Module 3 Trends in using sweetpotato and Module 4 Production and sales volumes

SPHI

Sweetpotato for Profit and Health Initiative

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Module 3: Trends in using sweetpotato

1. This module identifies:
    - Trends in area under sweetpotato Proportion of households growing sweetpotato
    - The percent changes in area allocated to different varieties (white/cream, yellow, orange, purple-fleshed) of sweetpotato.
2. Its difficult this data through a survey
3. Therefore we get this information through estimation
4. It is also easier and faster to analyze

Objectives

- It collects farmer perceptions on:
  - Changes in area under sweetpotato
  - Sweetpotato production
  - Sales volumes over a three year recall period among the selected households
- Why three years?
  - Recall data is difficult hence we choose a period that is easier to remember

Tools

- It is recommended to use at least **120 HH**
- The tool can be utilized in the baseline and endline surveys or at any point of survey
- These surveys should be conducted at the same period/season
  - This controls for seasonality and differences in planting patterns

Process

- We will go through the questions quickly
- Then go through the paper version
- Then go to analysis utilizing STATA

M03_01. WHAT WAS THE PREVIOUS SEASON IN WHICH YOU GREW SWEETPOTATO (SP)?

1 Main growing season
2 Secondary growing season
3 Dry season
4 Did not grow in the previous season (go to M03_03)

M03_02. FOR THAT PREVIOUS SEASON, TELL US ALL OF THE SOURCES OF YOUR PLANTING MATERIAL (CUTTINGS): [Put 1 if mentioned, 0 if not mentioned]. This is an open question, where you note any source mentioned by placing a 1 in the box of any mentioned source, then filling in the remaining boxes with zero before moving on to the next question.

M03_02A. Own farm _____
M03_02B. From this project _____
M03_02C. Nearby male farmer _____
M03_02D. Nearby female farmer_____
M03_03E. Distant male farmer _____
M03_02F. Distant female farmer _____
M03_02G. Trained male multiplier _____
M03_02H. Trained female multiplier_____
M03_02I. Government extension agent _____
M03_02J. NGO extension agent/volunteer_____
M03_02K. Market_____
M03_02L. Private sector seed company_____
M03_02M. Research Center_____
M03_02N. Other_____

M03_03. DURING THE PAST THREE YEARS DID ANYONE IN YOUR HOUSEHOLD ACQUIRE CUTTINGS TO PLANT THROUGH:

M03_04A. Purchase? 1=Yes 0=No
M03_04B. Free distribution? 1=Yes 0=No
M03_04C. Other? 1=Yes 0=No

If the answer is NO to all three options, confirm that the HH has not grown sweetpotato during the past three years and skip to the next module, M04.

M03_04. IF BOUGHT, WHAT IS THE MAIN REASON THE CUTTING WERE BOUGHT? Fill in the single box provided with the main reason as pre-defined below.

1=Lost planting material due to drying out
2=Destroyed by livestock
3=Stolen
4= To try new variety
5=Low yields of existing varieties
6=First time grower
7=Other

M03_03. DURING THE PAST THREE YEARS DID ANYONE IN YOUR HOUSEHOLD ACQUIRE CUTTINGS TO PLANT THROUGH:

M03_04A. Purchase? 1=Yes 0=No
M03_04B. Free distribution? 1=Yes 0=No
M03_04C. Other? 1=Yes 0=No

If the answer is NO to all three options, confirm that the HH has not grown sweetpotato during the past three years and skip to the next module, M04.

M03_04. IF BOUGHT, WHAT IS THE MAIN REASON THE CUTTING WERE BOUGHT? Fill in the single box provided with the main reason as pre-defined below.

1=Lost planting material due to drying out
2=Destroyed by livestock
3=Stolen
4= To try new variety
5=Low yields of existing varieties
6=First time grower
7=Other

M03_05A. PLEASE TELL ME THE NUMBER OF NEW VARIETIES YOUR HOUSHOLD HAS OBTAINED DURING THE PAST 3 YEARS? This number is a total of distinct varieties from any source.

