FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

PERFORMANCE MONITORING

PARTICIPANT MANUAL

USAID
FROM THE AMERICAN PEOPLE

This publication was produced for review by the U.S. Agency for International Development (USAID). It was prepared by the Feed the Future Knowledge-Driven Agricultural Development Project (KDAD), Contract Number: AID-OAA-C-13-00137, implemented by Insight Systems Corporation. The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of USAID.

August 2016

August 2016

Welcome to the Feed the Future Performance Monitoring Course

Dear Course Participant,

Welcome to Feed the Future's course on performance monitoring. Monitoring, learning and adapting activities-based evidence moves us forward in our goal to reduce hunger, poverty and under-nutrition. To that end, this course will prepare you to:

- Meet the requirements for reporting performance such that program activities and outcomes to the Feed the Future Results Framework.
- Use performance monitoring as a means for strategic adaptive management of Feed the Future activities.

Over the next five days, you will build your skills and knowledge to:

- Develop a theory of change and a results framework for your FTF activities
- Select require if applicable indicators for your activity results framework
- Create custom indicators
- Define beneficiaries, baselines and targets
- Collect performance monitoring data
- Verify performance monitoring data
- Report and use performance monitoring data
- Submit open data

To achieve these outcomes, we have just a few guidelines for all course participants to follow:

- Listen, inquire and share
- Respect and value different ideas and options
- Create a safe space
- Challenge yourself
- Support each other

The course was developed by the Feed the Future Monitoring and Evaluation team. If you have any questions about monitoring and evaluating Feed the Future activities, do not hesistate to ask any Monitoring, Evaluation and Learning team member. We are proud to be your partners in the important work you do in the field.

Sincerely,

Anne Swindale
Anne Swindale, Course Owner
Senior Program Advisor
Monitoring, Evaluation and Learning
Feed the Future, USAID

Salik Farooqi
Salik Farooqi, Course Owner
Technical Advisor
Monitoring, Evaluation and Learning
Feed the Future, USAID

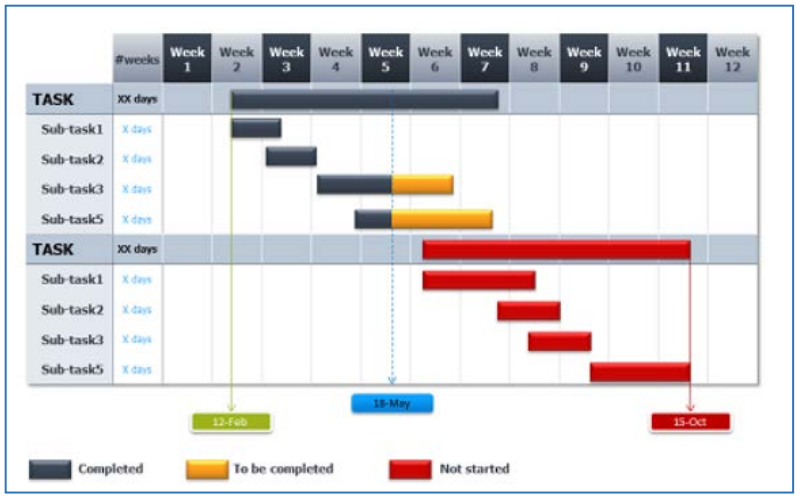
Table of Contents

SESSION 6:

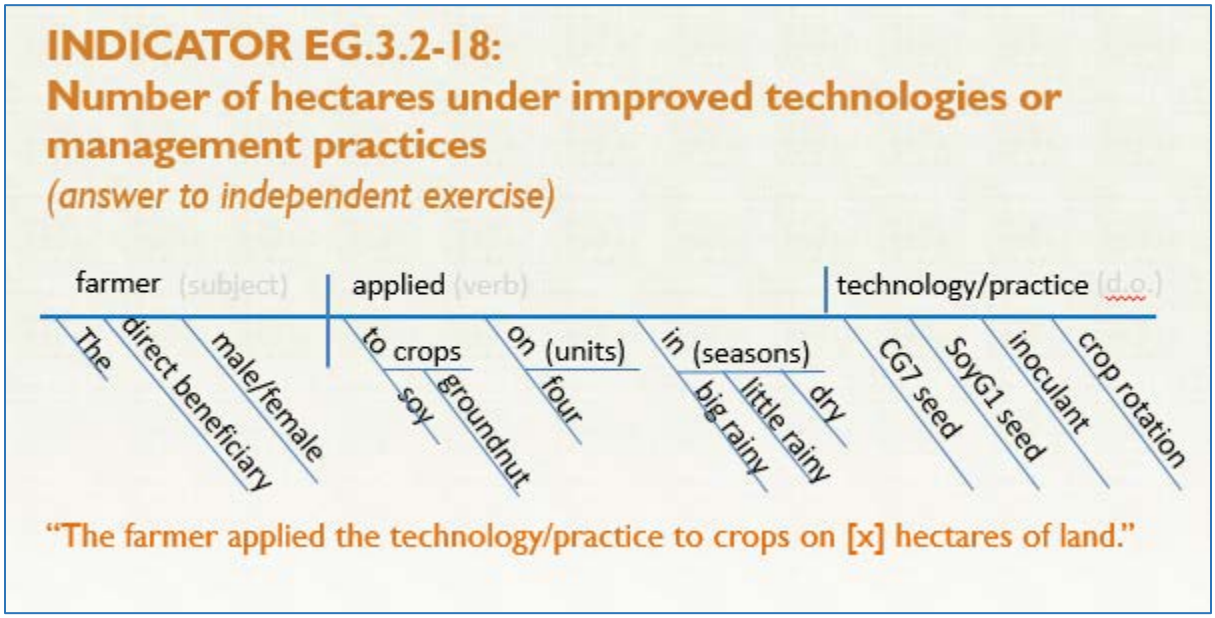
Collecting Performance Monitoring Data


GANTTCHARTS

Notes:


#weeks
Week 1
Week 2
Week 3
Week 4
Week 5
Week 6
Week 7
Week 8
Week 9
Week 10
Week 11
Week 12
TASK
XX days
Sub-task1
X days
Sub-task2
X days
Sub-task3
X days
Sub-task5
X days
TASK
XX days
Sub-task1
X days
Sub-task2
X days
Sub-task3
X days
Sub-task5
X days
15-May
12-Feb
15-Oct
Completed
To be completed
Not started

Diagramming an Indicator Notes



SPS LOCATION: Program Sub-element EG.3.3: Nutrition-Sensitive Agriculture
INITIATIVE AFFILIATION: Feed the Future – IR 6: Improved access to diverse and quality foods

INDICATOR TITLE: EG.3.3-10 Percentage of female direct beneficiaries of USG nutrition-sensitive agriculture activities consuming a diet of minimum diversity

DEFINITION:

A female direct beneficiary of a nutrition-sensitive agriculture activity is defined as a female of any age who is directly reached by the activity with agriculture-related intervention(s) (e.g. training, technical assistance, input access). Her interaction with the activity should be significant, meaning that a woman reached by an agriculture activity solely through brief attendance at a meeting or gathering should not be counted as beneficiary.

This indicator is applicable to nutrition-sensitive agriculture activities with explicit consumption, diet quality, or other nutrition-related objectives and/or outcomes. These nutrition-sensitive agriculture activities should be implementing components addressing one or more of the three agriculture-to-nutrition pathways: Food Production, Agricultural income, and Women's Empowerment.[1]

A female is considered to be consuming a diet of minimum diversity if she consumed at least five of 10 specific food groups during the previous day and night.[2]

The 10 food groups are:

1. Grains, white roots and tubers, and plantains
2. Pulses (beans, peas and lentils)
3. Nuts and seeds[3] (including groundnut)
4. Dairy
5. Meat, poultry, and fish
6. Eggs
7. Dark green leafy vegetables
8. Other vitamin A-rich fruits and vegetables
9. Other vegetables
10. Other fruits

The numerator for this indicator is the total number of female direct beneficiaries of the nutrition-sensitive agriculture activity who consumed 5 out of 10 food groups during the previous day and night.

The denominator is the total number of female direct beneficiaries of the nutrition-sensitive agriculture activity.

If data for this indicator are collected through a beneficiary-based sample survey, the numerator is the sample-weighted extrapolated total number of female direct beneficiaries of the nutrition-sensitive agriculture activity who consumed 5 out of 10 food groups during the previous day and night. The denominator is the sample-weighted extrapolated total number of female direct beneficiaries of the nutrition-sensitive agriculture activity with food group data.

Data should be collected annually at the same time of year since the indicator will likely display considerable seasonal variability. If possible, data should be collected at the time of year when diversity is likely to be the lowest to best capture improvements in year-round

[1] See Improving Nutrition through Agriculture Technical Brief Series, https://www.spring-nutrition.org/publications/series/improving-nutrition-through-agriculture-technical-brief-series

[2] See Introducing the Minimum Dietary Diversity – Women (MDD-W) Global Dietary Diversity Indicator for Women, http://www.fao.org/fileadmin/templates/nutrition_assessment/Dietary_Diversity/Minimum_dietary_diversity_-_women__MDD-W__Sept_2014.pdf. Additional detail on collecting and analyzing minimum dietary diversity indicator may be found in Minimum Dietary Diversity for Women – A Guide to Measurement (http://www.fao.org/3/a-i5486e.pdf)

[3] "Seeds" in the botanical sense includes a very broad range of items, including grains and pulses. However, "seeds" is used here in a culinary sense to refer to a limited number of seeds, excluding grains or pulses, that are typically high in fat content and are consumed as a substantial ingredient in local dishes or eaten as a substantial snack or side dish. Examples include squash, melon or gourd seeds used as a main ingredient in West African stews and sesame seed paste (tahini) in some dishes in Middle Eastern cuisines.

consumption of a diverse diet. However, Feed the Future recognizes that data for this indicator is likely to be collected in the post-harvest/sale period when data for other Required if Applicable (RiA) indicators, such as gross margins and incremental sales, are collected. In this case, the indicator value may reflect a best-case scenario in terms of yearly access to a quality and diverse diet by female beneficiaries.

Notes:
1. This indicator complements the Feed the Future indicator "Prevalence of women of reproductive age consuming a diet of minimum diversity," which measures minimum dietary diversity among women 15-49 years old in the Feed the Future Zone of Influence through a population-based survey.
2. Using the data collected for this indicator, activities may wish to create a custom indicator measuring the average number of food groups consumed by female beneficiaries. This will allow managers to better understand progress made under this indicator, and would be especially useful in situations where diet diversity is very low at baseline.

