2	224		45%

**TABLE 8.1: AVERAGE NUMBER OF INDIVIDUAL MPTS APPLIED PER HOUSEHOLD
DISAGGREGATED BY COMMODITY AND TECHNOLOGY TYPE**

Technology type	Rice (n=1383)		Maize (n=1311)		Lentil (n=602)		Vegetables (n=1334)		Goat (n=1056)	
	% HH applying tech	Average sub-tech applied	% HH applying tech	Average sub-tech applied	% HH applying tech	Average sub-tech applied	% HH applying tech	Average sub-tech applied	% HH applying tech	Average sub-tech applied
Crop Genetics	66%	1.1	45%	1.0	15%	1.0	69%	1.2	-	-
Cultural Practices	26%	1.0	0%	-	0%	-	70%	2.2	-	-
Pest and disease management	29%	1.7	5%	1.6	3%	1.4	51%	2.0	-	-
Soil fertility and conservation	51%	1.3	45%	1.3	22%	1.2	53%	1.6	-	-
Irrigation (drip, surface, sprinkler)	89%	1.0	13%	1.0	16%	1.0	65%	1.2	-	-
Agriculture water management	51%	1.0	10%	1.0	9%	1.1	52%	1.1	-	-
Climate mitigation	9%	1.0	3%	1.0	4%	1.0	9%	1.0	-	-
Climate adaptation	43%	1.4	27%	1.4	18%	1.2	32%	1.7	-	-
Improved ICT channels or content	7%	1.3	6%	1.3	4%	1.1	10%	1.4	7%	1.3
Marketing and distribution	31%	1.4	20%	1.2	28%	1.3	29%	1.6	11%	1.3
Post-harvest handling and storage	88%	1.4	81%	1.4	88%	1.4	71%	1.6	97%	1.1
Value-added processing	1%	1.0	1%	1.0	2%	1.0	3%	1.0	0%	-
Other	34%	1.5	26%	1.4	30%	1.5	31%	1.8	25%	1.5
Livestock management	-	-	-	-	-	-	-	-	110%	2.5

Tables 9 and 10 provide additional disaggregate data for the two climate-smart technology type categories in EG.3.2-24 (Table 7). Just over half of households in the sample (52.3 percent) applied a climate-smart technology or practice. Of these, they applied an average of 1.9 climate-smart technologies or practices per household. The average number did not vary substantially across commodities (1.3 to 1.8).

TABLE 9. AVERAGE NUMBER OF CLIMATE-SMART TECHNOLOGIES OR PRACTICES (CSTPS) APPLIED PER HOUSEHOLD, COUNTED AT THE INDIVIDUAL MPT LEVEL

K13/Custom 1: Average number of climate-smart technologies or practices applied per household with USG assistance.				
	Number of HHs that Applied a CSTEP	Number of HHs	Percentage of HHs that Applied a CSTEP	Average No. of CSTPs per HH (of 1,860)
Aggregate Results				
Total Number of Unique HHs and CSTPs	972	1,860	52.3%	1.9 (±1.2)
Commodity Disaggregates				
Rice (out of 6)	627	1,383	45.3%	1.6 (±0.8)
Maize (out of 6)	369	1,311	28.1%	1.5 (±0.7)
Lentil (out of 6)	125	602	20.8%	1.3 (±0.5)
Vegetables (out of 9)	466	1,140	40.9%	1.8 (±1.1)

The following indicator was dropped by FTF in April 2018 and replaced with EG.3.2-28 to focus on the number of hectares rather than the number of individuals (refer to Table 15). It is included here because it remains in the KISAN II MEL Plan.

TABLE 10. NUMBER OF FARMERS USING CLIMATE INFORMATION OR IMPLEMENTING RISK-REDUCING ACTIONS TO IMPROVE RESILIENCE TO CLIMATE CHANGE

K46 (EG.11-6, Nepal 2.1.1-2, EG.3.2-17): Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance			
Aggregate Results	Number of Farmers in Sample	Number of Farmers Addressing Climate Risk	Percentage of Farmers Addressing Climate Risk
Households	1,860	972	52.3%
Unique Producers	2,560	1,064	41.6%
Commodity Disaggregates			
Rice	1,383	638	46%
Maize	1,311	373	28%
Lentil	602	128	21%
Vegetables	1,334	474	36%

Demographic Disaggregates of Decision Maker	Number of Farmers	Sample Composition (Sum=100%)	Percentage of Farmers Addressing Climate Risk
Age			
15 to 29 (Youth)	100	9.4%	3.0%
30 to 45	463	43.5%	21.5%
46 to 59	359	33.7%	28.0%
Above 59	142	13.3%	16.5%
Sex			
Female	386	36.3%	9.9%
Male	678	63.7%	18.2%

Table 11 provides additional data for the marketing and distribution technology type category in EG.3.2-24 (Table 5).

TABLE 11. NUMBER OF FARMERS WHO HAVE APPLIED IMPROVED MPTS RELATED TO MARKETING AND DISTRIBUTION

K19/Nepal 2.1.1-2/EG.3.2-24 Subset: Number of Individuals in the agriculture system who have applied improved management practices or technologies with USG assistance – <i>related to marketing and distribution</i>			
Aggregate Result	Number of Farmers in Sample	Number of Farmers Who Applied	Percentage of Farmers Who Applied
Total Number of Unique Households and MPTs	2,560	744	29.1%
Commodity			
Rice	1,383	431	31.2%
Maize	1,311	257	19.6%
Lentil	602	166	27.6%
Vegetables	1,334	386	28.9%
Goats	1,056	121	11.5%

Table 12 provides additional data for the ICT technology type category in EG.3.2-24 (Table 7). Only 8.1 percent of farmers access extension information through ICT channels. Note that this is much lower than the number of farmers using ICT reported in Table 7 because Table 7 captures all uses of ICT (such as checking market prices), not only accessing information on improved MPTs.

TABLE 12. PERCENTAGE OF FARMERS ACCESSING INFORMATION ON IMPROVED MPTS THROUGH IMPROVED ICT CHANNELS

K20/Custom 2: Percentage of USG-assisted farmers accessing information on improved technologies and practices through improved ICT channels or content			
Aggregate Results	Number of Farmers in Sample	Number of Farmers Accessing Info via ICT	Percentage of Farmers Accessing Info via ICT
Number of Unique Farmers	2,560	207	8.1%
Commodity Disaggregates			
Rice	1,383	94	6.8%
Maize	1,311	74	5.6%
Lentil	602	25	4.2%
Vegetables	1,334	137	10.3%
Goats	1,056	76	7.2%
Demographic Disaggregates of Decision Maker	Number of Farmers Accessing Info via ICT (207)	Composition of Farmers Accessing Info (Sum=100%)	Percentage of Farmers Accessing Info via ICT
Age			
15 to 29 (Youth)	22	10.6%	7.6%
30 to 45	87	42.0%	8.2%
46 to 59	79	38.2%	9.6%
Above 59	19	9.2%	4.9%
Sex			

Female	57	27.5%	4.7%
Male	150	72.5%	11.1%

Table 13 provides additional information on food grading and safety -- a subset of the post-harvest handling and storage MPT type category in EG.3.2-24 (Table 7). Note that the indicator title in the table has been edited (from how it is presented in the KISAN II MEL Plan) to match the wording for EG.3.2-24, which was modified in the 2018 FTF Indicator Handbook.

TABLE 13. NUMBER OF FARMERS WHO APPLIED IMPROVED MPTS RELATED TO FOOD GRADING AND SAFETY

K 31/Nepal 2.1.1-2/EG.3.2-24 Subset: Number of Individuals in the agriculture system who have applied improved management practices or technologies with USG assistance – related to food grading or safety			
Aggregate Results	Number of Farmers in Sample	Number of Farmers Who Applied	Percentage of Farmers Who Applied
Number of Unique Farmers	2,560	1,946	76.0%
Commodity Disaggregates			
Rice	1,383	1,222	88.4%
Maize	1,311	1,058	80.7%
Lentil	602	528	87.7%
Vegetables	1,334	944	70.8%
Goats	1,056	1,019	96.5%
Demographic Disaggregates of Decision Maker	Number of Farmers Who Applied (1,946)	Composition of Farmers Who Applied (Sum=100%)	Percentage of Farmers Who Applied
Age			
15 to 29 (Youth)	227	11.7%	6.8%
30 to 45	851	43.7%	39.5%
46 to 59	630	32.4%	49.2%
Above 59	238	12.2%	27.6%
Sex			
Female	1,079	55.4%	27.6%
Male	867	44.6%	23.3%
Caste/Ethnicity			
Brahmin/Chettri	710	36.5%	27.6%
Dalit	205	10.5%	27.9%
Janajati	810	41.6%	24.1%
Muslim	39	2.0%	21.3%
Newar	72	3.7%	23.5%
Others (Terai/Madhesi)	110	5.7%	23.7%
Size of Producers			
None employed	985	50.6%	25.2%
Micro-enterprise (1-10 employees)	377	19.4%	27.8%
Small (11-49 employees)	464	23.8%	25.3%
Medium (50-249 employees)	113	5.8%	22.3%
Large (>250 employees)	7	0.4%	31.8%

Tables 14 and 15 focus on the number of hectares under improved MPT. No data was collected for the “association-applied” disaggregates, as this is outside the SOW for the household baseline survey.

TABLE 14. NUMBER OF HECTARES UNDER IMPROVED MPT

Indicator K8/Nepal 2.1.1-1/EG.3.2-25: Number of hectares under improved management practices or technologies with USG assistance (IM-Level)			
Aggregate Results	No. of Hectares Cultivated	No. of Ha with an Improved MPT	Percentage of Ha With an Improved MPT
Number of unique hectares with at least one MPT applied	1,140	1,138.6	99.8%
Type of Hectare Disaggregates			
Crop land	1,140	1,138.6	100%
Cultivated pasture	0	0	0%
Rangeland	0	0	0%
Conservation and mixed-used landscapes	0	0	0%
Freshwater or marine ecosystems, aquaculture	0	0	0%
Other	0	0	0%
Commodity Disaggregates			
Rice	1,369	648.5	57.0%
Maize	1,004	201.7	17.7%
Lentil	317	52.0	4.6%
Vegetables	1,118	92.1	8.1%
MPT Type Categories (Land-Based Only)			
Crop genetics	1,477	623.1	54.7%
Cultural practices	1,101	121.4	10.7%
Pest and disease management	928	487.2	42.8%
Soil related fertility and conservation	1,154	713.9	62.7%
Irrigation	1,459	715.0	62.8%
Agriculture water management (not irrigation)	1,036	434.1	38.1%
Climate mitigation	222	70.1	6.2%
Climate adaptation/climate risk management	929	495.6	43.5%
Demographic Disaggregates of Decision Maker	No. of Individuals Who Applied an MPT (2,359)	No. of Ha with an Improved MPT	Composition of Individuals Who Applied an MPT (Sum=100%)
Age			
15 to 29 (Youth)	270	80.1	7.0%
30 to 45	987	448.5	39.4%
46 to 59	777	445.7	39.1%
Above 59	325	164.3	14.4%
Association-Applied	Not measured	Not measured	Not measured

Indicator K8/Nepal 2.1.1-1/EG.3.2-25: Number of hectares under improved management practices or technologies with USG assistance (IM-Level)			
Aggregate Results	No. of Hectares Cultivated	No. of Ha with an Improved MPT	Percentage of Ha With an Improved MPT
Sex			
Female	984	310.2	27.2%
Male	1,375	828.4	72.8%
Association-Applied	Not measured	Not measured	Not measured
Caste/Ethnicity			
Brahmin/Chettri	862	331.6	29.1%
Dalit	246	78.0	6.9%
Janajati	999	564.0	49.5%
Muslim	38	34.0	3.0%
Newar	88	32.3	2.8%
Others (Terai/Madhesi)	126	98.8	8.7%

Notes to implementer: Yearly totals should not be summed to count application by unique individuals over the life of the project. Also, this indicator captures results where they were achieved, regardless of whether interventions were carried out, and results achieved, in the ZOI.

Table 15 provides additional disaggregate information for the two climate-smart technology type categories in EG.3.2-25 (Table 12).