M03_05B. OF THESE, HOW MANY ARE ORANGE-FLESHED? Use the A4 sheet showing the colors of the different types of flesh colors to assure that the respondent can differentiate between yellow and orange.

M03_06A. DID YOU STOP GROWING ANY SWEETPOTATO VARIETIES DURING THE PAST 3 YEARS? You can follow up by noting since the month and year that represents three years ago.

M03_06B. *If the answer to* M03_06A is Yes, then HOW MANY VARIETIES WERE AMONG THE NEW ONES THAT YOU OBTAINED? Clearly, the answer to this question cannot by more than the number provided in M03_05A.

M03_06C. *If the answer to* M03_06A is Yes, then HOW MANY AMONG THOSE DROPPED WERE ORANGE-FLESHED?

M03_07. IF SOME VARIETIES WERE DROPPED, WHY ARE YOU NO LONGER GROWING THESE VARIETIES? [Put 1 if mentioned, 0 if not mentioned].

M03_07A. Low root yield_____
M03_07B. Takes too long to mature_____
M03_07C. Susceptible to pests or disease_____
M03_07D. Too watery_____
M03_07E. Bad taste_____
M03_07F. Not drought resistant_____
M03_07G. Not marketable_____
M03_07H. Lack of planting material_____
M03_07I. Other

If M03_07I=1, then M03_07J. Specify: *describe in space provided* _____

M03_08A. WHAT IS THE NAME OF YOUR MOST PREFERRED VARIETY? Right the name clearly. If there is no code for the variety name given, fill in 9998.

M03_08C. WHAT IS ITS FLESH COLOR (INSIDE)? Again, show picture with the different varieties with distinct flesh color.
1=White 2=Cream 3=Light yellow 4=Deep yellow 5=Light orange 6=Deep orange
7=Purple 8=Purple & orange

M03_09A. WHAT IS THE NAME OF YOUR **SECOND** MOST PREFERRED VARIETY? Right the name clearly. If there is no code for the variety name given, fill in 9998.

M03_09C. WHAT IS ITS FLESH COLOR (INSIDE)? Again, show picture with the different varieties with distinct flesh color.

1=White 2=Cream 3=Light yellow 4=Deep yellow 5=Light orange 6=Deep orange
7=Purple 8=Purple & orange

M03_10A. HAVE YOU EVER HEARD OF THE TRIPLE S METHOD? 1=Yes 0=No

You can provide an additional explanation to the interviewee that this a method for keeping small, but healthy roots in sand during the dry season, then sprouting them in a garden prior to the start of the rains. Ideally, you would have a picture to show.

M03_10B. IF YES, HAVE YOU EVER TRIED IT? 1=Yes 0=No

M03_10C. ARE YOU STILL USING TRIPPLE S? 1=Yes 0=No

M03_11. HAVE YOU TRIED ANY NEW METHODS OF CONSERVING YOUR CUTTINGS TO PLANT THE NEXT SEASON DURING THE PAST 3 YEARS? 1=Yes 0=No

IF YES, PLEASE DESCRIBE THE METHOD YOU HAVE TRIED. This is open ended. Record a 1 for all techniques mentioned, a zero in the remaining boxes.

MO3_11A. Irrigation (any type)
MO3_11B. Use of lowlands, i.e. planting in the valley bottoms
MO3_11C. Fenced plot
MO3_11D. Garden close to home
MO3_11E. Letting roots stay in ground and sprout.
MO3_11F. Under shade
MO3_11G. Next to bathroom
MO3_11H. Other (but no need to specify)

M03_12. LOOKING AT ALL THE AREA UNDER SWEETPOTATO DURING THE PAST YEAR COMPARED TO 3 YEARS AGO, HAS THE AMOUNT OF LAND:
1=Increased 2=Decreased or 3=Stayed the same?

M03_13. IF 10 ROOTS REPRESENT ALL YOUR SWEETPOTATO PRODUCED THIS PAST YEAR, HOW MANY OF THOSE ROOTS WOULD BE WHITE-FLESHED, HOW MANY YELLOW-FLESHED AND HOW MANY ORANGE OR PURPLE-FLESHED?
M03_13A. White-fleshed
M03_13B. Yellow-fleshed
M03_13C. Orange-fleshed
M03_13D. Purple-fleshed

In asking this question, it is good to use 10 dried beans or stones that you can have the respondent use to put into the different categories on the ground. The total of the different categories MUST add up to ten. At the end of all of the modules, double check to see that the answer here is consistent with the production module 4 recording of the different flesh types of sweetpotato being grown.