RATIONALE:
This indicator will capture results under the Increased Availability of and Access to High-quality Nutrition-Sensitive Services and Commodities Sub-IR under USAID's Multisectoral Nutrition Strategy Results Framework, and the Improved Access to Diverse and Quality Foods IR of the Feed the Future Results Framework. Minimum Dietary Diversity – Women (MDD-W) is a validated proxy indicator for the quality of the diet for women of reproductive age (15-49 years). Women of reproductive age consuming foods from five or more of the 10 food groups are more likely to consume a diet higher in micronutrient adequacy than women consuming foods from fewer than five of these food groups [3]. While it is possible that some female direct beneficiaries measured under this indicator will be younger than 15 years or 50 years or older, we assume the majority will be women of reproductive age. Thus the indicator would still be a validated proxy for the likelihood of micronutrient adequacy for the majority of beneficiaries captured, while still capturing the consumption of a diverse diet for the remainder.

UNIT:	*DISAGGREGATE BY:*
Percent	In addition to reporting the percent value, the number of female direct beneficiaries of the nutrition-sensitive agriculture activity should be reported, to allow a weighted average percent to be calculated across activities for entry into the PPR and across operating units for reporting on the Nutrition Strategy.
TYPE:	*DIRECTION OF CHANGE:*
Outcome	Higher is better

DATA SOURCE:
Data for this indicator can be collected through routine reporting systems or annual (or more frequent) beneficiary-based surveys.

MEASUREMENT NOTES:
- LEVEL OF COLLECTION: Activity-level, direct beneficiaries
- WHO COLLECTS DATA FOR THIS INDICATOR: Implementing partners
- HOW SHOULD IT BE COLLECTED: Direct beneficiary sample surveys; data collection through routine reporting systems
- FREQUENCY OF COLLECTION: Annually

TYPE:	*DIRECTION OF CHANGE:*
Outcome	Higher is better

DATA SOURCE:

Implementing Partners will collect this data through census or survey of direct beneficiaries, direct observations of land, farm records, and activity documents.

MEASUREMENT NOTES:

- LEVEL OF COLLECTION: Activity-level, direct beneficiaries; only those hectares affected by USG assistance, and only those newly brought or continuing under improved technologies/management during the current reporting year
- WHO COLLECTS DATA FOR THIS INDICATOR: Implementing partners
- HOW SHOULD IT BE COLLECTED: Via survey or other applicable method
- FREQUENCY OF COLLECTION: Annually reported

Now You Try Diagramming a PIRS

Individual Activity

Individual Exercise

Using the PIRS on the next page, diagram INDICATOR EG.3.2-18: Number of hectares under improved technologies or management practices.

Diagram for:

SPS LOCATION: Program Element EG.3.2: Agricultural Sector Capacity

INITIATIVE AFFILIATION: Feed the Future – IR 1: Improved Agricultural Productivity / Sub IR 1.2: Enhanced Technology Development, Dissemination, Management and Innovation

INDICATOR TITLE: EG.3.2-18 Number of hectares under improved technologies or management practices with USG assistance

DEFINITION:

This indicator measures the area (in hectares) of land cultivated using USG-promoted improved technology(ies) or management practice(s) during the reporting year. Technologies to be counted are agriculture-related, land-based technologies and innovations, including those that address climate change adaptation and mitigation. The indicator does not count application of improved technologies in aquaculture ponds, even though area of ponds is measured in hectares under indicator EG.3-6 Gross Margin per hectare. Significant improvements to existing technologies should also be counted.

Examples of relevant technologies include:

· Crop genetics: e.g. improved/certified seed that could be higher-yielding, higher in nutritional content (e.g. through biofortification, such as vitamin A-rich sweet potatoes or rice, or high-protein maize), and/or more resilient to climate impacts; improved germplasm.

· Cultural practices: e.g. seedling production and transplantation; cultivation practices such as planting density, moulding; mulching.

· Pest management: e.g. Integrated Pest Management; appropriate application of insecticides and pesticides.

· Disease management: e.g. improved fungicides, appropriate application of fungicides.

· Soil-related fertility and conservation: e.g. Integrated Soil Fertility Management; soil management practices that increase biotic activity and soil organic matter levels, such as soil amendments to increase fertilizer-use efficiency (e.g. mulching); fertilizers; erosion control.

· Irrigation: e.g. drip, surface, sprinkler irrigation; irrigation schemes.

· Water management - non-irrigation-based: e.g. water harvesting; mulching.

- Climate Mitigation: technologies selected because they minimize emission intensities relative to other alternatives. Examples include low- or no-till practices, efficient nitrogen fertilizer use.

-Climate Adaptation: technologies promoted with the explicit objective of adapting to current climate change concerns. Examples include drought and flood resistant varieties, conservation agriculture.

· Other: e.g. improved mechanical and physical land preparation.

If an activity is promoting a technology for multiple benefits, the area under the technology may be reported under each relevant category under the Technology Type disaggregate. For example, mulching could be reported under Cultural practices (weed control), Soil-related fertility and conservation (organic content) and Water management (moisture control), depending on how of for what purpose(s) or benefit(s) the activity was promoted.

If a beneficiary cultivates a plot of land more than once in the reporting year, the area should be counted each time one or more improved technologies is applied. For example, because of access to irrigation as a result of a Feed the Future activity, a farmer can now cultivate a

second crop during the dry season in addition to her/his regular crop during the rainy season. If the farmer applies Feed the Future promoted technologies to her/his plot during both the rainy season and the dry season, the area of the plot would be counted twice under this indicator. However, the farmer would only be counted once under *EG.3.2-17 Number of farmers and others who have applied improved technologies*.

If a group of beneficiaries cultivate a plot of land as a group, e.g. an association has a common plot on which multiple association members cultivate together, and on which improved technologies are applied, the area of the communal plot should be counted under this indicator and recorded under the sex disaggregate "association-applied". In addition, the association should be counted once under indicator *EG.3.2-20 Number of for-profit private enterprises, producer's organizations… and community-based organizations (CBOs) that applied improved organization-level technologies or management practices*.

If a lead farmer cultivates a plot used for training, e.g a demonstration plot used for Farmer Field Days or Farmer Field School, the area of the demonstration plot should be counted under this indicator. In addition, the lead farmer should be counted as one individual under indicator *EG.3.2-17 Number of farmers and others who have applied improved technologies*. However, if the demonstration or training plot is cultivated by extension agents or researchers, (a demonstration plot in a research institute, for instance) neither the area nor the extension agent or researcher should be counted under this indicator or indicator EG.3.2-17.

If more than one improved technology is being applied on a hectare, count the hectare under each technology type (i.e. double-count). In addition, count the hectare under the Total w/one or more improved technology category. Since it is very common for Feed the Future activities to promote more than one improved technology, not all of which are applied by all beneficiaries at once, this approach allows Feed the Future to accurately track and count the uptake of different technology types, and to accurately count the total number of hectares under improved technologies.

If a direct beneficiary sample survey is used to collect data for this indicator, the sample weighted estimate of the total number of hectares across all beneficiaries for each Technology Type and Sex disaggregate must be calculated using appropriate sample weights before being entered into FTFMS to ensure accurate calculation of weighted averages across all implementing mechanisms at the Operating Unit level as well as across all Feed the Future countries for global reporting.

Please refer to the Feed the Future Agricultural Indicators Guide (https://agrilinks.org/library/feed-the-future-ag-indicators-guide) for collecting and interpreting the data required for this indicator.

RATIONALE:

This indicator tracks successful application of technologies and management practices in an effort to improve agricultural productivity, agricultural water productivity, sustainability, and resilience to climate change. In the Feed the Future (FTF) results framework, this indicator reports contributions to IR 1: Improved Agricultural Productivity and Sub IR 1.2: Enhanced Technology Development, Dissemination, Management and Innovation.

UNIT:	*DISAGGREGATE BY:*
Hectares	Technology type (see explanation in definition, above): Crop genetics, Cultural practices, Pest management, Disease management, Soil-related fertility and conservation, Irrigation, Water management, Climate mitigation, Climate adaptation, Other; Total w/one or more improved technology

	Sex: Male, Female, Joint, Association-applied *Note, before using the "Joint" sex disaggregate category, partners must determine that decision-making about what to plant on the plot of land and how to manage it for that particular beneficiary and targeted commodity is truly done in a joint manner by male(s) and female(s) within the household. Given what we know about gender dynamics in agriculture, "joint" should not be the default assumption about how decisions about the management of the plot are made.* *Note: The sum of hectares under the Sex disaggregate should equal the total under the "Total w/one or more improved technology" Technology Type disaggregate.* FTFMS-only disaggregate: Commodity Activities promoting sustainable intensification and similar crop diversification strategies where calculating area under specific commodities is complicated and not meaningful are not required to disaggregate beneficiaries by commodity, and should use the "Disaggregates not available" category under the Commodities disaggregate.
TYPE: Outcome	*DIRECTION OF CHANGE:* Higher is better
DATA SOURCE: Implementing Partners will collect this data through census or survey of direct beneficiaries, direct observations of land, farm records, and activity documents.	
MEASUREMENT NOTES: ➢ LEVEL OF COLLECTION: Activity-level, direct beneficiaries; only those hectares affected by USG assistance, and only those newly brought or continuing under improved technologies/management during the current reporting year ➢ WHO COLLECTS DATA FOR THIS INDICATOR: Implementing partners ➢ HOW SHOULD IT BE COLLECTED: Via survey or other applicable method ➢ FREQUENCY OF COLLECTION: Annually reported	

Questionnaire Design

Notes:

Steps in the QAS

- STEP 1: READING: Determine if it is difficult for the interviewers to read the question uniformly to all respondents.
- STEP 2: INSTRUCTIONS: Look for problems with any introductions, instructions, or explanations from the respondent's point of view.
- STEP 3: CLARITY: Identify problems related to communicating the intent or meaning of the question to the respondent.
- STEP 4: ASSUMPTIONS: Determine if there are problems with assumptions made or the underlying logic.
- STEP 5: KNOWLEDGE/MEMORY: Check whether respondents are likely to not know or have trouble remembering information.
- STEP 6: SENSITIVITY/BIAS: Assess questions for sensitive nature or wording, and for bias.
- STEP 7: RESPONSE CATEGORIES: Assess the adequacy of the range of responses to be recorded.
- STEP 8: OTHER: Look for problems not identified in Steps 1 - 7.