TABLE 15. NUMBER OF HECTARES UNDER IMPROVED MPT THAT PROMOTE IMPROVED CLIMATE RISK REDUCTION AND/OR NATURAL RESOURCES MANAGEMENT

Indicator K12/EG.3.2-28: Number of hectares under improved management practices or technologies that promote improved climate risk reduction and/or natural resources management with USG assistance (IM-Level)			
Aggregate Results	No. of Hectares Planted (1,064)	No. of Hectares Planted with an MPT	Percentage of Hectares Planted with an MPT
Number of unique hectares with at least one MPT applied related to climate or NRM	1,140	333.9	29.3%
Type of Hectare Disaggregates			
Crop land	1,140	332.6	100%
Cultivated pasture	0	0	0%
Rangeland	0	0	0%
Conservation and mixed-used landscapes	0	0	0%
Freshwater or marine ecosystems, aquaculture	0	0	0%
Other	0	0	0%
Commodity Disaggregates			
Rice	638	258.6	40.5%
Maize	373	69.4	18.6%

Lentil	128	21.8	17.0%
Vegetables	474	43.2	9.1%
MPT Type Disaggregates			
Climate Adaptation/Climate Risk Management	1,140	310.6	27.2%
Climate Mitigation	1,140	62.8	5.5%
Demographic Disaggregates of Decision Maker	No. of Farmers Who Applied an MPT (1,064)	No. of Hectares With an MPT	Composition of Hectares (Sum=100%)
Age			
15 to 29 (Youth)	100	21.1	6.3%
30 to 45	463	136.0	40.7%
46 to 59	359	132.2	39.6%
Above 59	142	44.6	13.4%
Sex			
Female	385	80.3	24.0%
Male	679	253.6	76.0%
Caste/Ethnicity			
Brahmin/Chettri	398	95.7	28.7%
Dalit	104	21.3	6.4%
Janajati	431	164.3	49.2%
Muslim	16	10.0	3.0%
Newar	49	10.6	3.2%
Others (Terai/Madhesi)	66	31.9	9.6%

5.4 Production, Yield, and Sales Indicators

Farmers produced 4,036 MT of the five commodities targeted by KISAN II. Rice accounts for most of this volume (57 percent). Maize and vegetables are also significant (13 and 27 percent of total volume, respectively). Lentil and goats comprised less than 2 percent of total volume each.

TABLE 16. FARM-LEVEL VOLUMES (MT) PRODUCED OF TARGETED AGRICULTURAL COMMODITIES

Indicator K9/Reporting 1: Total farm-level volumes (MT) produced of targeted agricultural commodities with USG assistance				
Aggregate Results	Number of HHs	Volume (MT)	Percentage of Total Volume	Average Kg Per HH
Total produced	1,860	4,035.6		2,169.7
Commodity Disaggregates			All Commodities	
Rice	1,383	2,305.1	57.1%	1666.7
Maize	1,311	517.7	12.8%	394.9
Lentil	602	62.3	1.5%	103.5
Vegetables	1,140	1,096	27.2%	961.4
Goats	1,056	54.5	1.4%	76.5
Vegetable Disaggregates			Vegetables Only	
Bitter Gourd	180	41.0	3.7%	227.8
Bottle Gourd	165	20.5	1.9%	124.2
Broccoli	10	1.9	0.2%	190.0

Cabbage	399	175.1	16.0%	438.8
Capsicum	60	71.0	6.5%	1,183.3
Carrot	3	0.1	0.0%	33.3
Cauliflower	447	245.1	22.4%	548.3
Chilli	153	40.4	3.7%	264.1
Cucumber	227	90.7	8.3%	399.6
Eggplant	70	14.2	1.3%	202.9
French bean	129	19.6	1.8%	151.9
Long bean	152	14.3	1.3%	94.1
Okra	130	11.5	1.0%	88.5
Onion	232	19.4	1.8%	83.6
Peas	48	5.1	0.5%	106.3
Pumpkin	202	25.5	2.3%	126.2
Radish	217	42.4	3.9%	195.4
Spinach	160	20.3	1.9%	126.9
Sponge gourd	106	14.3	1.3%	134.9
Tomato	368	214.0	19.5%	581.5
Other vegetables	71	9.6	0.9%	135.2
Demographic Disaggregates of Decision Maker	Number of Farmers	Volume (MT)	Farmers' Contribution to Total Volume (Sum=100%)	
Age				
15 to 29 (Youth)	289	277.9	6.9%	
30 to 45	1,059	1,579.9	39.1%	
46 to 59	827	1,628.4	40.4%	
Above 59	385	549.4	13.6%	
Sex				
Female	1,210	1,016.1	25.2%	
Male	1,350	3,019.5	74.8%	
Caste/Ethnicity				
Brahmin/Chettri	943	1,230.7	30.5%	
Dalit	257	232.2	5.8%	
Janajati	1,077	1,968.1	48.8%	
Muslim	47	96.5	2.4%	
Newar	105	154.4	3.8%	
Others (Terai/Madhesi)	131	353.7	8.8%	

TABLE 17. YIELD OF TARGETED AGRICULTURAL COMMODITIES

Indicator K10/EG.3-10 (crops) and -12 (livestock): Yield of targeted agricultural commodities among program participants with USG assistance (IM-Level)		
Commodities	Number of Hectares	Average Yield
Rice	1,383	3.5 MT/Ha
Maize	1,311	2.0 MT/Ha

Indicator K10/EG.3-10 (crops) and -12 (livestock): Yield of targeted agricultural commodities among program participants with USG assistance (IM-Level)		
Lentil	602	0.6 MT/Ha
Vegetables	1,334	10.7 MT/Ha
Goats	1,056	6.3 Kg/Goat
Vegetable Disaggregates		MT/Ha
Bitter Gourd	180	12.9
Bottle Gourd	165	15.3
Broccoli	10	6.1
Cabbage	399	14.4
Capsicum	60	16.3
Carrot	3	6.0
Cauliflower	447	11.6
Chilli	153	8.1
Cucumber	227	11.7
Eggplant	70	15.0
French bean	129	5.3
Long bean	152	2.3
Okra	130	6.0
Onion	232	5.4
Peas	48	2.1
Pumpkin	202	9.9
Radish	217	8.1
Spinach	160	8.2
Sponge Gourd	106	13.9
Tomato	368	14.4
Other vegetables	71	4.1
Farm Size Disaggregates	Number of Producers	Average Total Yield for All Crops (MT/ha)
Smallholder	2,560	3.5
Non-smallholder	0	n/a
Goat Production Systems	Number of Producers	Average Total Yield For Goats (Kg/Goat)
Agro-pastoral/extensive grassland	0	n/a
Small holder mixed livestock-crop	1,056	6.3 Kg/Goat
Urban/peri-urban	0	n/a
Intensive industrial	0	n/a
Demographic Disaggregates of Decision Maker	Number of Producers (2,560)	Average Total Yield for All Crops (MT/ha)
Age		
15 to 29 (Youth)	289	4.0
30 to 45	1,059	3.6
46 to 59	827	3.5
Above 59	385	3.1
Sex		
Female	1,210	3.1

Indicator K10/EG.3-10 (crops) and -12 (livestock): Yield of targeted agricultural commodities among program participants with USG assistance (IM-Level)		
Male	1,350	3.6
Caste/Ethnicity		
Brahmin/Chettri	943	3.7
Dalit	257	3.2
Janajati	1,077	3.3
Muslim	47	2.8
Newar	105	4.9
Others (Terai/Madhesi)	131	4.1

Table 18 presents the value of annual sales for farms only, as firms are outside the SOW for the household baseline survey. Of the 2,560 individuals who produced commodities targeted by KISAN II, 1,750 individuals sold (66 percent). Average annual sales for women (\$199) were less than half of men's (\$442).

TABLE 18. VALUE OF ANNUAL SALES (FARMS ONLY)

Indicator K17/EG.3.2-26: Value of annual sales of farms and firms receiving USG assistance (conversion rate: NPR 104.4/USD)				
Aggregate Result	Number of HHs That Sold	Annual Sales (USD)	Contribution to Total Sales (Sum=100%)	Average Annual Sales per HHs That Sold
Total Farm Sales	1,412	\$577,043		\$408.67
Commodity Disaggregates			All Commodities	
Rice	457	\$147,128	25.5%	\$321.94
Maize	246	\$16,676	2.9%	\$67.79
Lentil	175	\$12,806	2.2%	\$73.18
Vegetables	770	\$257,892	44.7%	\$334.92
Goat	788	\$142,540	24.7%	\$180.89
Vegetable Disaggregates			Veg Sales Only	
Bitter Gourd	122	\$9,045	4.9%	
Bottle Gourd	81	\$2,247	1.2%	
Broccoli	5	\$602	0.3%	
Cabbage	264	\$26,361	14.4%	
Capsicum	59	\$36,011	19.6%	
Carrot	0	n/a		
Cauliflower	309	\$64,104	34.9%	
Chilli	134	\$15,546	8.5%	
Cucumber	152	\$18,717	10.2%	
Eggplant	43	\$2,651	1.4%	
French bean	86	\$6,209	3.4%	
Long bean	88	\$2,994	1.6%	
Okra	64	\$2,027	1.1%	
Onion	74	\$1,110	0.6%	
Peas	25	\$963	0.5%	

Pumpkin	56	\$1,915	1.0%	
Radish	90	\$5,182	2.8%	
Spinach	66	\$4,049	2.2%	
Sponge gourd	30	\$2,095	1.1%	
Tomato	314	\$52,266	28.5%	
Other vegetables	43	\$3,798	2.1%	
Demographic Disaggregates of Decision Maker	Number of Farmers	Annual Sales (USD)	Farmers' Contribution to Total Sales (Sum=100%)	Average Annual Sales per Farmer That Sold
Age				
15 to 29 (Youth)	200	\$47,654	8.3%	\$238.27
30 to 45	747	\$225,743	39.1%	\$302.20
46 to 59	573	\$236,041	40.9%	\$411.94
Above 59	230	\$67,605	11.7%	\$293.93
Sex				
Female	807	\$160,522	27.8%	\$198.91
Male	943	\$416,521	72.2%	\$441.70
Caste-ethnicity				
Brahmin/Chettri	675	\$242,374	38.6%	\$359.07
Dalit	154	\$44,599	8.8%	\$289.60
Janajati	718	\$209,477	41.0%	\$291.75
Muslim	23	\$7,686	1.3%	\$334.17
Newar	85	\$27,847	4.9%	\$327.61
Others (Terai/Madhesi)	95	\$45,061	5.4%	\$474.33
Size of Firm (Farm)				
None employed	828	\$188,042	32.6%	\$227.1
Micro-enterprise (1-10 employees)	317	\$72,879	12.6%	\$229.9
Small (11-49 employees)	466	\$173,880	30.1%	\$373.1
Medium (50-249 employees)	132	\$128,949	22.3%	\$976.9
Large (>250 employees)	7	\$13,292	2.3%	\$1,898.9

Households sold 1,634 MT of commodities targeted by KISAN II.

TABLE 19. VOLUME OF ANNUAL SALES

Indicator K18: Volume of annual sales (MT) of farms receiving USG assistance				
Aggregate Results	Number of HHs That Sold	Annual Sales (MT)	Contribution to Sales (Sum=100%)	Average Annual Sales Volume per HH That Sold (Kg)
Totals	1,412	1,634.1	-	1157.3
Commodity Disaggregates				
Rice	457	607.9	37.2%	1330.2
Maize	246	75.6	4.6%	307.3
Lentil	175	25.3	1.5%	144.6
Vegetables	770	890.0	54.5%	1155.8
Goat	788	35.3	2.2%	44.8
Vegetables			Veg Only	
Bitter Gourd	122	33.1	3.7%	271.3
Bottle Gourd	81	10.6	1.2%	130.9
Broccoli	5	1.4	0.2%	280.0
Cabbage	264	142.9	16.1%	541.3
Capsicum	59	68.1	7.6%	1154.2
Carrot	0	0.0	0.0%	-
Cauliflower	309	221.9	24.9%	718.1
Chilli	134	35.1	3.9%	261.9
Cucumber	152	74.4	8.4%	489.5
Eggplant	43	11.6	1.3%	269.8
French bean	86	15.3	1.7%	177.9
Long bean	88	8.9	1.0%	101.1
Okra	64	6.4	0.7%	100.0
Onion	74	3.6	0.4%	48.6
Peas	25	1.9	0.2%	76.0
Pumpkin	56	9.6	1.1%	171.4
Radish	90	28.2	3.2%	313.3
Spinach	66	13.4	1.5%	203.0
Sponge Gourd	30	9.7	1.1%	323.3
Tomato	314	187.1	21.0%	595.9
Other vegetables	43	7.0	0.8%	162.8
Demographic Disaggregates of Decision Marker	Number of Households That Sold (1,750)	Annual Sales (MT)	Contribution to Sales Volume (Sum=100%)	Average Annual Sales Volume per HH That Sold (Kg)
Age				
15 to 29 (Youth)	200	128.7	7.9%	643.5
30 to 45	747	643.8	39.4%	861.8

Indicator K18: Volume of annual sales (MT) of farms receiving USG assistance				
Aggregate Results	Number of HHs That Sold	Annual Sales (MT)	Contribution to Sales (Sum=100%)	Average Annual Sales Volume per HH That Sold (Kg)
46 to 59	573	686.4	42.0%	1,197.9
Above 59	230	175.2	10.7%	761.7
Sex				
Female	807	326.6	20.0%	404.7
Male	943	1,307.5	80.0%	1,386.5
Caste-ethnicity				
Brahmin/Chettri	675	543.8	38.5%	805.6
Dalit	154	100.0	8.8%	649.4
Janajati	718	685.3	41.0%	954.5
Muslim	23	27.3	1.3%	1,187.0
Newar	85	101.1	4.9%	1,189.4
Others (Terai/Madhesi)	95	176.7	5.4%	1,860.0
Size of Firm				
None employed	828	541.1	33.1%	653.5
Micro-enterprise (1-10 employees)	317	202.6	12.4%	639.1
Small (11-49 employees)	466	425.6	26.0%	913.3
Medium (50-249 employees)	132	414.9	25.4%	3,143.2
Large (>250 employees)	7	50.0	3.1%	7,142.9

Over 70 percent of households in the sample produced 466 MT of nutrient-rich commodities targeted by KISAN II. Over half of households set aside some for home consumption, but only 12.5 percent of the total volume produced.