M03_14. IF 10 ROOTS REPRESENT ALL YOUR SWEETPOTATO PRODUCED 3 YEARS AGO, HOW MANY OF THOSE ROOTS WOULD BE WHITE-FLESHED, HOW MANY YELLOW-FLESHED AND HOW MANY ORANGE OR PURPLE-FLESHED?

M03_14A. White-fleshed
M03_14B. Yellow-fleshed
M03_14C. Orange-fleshed
M03_14D. Purple-fleshed

In asking this question, it is good to use 10 dried beans or stones that you can have the respondent use to put into the different categories on the ground. The total of the different categories MUST add up to ten.

MO3_15A. DID YOU SELL ANY SWEETPOTATO WHEN YOU GREW IT 3 YEARS AGO? 1-Yes 0-No 9-N/A did not grow three years ago.

MO3_15B. HAVE YOU SOLD ANY TYPE OF SWEETPOTATO IN THE LAST 1 YEAR? 1-Yes 0-No

M03_16A. COMPARED TO 3 YEARS AGO, HAS THE MONEY FROM SELLING ANY TYPE OF SWEETPOTATO
1=Increased 2=Decreased or 3=Stayed the same? 9=N/A (don't sell sweetpotato)

M03_16B. COMPARED TO 3 YEARS AGO, HAS THE MONEY FROM SELLING YOUR ORANGE-FLESHED SWEETPOTATO
1=Increased 2=Decreased or 3=Stayed the same? 9=N/A (don't sell sweetpotato)

M03_17A. COMPARED TO 3 YEARS AGO, HAS THE AMOUNT OF FAMILY MALE LABOR USED IN SWEETPOTATO PRODUCTION:
1=Increased 2=Decreased or 3=Stayed the same? 9=N/A (MEN not involved)

M03_17B. WHY?
During pre-testing you may create pre-coded responses to this question. Whether pre-coded or not, please write down the answer provided fully. The answers will need to be post-coded before running the STATA program.

M03_17C. The code of the WHY answer in M03_17B.

M03_18A. COMPARED TO 3 YEARS AGO, HAS THE AMOUNT OF FAMILY **FEMALE** LABOR USED IN SWEETPOTATO PRODUCTION:
1=Increased 2=Decreased or 3=Stayed the same? 9=N/A (MEN not involved)

M03_18B. WHY?
During pre-testing you may create pre-coded responses to this question. Whether pre-coded or not, please write down the answer provided fully. The answers will need to be post-coded before running the STATA program.

M03_18C. The code of the WHY answer in M03_18B.

3.4 Analysis

This module is straightforward to analysis, generating frequencies, means and or medians depending on the kind of variable. The results Table 3.1 summarizes the variables which will appear in the tables generated by the provided STATA program.
In the STATA program, an option is provided for analyzing this descriptive trend data by 2 categorical variables from module 2, namely Status of the Household and Type of Household (for example, an intervention versus control household). Concerning the Status of Household Head, some combining of the different responses into male-headed versus female-headed may be necessary if there are two few responses in categories 2 through 4.

Figure 3.1: Form for collection of information on qualitative trends

M03. TRENDS IN USING SWEETPOTATO PROV: DIST: LOC: SUBLOC: VILL: HHNO: **Pg 3**

M03_01 WHAT WAS THE PREVIOUS SEASON IN WHICH YOU GREW SWEETPOTATO (SP)? 1- Main growing season 2- Secondary growing season 3- Dry season 4- Did not grow SP the previous season *if 4, go to M03_03*

M03_02 FOR THAT PREVIOUS SEASON, TELL US ALL OF THE SOURCES OF YOUR PLANTING MATERIAL: ***(Put 1 when mentioned and 0 if not)*** **M03_02A** Own Farm **M03_02B** From this project **M03_02C** Nearby Male farmer