Questionnaire Design Challenge

Small Group
Exercise
45 minutes

Review the sample questionnaire and find 10 reasons why it cannot be used to collect data for the "hectares under improved technology" indictor.

First team to find all 10 errors, wins a prize.

Notes:

AREDONIA BASELINE SURVEY - HOUSEHOLD QUESTIONNAIRE

IDENTIFICATION

A. DEPARTMENT (CIRCLE ONE) 1 ARTIBONITE 2 OUEST 3 NORD 4 NORD-EST

B. COMMUNE _____

C. SECTION COMMUNALE _____

D. NAME OF SELECTED RESPONDENT _____

E. CLUSTER NUMBER ..... | | | |

F. STRUCTURE NUMBER ..... | | | |

G. HOUSEHOLD NUMBER | | |

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
G. DATE				K. DAY
				L. MONTH
				M. YEAR 2016
H. INTERVIEWER'S NAME				N. INT NUMBER
J. RESULT CODE*				O. RESULT CODE*
NEXT VISIT: DATE				
TIME				

*RESULT CODES:

01 COMPLETED
02 NO HOUSEHOLD MEMBER AT HOME
03 RESPONDENT NOT AT HOME AT TIME OF VISIT
04 NO APPROPRIATE RESPONDENT
05 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME
06 POSTPONED
07 STRUCTURE NOT FOUND
08 STRUCTURE DESTROYED
09 STRUCTURE NOT A DWELLING
10 STRUCTURE VACANT
96 OTHER _____ (SPECIFY)
97 REFUSED

P. TOTAL NUMBER OF VISITS | |

Q. TOTAL PERSONS IN HOUSEHOLD | | |

R. PRIMARY ADULT DECISIONMAKER (1=YES, 2=NO) | | | MALE | FEMALE

U. LINE NO. OF RESPONDENT TO HOUSEHOLD QUESTIONNAIRE | | |

V. SUPERVISOR NAME _____ | | |

W. FIELD EDITOR NAME _____ | | |

X. OFFICE EDITOR | |

Y. KEYED BY | |

INTRODUCTION AND CONSENT

Hello. My name is _____. I am working with the National Aredonia Statistical Office. We are conducting a survey about health, education, nutrition & agriculture, employment, and community services in many places in Aredonia. The information we collect will help the government to plan health, employment, and community services. Your household was selected for the survey. I would like to ask you some questions about your household. Today's visit may take up to two hours. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team. You don't have to be in the survey, but we hope you will agree to answer the questions since your views are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time. In case you need more information about the survey, you may contact the person listed on this card.

GIVE CARD WITH CONTACT INFORMATION

Do you have any questions?

Z. May I begin the interview now?

SIGNATURE OF INTERVIEWER: _____ DATE: _____

RESPONDENT AGREES TO BE INTERVIEWED ... 1 ↓

RESPONDENT DOES NOT AGREE TO BE INTERVIEWED ... 2 → THANK THE RESPONDENT AND END THE INTERVIEW

AA. START TIME H H : M M CIRCLE ONE AM PM

SECTION 1. HOUSEHOLD ROSTER

00a. Who would you say is the primary adult male decisionmaker in this household? This person should be 18 years old or older.

PRIMARY ADULT MALE DECISIONMAKER EXISTS IN HOUSEHOLD ..... 1 → ENTER NAME OF PRIMARY ADULT MALE DECISIONMAKER ON LINE 01 OF THE ROSTER. QS 3 & 4 ARE PRE-FILLED FOR THIS LINE NUMBER.
NO PRIMARY ADULT MALE DECISIONMAKER IN HOUSEHOLD 2

00b. Who would you say is the primary adult female decisionmaker in this household? This person should be 18 years old or older.

PRIMARY ADULT FEMALE DECISIONMAKER EXISTS IN HOUSEHOLD . 1 → ENTER NAME OF PRIMARY ADULT FEMALE DECISIONMAKER ON LINE 02 OF THE ROSTER. Q3 IS PRE-FILLED FOR THIS LINE NUMBER.
NO PRIMARY ADULT FEMALE DECISIONMAKER IN HOUSEHOLD .. 2

								IF AGE 15 YEARS OR OLDER	IF AGE 3 YEARS OR OLDER		IF AGE 3-24 YEARS			
LINE NO.	USUAL RESIDENTS	JOB	RELATION TO PRIMARY DECISIONMAKER	RESIDENCE		AGE	ELIGIBILITY	MARITAL STATUS	HIGHEST LEVEL OF SCHOOL ATTENDED/COMPLETED		CURRENT SCHOOL YEAR ATTENDANCE, LEVEL & GRADE		CURRENT/RECENT SCHOOL ATTENDANCE	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Now, please tell me the names of all of the other people who usually live here, and guests of the household who stayed here last night. LIST ALL HOUSEHOLD MEMBER NAMES (COL 2), SEX (COL 3), AND RELATIONSHIP (COL 4) TO THE PRIMARY DECISIONMAKER NAMED IN LINE 01, OR NAMED IN LINE 02 IF NO HH MEMBER ON LINE 01.	Is [NAME] a farmer?	What is [NAME's] relationship to the primary male decisionmaker? IF NO PRIMARY MALE DECISION-MAKER: What is [NAME's] relationship to the primary female decisionmaker? SEE CODES BELOW	Does [NAME] usually live here?	Did [NAME] stay here last night?	How old is [NAME]? IF 95 OR OLDER, RECORD 95	CIRCLE LINE NUMBER OF SELECTED RESPONDENT	What is [NAME's] current marital status? MARRIED OR LIVING TOGETHER ..... 1 DIVORCED OR SEPARATED ... 2 VIVAVEK ..... 3 WIDOWED ..... 4 NEVER MARRIED & NEVER LIVED TOGETHER ... 5	Has [NAME] ever attended school?	What is the highest level of school [NAME] has attended? SEE CODES BELOW What is the highest grade [NAME] completed at that level? SEE CODES BELOW	Did [NAME] attend school at any time during the current 2015-2016 school year?	In the current 2015-2016 school year, what level and grade of school does [NAME] attend? SEE CODES BELOW	In the current 2015-2016 school year, what type of school does [NAME] attend? PUBLIC, NON-RELIGIOUS.....1 PUBLIC, RELIGIOUS.....2 PRIVATE, RELIGIOUS.....3 PRIVATE, NON-RELIGIOUS.....4 FOREIGN.....5	In the current 2015-2016 school year, how often are teachers present in [NAME]'s classroom? ALWAYS... 1 OFTEN.... 2 RARELY.... 3 DON'T KNOW..... 8
								IF AGE 15 YEARS OR OLDER	IF AGE 3 YEARS OR OLDER		IF AGE 3-24 YEARS		98 DON'T KNOW	
01	S	Y N 1 2	0 1	Y N 1 2	Y N 1 2	IN YEARS	01		Y N 1 2 → NEXT LINE	LEVEL GRADE	Y N 1 2 → NEXT LINE	LEVEL GRADE		
02		Y N 1 2		Y N 1 2	Y N 1 2	IN YEARS	02		Y N 1 2 → NEXT LINE	LEVEL GRADE	Y N 1 2 → NEXT LINE	LEVEL GRADE		
03		Y N 1 2		Y N 1 2	Y N 1 2	IN YEARS	03		Y N 1 2 → NEXT LINE	LEVEL GRADE	Y N 1 2 → NEXT LINE	LEVEL GRADE		
04		Y N 1 2		Y N 1 2	Y N 1 2	IN YEARS	04		Y N 1 2 → NEXT LINE	LEVEL GRADE	Y N 1 2 → NEXT LINE	LEVEL GRADE		

2A) Just to make sure that I have a complete listing: are there any other persons such as small children or infants that we have not listed? Any children in school or household members at work that we haven't yet listed? YES → ADD TO TABLE / NO

2B) Are there any other people who may not be members of your family, such as domestic servants, lodgers, or friends, who usually live here? YES → ADD TO TABLE / NO

2C) Are there any guests or temporary visitors staying here, or anyone else who stayed here last night, who have not been listed? YES → ADD TO TABLE / NO

CODES FOR Q4: RELATIONSHIP TO PRIMARY DECISIONMAKER

SELF	01	NIECE/NEPHEW	10
WIFE OR HUSBAND	02	UNCLE/AUNT	11
SON OR DAUGHTER	03	ADOPTED	12
SON-IN-LAW OR DAUGHTER-IN-LAW	04	CHILD IN GUARDIANSHIP	13
GRANDCHILD	05	OTHER RELATION	14
MOTHER/FATHER	06	FRIEND	15
MOTHER/FATHER-IN-LAW	07	WORKER	16
BROTHER OR SISTER	08	RESTAVEK	17
COUSIN	09	NO DECISIONMAKER AGE 18+	18
		OTHER	96

CODES FOR Qs 11 and 13:

LEVEL:		GRADE:	
PRESCHOOL	1	LESS THAN 1 YEAR	0
PRIMARY	2	1ST YEAR	1
SECONDARY	3	2ND YEAR	2
COLLEGE/UNIVERSITY	4	3RD YEAR	3
		4TH YEAR	4
		DON'T KNOW	8

SECTION 5.1 HUNGER

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	In the past 4 weeks, was there ever no food to eat of any kind in your house because of lack of resources to get	YES ..... 1 NO ..... 2 →	503
502	How often did this happen in the past 4 weeks?	RARELY (1-2 TIMES) ..... 1 SOMETIMES (3-10 TIMES) ..... 2 OFTEN (MORE THAN 10 TIMES) 3	
503	In the past 4 weeks, did you or any household member go to sleep at night hungry because there was not enough food?	YES ..... 1 NO ..... 2 →	505
504	How often did this happen in the past 4 weeks?	RARELY (1-2 TIMES) ..... 1 SOMETIMES (3-10 TIMES) ..... 2 OFTEN (MORE THAN 10 TIMES) 3	
505	In the past 4 weeks, did you or any household member go a whole day and night without eating anything at all because there was not enough food?	YES ..... 1 NO ..... 2 →	507
506	How often did this happen in the past 4 weeks?	RARELY (1-2 TIMES) ..... 1 SOMETIMES (3-10 TIMES) ..... 2 OFTEN (MORE THAN 10 TIMES) 3	

MODULES D, E, F, FF: AGRICULTURAL PRODUCTION – CROP LIST

D00. Did anyone in the household cultivate any crops between February 2015 and February 2016? Which crops? [SELECT ALL THAT APPLY]