TABLE 20. QUANTITY OF NUTRIENT-RICH COMMODITIES SET ASIDE FOR HOME CONSUMPTION

K4/Custom 5: Quantity of nutrient-rich value chain commodities produced by direct beneficiaries with USG assistance that is set aside for home consumption (MT)			
Aggregate Results	Number of Households	Quantity (MT)	Percentage of Sample (1,860 HHs)
Number of households producing nutrient-rich commodities	1,326	466.3	71.3%
Number of households that set aside nutrient rich commodities for home consumption	1,050	58.5	56.5%
Nutrient-Rich Commodities	Number of Households Consuming	Quantity Set Aside (MT)	Percentage of Production (58.5 MT)
Bitter Gourd	177	4.3	7.4%
Broccoli	10	0.3	0.5%
Cabbage	389	13.5	23.1%
Capsicum	57	0.8	1.4%
Carrot	3	0.1	0.2%
Cauliflower	441	13.7	23.4%
French bean	127	2.6	4.4%
Long bean	148	3.7	6.3%
Okra	129	3.5	6.0%
Pumpkin	200	7.1	12.1%
Spinach	158	4.5	7.7%
Goats	317	4.5	7.7%

5.5 Access to Finance Indicators

Table 21 features output indicators, for which the baselines are zero by definition. The data is provided for reference only. Of 2,848 farmers (agriculture decision makers) in the sample, 50.5 percent participate in group-based savings, microfinance, or lending programs (the FTF definition for having “access to productive resources”). Of these, 73.2 percent are women and 22.4 percent are youth.

TABLE 21. NUMBER OF FARMERS PARTICIPATING IN GROUP-BASED SAVINGS, MICROFINANCE OR LENDING PROGRAMS

Indicator K24/EG.4.2-7: Number of individuals participating in group-based savings, microfinance or lending programs with USG assistance (IM-level output)			
Total	Number of Farmers Who Participate	Percentage of Farmers Who Participate (N=2,848)	
Number of unique individual farmers	1,437	50.5%	
Financial Product Disaggregates			
Saving	2,436	-	
Credit	823	-	
Indicator K6/GNDR-2: Percentage of female participants in USG assisted programs designed to increase access to productive resources (IM-level output)			
Indicator K7/YOUTH-3: Percentage of participants in USG-assisted programs designed to increase access to productive economic resources who are youth (15-29) (IM-Level output)			
Demographic Disaggregates	Number of Farmers Saving	Composition of Savers (Sum=100%)	Percentage of Farmers Who Save
Age			
15 to 29 (YOUTH-3)	322	22.4%	9.7%
30+	1,115	77.6%	26.0%
Sex			
Female (GNDR-2)	1,052	73.2%	26.9%
Male	385	26.8%	10.4%

Note that annual results data for indicator K24 will include duration disaggregates: “new” and “continuing.” They are omitted from the above table because they are not relevant for baseline data.

Approximately 80 percent of smallholder households in the sample have savings deposits, averaging USD 132 per household.

TABLE 22. VALUE OF HOUSEHOLD SAVINGS DEPOSITS OF SMALLHOLDERS

Indicator K25/Reporting 4: Value of household savings deposits of USG-assisted smallholders				
Total	Number of Households With Savings	Value (USD) of Savings	Percentage of HH Sample That Saves	Average Savings per Household
Households with saving deposits	1,498	\$285,821	80.5%	\$132
Demographic Disaggregates of Decision Makers	Number of Individuals Saving (2,182)	Value (USD) of Savings	Contributions to Total Savings (Sum=100%)	% of Ag Decision Makers in Sample (2,848)
Age				
15 to 29 (Youth)	474	\$46,738	16.4%	14.2%
30 to 45	996	\$158,610	55.5%	46.3%
46 to 59	546	\$58,017	20.3%	42.6%
Above 59	166	\$22,457	7.9%	19.2%
Sex				
Female	1,572	\$143,815	50.3%	40.2%
Male	610	\$142,006	49.7%	16.4%
Caste/Ethnicity				
Brahmin/Chettri	823	\$134,649	47.1%	32.0%
Dalit	211	\$15,875	5.6%	28.7%
Janajati	976	\$102,805	36.0%	29.0%
Muslim	14	\$286	0.1%	7.7%
Newar	86	\$24,374	8.5%	28.0%
Others (Terai/Madhesi)	72	\$7,832	2.7%	15.5%

Of 2,858 farmers in the sample, 253 (9.9 percent) have access to agriculture-related financing.

TABLE 23. VALUE OF AGRICULTURE

Indicator K23/EG.3.2-27: Value of agriculture-related financing (USD) accessed as a result of USG assistance (IM-Level)				
Total	Number with Access	Value of Financing (USD)	Number of Ag Decision Makers in Sample	Percentage of Ag DMs with Access
Unique individuals (borrowers)	253	\$130,345	2,848	11.3%
Unique households	236	\$130,345	1,860	12.7%
Finance Disaggregates	Number of Borrowers	Value (USD)	Contribution (Sum=100%)	
Type of Financing				
Debt	252	\$130,259	99.9%	
Non-debt	1	\$86	0.1%	
Type of Debt				

Cash	253	\$130,345	100.0%	
In-kind	0	0	0	
Demographic Disaggregates	Number of Borrowers	Value (USD)	Contribution (Sum=100%)	Percentage of Ag DMs with Access
Size of Firm (Farm)				
None employed	95	\$25,393	19.5%	\$267
Micro-enterprise (1-10 employees)	52	\$30,493	23.4%	\$586
Small (11-49 employees)	78	\$49,593	38.0%	\$636
Medium (50-249 employees)	26	\$18,640	14.3%	\$717
Large (>250 employees)	2	\$6,226	4.8%	\$3,113
Age				
15 to 29 (Youth)	42	\$20,168	15.5%	\$480
30 to 45	121	\$62,033	47.6%	\$513
46 to 59	77	\$43,356	33.3%	\$563
Above 59	13	\$4,789	3.7%	\$368
Sex				
Female	163	\$52,615	40.4%	\$323
Male	90	\$77,730	59.6%	\$864

Of the 253 individuals with access to agriculture-related financing, 223 (88 percent) have an outstanding balance. The average balance varies substantially between men (USD 751) and women (USD 233).

TABLE 24. VALUE OF THE OUTSTANDING BALANCE

K26/Reporting 5: Value of the outstanding balance on agriculture loans of USG-assisted households by type of debt and financing type				
Aggregate Results	Number with an Outstanding Balance	Value (USD)	Average Outstanding Balance	Percentage of Sample
Households (of 1,860)	208	\$94,924	\$456.37	11.2%
Borrowers (of 2,848 Ag Decision Makers)	223	\$94,924	\$425.67	8.7%
Type of Debt	Number with an Outstanding Balance	Value (USD)	Composition of Those With a Balance (Sum=100%)	
Cash	223	\$94,924	100.0%	
In-kind	0	0	0%	
Type of Financing				
Debt	222	\$94,838	99.9%	
Non-debt	1	\$86	0.1%	
Demographic Disaggregates	Number with an Outstanding Balance	Value (USD)	Composition of Those with a Balance (Sum=100%)	Average Balance per Borrower (USD)
Size of Firm				

K26/Reporting 5: Value of the outstanding balance on agriculture loans of USG-assisted households by type of debt and financing type				
None employed	82	\$18,931	19.9%	\$231
Micro-enterprise (1-10 employees)	46	\$22,393	23.6%	\$487
Small (11-49 employees)	69	\$34,708	36.6%	\$503
Medium (50-249 employees)	24	\$14,027	14.8%	\$584
Large (>250 employees)	2	\$4,866	5.1%	\$2,433
Age				
15 to 29 (Youth)	37	\$12,398	13.1%	\$335
30 to 45	103	\$43,705	46.0%	\$424
46 to 59	70	\$34,640	36.5%	\$495
Above 59	13	\$4,180	4.4%	\$322
Sex				
Female	140	\$32,552	34.3%	\$233
Male	83	\$62,371	65.7%	\$751
Total	223	\$94,924		

5.6 Additional Tables

TABLE 25: OWNERSHIP OF ASSETS BY HH HEAD AND DAG AND NON-DAG GROUPS

Assets	Male headed HH (n=1447)	Female headed HH (n=413)	Non-Disadvantaged (n=843)	Disadvantaged (n=1017)	Total
Hand tools	100%	100%	100%	100%	100%
Agri Land	97%	97%	98%	97%	97%
Livestock	93%	88%	91%	92%	92%
Non mechanized	62%	49%	52%	65%	59%
Poultry	54%	56%	38%	67%	54%
Mechanized	20%	11%	20%	16%	18%
Building	99%	99%	99%	99%	99%
Mobile	96%	94%	96%	95%	96%
Smartphone	54%	58%	57%	53%	55%

TABLE 26: SHARE OF INCOME SOURCE BY DAG AND NON-DAG GROUP

Income source	Non-DAG group				DAG group			
	HHs	% HH	Total Income (USD)	Average income (USD)	HHs	% HH	Total Income (USD)	Average income (USD)
Own crop sales	345	41%	\$ 122,335.5	\$ 354.6	401	39%	\$ 83,974.7	\$ 209.4
Own livestock sales (planned, not under stress)	215	26%	\$ 78,537.9	\$ 365.3	234	23%	\$ 57,292.6	\$ 244.8
Agricultural wage labor	145	17%	\$ 22,137.5	\$ 152.7	250	25%	\$ 41,970.3	\$ 167.9
Non-agricultural wage labor	195	23%	\$ 132,680.5	\$ 680.4	470	46%	\$ 376,863.9	\$ 801.8
Fish sales	15	2%	\$ 3,304.8	\$ 220.3	15	1%	\$ 2,975.2	\$ 198.3
Agricultural business, trade, or self-employment	33	4%	\$ 22,983.7	\$ 696.5	39	4%	\$ 29,355.4	\$ 752.7
Non-agricultural business, trade, or self-employment	168	20%	\$ 204,928.2	\$ 1,219.8	224	22%	\$ 281,346.4	\$ 1,256.0
Rental of land	49	6%	\$ 12,988.5	\$ 265.1	23	2%	\$ 6,142.7	\$ 267.1
Rental of house or rooms	58	7%	\$ 40,971.3	\$ 706.4	35	3%	\$ 11,511.5	\$ 328.9
Cash from HH members working in another country (foreign remittances)	195	23%	\$ 437,442.7	\$ 2,243.3	238	23%	\$ 470,873.6	\$ 1,978.5
Government allowances (senior citizen allowance, maternity allowance, etc.)	207	25%	\$ 121,661.5	\$ 587.7	207	20%	\$ 95,922.7	\$ 463.4
Salaried work	217	26%	\$ 465,808.6	\$ 2,146.6	193	19%	\$ 358,425.7	\$ 1,857.1
Sale of land and or assets (not under stress)	27	3%	\$ 353,687.7	\$ 13,099.5	18	2%	\$ 46,379.3	\$ 2,576.6

TABLE 27: NUMBER OF SOURCES OF HOUSEHOLD INCOME BY DAG AND NON-DAG

Sources	Non-DAG		DAG		Total
	Number	Percent	Number	Percent	
Single source	102	12%	111	11%	213
Two sources	209	25%	266	26%	475
Three sources	250	30%	302	30%	552
Four sources	170	20%	204	20%	374
Five or more sources	112	13%	134	13%	246
Total	843	100%	1,017	100%	1,860

TABLE 28: SUAAHARA-II RELATED RESULTS

Heard of Suaahara before?	Number	Percent
Yes	569	31.6%
No	1227	66.0%
Not able to interview primary female decision maker	64	3.4%
Total	1,860	100%
Suaahara staff member ever visited home?	Number	Percent
Yes	202	35.5%
No	360	63.3%
Don't know	7	1.2%
Total	569	100%
FCHVs visiting home	Number	Percent
Yes	314	56.1%
No	233	41.6%
Don't know	3	0.5%
Respondent is FCHV herself	19	3.4%
Total	569	100%
Heard of "Bhanchin Ama"?	Number	Percent
Yes	373	65.6%
No	193	33.9%
Don't know	3	0.5%
Total	569	100%
Listened to "Bhanchin Ama"?	Number	Percent
Yes	306	82.0%
No	65	17.0%
Don't know	2	1.0%
Total	373	100%
Owned mobile phone	Number	Percent
Yes	468	82.3%
No	101	17.8%
Total	569	100%
Received nutrition related messages in their phones	Number	Percent

Yes	22	4.7%
No	373	79.7%
Don't know	73	15.6%
Total	468	100%

TABLE 29: EXPOSURE TO SHOCKS/STRESSORS BY HH CHARACTERISTICS

HH characteristics	Experiencing shocks/stressor in last 12 months	
	n	%
Province		
Province 3	324	27.6
Province 5	465	39.6
Province 6	221	18.8
Province 7	163	13.9
Eco Region		
Hills	727	62.0
Terai	446	38.0
Sex of HH head		
Male	919	78.3
Female	254	21.7
Caste/Ethnicity		
Brahmin/Chhetri	448	38.2
Dalit	138	11.8
Janajati	455	38.8
Muslim	27	2.3
Newar	48	4.1
Tarai/Madhese	57	4.9
Total	1,173	100.0