M03_02D Nearby Female farmer **M03_02E** Distant Male farmer **M03_02F** Distant Female farmer **M03_02G** Trained Male multiplier (DVM) **M03_02H** Trained Female Multiplier (DVM)

M03_02I Government Extension Agent **M03_02J** NGO Extension Agent/Volunteer **M03_02K** Market **M03_02L** Private sector seed company **M03_02M** Research Center **M03_02N** Other

M03_03 DURING THE PAST THREE YEARS DID ANYONE IN YOUR HOUSEHOLD ACQUIRE CUTTINGS TO PLAN **M03_03A** THROUGH PURCHASE 1-Yes 0-No **M03_03B** THROUGH A FREE DISTRIBUTION 1-Yes 0-No **M03_03C** OTHER 1-Yes 0-No

if the answer is NO to all three, confirm not growing SP during past 3 years and skip to M04 on the next page

M03_04 *IF BOUGHT:* WhAT IS THE MAIN REASON THE CUTTINGS WERE BOUGHT? 1- Lost due to drying out 2- Destroyed by livestock 3- Stolen 4- To try new variety 5- Low yields of existing varieties 6- 1st time grower 7- Other

M03_05A PLEASE TELL ME THE NUMBER OF NEW VARIETIES YOUR HOUSHOLD HAS OBTAINED DURING THE PAST 3 YEARS? **M03_05B** OF THESE, HOW MANY ARE ORANGE-FLESHED?

M03_06A DID YOU STOP GROWING ANY SWEETPOTATO VARIETIES DURING THE PAST 3 YEARS? 1-Yes 0-No **M03_06B** *IF YES:* OF THESE HOW MANY WERE AMONG THE NEW ONES THAT YOU OBTAINED? **M03_06C** WERE OFSP?

M03_07 *IF STOPPED:* WHY ARE YOU FOR NO LONGER GROWING THESE VARIETIES? (Put 1 when mentioned and 0 if not) **M03_07A** Low root yield **M03_07B** Takes too long to mature **M03_07C** Susceptible to pest or disease

M03_07D Too watery **M03_07E** Bad Taste **M03_07F** Not drought resistant **M03_07G** Not marketable **M03_07H** Lack of planting material **M03_07I** Other **M03_07J** Specify:

M03_08A NAME OF YOUR MOST PREFERRED VARIETY: **M03_08C** ITS FLESH COLOR (INSIDE)

M03_09A NAME OF YOUR SECOND MOST PREFERRED VARIETY: **M03_09C** ITS FLESH COLOR (INSIDE)

Codes for Flesh Colors 1-White 2- Cream 3- Light Yellow 4- Deeper Yellow 5- Light Orange 6- Deeper Orange 7- Purple 8-Orange & Purple

M03_10A HAVE YOU EVER HEARD OF THE TRIPLE S METHOD? 1-Yes 0-No *IF YES:* **M03_10B** WHO IN YOUR HH HAS TRIED IT? 0-No one 1-Male 2-Female 3- Both **M03_10C** IS IT STILL BEING USED? 1-Yes 0-No 8-N/A

that is storing your roots in sand during the dry season, then sprouting….

M03_11 HAVE YOU OR ANYONE IN YOUR HH TRIED ANY NEW METHODS OF CONSERVING YOUR CUTTINGS TO PLANT THE NEXT SEASON DURING THE PAST 3 YEARS 1-Yes 0-No 8-N/A ***IF YES:*** PLEASE DESCRIBE 1-Mentioned 0- Not Mentioned

M03_11A Irrigation (any type) **M03_11B** Use of lowlands **M03_11C** Fenced plot **M03_11D** Garden near home **M03_11E** Let roots re-sprout **M03_11F** Under shade **M03_11G** Next to bathroom **M03_11H** Other

M03_12 LOOKING AT ALL THE AREA UNDER SWEETPOTATO DURING THE PAST YEAR COMPARED TO 3 YEARS AGO, HAS THE AMOUNT OF LAND: 1- Increased 2- Decreased or 3- Stayed the same?