CROP LIST A Modules D, E, and F			CROP LIST B Modules FF			CROP LIST C no module		
Cereals								
01. Corn	YES…1	NO…2	20. Avocado	YES…1	NO…2	27. Lima beans	YES…1	NO…2
02. Rice	YES…1	NO…2	21. Francis mango	YES…1	NO…2	28. Blackeye peas	YES…1	NO…2
03. Sorghum/Millet	YES…1	NO…2	22. Mango (other)	YES…1	NO…2	29. Eggplant	YES…1	NO…2
			23. Orange	YES…1	NO…2	30. Watermelon	YES…1	NO…2
Leguminous Crops			24. Coconut palm	YES…1	NO…2	31. Pumpkin, zucchini, squash	YES…1	NO…2
04. Lima beans	YES…1	NO…2	25. Coffee	YES…1	NO…2	32. Okra	YES…1	NO…2
05. Pigeon peas	YES…1	NO…2	26. Cocoa	YES…1	NO…2	33. Carrot and turnip	YES…1	NO…2
06. Lentils	YES…1	NO…2				34. Red beetroot	YES…1	NO…2
						35. Onions (including shallots)	YES…1	NO…2
Vegetables						36. Malanga, Taro	YES…1	NO…2
07. Cabbage	YES…1	NO…2				37. Pinapple	YES…1	NO…2
08. Lettuce	YES…1	NO…2				38. Breadfruit	YES…1	NO…2
09. Spinach, purslane	YES…1	NO…2				39. Lemon & lime	YES…1	NO…2
10. Tomato	YES…1	NO…2				40. Grapefruit	YES…1	NO…2
11. Bell pepper	YES…1	NO…2				41. Tangerines, mandarines, and clementines	YES…1	NO…2
12. Leek, shallots	YES…1	NO…2				42. Cashew	YES…1	NO…2
						43. Pepper (capsicum spp.)	YES…1	NO…2
Roots and Tubers						44. Papaya	YES…1	NO…2
13. Potato	YES…1	NO…2						
14. Sweet potato	YES…1	NO…2				45. Other (specify) _____		
15. Yam, masoko	YES…1	NO…2						
16. Sweet cassava	YES…1	NO…2						
17.Cassava	YES…1	NO…2				46. Other (specify) _____		
Other								
18.Sugarcane	YES…1	NO…2						
19.Banana & Plantain	YES…1	NO…2						

MODULE D0: AGRICULTURAL PRODUCTION, GREAT RAINY SEASON: FEBRUARY THROUGH AUGUST 2015 - DIAGRAM

D01.: You know that in the country in general, there are 3 agricultural seasons :

- There is the great rainy season, where plantations are held in March and the harvest is held in June, sometimes after.
- There is the little rainy season, where plantations are held in July and harvest is held in November.
- And there is the dry season, where plantations are held in December (though sometimes as early as October), and the harvest is held in February.

INTERVIEWER: PLEASE USE THE SPACE BELOW TO DIAGRAM THE LAND WHERE THE HOUSEHOLD PRACTICED AGRICULTURE DURING THE GREAT RAINY SEASON, FROM FEBRUARY TO AUGUST 2015. THE PLOTS IDENTIFIED THROUGH THIS EXERCISE WILL BE USED FOR MODULE D. INDICATE THE LOCALITY OF EACH PLOT. NUMBER EACH PLOT.

A PLOT IS A CONTINUOUS PIECE OF LAND ON WHICH A UNIQUE CROP OR A MIXTURE OF CROPS IS GROWN UNDER A CONSISTENT CROP MANAGEMENT SYSTEM. IT MUST BE CONTINUOUS AND SHOULD NOT BE SPLIT BY A PATH OF MORE THAN ONE METER IN WIDTH. PLOT BOUNDARIES ARE DEFINED ACCORDING TO THE CROPS GROWN AND THE OPERATOR.

MODULE D. AGRICULTURAL PRODUCTION: PRIMARY SEASON 1 - GREAT RAINY SEASON: FEBRUARY THROUGH AUGUST 2015

D00. CHECK THE CROPS LISTED IN CROP LIST 'A': ARE ANY OF THESE CROPS CIRCLED? YES....1 → GO TO D01; NO.....2 → GO TO MODULE G

NUMBER OF PLOTS FARMED BY THE HOUSEHOLD FOR THE SEASON

D01. During the great rainy season, from February 2015 to August 2015, did you plant any of the following crops on your farm: [READ THE CROPS CIRCLED IN CROP LIST 'A']? YES....1 → GO TO D02; NO.....2 → GO TO E01

D02		D03	D04	D05
Please list the location of all the plots you or anyone in your household cultivated with these crops during the great rainy season, February to August 2015.		What is the total area of the plot?	In the great rainy season, from February to August 2015, did you plant [READ THE CROPS WITH 'YES' IN CROP LIST 'A'] in plot [PLOT]? FILL IN THE NAME AND CODE FOR EACH CROP (REPEAT FOR EACH PLOT)	How much of the area under cultivation was used for [CROP] during the great rainy season (from February to August 2015)? GIVE AN ESTIMATED PERCENTAGE FOR EACH CROP. THE TOTAL MAY BE LESS THAN 100, BUT NOT MORE.
PLOT CODE	LOCATION (FROM DIAGRAM)	AREA	CROP CODES	PERCENTAGE OF AREA
_____		QUANTITY ▪ DON'T KNOW 999998	1 2 3 4	% % % %
_____		QUANTITY ▪ DON'T KNOW 999998	1 2 3 4	% % % %
_____		QUANTITY ▪ DON'T KNOW 999998	1 2 3 4	% % % %
_____		QUANTITY ▪ DON'T KNOW 999998	1 2 3 4	% % % %
_____		QUANTITY ▪ DON'T KNOW 999998	1 2 3 4	% % % %
_____		QUANTITY ▪ DON'T KNOW 999998	1 2 3 4	% % % %

MODULE D. AGRICULTURAL PRODUCTION: PRIMARY SEASON 1 - GREAT RAINY SEASON: FEBRUARY THROUGH AUGUST 2015 (CONTINUED)

CHECK D04:			D06	D07	D08	D09	D10	D11	D12	D13		D14	
TRANSFER THE PLOT CODE AND LOCALITY NAME AND FOR EACH PLOT THAT WAS FARMED, AS LISTED ON THE PREVIOUS PAGE. ENSURE THAT YOU WRITE THE PLOT CODES IN THE SAME ORDER AS IN THE PREVIOUS PAGE.			How much did you pay for seeds to cultivate [CROP]?	How much did you pay for fertilizer to cultivate [CROP]?	How much did you pay for pesticides (against mice, caterpillars, rats, etc.) to cultivate [CROP]?	How much did you pay for land preparation (including rental of tools, machinery, animals, labor) to cultivate [CROP]?	How much did you pay for water/ irrigation to cultivate [CROP]?	How much did you pay for labor (excluding labor for land preparation) to cultivate [CROP]?	How much did you pay for any other inputs to cultivate [CROP]?	How much [CROP] was lost to rodents, storms, flooding or theft prior to harvesting?		How much [CROP] was harvested?	
PLOT CODE	LOCALITY	CROP	AREDONS	AREDONS	AREDONS	AREDONS	AREDONS	AREDONS	AREDONS	QUANTITY	UNIT	QUANTITY	UNIT
____		1											
		2											
		3											
		4											
____		1											
		2											
		3											
		4											
____		1											
		2											
		3											
		4											
____		1											
		2											
		3											
		4											
____		1											
		2											
		3											
		4											
____		1											
		2											
		3											
		4											

UNIT CODES (D13, 14)

SMALL POT 01	BASKET 06	BUNCH (BANANA) 11	
LARGE POT 02	SMALL SACK (MADE FOR RICE) 07	DOZEN 12	
SMALL BUCKET 03	FLOUR SAK 08	MAKOUT 13	
BUCKET (5 GALLONS) 04	LARGE SACK (MADE FOR WHEA 09	BARREL 14	
SMALL BASKET 05	PACK (BANANA) 10	DRUM 15	OTHER (SPECIFY) 96

MODULE D. AGRICULTURAL PRODUCTION: PRIMARY SEASON 1 - GREAT RAINY SEASON: FEBRUARY THROUGH AUGUST 2015 (CONTINUED)

CROP		D15	D16	D17				D18		D19			D20		D21		D22	D23		
VERIFY COLUMN D04 AND CIRCLE THE CODES FOR ALL CROPS LISTED. FOR ALL CIRCLED CODES, ASK QUESTIONS D15 THROUGH D23.		What type of processing did you apply to [CROP]? Did you use: Shelling, hulling, beating? A Drying? ..... B Milling or grinding? ... C Other? (SPECIFY) ... X Nothing ..... Y GO TO NEXT CROP; IF NONE, GO TO D17 (SELECT ALL APPLICABLE)	How much [CROP] was lost due to this processing?	What was your main method of storage for [CROP]? NONE ..... 00 UNPROTECTED PILE ..... 01 HEAPED IN HOUSE ..... 02 BAGS IN HOUSE ..... 03 TRADITIONAL SILO ..... 04 METALLIC SILO ..... 05 PROTECTED HUT ..... 06 UNPROTECTED HUT ..... 07 HUNG IN TREE ..... 08 OTHER (SPECIFY) _____ 96				How much [CROP] was lost to rotting, insects, rodents/pests, flood, theft, etc. in the post-harvest period? IF NO LOSSES, GO TO D20		What was the main reason for the loss of [CROP]? ROT ..... 1 INSECTS ..... 2 RODENTS/PESTS... 3 FLOOD ..... 4 THEFT ..... 5 OTHER (SPECIFY)____ 6			How much [CROP] was consumed by the household?		How much [CROP] was sold?		What was the total income you received for selling [CROP]?	Who was the main buyer of your [CROP]? NO ONE ..... 0 RELATIVE ..... 1 LOCAL MARKET .... 2 PRIVATE TRADER... 3 AGRICULTURAL CO-OP ..... 4 OTHER (SPECIFY)____ 6		
CODE	CROP	CODE	QUANTITY	UNIT	CODE			QUANTITY	UNIT	CODE			QUANTITY	UNIT	QUANTITY	UNIT	AREDONS	CODE		
01	Corn	A B C X Y																		
02	Rice	A B C X Y																		
03	Sorghum/millet	A B C X Y																		
04	Soy bean	A B C X Y																		
05	Pigeon peas	A B C X Y																		
06	Groundnut	A B C X Y																		
07	Cabbage	A B C X Y																		
08	Lettuce	A B C X Y																		
09	Spinach	A B C X Y																		
10	Tomato	A B C X Y																		
11	Bell pepper	A B C X Y																		
12	Shallot, leek	A B C X Y																		
13	Potato	A B C X Y																		
14	Sweet potato	A B C X Y																		
15	Yam	A B C X Y																		
16	Sweet cassava	A B C X Y																		
17	Cassava	A B C X Y																		
18	Sugar cane	A B C X Y																		
19	Banana/plantain	A B C X Y																		