TABLE 30: FIRST AND SECOND MOST AFFECTED HH MEMBERS BY SHOCKS/STRESSORS IN LAST 12 MONTHS DISAGGREGATED BY AGE AND SEX

Background characteristics of individuals	First most affected		Second most affected	
	%	n	%	n
Age				
Less than 15	1.1	19	2.1	39
15-29	10.4	183	18.8	355
30-44	40.2	708	41.2	777
45-59	32.7	577	27.4	517
60+	15.7	276	10.5	197
Sex				
Male	63.1	1,113	41.4	780
Female	36.9	650	58.6	1,105

TABLE 31: SEVERE OR EXTREMELY SEVERE IMPACT ON INCOME AND FOOD DUE TO EXPOSURE TO SHOCKS AND STRESSORS IN LAST 12 MONTHS DISAGGREGATED BY INCOME LEVEL

Type of Shocks/Stressor	Income level: Less than \$1.9 per day			Income level: More than \$1.9 per day		
	HHs with severe or extremely severe impact on income	Total exposed HH	HHs with severe or extremely severe impact on income (%)	HHs with severe or extremely severe impact on income	Total exposed HH	HHs with severe or extremely severe impact on income (%)
Livestock Disease	69	129	53%	150	307	49%
Severe illness	89	121	74%	173	267	65%
Insects affecting crops	45	105	43%	125	321	39%
Disease affecting crops	45	99	45%	109	271	40%
Too little rain	31	84	37%	90	219	41%
Freezing temperatures	22	54	41%	56	179	31%
Unable to sell at fair price	20	46	43%	92	209	44%
Too much rain	20	44	45%	71	159	45%
Food prices	17	42	40%	47	128	37%
Lack of Access-Crop Inputs	7	33	21%	33	95	35%
Land erosion/ Landslide	8	27	30%	20	47	43%
Lack of Access-Livestock Inputs	10	26	38%	32	63	51%
Death	21	25	84%	44	65	68%
Loss of land	9	20	45%	32	57	56%
Theft	3	5	60%	12	20	60%
Livestock Theft	1	4	25%	2	8	25%
Crop Theft	1	3	33%	12	18	67%
Earthquake	0	2	0%	1	3	33%

Type of Shocks/Stressor	Income level: Less than \$1.9 per day			Income level: More than \$1.9 per day		
	HHs with severe or extremely severe impact on food	Total exposed HH	HHs with severe or extremely severe impact on food (%)	HHs with severe or extremely severe impact on food	Total exposed HH	HHs with severe or extremely severe impact on food (%)
Livestock Disease	32	129	25%	67	307	22%
Severe illness	46	121	38%	92	267	34%
Insects affecting crops	42	105	40%	74	321	23%
Disease affecting crops	34	99	34%	63	271	23%
Too little rain	23	84	27%	69	219	32%
Freezing temperatures	9	54	17%	35	179	20%
Unable to sell at fair price	15	46	33%	39	209	19%
Too much rain	14	44	32%	58	159	36%
Food prices	15	42	36%	38	128	30%
Lack of Access-Crop Inputs	7	33	21%	23	95	24%
Land erosion/ Landslide	6	27	22%	18	47	38%
Lack of Access-Livestock Inputs	6	26	23%	17	63	27%
Death	18	25	72%	28	65	43%
Loss of land	8	20	40%	22	57	39%
Theft	1	5	20%	5	20	25%
Livestock Theft	1	4	25%	1	8	13%
Crop Theft	2	3	67%	8	18	44%
Earthquake	0	2	0%	1	3	33%

TABLE 32: COPING STRATEGIES APPLIED BY HHS EXPERIENCING SHOCKS AND STRESSORS, DISAGGREGATED BY INCOME LEVEL

Type of coping strategy	Coping strategies	<\$1.9 per day (n=324)		>\$1.9 per day (n=849)	
		Number	Percent	Number	Percent
Positive strategies	Increased Wage Labor	173	53%	376	44%
	Remittances	45	14%	157	18%
	Returned from Overseas	14	4%	48	6%
	Neighbor Shared Food	75	23%	125	15%
	Food Aid	23	7%	58	7%
Neutral or Potentially Negative Strategies	Borrowed Cash (other HH)	145	45%	334	39%
	Borrowed Cash (informal group)	87	27%	228	27%
	Bought on Credit	132	41%	247	29%
	Migrated	41	13%	82	10%
	Used HH Savings	153	47%	498	59%
Negative strategies	Sold Livestock	68	21%	210	25%
	Sold Land	15	5%	45	5%

	Sold Other Asset	15	5%	34	4%
	Harvested Early	32	10%	43	5%
	Ate Less or Cheaper	73	23%	102	12%
	Took Child out of School	17	5%	25	3%
	None applied	38	12%	129	15%

TABLE 33: EXPECTATIONS ABOUT SOCIAL CAPITAL BY DAG AND NON-DAG GROUPS

Expected Sources of Support	Type of Social Capital	Non-DAG (n=843)		DAG (n=1017)	
		Number	Percent	Number	Percent
HHs That Expect They Will Receive Support to:					
Relatives living in your community	Bonding	722	86%	860	85%
Relatives living outside your community	Bridging	660	78%	757	74%
Non-relatives living in your community	Bonding	636	75%	703	69%
Non-relatives living outside your community	Bridging	346	41%	370	36%
HHs That Expect They Will Give Support to:					
Relatives living in your community	Bonding	799	95%	965	95%
Relatives living outside your community	Bridging	746	88%	879	86%
Non-relatives living in your community	Bonding	744	88%	854	84%
Non-relatives living outside your community	Bridging	565	67%	601	59%

TABLE 34: OWNED AND LEASED LAND AREA BY ZOI (IN HECTARES)

ZOI group	Type of land	HHs	Total land (Ha)	Average land (Ha)
ZOI 1	Owned	1311	570.52	0.44
	Leased	443	230.73	0.52
	Total	1350	801.26	0.59
ZOI 2	Owned	487	176.88	0.36
	Leased	157	40.31	0.26
	Total	500	217.19	0.43
Total Land Area	Owned	1798	747.40	0.42
	Leased	600	271.05	0.45
	Total	1850	1018.45	0.55

TABLE 35: WATER AVAILABILITY AND ITS VARIATION FOR IRRIGATION

Water availability and variation	Number of HHs	Percent
Access to irrigation (year-round) (out of total HH=1,860)	812	44%
Amount of water available for irrigation changed over the last 5 years		
Yes	387	48%
No	407	50%
Don't know	18	2%
Total	812	100%
Change in the amount of water availability over the last 5 years		
Big increase	33	9%
Moderate increase	79	20%
Moderate decrease	239	62%
Big decrease	36	9%
Total	387	100%
Variation in the water supply (highs and lows) for irrigation from year to year changed		
Yes	271	70%
No	111	29%
Don't know	5	1%
Total	387	100%
Amount of variation in the water supply (highs and lows) for irrigation from year to year changed		
Much more variable	40	15%
Somewhat more variable	73	27%
Somewhat less variable	151	56%
Much less variable	7	3%
Total	271	100%

APPENDIX V: KISAN OR GFSS INDICATORS AND CONTRIBUTION QUESTIONS

KISAN or GFSS Number Indicators		Project Components and Indicators	Contributing Question Numbers and Desegregation Levels Captured	Disaggregation Required as Shared by KISAN II Team with the MEL Activity
K4	Nepal 2.1.1-2 EG.3.2-24	Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance (IM-Level)	Land based technologies: Questions 602A, 603A, 604A, 605A, 606A Non-land-based technologies: Questions 602B, 603B, 604B, 605B, 606B Disaggregation: -Every next column of technology applied (205, 204), 105, 601A & 601B, 707	Disaggregation: - Age, Sex Caste/Ethnicity, Management practice or technology type, , Size of producers, Type of commodities
K5	Custom 1	Average number of improved management practices or technologies applied per household with USG assistance.	Land based technologies: Questions 602A, 603A, 604A, 605A, 606A Non-land-based technologies: Questions 602B, 603B, 604B , 605B, 606B Disaggregation: - 501A, 502B, 502C 601A & 601B	Disaggregation: - Type of commodities
K6	GNDR-2	Percentage of female participants in USG assisted programs designed to increase access to productive resources	Indicator EG.4.2-7: (1307, 1310, 1404, 1407) Note: females will be identified from 13081405 and 1409	Disaggregation possible. But KISAN M&E plan says no disaggregation required.
K7	New YOUTH-3	Percentage of participants in USG-assisted programs designed to increase access to productive economic resources who are youth (15-29) (IM-Level)	Indicator EG.4.2-7: (1307, 1310, 1404, 1407) Note: youths (15-29) will be identified from 1308, 1405 and 1409	Disaggregation possible. But KISAN M&E plan says no disaggregation required.

KISAN or GFSS Number Indicators		Project Components and Indicators	Contributing Question Numbers and Desegregation Levels Captured	Disaggregation Required as Shared by KISAN II Team with the MEL Activity
K8	Nepal 2.1.1-I EG.3.2-25	Number of hectares under improved management practices or technologies with USG assistance (IM-Level)	Land based technologies: Questions 602A, 603A, 604A, 605A, 606A Disaggregation: - 607A (105, 204, 205), 601A, 501A, 502B, 502C, 701-705	Disaggregation: - Age, Caste/Ethnicity, Management practice or technology type, Sex, Type of commodities, Type of hectare
K9	Reporting I	Total farm-level volumes (MT) produced of targeted agricultural commodities with USG assistance (<i>rice, maize, lentil, vegetables, goats</i>)	505A, 506B, 505C Disaggregation: - 514A, 515B, 514C (105, 204, 205), 501A, 502B, 502C	Disaggregation: - Age, Caste/Ethnicity, Sex, Type of commodities, Type of Vegetables
K10	New EG.3-10, -11, -12	Yield of targeted agricultural commodities among program participants with USG assistance (<i>rice, maize, lentil, vegetables, goats</i>) (IM-Level) (MT/ha)	505A /504A 506B/505B 507C/505C Disaggregation: - 514A, 515B, 514C (105, 204, 205), 501A, 502B, 502C 707, 701-705, 515C	Disaggregation: - Age, Caste/Ethnicity, Sex, Type of commodities, Type of Vegetables, Farm size, Production system
K12	New EG.3.2-28	Number of hectares under improved management practices or technologies that promote improved climate risk reduction and/or natural resources management with USG assistance (IM-Level)	602A, 603A, 604A, 605A, 606A 6A. VIII, 6A. IX Disaggregation: - 607A & 607B (105, 204, 205), 601A, 701-705	Disaggregation: - Age, Caste/Ethnicity, Management practice or technology type, Sex, Type of commodities, Type of hectare

KISAN or GFSS Number Indicators		Project Components and Indicators	Contributing Question Numbers and Desegregation Levels Captured	Disaggregation Required as Shared by KISAN II Team with the MEL Activity
K13	Custom 1 Nepal 2.1.1- 2 EG.3.2-24 Disaggregate	Average number of climate-smart technologies or practices applied per farmer with USG assistance.	602A, 603A, 604A, 605A, 606A 6A. VIII, 6A. IX Disaggregation: - 601A	Disaggregation: -Climate adaptation technology type
K17	New EG.3.2-26	Value of annual sales of farms (and firms) receiving USG assistance (<i>rice, maize, lentil, vegetables, goats</i>)	512A, 513B, 512C Disaggregation: - 514A,515B,514C (105,204,205) 501A, 502B, 501C	Disaggregation: Age, Size of Firm, Type of commodities, Type of product, Type of Vegetables
K18	New Disaggregate Reporting 2	Volume of annual sales (MT) of farms receiving USG assistance (<i>rice, maize, lentil, vegetables, goats</i>)	511A, 512B, 511C Disaggregation: - 514A,515B,514C (205),707 501A ,502B,501C	Disaggregation: - Age, Size of Firm, Type of commodities, Type of product, Type of Vegetables
K19	Nepal 2.1.1- 2 EG.3.2-24 Disaggregate	Number of Individuals in the agriculture system who have applied improved management practices or technologies with USG assistance – <i>related to marketing and distribution</i>	602B, 603B, 604B, 605B, 606B 6B. II Disaggregation: -607B (105,204, 205), 601B, 707	Disaggregation: - Age, Caste/Ethnicity, Management practice or technology type, Sex, Size of producers, Type of commodities, Type of Individuals, Value chain actor type
K20	Custom 2	Percentage of USG-assisted farmers accessing information on improved technologies and practices through improved ICT channels or content	602B, 603B, 604B, 605B, 606B 6B. I Disaggregation: -601B, 607B (204)	Disaggregation: -ICT Technology type, Sex