UNIT CODES (D16, 18, 20, 21)

SMALL POT	01	BASKET	06	BUNCH (BANANA)	11		
LARGE POT	02	SMALL SACK (MADE FOR RICE)	07	DOZEN	12		
SMALL BUCKET	03	FLOUR SAK	08	MAKOUT	13		
BUCKET (5 GALLONS)	04	LARGE SACK (MADE FOR WHEA	09	BARREL	14		
SMALL BASKET	05	PACK (BANANA...	10	DRUM	15	OTHER (SPECIFY.....	96

UNIT CODES (D16, 18, 20, 21)

MODULE G. ACCESS TO AGRICULTURAL INPUTS					
G01			G02	G03	
In the past 12 months, did you use (INPUT)?			Where did you obtain (INPUT)? (SELECT ALL THAT APPLY) Previous crop? ..... A Marketplace? ..... B Private store? ..... C Association? ..... D Donor project? ..... E Government (BAC,DDA, Mayor's Office, etc.)? ..... F Self? ..... G Other? (SPECIFY) _____ X	Were you able to obtain (INPUT) on time in the last 12 months?	
INPUTS			CODE	YES	NO
A	Irrigated or pumped water?	YES.....1 NO.....2	A B C D E F G X	1	2
B	Improved seeds?	YES.....1 NO.....2	A B C D E F G X	1	2
C	Fertilizer?	YES.....1 NO.....2	A B C D E F G X	1	2
D	Pesticides?	YES.....1 NO.....2	A B C D E F G X	1	2
E	Paid labor?	YES.....1 NO.....2	A B C D E F G X	1	2
F	Land preparation equipment, such as tractors or animals?	YES.....1 NO.....2	A B C D E F G X	1	2

MODULE G. ACCESS TO AGRICULTURAL INPUTS (CONTINUED)						
NO.	QUESTIONS AND FILTERS	CATEGORY CODES				SKIP
G04	Is (are) your plot(s) mostly flat or sloped?	FLAT ..... 1 SLOPED 2				G07
G05	What types of erosion control/water harvesting facilities are available on your plots? Terraces Grass strip Rock wall Dry walls Water catchment/impluvium Vetiver grass Tree belts Hedgerows Drainage ditches Gully plugs Contour farming Something else?		WI	NON	PK	
		TERRACES	1	2	8	
		GRASS STRIP	1	2	8	
		ROCK WALL	1	2	8	
		DRY WALLS	1	2	8	
		WATER CATCHMENT/IMPLUVIUM	1	2	8	
		VETIVER GRASS	1	2	8	
		TREE BELTS	1	2	8	
		HEDGEROWS	1	2	8	
		DRAINAGE DITCHES	1	2	8	
		GULLY PLUGS	1	2	8	
		CONTOUR FARMING	1	2	8	
		OTHER _____ (SPECIFY)	1	2	8	
G06	What is the agricultural usage of the plot(s)? Do you grow…:		WI	NON	PK	
	Dense trees/shrubs (mango, oak, mahogany, coffee, cocoa, citrus...)?	DENSE TREES/SHRUBS	1	2	8	
	Dispersed trees/shrubs (mango, oak, mahogany, coffee, cocoa, citrus...)?	DISPERSED TREES/SHRUBS	1	2	8	
	Bananas?	BANNANN	1	2	8	
	Food producing crops (rice, beans, peas, cassava, yam, potato, sweet potato, vegetables, etc.)?	KILTI POU MANJE	1	2	8	
	Patiray?	PATIRAY	1	2	8	
	Fallow?	JACHÈ	1	2	8	
	Something else?	LOT _____ (PRESIZE)	1	2	8	
G07	In the past year, did you:		WI	NON	PK	
	Participate in an agricultural work group, "sosye"?	PARTICIPATE IN AG WORK GROUP	1	2	8	
	Participate in a konbit for agricultural work?	PARTICIPATE IN A KONBIT	1	2	8	
	Hold a konbit to invite others to come and work for you?	HOLD A KONBIT	1	2	8	
	Sell days or mornings of your time as a member of a group (squad, or other) ?	SELL LABOUR DAYS: GROUP MEMBER	1	2	8	
	Purchase the labor of a group of workers (squad or others)?	PURCHASE LABOR OF WORKERS	1	2	8	
	Sell days or mornings of labor for yourself?	SELL LABOR DAYS: FOR YOURSELF	1	2	8	
	Purchase days or mornings of workers' labor to work on your own land?	PURCHASE LABOR TO WORK OWN LAND	1	2	8	

MODULE J. AGRICULTURAL TECHNOLOGIES

CHECK QUESTIONNAIRE MODULE D1, E1, AND F1 TO DETERMINE IF THE DIRECT BENEFICIARY PLANTED SOY BEANS OR GROUNDNUT IN THE PAST YEAR.

- IF THE BENEFICIARY DID NOT PLANT GROUNDNUTS OR SOY BEANS IN THE PAST YEAR, THANK THE RESPONDENT FOR THEIR TIME AND END THE INTERVIEW.
- IF THE BENEFICIARY DID PLANT GROUNDNUTS OR SOY BEANS LAST YEAR, CONTINUE WITH QUESTION J1.01.

"Next I would like to ask you about some of the crops you planted in the past one year."

NO.	QUESTION	RESPONSE
J1.01	CHECK MODULE D1, E1, AND F1: DID RESPONDENT CULTIVATE GROUNDNUT IN THE PAST ONE YEAR?	YES.....1 NO.....2 → SKIP TO J2.01
J1.02	What kind of land preparation did you use for the groundnut you planted in the past year? SELECT ALL THAT APPLY	NONE.....A → J1.07 ZERO TILLAGE.....B PLOUGHING.....C OTHER (SPECIFY)_____ .....Z
J1.03	CHECK J1.02: DID RESPONDENT USE ZERO TILLAGE TO PREPARE THE LAND?	YES.....1 NO.....2 → J1.05
J1.04	What kind of zero tillage system did you use for the groundnut? SELECT ALL THAT APPLY	SLASH AND PLANT.....A BURN AND PLANT.....B HERBICIDE AND PLANT.....C OTHER (SPECIFY)_____ .....Z
J1.05	CHECK J1.02: DID RESPONDENT USE PLOUGHING TO PREPARE THE LAND?	YES.....1 NO.....2 → J1.07
J1.06	What did you use for ploughing for the groundnut? SELECT ALL THAT APPLY	HAND TILLAGE (HOE).....A ANIMAL TRACTION.....B TRACTOR.....C OTHER (SPECIFY)_____ .....Z
J1.07	What was your main source of groundnut seed?	HOME-SAVED (SELF/FRIEND/RELATIVE).....1 PURCHASED FROM FRIEND/RELATIVE.....2 PURCHASED FROM AG DEALER.....3 PURCHASED IN MARKET (NON-AG DEALER).....4 AID DISTRIBUTION.....5 OTHER (SPECIFY)_____ 6

NO.	QUESTION	RESPONSE
J1.08	CHECK J1.07: DID RESPONDENT PURCHASE GROUNDNUT SEED FROM AN AGRICULTURAL OR NON-AGRICULTURAL DEALER (3 OR 4)?	YES ..... 1 NO ..... 2 → J1.10
J1.09	Please tell me the name of the dealer from which you purchased the groundnut seed.	NAME OF GROUNDNUT SEED DEALER (SPECIFY)_____ ....1 DON'T KNOW 8
J1.10	CHECK J1.07: DID RESPONDENT PURCHASE GROUNDNUT SEED FROM A FRIEND OR RELATIVE (2)?	YES ..... 1 NO ..... 2 → J1.12
J1.11	Why did you purchase groundnut seed from a friend or relative?	LESS EXPENSIVE ..... 1 MORE ACCESSIBLE THAN MARKET/DEALER ..... 2 QUALITY OF GROUNDNUT YIELD IS GOOD ..... 3 OTHER (SPECIFY)_____ 6
J1.12	What type of groundnut seed did you plant in the past year? SELECT ALL THAT APPLY	OPEN POLLINATED VARIETIES (OPVs)..... A HYBRID..... B DON'T KNOW X
J1.13	Was the groundnut crop grown to provide food for the household, or was it grown to be sold or traded in the market?	GROWN FOR FOOD ONLY ..... 1 GROWN FOR MARKET ONLY ..... 2 GROWN FOR BOTH FOOD & MARKET ..... 3 OTHER (SPECIFY) _____ 6
J1.14	Some farmers plant groundnut seeds in rows or randomly broadcast or plant with other crops growing in the plot. How did you plant the groundnut seeds? SELECT ALL THAT APPLY	IN ROWS ..... A RANDOMLY BROADCAST ..... B PLANTED WITH OTHER CROPS GROWING IN THE PLOT C
J1.15	Over the past two planting seasons did you rotate groundnut with other crop(s) in the same plot area?	YES ..... 1 NO ..... 2 OTHER (SPECIFY) _____ ..... 6 DON'T KNOW 8
J1.16	Did you apply fertilizer to the groundnut in the past year?	YES ..... 1 NO ..... 2→ J1.19
J1.17	At which times did you apply fertilizer to the groundnut? SELECT ALL THAT APPLY	PLANTING ..... A MID-CROP ..... B OTHER (SPECIFY)_____ ..... Z