KISAN or GFSS Number Indicators		Project Components and Indicators	Contributing Question Numbers and Desegregation Levels Captured	Disaggregation Required as Shared by KISAN II Team with the MEL Activity
K23	New EG.3.2-27	Value of agriculture-related financing (USD) accessed as a result of USG assistance (IM-Level)	1307, 1310 906,909 Disaggregation: - 1308(204,205), 707, 1302, 1303, 1304	Disaggregation: -Age, Sex, Size of Firm, Type of debt, Type of Financing accessed
K24	New EG.4.2-7	Number of individuals participating in group-based savings, microfinance or lending programs with USG assistance (IM-Level)	1401 & 1402 Disaggregation: - 1405 & 1410(204, 205) 1409, 1403, 1406	Disaggregation: - Age, Sex, Type of financial product
K25	Reporting 4	Value of household savings deposits of USG-assisted smallholders	1404 Disaggregation: - 1405(204, 205), 1403	Disaggregation: - Age, Sex, Type of financial product
K26	Reporting 5	Value of the outstanding balance on agriculture loans of USG-assisted households	1308 Disaggregation: - 1308(204, 205), 707, 1303, 1304	Disaggregation: - Age, Sex, Size of Firm, Type of debt, Type of Financing accessed
K31	Nepal 2.1.1-2 EG.3.2-17 Disaggregate	Number of farmers and others who applied improved management practices or technologies– <i>on food grading or safety</i>	6B.102-6B.106 6B.III Disaggregation: - 6B.107, 6B.101, 402,	Disaggregation: - Age, Caste/Ethnicity, Management practice or technology type, Sex, Size of producers, Type of commodities, Type of Individuals, Value chain actor type

KISAN or GFSS Number Indicators		Project Components and Indicators	Contributing Question Numbers and Desegregation Levels Captured	Disaggregation Required as Shared by KISAN II Team with the MEL Activity
K41	Custom 5	Quantity of nutrient-rich value chain commodities produced by direct beneficiaries with USG assistance that is set aside for home consumption (MT)	508B Disaggregation: - 502B (okra, cabbage, cauliflower, spinach, bitter gourd, carrot, Broccoli, beans, capsicum, pumpkin and goats)	Disaggregation: -Type of vegetables (nutritious)
K46	EG.11-6 Nepal 2.1.1-2 EG.3.2-17 Disaggregate	Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance	602A, 603A, 604A, 605A, 606A 6A. VIII, 6A. IX Disaggregation: - 601A	Disaggregation: -Climate adaptation technology type,

APPENDIX VI: KISAN II BASELINE QUESTIONNAIRE

FARMER INTERVIEW FORM

KISAN FY2018 Survey

2 September 2018

Baseline information for 12 months period: Bhadra 01, 2074 to Shrawan 31, 2075

INFORMED CONSENT

Namaste! My name is [enumerator name] from Full Bright Consultancy. We are conducting a survey for the KISAN II project covering the 12-month period from Bhadra 01, 2074 to Shrawan 31, 2075. You have been selected to participate in this interview, along with 1,860 other households in 22 districts. These questions will take approximately 2.5 hours to complete and your participation is entirely voluntary. If you agree to participate, you can choose to stop at any time or skip any questions you do not want to answer. Your answers will be completely confidential; we will not share information outside of the research team. After entering your answers into a database, we will remove information that links your answers to your name.

Do you consent to this interview? (1) Yes, (2) No. Thank you for the opportunity to speak with you. If you have any questions about this study, please contact:

Manjul K. Manandhar

Full Bright Consultancy (Pvt.) Ltd.

316 Baburam Acharya Sadak,

Sinamangal, Kathmandu

Tel: +977 1 4468749, 4468118

Fax: +977 1 4465604

Email: fbc@mos.com.np

URL : <http://www.fbc.com.np>

SURVEY TEAM AND INTERVIEW DATE & TIME

Session		Status of interview	Note in case of unsuccessful interview	Interview date and time	
Visits by Interviewer (day/month/year and outcome): Note: Second and third row applicable if interview was not successful in first visit/attempt.	1st: __/__/__			Interview Date	__/__/__
	2nd: __/__/__			Interview Start Time	__:__
	3rd: __/__/__			Interview End Time	__:__
Status of interview codes: 01= Refused interview 03= No household member at home 05= Postponed/Unavailable 07= Too ill to respond/cognitively impaired 96= Other (specify): 02= Fixed time for next visit 04= Entire household absent for extended period of time 06= Dwelling vacant/address not a dwelling 08= Partially complete					

I. BASIC INFORMATION

101. Respondent Name	(First Name)	(Last Name)	102. Mobile		
103. Name of HH Head (ask if respondent is not the HH Head)	(First Name)	(Last Name)	104. Mobile		
105. Caste/ Ethnicity	_____		Code Options (Caste/ethnicity) 01=brahmin/chhetri, 02=dalits, 03=janajatis, 04=muslims, 05=newars, 06=tarai/madhesi, 07=others		
106. Name and code of province	_____	☐ ☐	107. Name and code of district	_____	

108. Name and code of Municipality/Gaunpalika	-----		109. Ward no.		
110. Village/Tole name	-----				

2. HOUSEHOLD ROSTER

201	202	203	204	205	206	207	208	209	210	211	212	213
Line No	List names of people who are currently living in this household (always start with HH head)	Relationship with HH head? (see codes below)	Gender 01 = male 02 = female 03 = third gender	What is this person's completed age in years? (If age is less than 1 year then enter 0)	What is the highest level of education this person has completed? (only ask for above 5 years, see codes below)	What is this person's primary occupation? (only ask for 5 to 59 age, see codes below)	Marital Status (only for more than 10 years of age)	Is this member currently living in this household?	Did this person participate in Business Literacy Program 2015-16? (only ask for 15 to 59 age) 01=yes, 02=no	Did this person return from abroad (including India) in the last 12 months? (only ask for 15 to 59 age) 01=yes, 02=no	Which country did he/she return from? 1=India, 2=Other	How many months total did this person spend in that country in the last 12 months?

	Relationship with HH Head			Education Codes		Marital Status Codes	Currently living in this HH codes			Primary Occupation Codes		
	01= Head 02 = Wife or husband 03 = Son or daughter 04 = Son-in-law or daughter-in-law 05 = Grandchild 06 = Parent 07 = parent-in-law 08 = Brother or sister 09 = Brother-in-law or sister-in-law 10 = Niece/Nephew 11 = Other relatives 12 = Not related			01 = Illiterate and never attended school 02 = Literate and never attended school 03 = primary (class 1-5) 04 = secondary (class 6-10) 05 = higher secondary (class 11-12) 06 = graduate and above 07 = NA		01= Married 02= Single 03= Separated 04= Divorced 05= Widow/ Widower 06= NA	01= Yes 02= No, living outside Nepal 03= No, living outside this district			01= Student 02 = Housewife 03 = Government employee Private service 04 =Private employee 05 = Wage labour 06 = Self-employed (business) 07 = Agribusiness (self-employed) 08 = Unemployed 09 = Teacher 10 = Other (specify) 11 = Not Applicable (<5 years)		

3. PRIOR SUPPORT FOR AGRICULTURE

SN	QUESTIONS	RESPONSE	SKIP
304	Did you receive support on rice production or sales in the last 12 months (Bhadra 01, 2074 to Shrawan 31, 2075)?	1=Yes 2=No	->306
305	From which organization/project did you receive support? (open ended, record only one main organization)	_____	
306	Did you receive support on maize production or sales in the last 12 months?	1=Yes 2=No	->308

307	From which organization/project did you receive support? (open ended, record only one main organization)	_____	
308	Did you receive support on lentil production or sales in the last 12 months?	1=Yes 2=No	->310
309	From which organization/project did you receive support? (open ended, record only one main organization)	_____	
310	Did you receive support on vegetable production or sales in the last 12 months?	1=Yes 2=No	->312
311	From which organization/project did you receive? (open ended, record only one main organization)	_____	
312	Did you receive support on goat production or sales in the last 12 months?	1=Yes 2=No	->Next section
313	From which organization/project did you receive support? (open ended, record only one main organization)	_____	

4. AGRICULTURE LAND UNITS, OWNERSHIP, AND IRRIGATION

QN	QUESTION	RESPONSE	SKIP LOGIC (GO TO)
401	What is the land unit in this area?	1=Ropani 2=Kattha	
402	In the last 12 months (Bhadra 01, 2074 to Shrawan 31, 2075), of total cultivated land, what portions are: i) owned versus leased and (Kat/Rop)	Owned Leased Upland Lowland	

	ii) upland versus lowland? (Kat/Rop)			
403	Do you currently have access to an irrigation system that delivers water to your farm year-round?	1=Yes 2=No		->If no, skip to next section
404	How many Kat/Rop can you irrigate year round?			
405	Where does the water for irrigation come from (what is the water source)?	1=Spring or river managed by a Community Forest Group 2=Other spring or river 3=Reservoir, lake, or pond 4 =Groundwater (well) 5=Other (Specify)		
406	Has the amount of water available for irrigation changed over the last 5 years? 1=Yes, 2=No, 3=Don't Know	1=Big increase 2=Moderate increase 3=Moderate decrease 4=Big decrease		
407	Has the amount of variation in the water supply (highs and lows) from year to year changed? 1=Yes , 2=No, 3=Don't Know	1=Much more variable 2=Somewhat more variable 3=Somewhat less variable 4=Much less variable		
408	How is water for irrigation transported from the source to your farm? (Only one answer possible)	1= Water source on my land 2=Large irrigation canal/pipe constructed by government 3=Group-managed irrigation canal/Nahar 97=Other (specify)		

5A. PRODUCTION, CONSUMPTION, LOSSES AND SALES (CEREALS)

Let us review your cereals production from Bhadra 01, 2074 to Shrawan 31, 2075.

501A	502A	503A	504A	505A	506A	507A	508A	509A	510A	511A	512A	513A	514A	515A
Cereal/ Lentil/ Crop Did you harvest any? Yes=1, No=2 (go to next)	Seed Type What type of seed did you use?	Seed Variety Name (open- ended or don't know)	Production		Consumption (Kg)					Sales			Decision- making Who in your HH made the decision to plant this crop? (select from HH roster)	Income Use How did you use the income from selling [cereal/lentil/ crop]? (multiple answers possible, see codes)
			Area Planted (K/R)	Total Production (Kg)	Used for seed (kg)	Set aside for home consump- tion (kg)	Post harvest losses (kg)	Other uses (Puja, gift, animal feed) (kg)	In store (kg) (exclude storage of more than 1 year ago)	Quantity Sold (Kg)	Value of Sales (Rs)	Avg. Unit Price (Rs/Kg)		
Rice	1=Improved													
	2=Hybrid													
	3=Local													
Maize	1=Improved													
	2=Hybrid													
	3=Local													
Lentil	1=Improved													
	2=Hybrid													
	3=Local													

Codes for 515A:

01 = Buy vegetable/fruits for consumption

02 = Buy meat for consumption
03 = Buy eggs for consumption
04 = Buy dairy products for consumption
05 = Buy other food items for consumption
06 = Buy clothes
07 = Buy school supplies/pay fees
08 = Buy medicine
09 = Buy family planning products
10 = Buy WASH-related supplies (pan, soap, etc.)
11 = Seek health care
12 = Savings
96 = Other (specify)_____

5B. PRODUCTION, CONSUMPTION, LOSSES AND SALES (VEGETABLES)

Let us review your vegetable production from Bhadra 01, 2074 to Shrawan 31, 2075.

501B	Did you harvest 20 Kgs or more of any single type of vegetable from Bhadra 01, 2074 to Shrawan 31, 2075?									I=Yes, 2=No (Skip to 5C)				
502B	503B	504B	505B	506B	507B	508B	509B	510B	511B	512B	513B	514B	515B	516B
Vegetables Did you harvest 20 kgs or more of [vegetable]?	Seed Type What type of seed did you use?	Seed Variety Name (open ended or don't know)	Production		Consumption (KG)					Sales			Decision-making	Income Use
			Area Planted (K/R)	Total Production (Kg)	Used for seed	Set aside for home consumption	Other uses (puja, gift, animal feed)	Post harvest losses	In store (Kg) (exclude storage of more than 1 year ago)	Quantity Sold (Kg)	Value of Sales (Rs)	Avg. Unit Price (Rs/Kg)	Who in your household made the decision to plant this crop? (select from HH roster)	How did you use the income from selling vegetables? (multiple answers possible, see codes)
Capsicum	1=Improved													Ask once for all vegetables
	2=Hybrid													
	3=Local													
Peas	1=Improved													
	2=Hybrid													
	3=Local													
Radish	1=Improved													
	2=Hybrid													
	3=Local													
Broccoli	1=Improved													
	2=Hybrid													
	3=Local													

Carrot	1=Improved													
	2=Hybrid													
	3=Local													
Cauliflower	1=Improved													
	2=Hybrid													
	3=Local													
Cabbage	1=Improved													
	2=Hybrid													
	3=Local													
French Beans	1=Improved													
	2=Hybrid													
	3=Local													
Tomatoes	1=Improved													
	2=Hybrid													
	3=Local													
Onions	1=Improved													
	2=Hybrid													
	3=Local													
Cucumber	1=Improved													
	2=Hybrid													
	3=Local													
Chilli	1=Improved													

	2=Hybrid														
	3=Local														
Bottle Gourd	1=Improved														
	2=Hybrid														
	3=Local														
Long Beans	1=Improved														
	2=Hybrid														
	3=Local														
Eggplant	1=Improved														
	2=Hybrid														
	3=Local														
Sponge Gourd	1=Improved														
	2=Hybrid														
	3=Local														
Okra	1=Improved														
	2=Hybrid														
	3=Local														
Bitter Gourd	1=Improved														
	2=Hybrid														
	3=Local														
Pumpkin, Squash, and Zucchini	1=Improved														
	2=Hybrid														

	3=Local													
Spinach and Green Vegetables	1=Improved													
	2=Hybrid													
	3=Local													
Other vegetables	1=Improved													
	2=Hybrid													
	3=Local													

Codes for 516B:

01 = Buy grain for consumption

02 = Buy fruits for consumption

03 = Buy meat for consumption

04 = Buy eggs for consumption

05 = Buy dairy products for consumption

06 = Buy other food items for consumption

07 = Buy clothes

08 = Buy school supplies/pay fees

09 = Buy medicine

10 = Buy family planning products

11 = Buy WASH-related supplies (pan, soap, etc.)

12 = Seek health care

13 = Saving

96 = Other (specify)_____

5C. PRODUCTION, CONSUMPTION, LOSSES AND SALES (GOATS)

Let us review your goat rearing.

501C	Did you rear goats from Bhadra 01, 2074 to Shrawan 31, 2075?									Yes = 1, No = 2		(if no, go to section 6)	
502C	503C	504C	505C	506C		507C	508C	509C	510C	511C	512C	513C	514C
Production						Consumption			Sales		DM		
Which production system did you use? (single response)	Did you rear improved or local goats?	What breed of goat did you rear?	How many [type] goats did you rear from Bhadra 2074 to Shrawan 2075?	Number of goats currently available		Live weight of entire [type] goat herd offtake (Kg)*	Live weight of [type] goats consumed at home (Kg)	Live weight of [type] goats used for other purposes (gifted, puja, exchanged) (Kg)	Live weight of [type] theft or dead goats (Kg)	Live weight of [type] sold goats (Kg)	Value of Sales of [type] goats (Rs)	Avg. Unit Price (Rs/Kg) of [type] goats	Who in your HH made the decision to rear [type] goats? (select from HH roster)
See codes below	Improved												
	Local												
515C	How did you use the income from selling goats? (multiple answers possible, see codes)												
Production System Codes (refer to photos): 1=Agro-pastoral, extensive grassland 2=Small holder mixed livestock-crop 3=Urban/peri-urban 4=Intensive industrial													

*Display the total here for the enumerator to tally, should be equal to the sum of 508C, 509C, 510C, and 511C

Codes for 515C:

01 = Buy grain for consumption
 02 = Buy fruits for consumption
 03 = Buy meat for consumption
 04 = Buy eggs for consumption
 05 = Buy dairy products for consumption
 06 = Buy other food items for consumption
 07 = Buy clothes
 08 = Buy school supplies/pay fees
 09 = Buy medicine
 10 = Buy family planning products
 11 = Buy WASH-related supplies (pan, soap, etc.)
 12 = Seek health care
 13 = Saving
 96 = Other (specify)_____

QN	QUESTIONS	ANSWERS	SKIP LOGIC
515	Did you rear breeding bucks from Bhadra 01, 2074 to Shrawan 31, 2075?	Yes.....1 No.....2	→ Go to next section
516	How many breeding bucks did you rear?		
517	How much did you get paid total for providing buck breeding services from Bhadra 01, 2074 to Shrawan 31, 2075??		

6. Improved Technologies and Management Practices

What agriculture technologies and management practices have you used from Bhadra 01, 2074 to Shrawan 31, 2075? We will go through a list.

(Complete columns 6A.102 – 7A.107 for each technology and management practice used. For each row, count land units each time the technology or practice is applied to a crop during the assessment period. The area planted from Tables 5A and 5B is the maximum area technologies can be applied to per crop cycle. If applied to two vegetable cycles, count twice under vegetables).

6A. LAND BASED TECHNOLOGIES:

SN	601A	602A		603A		604A		605A		606A	607A
No.		Rice		Maize		Lentil		Vegetables		Goats	
										N/A	N/A
No.	Improved technologies and management practices (TMP)	How many K/R has [this TMP] been applied to for rice? (Area)	Who in your HH made the decision to use the [TMP]? (choose from HH roster)	How many K/R has [this TMP] been applied to for Maize? (Area)	Who in your HH made the decision to use the [TMP]? (choose from HH roster)	How many K/R has [this TMP] been applied to for Lentil? (Area)	Who in your HH made the decision to use the [TMP]? (choose from HH roster)	How many K/R has [this TMP] been applied to for Vegetables? (Area)	Who in your HH made the decision to use the [TMP]? (choose from HH roster)	How many goats has [this TMP] been applied to? (Number)	Who in your HH made the decision to use the [TMP]? (choose from HH roster)
6A.I Crop Genetics											
	Improved seed										
	Certified seed										
	Hybrid seed										
6A.II Cultural Practices											
	Raise bed farming										
	Improved nursery management										

	and Seedling production										
	Improve stacking practices										
	Mulching										
6A.III Livestock Management											
	Improved livestock (goat) breeds and livestock health management										
	Improve goat shed management										
	Waste management (Jutto)										
	Fodder cultivation										
	Improve stall feeding management										
6A.IV Pest and Disease Management											
	Integrated pest management										
	Judicious use of pesticides										

	Safe use of pesticides										
	Use of Bio pesticides										
6A.V Soil-related Fertility and Conservation											
	Application of Lime and micronutrients										
	Improved fertilizer application practices										
	Fertigation										
	Use of liquid fertilizers										
	Soil PH assessment										
	Use of soil organic matter										
	Green manuring										
6A.VI Irrigation											
	Drip irrigation										
	Surface irrigation										
	Sprinkler irrigation										
	Irrigation schemes (other systems)										

6A.VII Agriculture Water Management - Non-irrigation-based											
	Water harvesting										
	Sustainable water use practices										
	Practices that improve water quality										
6A.VIII Climate Mitigation											
	Drip irrigation										
	Upgrades of agriculture infrastructure and supply chains (use of pollution reducing technologies such as SRI, zero tillage, afforestation and so on)										
6A.IX Climate Adaptation/ Climate Risk Management											
	Drought and flood resistant varieties										
	Short-duration varieties										
	Adjustment of sowing time										

	Crop / livestock Insurance										
	Diversification										
	Protective agriculture (Use of tunnels and plastic house)										
	Use of climate information in farming										

What other agriculture technologies and management practices have you used from Bhadra 01, 2074 to Shrawan 31, 2075? We will go through a list.

6B. NON-LAND BASED TECHNOLOGIES (yes/no questions)

	601B	602B		603B		604B		605B		606B	607B
NO.	Improved technologies and management practices	Did you apply in rice	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in maize	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in lentil	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in vegetables	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in goats	Who in your household made the decision to use [TMP]? (choose from HH roster)
6B.I ICT Technology Type											
	Extension Videos										
	SMS and Text Messaging										
	Mobile Application										
	Radio										
	Website										
	Others (Specify.....)										
6B.II Marketing and Distribution											
	Contract farming/ livestock technologies and practices										
	Improved input purchase										

	601B	602B		603B		604B		605B		606B	607B
NO.	Improved technologies and management practices	Did you apply in rice	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in maize	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in lentil	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in vegetables	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in goats	Who in your household made the decision to use [TMP]? (choose from HH roster)
	technologies and practices										
	Improved commodity sale technologies and practices										
	Improved market information system technologies and practices										
	Buyer's/seller's forum										
	Business promotion practices										
6B.III Post-harvest Handling and Storage											
	Sorting, grading and packaging										
	Sanitary and safety handling practices										
	Improved quality control										

	601B	602B		603B		604B		605B		606B	607B
NO.	Improved technologies and management practices	Did you apply in rice	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in maize	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in lentil	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in vegetables	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in goats	Who in your household made the decision to use [TMP]? (choose from HH roster)
	technologies and practices										
	Improved vegetable cooling practices										
	Use of grain pro bags										
	Use of plastic crates										
6B.IV Value-added Processing											
	Improved packaging practices and materials										
6B.V Other											
	Farm record keeping (such as log books)										
	Crop/ Livestock budgeting										

	601B	602B		603B		604B		605B		606B	607B
NO.	Improved technologies and management practices	Did you apply in rice	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in maize	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in lentil	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in vegetables	Who in your household made the decision to use [TMP]? (choose from HH roster)	Did you apply in goats	Who in your household made the decision to use [TMP]? (choose from HH roster)
	Calculated gross margins or return on investment										
	Improved capacity to repair agricultural/livestock equipment										
	Improved quality of agricultural/livestock products or technology										

7. LAND TYPE AND LABOR USED FOR PRODUCTION

Q/N	QUESTION: What type of land did you use for [crop] harvested from Bhadra 01, 2074 to Shrawan 31, 2075	ANSWERS	SKIP LOGIC
701	Rice	1=Crop land 2=Cultivated pasture 3=Rangeland 4=Conservation/protected area 5=Freshwater/aquaculture 6=N/A, rice not harvested 7=Others (specify_____)	->702
702	Maize	1=Crop land 2=Cultivated pasture 3=Rangeland 4=Conservation/protected area 5=Freshwater/aquaculture 6=N/A, maize not harvested 7=Others (specify_____)	->703
703	Lentil	1=Crop land 2=Cultivated pasture 3=Rangeland 4=Conservation/protected area 5=Freshwater/aquaculture 6=N/A, lentil not harvested 7=Others (specify_____)	->704
704	Vegetables	1=Crop land 2=Cultivated pasture 3=Rangeland 4=Conservation/protected area 5=Freshwater/aquaculture 6=N/A, vegetables not harvested 7=Others (specify_____)	->705
705	Goat	1=Crop land 2=Cultivated pasture 3=Rangeland 4=Conservation/protected area 5=Freshwater/aquaculture 6=N/A, goat not produced 7=Others (specify_____)	->706

706	<i>Did you hire someone who is not a household member for seasonal agriculture labor from Bhadra 01, 2074 to Shrawan 31, 2075?</i>	1=Yes 2=No	->next section
707	<i>If yes, how many people did you hire?</i>		

RESILIENCE MODULE

8. Household Ownership of Assets

QN		801	802
	Major Household Assets	<i>Do you own any of the [asset], either by yourself or jointly with someone else?</i>	<i>How many [asset] does your HH own?</i>
	Productive Assets	Circle all that apply: 1=self, 2=spouse/partner, 3=other HH member, 4=joint, 5=No, doesn't own any	Area/Number
a.	Agricultural land		Ropani/Kattha
b.	Building: barn, storage		
c.	Hand tools: hoe, spade/shovel, rake, sickle, pick axe, axe, pruning shears, etc.		
d.	Non-mechanized farm equipment: <i>halo</i> and <i>juwa</i> (bullock and plow), cart, wheelbarrow, etc.		
e.	Mechanized farm equipment: water pump (mechanical or motorized), tiller, tractor, corn sheller, motorized grain mill, tractor-drawn plow.		
f.	Large livestock (like: cattle, oxen, etc.)		
g.	Small livestock (like goats, pigs, sheep, etc.)		
h.	Poultry (chicken, duck, pigeon)		
	Other Assets		
i.	Mobile phone	If no, skip to k	
j.	A smart phone with access to the Internet		
k.	Jewelry (gold, gems)		

9. Proximity to Markets, Infrastructure, and Services

		901	902
No	Markets, Infrastructure, and Services	<i>How much time does it usually take you to travel to [place] from your home, using your typical mode of transportation?</i> 1=less than 30 minutes 2=30-60 minutes 3=1-2 hours 4=more than 2 hours 5=Not Applicable 99=DNK	<i>Are services available within 2 hours of walking distance or 5 km from your village/tole?</i> 1=Yes 2=No 99=Do not know
a.	Formal or informal institutions where you can borrow money		

b.	Institutions where you can make savings deposits		
c.	Markets/stores for buying seeds		
d.	Markets/stores/locations for buying fertilizer		
e.	Markets for selling agricultural products		
f.	Collection center (if applicable)		
g.	Agriculture extension services (GoN)		
h.	Agriculture extension services (Agrovet or other private sector)		
i.	Veterinary services (GoN)		
j.	Veterinary services (Agrovet or other private sector)		
k.	Pick-up point for transport of agricultural produce to market		
l.	Warehouse or storage facility		
m.	Schools - primary		
n.	Schools – secondary		
o.	Health facility		
p.	Electricity		
q.	Public telephone		
r.	Mobile phone signal		
s.	Local TV signal (local language)		
t.	National TV signal		
u.	Local FM radio signal (local language)		
v.	National radio signal		