NO.	QUESTION	RESPONSE
J1.18	What type of fertilizer did you use? SELECT ALL THAT APPLY	ORGANIC ..... A INORGANIC ..... B FOLIAR FEEDS ..... C OTHER (SPECIFY)_____ ..... Z
J1.19	Inorganic fertilizer is a man-made fertilizer that you can buy in a bag at the shop. Have you been trained in how to use and apply inorganic fertilizer for groundnut?	YES ..... 1 NO 2
J1.20	Did you have any insect, rodent or disease attacks on your groundnut in the past year?	YES ..... 1 NO 2
J1.21	Did you use chemicals to control insect, rodent or disease attacks on the groundnut?	YES ..... 1 NO ..... 2→ J1.23
J1.22	Was the use of chemicals preventive, or was it in response to an insect, rodent or disease attack?	PREVENTIVE/ROUTINE ..... 1 RESPONSE TO ATTACK 2
J1.23	Have you been trained in when to use and how to apply pesticides for groundnut?	YES ..... 1 NO 2
J1.24	How many times did you control weeds among your groundnut crops in the past year?	NUMBER OF TIMES: ☐☐ NONE .... 95 → J1.26
J1.25	How did you control the weeds among your groundnut crops? SELECT ALL THAT APPLY	HOE ..... A HERBICIDE ..... B MULCHING ..... C INTERCROPPING ..... D SLASHING ..... E PULL BY HAND ..... F
J1.26	Have you been trained in when to use and how to apply herbicides for groundnut?	YES ..... 1 NO 2
J1.27	In the past year, did you use any of the following techniques to manage soil and water for your groundnut crop? SELECT ALL THAT APPLY Terracing? Mulching? Soil bands or trenches? Intercropping? Crop rotation? Some other technique? IF YES: What was the technique?	TERRACING ..... A MULCHING ..... B SOIL BANDS/TRENCHES ..... C INTERCROPPING ..... D CROP ROTATION ..... E NONE ..... X OTHER (SPECIFY)_____ ..... Z

J1.28	Besides rainfall, did you use any additional irrigation methods for the groundnut?	YES ..... 1 NO ..... 2→ J1.30
J1.29	What type of irrigation did you use? SELECT ALL THAT APPLY	BY HAND (WATERING CAN, HOSE, ETC.) ..... A CANALS ..... B PERMANENT HOSE ..... C PUMPS ..... D OTHER (SPECIFY)_____ ..... Z
J1.30	How did you harvest the groundnut?	BY HAND ONLY ..... 1 WITH A MACHINE ONLY ..... 2 SOME BY HAND, SOME WITH A MACHINE ..... 3 NOT YET HARVESTED 4
J1.31	Did you dry any of your groundnut harvest before sale or use?	YES ..... 1 NO ..... 2→ J1.33
J1.32	What did you dry the groundnut on? SELECT ALL THAT APPLY	BARE GROUND ..... A GROUND PLASTERED WITH COW DUNG ..... B GROUND COVERED WITH STRAW ..... C LEFT TO DRY ON PLANT IN FIELD ..... D TARPAULINS ..... E DRYING YARD ..... F DRYING RACKS ..... G SOLAR DRYERS ..... H MECHANIZED DRYERS ..... I OTHER (SPECIFY)_____ ..... Z
J1.33	How did you shell the groundnut? SELECT ALL THAT APPLY	BY HAND ONLY ..... A BY STICKS ..... B WITH A SHELLING MACHINE ..... C DID NOT SHELL ..... D OTHER (SPECIFY)_____ ..... Z
J1.34	Did you put the groundnut in bags after harvest for storage or transport?	YES ..... 1 NO ..... 2→ J1.36
J1.35	What type of storage bag did you use for the groundnut?	WOVEN BAG, SINGLE LAYER ..... 1 TWO- OR THREE-LAYERED WOVEN BAGS ..... 2 HERMETIC BAG 3

J1.36	Did you use any of the following storage locations to store the groundnut? SELECT ALL THAT APPLY Residential house? Cribs? Granaries? Other constructed stores? Warehouses? Storage silos? Some other type of location? IF YES: What was the storage location you used?	RESIDENTIAL HOUSE..... A CRIBS ..... B GRANARIES ..... C OTHER CONSTRUCTED STORES ..... D WAREHOUSES ..... E STORAGE SILOS..... F NONE/DID NOT STORE ANY GROUNDNUT.....X→ SKIP TO J2.01 OTHER (SPECIFY)_____ ..... Z
J1.37	Was your groundnut attacked by insects, rodents or disease while in storage?	YES .....1 NO.....2
J2.01	CHECK MODULE D1, E1, AND F1: DID RESPONDENT CULTIVATE SOY BEANS IN THE PAST ONE YEAR?	YES .....1 NO..... 2 → SKIP TO END
J2.01A	How many varieties of soy beans did you cultivate?	NUMBER OF VARIETIES CULTIVATED: ☐☐ DON'T KNOW.....98
J2.02	What kind of land preparation did you use for the beans you planted in the past year? SELECT ALL THAT APPLY	NONE.....A → J2.07 ZERO TILLAGE .....B PLOUGHING.....C OTHER (SPECIFY) _____Z
J2.03	CHECK J2.02: DID RESPONDENT USE ZERO TILLAGE TO PREPARE THE LAND?	YES .....1 NO..... 2 → J2.05
J2.04	What kind of zero tillage system did you use for the soy beans? SELECT ALL THAT APPLY	SLASH AND PLANT .....A BURN AND PLANT.....B HERBICIDE AND PLANT .....C OTHER (SPECIFY)_____Z
J2.05	CHECK J2.02: DID RESPONDENT USE PLOUGHING TO PREPARE THE LAND?	YES .....1 NO..... 2 → J2.07
J2.06	What did you use for ploughing for the soy beans? SELECT ALL THAT APPLY	HAND TILLAGE (HOE).....A ANIMAL TRACTION .....B TRACTOR.....C OTHER (SPECIFY)_____Z

J2.07	What was your main source of soy bean seed?	HOME-SAVED (SELF/FRIEND/RELATIVE) .....1 PURCHASED FROM FRIEND/RELATIVE.....2 PURCHASED FROM AG DEALER .....3 PURCHASED IN MARKET (NON-AG DEALER) .....4 AID DISTRIBUTION.....5 OTHER (SPECIFY)_____ 6
J2.08	CHECK J2.07: DID RESPONDENT PURCHASE SOY BEAN SEED FROM AN AGRICULTURAL OR NON-AGRICULTURAL DEALER (3 OR 4)?	YES.....1 NO.....2 → J2.10
J2.09	Please tell me the name of the dealer from which you purchased the bean seed.	NAME OF SOY BEAN SEED DEALER (SPECIFY)_____ ....1 DON'T KNOW 8
J2.10	CHECK J2.07: DID RESPONDENT PURCHASE SOY BEAN SEED FROM A FRIEND OR RELATIVE (2)?	YES.....1 NO.....2 → J2.12
J2.11	Why did you purchase soy bean seed from a friend or relative?	LESS EXPENSIVE .....1 MORE ACCESSIBLE THAN MARKET/DEALER .....2 QUALITY OF BEAN YIELD IS GOOD.....3 OTHER (SPECIFY)_____ 6
J2.12	What type of bean seed did you plant in the past year? SELECT ALL THAT APPLY	OPEN POLLINATED VARIETIES (OPVs)..... A HYBRID..... B DON'T KNOW X
J2.13	Was the soy bean crop grown to provide food for the household, or was it grown to be sold or traded in the market?	GROWN FOR FOOD ONLY.....1 GROWN FOR MARKET ONLY .....2 GROWN FOR BOTH FOOD & MARKET .....3 OTHER (SPECIFY) _____ 6
J2.14	Some farmers plant soy bean seeds in rows, or randomly broadcast, or plant with other crops growing in the plot. How did you plant the bean seeds? SELECT ALL THAT APPLY	IN ROWS ..... A RANDOMLY BROADCAST ..... B PLANTED WITHIN OTHER CROPS GROWING IN THE PLOT..... C
J2.15	Over the past two planting seasons did you rotate soy beans with other crop(s) in the same plot area?	YES.....1 NO.....2 OTHER (SPECIFY) _____ .....6 DON'T KNOW.....8
J2.16	Did you apply fertilizer to the soy beans in the past year?	YES..... 1 NO..... 2→ J2.19

J2.17	At which times did you apply fertilizer to the soy beans? SELECT ALL THAT APPLY	PLANTING ..... A MID-CROP ..... B OTHER (SPECIFY)_____ ..... Z
J2.18	What type of fertilizer did you use? SELECT ALL THAT APPLY	ORGANIC ..... A INORGANIC ..... B FOLIAR FEEDS ..... C OTHER (SPECIFY)_____ ..... Z
J2.19	Inorganic fertilizer is a man-made fertilizer that you can buy in a bag at the shop. Have you been trained in how to use and apply inorganic fertilizer for soy beans?	YES ..... 1 NO 2
J2.20	Did you have any insect, rodent or disease attacks on your soy beans in the past year?	YES ..... 1 NO 2
J2.21	Did you use chemicals to control insect, rodent or disease attacks on the soy beans?	YES ..... 1 NO ..... 2→ J2.23
J2.22	Was the use of chemicals preventive, or was it in response to an insect, rodent or disease attack?	PREVENTIVE/ROUTINE ..... 1 RESPONSE TO ATTACK 2
J2.23	Have you been trained in when to use and how to apply pesticides for beans?	YES ..... 1 NO 2
J2.24	How many times did you control weeds among your soy bean crops in the past year?	NUMBER OF TIMES: ☐☐ NONE ..... 95 → J2.26
J2.25	How did you control the weeds among your soy bean crops? SELECT ALL THAT APPLY	HOE ..... A HERBICIDE ..... B MULCHING ..... C INTERCROPPING ..... D SLASHING ..... D PULL BY HAND ..... E
J2.26	Have you been trained in when to use and how to apply herbicides for soy beans?	YES ..... 1 NO 2

J2.27	In the past year, did you use any of the following techniques to manage soil and water for your soy bean crop? SELECT ALL THAT APPLY Terracing? Mulching? Soil bands or trenches? Intercropping? Crop rotation? Row planting? Some other technique? IF YES: What was the technique?	TERRACING ..... A MULCHING ..... B SOIL BANDS/TRENCHES ..... C INTERCROPPING ..... D CROP ROTATION ..... E ROW PLANTING ..... F NONE ..... X OTHER (SPECIFY)_____ ..... Z
J2.28	Besides rainfall, did you use any irrigation for the soy beans?	YES ..... 1 NO ..... 2→ J2.30
J2.29	What type of irrigation did you use? SELECT ALL THAT APPLY	BY HAND (WATERING CAN, HOSE, ETC.) ..... A CANALS ..... B PERMANENT HOSE ..... C PUMPS ..... D OTHER (SPECIFY)_____ ..... Z
J2.30	How did you harvest the soy beans?	BY HAND ONLY ..... 1 WITH A MACHINE ONLY ..... 2 SOME BY HAND, SOME WITH A MACHINE ..... 3 NOT YET HARVESTED 4
J2.31	Did you dry any of your soy bean harvest before sale or use?	YES ..... 1 NO ..... 2→ J2.33
J2.32	What did you dry the soy beans on? SELECT ALL THAT APPLY	BARE GROUND ..... A GROUND PLASTERED WITH COW DUNG ..... B LEFT TO DRY ON PLANT IN FIELD ..... C TARPAULINS ..... D DRYING YARD ..... E DRYING RACKS ..... F SOLAR DRYERS ..... G MECHANIZED DRYERS ..... H OTHER (SPECIFY)_____ ..... Z
J2.33	How did you shell the soy beans? SELECT ALL THAT APPLY	BY HAND ONLY ..... A BY STICKS ..... B WITH A SHELLING MACHINE ..... C DID NOT SHELL ..... D OTHER (SPECIFY)_____ ..... Z
J2.34	Did you put the soy beans in bags after harvest for storage or transport?	YES ..... 1 NO ..... 2→ J2.36