10. Access to Agricultural Information and Services (by topic, source, and gender)

		1001	1002	1003	1004	1005
	Topics	Access	SMS	Sources	Gender	Influence
	In the last 12 months...	Did you or anyone in your HH receive any information, training or/and services related to [topic]? 1=Yes 2=No 99=Do not know (If 2 or 99, skip to next topic)	Did you receive any information related to [topic] by text message on your mobile phone? 1=Yes 2=No 99=Do not know	What are your most important sources of information or services related to [topic]? (multiple responses possible) 1=Agrovet 2=Miller/processor/feed industry 3=Other private sector firms 4=Government 5=NGO or project 6=Community group 7=Cooperative 8=Neighbor, friend, relative 9=Newspaper, radio, TV 10=Internet, SMS, mobile apps	Who in your HH usually accesses information or services about [topic]? 1=Female 2=Male	Did the information or service received influence any HH decisions? 1=Yes 2=No 99=Do not know
a.	Early warning for natural hazards (flooding, hail, landslide)					
b.	Long-term changes in weather patterns					
c.	Rainfall/weather prospects for coming growing season					
d.	Irrigation (infrastructure or water)					
e.	Animal health (e.g., disease, epidemic, prevention)					
f.	Crop health (e.g., insect, disease outbreaks, prevention)					
g.	Crop production practices/technologies					

		1001	1002	1003	1004	1005
	Topics	Access	SMS	Sources	Gender	Influence
	In the last 12 months...	<i>Did you or anyone in your HH receive any information, training or/and services related to [topic]?</i> 1=Yes 2=No 99=Do not know (If 2 or 99, skip to next topic)	<i>Did you receive any information related to [topic] by text message on your mobile phone?</i> 1=Yes 2=No 99=Do not know	<i>What are your most important sources of information or services related to [topic]?</i> <i>(multiple responses possible)</i> 1=Agrovet 2=Miller/processor/feed industry 3=Other private sector firms 4=Government 5=NGO or project 6=Community group 7=Cooperative 8=Neighbor, friend, relative 9=Newspaper, radio, TV 10=Internet, SMS, mobile apps	<i>Who in your HH usually accesses information or services about [topic]?</i> 1=Female 2=Male	<i>Did the information or service received influence any HH decisions?</i> 1=Yes 2=No 99=Do not know
h.	Livestock production practices (fodder, husbandry)					
i.	Seeds					
j.	Fertilizer					
k.	Post-harvest handling or food safety (including storage)					
l.	Linking to buyers or marketing					
m.	Transportation of produce to markets					
n.	Current market prices for agricultural products (crops or animals)					
o.	Financial services					

		1001	1002	1003	1004	1005
	Topics	Access	SMS	Sources	Gender	Influence
	In the last 12 months...	Did you or anyone in your HH receive any information, training or/and services related to [topic]? 1=Yes 2=No 99=Do not know (If 2 or 99, skip to next topic)	Did you receive any information related to [topic] by text message on your mobile phone? 1=Yes 2=No 99=Do not know	What are your most important sources of information or services related to [topic]? (multiple responses possible) 1=Agrovet 2=Miller/processor/feed industry 3=Other private sector firms 4=Government 5=NGO or project 6=Community group 7=Cooperative 8=Neighbor, friend, relative 9=Newspaper, radio, TV 10=Internet, SMS, mobile apps	Who in your HH usually accesses information or services about [topic]? 1=Female 2=Male	Did the information or service received influence any HH decisions? 1=Yes 2=No 99=Do not know
p.	Using mobile phones to access market information (SMS or app)					
q.	Nutrition and health information					
r.	Equal rights for women and men					
s.	Gender-based violence					
t.	Natural resource management					
u.	Sources of emergency support					

Following are examples of sources for Question 1003:

- Government: MOAD, palika, research farm, other offices.
- Community: groups, other farmer, cooperative, demo farm, teacher, relatives, friends, neighbors.

11. Number and Consistency of Agriculture Market Linkages

Consistency of Access		
QN	Question	Response
I101	During the past 12 months, were you ever unable to obtain <u>agricultural advice or information</u> because no local advisor was available?	1=Yes, 2=No, 99=Do not know
I102	During the past 12 months, were you ever unable to obtain <u>agricultural inputs</u> because no local supplier and/or inventory was available?	1=Yes, 2=No, 99=Do not know
I103	During the past 12 months, were you ever unable to <u>sell your produce</u> because no buyer/trader was available?	1=Yes, 2=No, 99=Do not know
I104	During the past 12 months, did your HH have interaction with Agrovet?	1=Yes 2=No (skip to I106)
I105	How many agrovet did your HH interact with during that period?	
I106	During the past 12 months, did you obtain/ buy high quality seeds or other inputs from agrovet?	1=Yes 2=No (skip to I109) 99=Do not know (skip to I109)
I107	Did the prices you pay for quality seeds or other inputs offered by the agrovet change compared to the previous year? Note: If respondent says “No”, Circle 2, if respondent says “Yes” probe if increased or decreased	1= prices increased 2= remained the same 3= prices decreased 98=do not know 97=not applicable
I108	How satisfied were you with the inputs and/or services provided by your agrovet in the past 12 months?	1=not satisfied 2=somewhat satisfied 3=satisfied 4=very satisfied 98 97
I109	During the past 12 months, did your HH have interaction with commercial buyers, traders, aggregators or wholesalers?	1=Yes 2=No (skip to I111)
I110	How many commercial buyers, traders, aggregators or wholesalers did your HH interact with during the past 12 months?	
I111	During the past 12 months, did your HH sell agricultural products to any commercial buyers, traders, aggregators or wholesalers?	1=Yes 2=No (skip to I114) 99=Do not know (skip to I114)

QN	Question	Response
I112	<i>During the past 12 months, did your total sales (in Rs) of agricultural products to commercial buyers, traders, wholesalers or aggregators change compared to the previous year?</i> Note: If respondent says “No”, Circle 2, if respondent says “Yes” probe if increased or decreased	1=increased 2=no, remained the same 3=decreased 98=do not know 97=not applicable
I113	<i>How satisfied are you with the sales/price you received from buyers/traders/aggregators or wholesalers in the past 12 months?</i>	1=not satisfied 2=somewhat satisfied 3=satisfied 4=very satisfied 98=do not know 97=not applicable
I114	<i>During the past 12 months, did you obtain high quality seeds or other inputs from the buyers, traders, wholesalers or aggregators?</i>	1=Yes 2=No (skip to next section) 99=Do not know (skip to next section)
I115	<i>During the past 12 months, did the prices you pay for quality seeds or other inputs from the buyers, traders, wholesalers or aggregators change compared to the previous year?</i> Note: If respondent says “No”, Circle 2, if respondent says “Yes” probe if increased or decreased	1= prices increased 2= remained the same 3= decreased 98=do not know 97=not applicable
I116	<i>How satisfied are you with the prices you pay for quality seeds and other inputs from buyers/traders/aggregators or wholesalers in the past 12 months?</i>	1=not satisfied 2=somewhat satisfied 3=satisfied 4=very satisfied 98=do not know 97=not applicable

12. Group Participation

QN	Question	Response
I201	<i>During the past 12 months, have you and other members of your household participated in any groups as group member/s?</i>	1=Yes 2=No (Go to section 13)
I202	<i>During the past 12 months, which groups have you and other members of your household participated in as group members?</i> (multiple answers possible)	1=Farmers group 2=Drinking water users group 3=Irrigation water users group 4=Mothers group 5=Savings and credit group 6=Cooperative group 7=Business literacy group 8=Community forest user group 9=Other groups (specify)

QN	Question	Response
I203	If “yes” to any groups under b, <i>who facilitated you or your household member to become a member of that/those group/s?</i>	1=KISAN project 2=Female Community Health Volunteer (FCHV) 3=Suaahara 4=Other 5=Do Not Know
I204	<i>During the past 12 months, which of these groups have you and other members of your household participated in more than half of all group meetings? (multiple answers possible)</i>	Only those groups identified in question b, plus: 8=None
I205	<i>During the past 12 months, have you or any members of your HH had a leadership position in a group; for example, Chair, Vice Chair, Treasurer or Secretary?</i>	1=Yes, male 2=Yes, female 3=No

Now I am going to ask questions about loans received from Bhadra 01, 2074 to Shrawan 31, 2075.

13. ACCESS TO FINANCE FROM FORMAL FINANCIAL INSTITUTIONS

1301	<i>Has any HH member received a loan (cash or kind) from a financial institution that is not a group?</i> (Note: if a single member of the household has taken loans from multiple institutions or multiple members of a household have taken loans from a single institution, sum all of them. In short, it is the total number of loans received during the period by the household.)					1=Yes (list all loans below) 2=No		
1302	1303	1304	1305	1306	1307	1308	1308	1310
<i>Type of Financial Institution</i> 1=Bank 2=Finance Co. 3=MFI 4=Cooperative 5=Other	<i>Type of debt</i> 1=Payable debt, 2=Non-payable debt support (equity, convertible debt, or leasing), 3=Both	<i>Type of loan:</i> 1=Cash, 2=In-kind, 3=Both	<i>Date loan received</i> (MM/DD/YY)	<i>Name of Institution</i>	<i>Value of Loan received</i> (NPR)	<i>Outstanding loan amount</i> (NPR)	<i>Name of borrower</i> (select from HH roster, single answers possible)	<i>How much of the loan amount was used for agriculture?</i> (NPR)

Now I'm going to ask about your household access to group-based savings and credit from Bhadra 01, 2074 to Shrawan 31, 2075.

14. ACCESS TO INFORMAL SOURCES OF SAVINGS AND CREDIT (GROUP BASED FINANCIAL SERVICES)

1401	Did your household deposit savings with a group within the past 12 months?			Yes=1, No=2		(If no, skip 1403-1405)		
1402	Did you borrow money from a group within the past 12 months?			Yes=1, No=2		(If no, skip 1406-1408)		
	1403	1404	1405	1406	1407	1408	1409	1410
Group Name	Savings			Loans			Documents	Join Date
	What type of group did your household deposit savings with? 1=Farmer group, 2=savings and credit group	How much did you deposit with this group? (NPR)	Who in the household made the savings deposits to this group? (choose from household roster, multiple answers possible)	What type of group(s) did your household borrow money from?	How much did you borrow from this group? (NPR)	Who in the HH borrowed money? (choose from HH roster, multiple answers possible)	Does the household member have a checkbook or passbook? Yes=1, No=2	Did this household member join the [group] before Bhadra 1, 2074? Yes=1, No=2

15. PERCEPTION OF CONSTRAINTS

What are the top three issues that prevent you from achieving higher yields or sales, starting with the most important? *(This is an open-ended question; do not prompt them by listing options. Listen to their response and circle one option for each row, based on their ranking. The farmer may use different words, select the option that most closely matches.)*

1501	#1 Constraint (most important):	(a) labor, (b) money/access to finance (c) irrigation water, (d) decision-making authority, (e) knowledge, (f) availability of quality inputs, (g) access to buyers, (h) natural disasters/weather, (i) prices for quality inputs, (j) prices received from buyers, traders, wholesalers, aggregators, (k) other (specify):
1502	#2 Constraint (next most important):	(a) labor, (b) money/access to finance (c) irrigation water, (d) decision-making authority, (e) knowledge, (f) availability of quality inputs, (g) access to buyers, (h) natural disasters/weather, (i) prices for quality inputs, (j) prices received from buyers, traders, wholesalers, aggregators, (k) other (specify):
1503	#3 Constraint (next most important):	(a) labor, (b) money/access to finance (c) irrigation water, (d) decision-making authority, (e) knowledge, (f) availability of quality inputs, (g) access to buyers, (h) natural disasters/weather, (i) prices for quality inputs, (j) prices received from buyers, traders, wholesalers, aggregators, (k) other (specify):

RM 2: EXPOSURE TO SHOCKS AND STRESSORS AND COPING STRATEGIES

For all tables in Section 2, interview the primary female decision-maker or whoever is most knowledgeable about the food consumption of household members. Enter into this section with caution (language from PBS questionnaire): This module contains questions that are sensitive. Ensure complete privacy before continuing with this module.

16. HOUSEHOLD FOOD INSECURITY EXPERIENCE SCALE (FIES)

No.	Questions: <i>During the past 30 days, was there a time when you or others in your household...</i>	Incidence (1=Yes, 2=No, 99=DNK)
I601	<i>...were worried you would not have enough food to eat because of a lack of money or other resources?</i>	
I602	<i>... were unable to eat healthy and nutritious food because of a lack of money or other resources?</i>	
I603	<i>... ate only a few kinds of foods because of a lack of money or other resources?</i>	
I604	<i>... had to skip a meal because of a lack of money or other resources to get food?</i>	
I605	<i>... ate less than you thought you should because of a lack of money or other resources?</i>	
I606	<i>... did not have food because of a lack of money or other resources?</i>	
I607	<i>... were hungry but did not eat because there was not enough money or other resources for food?</i>	
I608	<i>... went without eating for a whole day because of a lack of money or other resources?</i>	

17. Exposure to Shocks and Stressors and Severity

SN		1701	1702	1703	1704	1705	1706	1707
	Shocks and Stressors	Did your HH experience any shocks		Answer only for shocks experienced				
		during the last 3 years?	during the last 12 months?	How severe was the impact on your (HH) income ?	How severe was the impact on your HH food consumption ?	Who in your HH was most affected? (rank top 3)		
		1=Yes, 2=No, 3=DNK		1=Not affected, 2=Not severe, 3=Somewhat severe, 4=severe, 5=extremely severe, 99=DNK If "1" or "99" in 1703 and 1704, go to next topic		First most affected	Second most affected	Third most affected
	Extreme Weather and Natural Disasters							
a.	Too much rain							
b.	Too little rain							
c.	Land erosion/ Landslide							
d.	Freezing temperatures*							
e.	Earthquake*							
	Markets							
f.	Sharp increase in the price of food you buy							
g.	Not being able to access inputs or services for crops							
h.	Not being able to access inputs or services for livestock							

i.	Not being able to sell crops, livestock, or other products at a fair price							
	Disease and Death							
j.	Disease affecting crops							
k.	Insects affecting crops							
l.	Disease affecting livestock							
m.	Severe illness in the family							
n.	Death in the household							
	Loss and Theft							
o.	Loss of land							
p.	Someone stealing or destroying belongings							
q.	Theft of crops							
r.	Someone stealing animals							

Questions in Table 18 relate to the set of shocks and stressors experienced, and are not designed to be asked for each shock or stressor. Skip if the HH did not experience any shocks and stressors.

18. Coping Strategies in Response to a Shock or Stressor

SN		I 801
	Coping Strategies	<i>During the Past 12 months, which of these sources did you use in response to a shock or stressor?</i> 1=Yes, 2=No, 3=DNK
	Positive Strategies	
a.	Took up new wage labor or extended work hours	
b.	Cash from HH members working in another country (foreign remittances)	
c.	A HH member returned from overseas to help	
d.	Another HH in the community shared their food	
e.	Relief organization, local group, or project provided food aid	
	Neutral or Potentially Negative Strategies	
f.	Borrowed cash from another household	
g.	Borrowed cash from an informal group (farmer group or savings and credit group)	
h.	Bought food or other HH items on credit	
i.	A HH member migrated for foreign employment	
j.	Used HH savings	
	Negative Strategies	
k.	Sold livestock under stress	
l.	Sold land under stress	
m.	Sold another asset under stress	
n.	Harvested immature crops early for food	
o.	Ate less food or ate lower-cost food	
p.	Pulled one or more children out of school	
q.	Other (specify):	

19. Household income from various sources in past 12 months:

SN		I90I
	Income sources	What was your total household income from following sources in the past 12 months? (Amount NRS)
A	Own crop sales (except mentioned above)	
B	Own livestock sales (except goats)	
C	Agricultural wage labor	
D	Non-agricultural wage labor	
E	Fish sales	
F	Agricultural business, trade, or self-employment	
G	Non-agricultural business, trade, or self-employment	
H	Rental of land	
I	Rental of house or rooms	
J	Cash from HH members working in another country (foreign remittances)	
K	Government allowances (senior citizen allowance, maternity allowance, pension, etc.)	
L	Salaried work	
M	Sale of land and or assets	

20. HH Expectations About Social Capital

Table 20 focuses on *expectations about potential future help*, not actual experience.

SN		2001	2002	2003	2004
	Type of Social Capital	a) Bonding	b) Bridging	c) Bonding	d) Bridging
	Questions 1=Yes, 2=No, 3=DNK	Relatives living in your community?	Relatives living outside your community?	Non-relatives living in your community?	Non-relatives living outside your comm.?
a.	<i>Will your HH be able to lean on others for financial or food support during difficult times (shocks or stressors)?</i>				
b.	<i>Will the same people that you will be able to lean on</i>				

	during your difficult times also be able to lean on you for financial or food support during their difficult times (shocks or stressors)?				
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Table 21 focuses on actual experience.

21. HH Experience Using Social Capital

SN		2101	2102	2103
	Questions and Codes	If no, skip 2102 and 2103	1=Relatives living in your community 2=Relatives living outside your community 3=Non-relatives living in your community 4=Non-relatives living outside your community	1=farm labor 2=cash loan 3=food 4=housing 5=other
a.	During difficult times (shocks or stressors) experienced in the last 12 months, did your HH <u>receive</u> any assistance from relatives or community members?	1=Yes 2=No 3=Support not needed	From whom did you receive support?	What kind of support did you receive?
b.	In the last 12 months, did your HH <u>give</u> any assistance to relatives or community members experiencing difficult times (shocks or stressors)?	1=Yes 2=No 3=Support not needed	To whom did you provide support?	What kind of support did you provide?

Skip Table 22 if the HH did not experience any shocks and stressors.

22. Post-shock perceptions about future food security

SN	Questions	Response Codes
2201	<i>Would you say that right now, your household's ability to meet your food needs is:</i>	1. <i>Better than before the shocks and stressors experienced in the past 12 months?</i> 2. <i>The same as before the shocks and stressors experienced in the past 12 months?</i> 3. <i>Worse than before the shocks and stressors experienced in the past 12 months?</i>
2201	<i>Looking ahead over the next year, do you believe your household's ability to meet your food needs will be:</i>	1. <i>Better than before the shocks and stressors experienced in the past 12 months?</i> 2. <i>The same as before the shocks and stressors experienced in the past 12 months?</i> 3. <i>Worse than before the shocks and stressors experienced in the past 12 months?</i>

23. Perceptions of Government Effectiveness(Resil-c)

	Questions	Response Codes
2301	<i>Do you believe your local government (the palika) will respond effectively during the next shock or stressor?</i>	1=Yes 2=No, I do not expect them to be responsive 3=It is unlikely that I will need support

RM 4: SUA AHARA EXPOSURE

Questions in Table 24 should be asked of the **primary female decision maker**.

Introductory statement: *Now we have some questions about your knowledge of Suaahara and your interactions with individuals working with Suaahara.*

24. EXPOSURE TO SUA AHARA PROJECT

K2 SN	SH SN	Question	Response	Skip
2401	901	<i>Before this interview, had you ever heard of Suaahara?</i>	1=Yes 2=No 3=Don't know	>End
2402	914	<i>Has a Suaahara staff member (e.g. field supervisor, CNF, WASH Triggerer) ever visited your home?</i>	1=Yes 2=No 3=Don't know	>2407
2403	915	<i>How many times has a Suaahara staff member (e.g. field supervisor, CNF, WASH Triggerer) visited your home in the past 6 months?</i>	[Number of visits]	
2404	918	<i>What did the Suaahara staff member (e.g. field supervisor, CNF, WASH Triggerer) do at your home?</i> Multiple answers possible. Probe, but don't read possible answers.	a=checked vegetable garden b=checked chicken husbandry c=advised on improving garden d=advised on improving chicken husbandry e=demonstrated gardening skills f=demonstrated chicken husbandry skills g=advised on making child food or child feeding h=demonstrated making child food or child feeding i=discussed maternal health or illnesses j=discussed child health or illnesses j= discussed maternal nutrition or diet k=discussed child nutrition or diet l=checked toilet and its use m=discussed water purification n=discussed hand washing with soap and water o=discussed disposal of child feces p=vitamin A distribution q=support on childbirth (deliveries) r=discussed gender norms, values, or cultural practices s=discussed division of household and homestead food production work by family members t=discussed or advised on family planning u=other v=don't know	
2605	919	<i>Did the Suaahara staff member</i>	1=Yes	

K2 SN	SH SN	Question	Response	Skip
		(e.g. field supervisor, CNF, WASH Triggerer) speak with you during this visit?	2=No 3=Don't know	
2606	920	Which other family members did the Suaahara staff member (e.g. field supervisor, CNF, WASH Triggerer) speak with? Multiple answers possible. Probe, but don't read possible answers.	a=spouse b=mother or mother-in-law c=father or father-in-law d=other adult household member e=other child household member f=adolescent g=no one or n/a h=don't know	
2407	925	Has a Female Community Health Volunteer ever visited your home?	1=Yes 2=No 3=Don't know	>2409
2408	926	How many times has a Female Community Health Volunteer visited your home in the past 6 months.	[number]	
2409	205	How many currently pregnant women are there in this household?	[number]	
2410	017	How many children 0-23 months of age live in this household and are your sons and daughters?	[number total] [number sons] [number daughters]	
2411	939	Have you ever heard of a radio program called "Bhanchhin Aama" (Amma Kahat Batin; Bhannicchin Ama)?	1=Yes 2=No 3=Don't know	>2414
2412	940	Have you ever listened to "Bhanchhin Aama" (Amma Kahat Batin; Bhannicchin Ama)?	1=Yes 2=No 3=Don't know	>2414
2413	941	How often do you listen to "Bhanchhin Aama" (Amma Kahat Batin; Bhannicchin Ama)?	1=Every week 2=2-3 times per month 3=Once a month 4=Less than once a month 5=Only listened once or twice	
2414	944	Do you own a mobile phone?	1=Yes 2=No	>2417
2415	945	Did you receive any health or nutrition related text messages on your mobile phone in the last 1 month?	1=Yes 2=No 3=Don't know	>2417

K2 SN	SH SN	Question	Response	Skip
2416	946	<i>How many messages did you receive in the last 1 month</i>	Number _____ Do not know	
2417	904	<i>In your household, do men participate in [activity]</i> Multiple answers possible.	A=Discussions with Suaahara (Field Supervisor, CNF, etc.) during home visits B=Community Health Volunteer-led groups (HMGs, savings) C=Suaahara II Homestead Food Production group D=Community events (such as “key life”) E= Listening to Bhanchhin Aama F =Being a Village Model Farm G=Being a gender equality champion H=Other Suaahara II platform/activity (specify): _____	

Thank you

APPENDIX VII: STUDY AND DATA COLLECTION TEAM

TECHNICAL AND ADMINISTRATIVE STAFF OF FULLBRIGHT PVT. LTD.

CORE TEAM MEMBER:

Manjul Manandhar

QUALITY CONTROL STAFFS:

Rishi Ram Koirala

Ramesh Poudel

Shankar Karki

DATA QUALITY CHECKERS:

Bijaya Pandey

Chandrika Rai

Krishtal Chaudhary

Shushil KC

Sita Maharjan

Pravakar Jaisawal

Shamjhana Shrestha

FIELD DATA COLLECTION STAFFS:

Supervisors/Enumerators

Supervisors

Bikim Shrestha

Bishnu Pandey

Braj Kishor Shah

Hari Bhakta Saud

Krishna Khanal

Mahesh Dev

Prakash Giri

Premdip Adhikari

Rajendra Shrestha

Ram Chandra Paneru

Ram Dutta Panta

Suman Ghimire

Umesh Shrestha

Enumerators

Arjun Giri

Arjun Magar

Asmi Paudel

Bishnu Datta Pandey

Bishnu Khatiwada

Bramhadev Chaudhary

Deepak Singh Karki

Dipila Pant

Dirga Thapa

Ganesh Khadka

Ganga Pd. Paudel

Geeta Chaudhari

Ghanasyam Gaire

Ishu Gurung

Jamuna Acharya

Keshab Datta Bhatta

Kul Bahadur Khatri

Kumar Sanjel

Madhav Gyawali

Mahesh Mahato

Manisha Bhatta

Manisha Hamal

Enumerators

Manoj Shah

Min Koirala

Mukti Nath Adhikari

Nagendra Shah

Navraj Awasthi

Nirmal Banjara

Niroj Dhodari

Pradip Basnet

Pratima Bhatta Paudel

Purushottam Dahal

Rajendra Acharya

Ramesh Thapa

Ranjana Bista

Roshan Karki

Rupa Barma

Samiksha Aryal

Sanjay Sharma

Shivji Budhathoki

Sudesh Ghimire

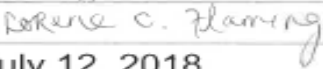
Tara Devi Khatiwada

APPENDIX VIII: DISCLOSURE OF ANY CONFLICT OF INTEREST

Disclosure of Conflict of Interest for USAID Evaluation Team Members

Name	Lorene Flaming
Title	Consultant
Organization	Independent Consultant Contracted by CAMRIS International
Evaluation Position?	☒ Team Leader ☐ Team member
Evaluation Award Number (contract or other instrument)	AID-367-C-15-00001
USAID Project(s) Evaluated (Include project name(s), implementer name(s) and award number(s), if applicable)	USAID/Nepal KISAN II (baseline survey)
I have real or potential conflicts of interest to disclose.	☒ Yes ☐ No
If yes answered above, I disclose the following facts: <i>Real or potential conflicts of interest may include, but are not limited to:</i> 1. Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project. 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.	Previous direct experience with the project (no. 3): I've worked with the KISAN I and II project teams since I was contracted by Winrock International to design and oversee the KISAN I baseline survey in early 2015. In parallel, I redesigned their M&E systems and wrote a new M&E Plan. I subsequently supported their FY2016 and FY2017 Annual Monitoring Surveys and project learning activities. Most recently, Winrock contracted me to help write the KISAN II MEL Plan during project start-up (July-October, 2017). I don't believe this experience presents a conflict of interest in the context of leading a baseline survey. In contrast to a project evaluation, a baseline survey does not involve assessing or commenting on project performance. All findings will be based on statistical analysis of data, and other baseline survey team members will be involved in data analysis. It's not uncommon for USAID Missions to have project teams conduct their own baselines, as was done for KISAN I. Having the MEL project oversee the baseline survey for KISAN II ensures a greater degree of technical oversight and quality control. Last, professional integrity is a high priority for me and my entire career has been dedicated to supporting evidence-based findings. None of the other potential conflicts of interest listed in the left column apply.

I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.

Signature	
Date	July 12, 2018

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