J2.35	What type of storage bag did you use for the soy beans?	WOVEN BAG, SINGLE LAYER.....1 TWO- OR THREE-LAYERED WOVEN BAGS.....2 HERMETIC BAG.....3
J2.36	Did you use any of the following storage locations to store the soy beans? SELECT ALL THAT APPLY Residential house? Cribs? Granaries? Other constructed stores? Warehouses? Some other type of location? IF YES: What was the storage location you used?	RESIDENTIAL HOUSE..... A CRIBS ..... B GRANARIES ..... C OTHER CONSTRUCTED STORES ..... D WAREHOUSES ..... E NONE/DID NOT STORE ANY BEANS .....X → SKIP TO J3.01 OTHER (SPECIFY)_____ ..... Z
J2.37	Were your soy beans attacked by insects, rodents or disease while in storage?	YES.....1 NO.....2

CONCLUDE THE INTERVIEW:

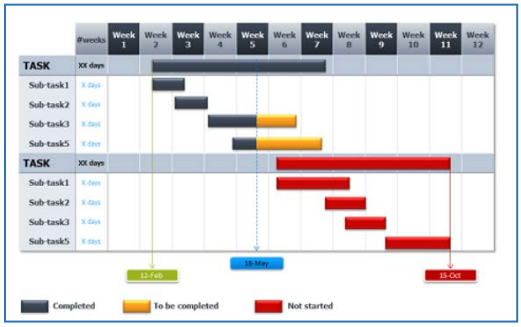
"Thank you very much for your time in responding to this survey. Your contributions are greatly appreciated."

Individual Application

Individual
Exercise
15 minutes

Think about an FTF activity in which you will need to collect data and draft a Gantt Chart for the activity.

Notes:



Measuring Area

Notes:

	Accuracy	Cost	Equipment required	Expertise needed	Level of effort	Plot size
Tape and compass	medium-high	medium; varies with quality	low	low-medium	medium-high	< .5 ha
GPS	high	med-high; varies with quality	high	medium	medium	> .5 ha*
Pacing	low-medium	low	low	low	medium	small-medium
Farmer estimates	low-medium; high w/correction factor	low	low	low	low	small
Remote sensing	low	high	high	high	medium	very large

Measuring Estimating Area Challenge

Group Exercise
90 minutes

Materials required: marbles, sturdy measuring tape, handheld GPS unit (extra AA batteries), pencil and paper (Rite-in-Rain notebook preferred), Google Earth sketch of plot to be measured.

Group 1 – Measuring Area by Pacing[4] (Army Study Guide)

A pace is equal to one natural step, about 30 inches long or 0.76 meters. One way to measure ground distance is the pace count. To accurately use the pace count method, you must know how many paces it takes you to walk 10 meters. To determine this, you must walk an accurately measured course using your measuring tape and count the number of paces you take. A pace course can be as short as 10 meters or as long as 600 meters. The pace course, regardless of length, must be on similar terrain to that you will be walking over. It does no good to walk a course on flat terrain and then try to use that pace count on hilly terrain.

To determine your pace count on a 10-meter course, count the paces it takes you to walk the 10 meters. Do this three times and then average out the results 30/number of paces. The answer will give you the average paces it takes you to walk 30 meters. It is important that each person who navigates knows her pace count.

(1) There are many methods to keep track of the distance traveled when using the pace count. Some of these methods are: put a pebble in your pocket every time you have walked 10 meters according to your pace count; tie knots in a string; or put marks in a notebook. Do not try to remember the count; always use one of these methods or design your own method.

(2) Certain conditions affect your pace-count in the field, and you must allow for them by making adjustments.

- Slopes. Your pace lengthens on a downslope and shortens on an upgrade. Keeping this in mind, if it normally takes you 120 paces to walk 100 meters, your pace count may increase to 130 or more when walking up a slope.
- Winds. A head wind shortens the pace and a tail wind increases it.
- Surfaces. Sand, gravel, mud, snow, and similar surface materials tend to shorten the pace.
- Elements. Falling snow, rain, or ice can cause the pace to be reduced in length.
- Clothing. Excess clothing and boots with poor traction affect the pace length.
- Visibility. Poor visibility such as in fog, rain, or darkness, will shorten your pace.

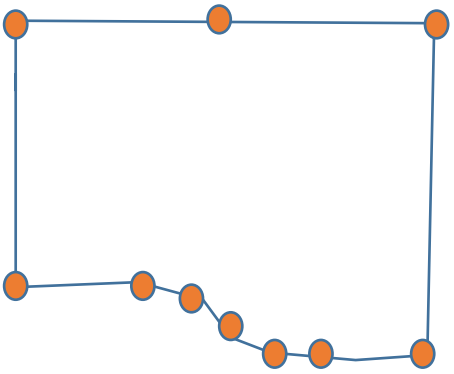
[4] http://www.armystudyguide.com/content/army_board_study_guide_topics/land_navigation_map_reading/how-to-use-pace-count-to-.shtml

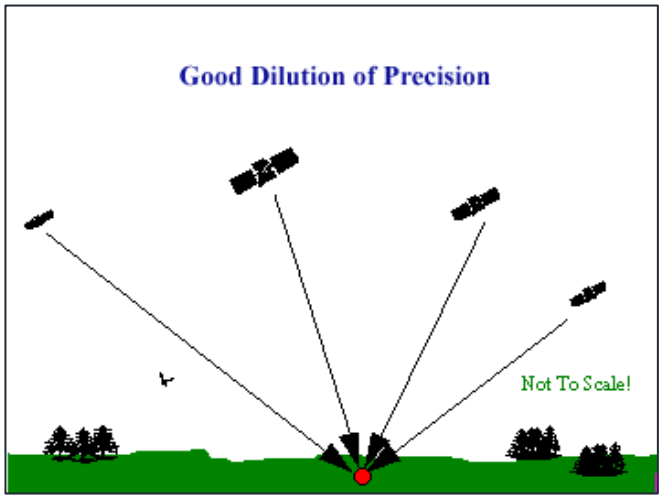
Calculate the area of the "plot part 1" rectangle by multiplying length x width.

Calculate the area "plots part 2 and 3" triangles A = $\frac{h_b\, b}{2}$. See cheat sheet for further instructions on calculating area of triangle.

Group 2 – Measuring Area with a GPS Unit

Turn on your GPS unit – check settings and make sure the unit is set to collect points in decimal degrees, and the correct[5] datum (WGS 84) is set and you have at least 4 satellites with good dilution of precision or "geometry" (satellites are not clustered together). Walk the perimeter of the plot stopping every 3-4 meters (10-13 feet) on straight edges and every 1-2 meters (3-7 feet) on curved edges to collect points. Be sure to capture the corners of the plot. Stand holding the GPS unit at each point collection location for at least 2 minutes.





Group 3 - Farmer's Estimate:

Group members will estimate the size of the plot and then try to predict what quantity of maize they expect to harvest this year (prediction). Record the amount in yield per acre. In the U.S. this is measured in bushels/acre. We will use NASS 2016 QuickStats[6] Virginia average yield per acre of 161 bushels/acre. NOTE: In your own country you would use the local unit of measurement for both area and yield. Consult with Group #1 (Pacing Measurement) and compare results on the estimated size of the plot versus direct measurement.

[5] Africa: http://earth-info.nga.mil/GandG/coordsys/onlinedatum/CountryAfricaTable.html
GPS Datum List: http://therucksack.tripod.com/MiBSAR/LandNav/Datums/GarminMapDatumList.pdf

[6] 2015 **STATE AGRICULTURE OVERVIEW:** https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=virginia

How to ...

How to calculate an area in the field

You may need to calculate an area in the field, particularly for mapping a weed infestation or working out how much herbicide you need to mix to treat weeds.

Measuring an area

There are two ways you can measure an area:

1. Use a tape measure to get an accurate measurement.
2. Pace out the distance as best you can to get an estimation.

The unit used for measuring an area is a metre (m).

If you want to use the 'pacing out' method to measure an area you should first practise stepping out against a measured distance of 10m.

Here's how you do it:

1
Measure out 10m.

2
Use a natural stride to pace out 10m.

3
Work out the number of paces taken in 10m.

Use a natural stride to pace out 10m. To get an accurate measurement don't force an overextended step. Make sure you do it several times to find your natural rhythm and pace length.

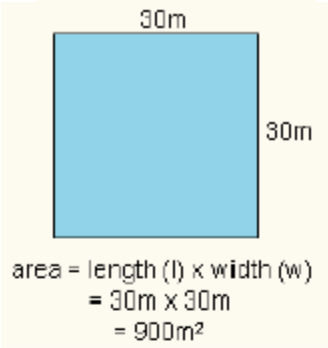
Calculating regular shapes

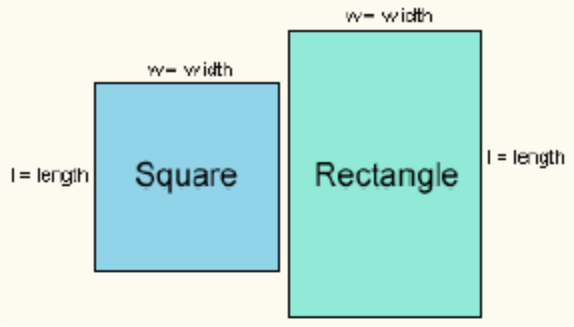
The area of a regular shape is calculated using the following formula:

Area = length x width

The area is shown in square metres (m^2). For example, to calculate the area of a plot of land, use the following formula:

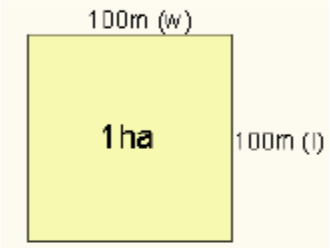
https://www.dlsweb.rmit.edu.au/toolbox/conservation/html/pages/website/how_to/howto_11.htm





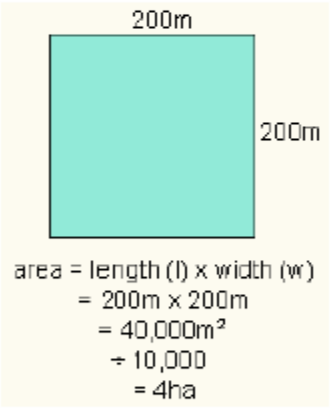
Calculating areas in hectares

You can think of a hectare (ha) as measuring 100m by 100m.



Take the figure you have worked out in square metres (m²), then divide by 10,000 to find the number of hectares (ha).

For example, to calculate a larger area of land in hectares, use the following formula:



Use a calculator to convert an area in square metres (m²) into hectares (ha).

GEOSPATIAL INNOVATION FACILITY
Cutting-Edge Mapping Technology at UC Berkeley

GPS Field Protocol:

What you need to know when using a GPS unit for fieldwork

Global Positioning Systems (GPS) is a common way to collect location data for agricultural, urban, and natural resources. It is made up of a constellation of 24 satellites used for civilian GPS, which accurately determine your location (X, Y, Z) in any weather, day or night, anywhere on Earth. A GPS unit uses four or more satellites to triangulate your position on Earth. For this reason, you need four or more satellites! GPS satellite signals travel by line of sight, and will pass through clouds, glass, & plastic, but NOT through most solid objects, such as buildings & mountains.

Your GPS accuracy depends on:

The type of GPS unit you have
If you have a handheld GPS unit (e.g. Garmin), the highest attainable horizontal accuracy is about 3 m. More accurate units like Trimble's GeoXH, will give you accuracy of < 3 m, sometimes sub-meter accuracy under good conditions or with additional antennas. More expensive units are not *always* the most accurate – many have reported that Garmin handhelds give better accuracy under heavy canopy than do more advanced Trimble units.
Recommendation: buy the most affordable (and dependable) GPS that best suits your accuracy requirements!

Number of satellites visible to your receiver
Buildings, terrain, or sometimes even dense foliage can block signal reception, causing position errors or possibly no position reading at all. Also, signal multi-path might happen if a signal from a satellite is reflected off objects such as tall buildings or large rock surfaces before it reaches the receiver. This increases the travel time of the signal, causing errors.
Recommendation: The more satellites, the better – but you must have four or more before you record a point! If you cannot get four or more, wait a few minutes for the satellites to move/adjust, or move to an area with better reception and make note of distance and direction moved from the desired point.

Strength of satellite signals
While many GPS units do not give you a measurement of satellite signal strength, you can get an idea of it by viewing the satellite screen on most GPS units, which depicts signal strength with bar graphs for each visibly satellite.
Recommendation: The stronger the signals, the better – just make sure you have four or more satellite signals before you record a point!

Pictured here is a Garmin GPSmap 60CSx as an example of the satellite screen, which all GPS devices contain.
Image credit: Garmin.com

Geometric positioning of the satellites in the sky
Ideal satellite geometry exists when the satellites are located at wide angles relative to each other in the sky, which improves triangulation and thus reduces error. While Trimble units give a measurement for satellite geometry ("PDOP," "HDOP," or "GDOP"), handheld units do not give a measurement for it – it is a good idea to be aware that accuracy will improve when satellites are distributed in different areas of the sky.
Recommendation: Aim for the satellites to be widely distributed across the skyplot on your GPS unit.

Differential correction procedures
Wide-Area Augmentation System (WAAS) is available on many GPS units (see "Handheld GPS Buyer's Guide" for more info), and on all Trimble receivers. WAAS can improve GPS accuracy to within 2 m for compatible handheld GPS units, and to less than 1 m with Trimble units. However, it's only available in North America, and you need an unobstructed view of the southern horizon, so it's ideal for open land (such as open agricultural crops) and marine applications. You know you are receiving WAAS signal if you are receiving signals from satellites with ID numbers 31 or higher (in the skyplot). Differential GPS (DGPS) is available for Trimble units (and for PDAs with ArcPad and GPS Correct software) and can improve accuracy to about 1 cm.
Recommendation: Only enable WAAS if you have an open view of the southern horizon – if you have WAAS enabled without a clear view, your accuracy will be reduced because the GPS unit is constantly trying to find the WAAS satellites. As for DGPS, use it if you have access to DGPS correction (either real-time or post-processed), and you want sub-meter accuracy.

http://gif.berkeley.edu

What format should I use to collect GPS data?

The most important things about collecting GPS are to be consistent and to document your data. That way, data can be easily used with other data with minimal adjustments, and people who use your data in the future (including you) can know exactly what format (projection and datum) you used to collect the data. If you do not document your data, it is possible that it will be unusable in the future!

All geographic data has a projection and a datum:

- **Projection** is how the 3D earth is mapped on a 2D surface, like a map on paper or your computer screen. GPS units call it the "Position Format" or "Coordinate System."
- **Datum** is the mathematical model that fits the earth to an ellipsoid. Most GPS units call it the "Datum" or "Map Datum."

Recommendations:

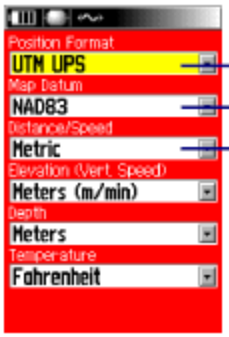
- Use the projection: UTM (stands for Universal Transverse Mercator)
- Use the datum: NAD 83 (stands for North American Datum 1983)
- Using other projections (like Latitude-Longitude or Stateplane) and other datum (like WGS 84) is okay – just be sure you record whatever projection and datum you used!
- If you decide to use Latitude-Longitude, try to collect in decimal-degrees (hddd.dddd°) as the Position Format.

GPS Accuracy:

- Accuracy is how close you are to the real-world location. It is also called the offset or the error. On most handheld units, accuracy is represented by a "error buffer," e.g. ±14ft or ±11m.
- Your GPS accuracy depends on many things; see other side.
- When we talk about accuracy, usually we mean horizontal accuracy. There is also vertical accuracy, which is how close you are to the real-world elevation at a given location. Vertical accuracy is usually somewhat inaccurate with handheld GPS unit (10-200m), while it is more accurate with more advanced Trimble units (<5m). For sub-meter vertical accuracy, survey-grade GPS equipment is required.

How do I set my GPS projection & datum?

All GPS units have a Setup menu, where you can set the projection and datum. Check the GPS unit's manual for detailed instructions. Below is a screenshot from Garmin's Setup|Units menu:



Set the projection here. For UTM, set to UTM UPS. For Lat/Long, set to hddd.ddd°.

Set the datum here. For NAD 83 or WGS 84..

Set the distance units here, either meters or feet. If you use UTM, use meters as the units.

Recording GPS Information

- **UTM:**
  - » Easting (e.g. 0525690)
  - » Northing (e.g. 4286289)
  - » Accuracy (e.g. ± 11m)
- **Latitude, Longitude:**
  - » Latitude (e.g. 37.867242) with 5-6 decimals
  - » Longitude (e.g. 122.300746) with 5-6 decimals
  - » Accuracy (e.g. ± 11m)
- **Backup**
  It is always a good idea to record GPS coordinates and any other data on paper/notebook in the field if possible, just in case of data loss after accidental damage. (Damage is less common with rugged units, such as Garmin handhelds or the Trimble Recon.)

If you do record GPS coordinates, write both the X (Easting or Latitude), the Y(Northing or Longitude), and the accuracy, e.g. ± 11m.

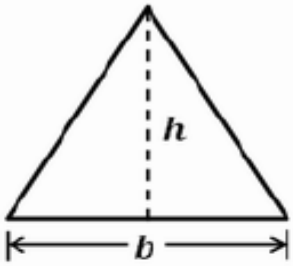
Things to Remember:

1. Be consistent with what projection and datum you use to collect data.
2. When in doubt, or if starting a new project, use UTM projection with NAD 83 datum.
3. Only record a point if you have 4 or more satellites.
4. Record accuracies on your field sheet since you can't always transfer these digitally.

Geospatial Innovation Facility
http://gif.berkeley.edu

Area of a Triangle

(Solve Using Base and Height)

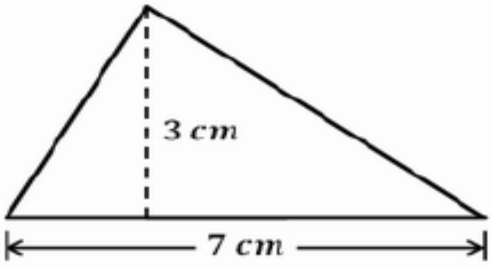


$$Area = \frac{1}{2}(b \times h)$$

$b = base\ of\ the\ triangle$

$h = height\ of\ the\ triangle$

Example:



$$A = \frac{1}{2}(b \times h)$$

$$= \frac{1}{2}(7 \times 3)$$

$$= \frac{1}{2}(21)$$

$$= 10.5\ cm^2$$

Disaggregating Data

Notes:

Sampling Basics

Notes:

–

Individual Application

Individual
Exercise
15 minutes

Think about an FTF activity in which you need to collect performance monitoring data.

- Select one variable on which you will collect data
- Do you need to disaggregate the data
- If so, how will you disaggregate the data?
- Sample size

Notes:

Additional Resources:

- Feed the Future Agricultural Indicators Handbook: https://agrilinks.org/sites/default/files/resource/files/FTF_Agriculture_Indicators_Guide_Mar_2015.pdf
- USGS Global Positioning Application and Practice: http://water.usgs.gov/osw/gps/
- GNSS in Africa : http://www.gnss-africa.org/?page_id=23
- Measurement, Farm Size and Productivity (LSMS-ISA/WorldBank) http://siteresources.worldbank.org/INTSURAGRI/Resources/7420178-1294259038276/Fact_Artifact_Brief.pdf
- The Humanitarian Data Exchange - Open Data Sources for the Global Development Community: https://data.humdata.org/
- Army Study Guide (How to Pace Count): http://www.armystudyguide.com/content/army_board_study_guide_topics/land_navigation_map_reading/how-to-use-pace-count-to-.shtml

FOR MORE INFORMATION:

For more information about the Feed the Future Performance Monitoring Course, contact:

Anne Swindale (aswindale@usaid.org) or Salik Farooqi (sfarooqi@usaid.gov)
Monitoring, Evaluation and Learning
Bureau of Food Security
USAID