M03_13 IF 10 ROOTS REPRESENT ALL YOUR SWEETPOTATO PRODUCED **THIS PAST YEAR**, HOW MANY OF THOSE ROOTS WOULD BE WHITE-FLESHED, HOW MANY YELLOW-FLESHED AND HOW MANY ORANGE OR PURPLE-FLESHED?

M03_13A white-fleshed **M03_13B** yellow-fleshed **M03_13C** orange-fleshed **M03_13D** purple-fleshed *Check for consistency with the production module..*

M03_14 IF 10 ROOTS REPRESENT ALL YOUR SWEETPOTATO PRODUCED 3 YEARS AGO, HOW MANY OF THOSE ROOTS WOULD BE WHITE-FLESHED, HOW MANY YELLOW-FLESHED AND HOW MANY ORANGE OR PURPLE-FLESHED?

M03_14A white-fleshed **M03_14B** yellow-fleshed **M03_14C** orange-fleshed **M03_14D** purple-fleshed

M03_15A HAVE YOU SOLD ANY SWEETPOTATO IN THE LAST THREE YEARS? 1-Yes 0-No **M03_15B** HAVE YOU SOLD ANY SWEETPOTATO IN THE LAST ONE YEAR? 1-Yes 0-No

M03_16 ***IF YES:*** **COMPARED TO 3 YEARS AGO,** HAS THE MONEY FROM SELLING **M03_16A** ANY TYPE OF SWEETPOTATO 1- Increased 2- Decreased or 3- Stayed the same? 8- N/A, don't sell **M03_16B** SELLING OFSP?

M03_17A COMPARED TO 3 YEARS AGO, HAS THE AMOUNT OF FAMILY **MALE** LABOR USED IN SWEETPOTATO PRODUCTION 1- Increased 2- Decreased or 3- Stayed the same?

M03_17B WHY?

M03_18A COMPARED TO 3 YEARS AGO, HAS THE AMOUNT OF FAMILY **FEMALE** LABOR USED IN SWEETPOTATO PRODUCTION 1- Increased 2- Decreased or 3- Stayed the same?

M03_18B WHY?

Module 4: Production and sales volumes

- Superior to the existing ones in at least two aspects, namely:
  - They are bred to be pest and disease tolerant
  - The orange-fleshed types have superior levels of beta-carotene (pro-vitamin A) –deeper orange indicates higher beta-carotene
  - They mature much faster, i.e., 3-5 months instead of 6-7 months hence are higher yielding and early maturing
  - HH gets food faster during the hunger season

Challenges

- Most of the HH do piecemeal harvest unless they are commercially oriented
- Hence it is difficult for a HH to estimate with one question the SP yield
- However, increase is becoming an important indicator
- We also need to estimate sales because income is an important indicator
- We will also look at gender dynamics

Objectives

- The module monitor progress
- Specifically aims to assess:
  - Whether households that receive and grow **improved varieties** of sweetpotato
  - Adoption of biofortified orange-fleshed varieties
  - If HH gets higher harvests
  - Do HH sell the new varieties

Tools

- Tool is used at the baseline, midterm, and endline survey
- It is critical to utilize pre-testing to get measurement units and conversion factors
- Very important to get clearly the reference period (year, season)
- Starting month and ending month
- Number of fields (plots) and their location

Some tips

- Clearly identify:
- The period of consideration
- Is it total area or per plot (field)
- Variety in terms of flesh colors
- Units of measure at harvest
- What is a major and a minor harvest
- Frequency of harvest and unit of measure (day, week, month)

Experience

- This is a tough module in general
- Therefore, it is recommended that we utilize ODK, CSPRo to ensure that the right checks are built into the software
- Amount sold should be commensurate with production
- Value of the sale will require some calculation on the side hence a notebook is very important

Figure 4.1: Form for Collection of Sweetpotato Production and Sales Information

M04: SWEETPOTATO PRODUCTION AND SALES PROV: DIST: LOC: SUBLOC: VILL: HHNO: **Pg 4**

Now, we would like to talk to you in greater detail about your sweetpotato crop that was planted and harvested ...[*during the specified recall period]*

M04_01 Note the recall period for these questions: 1- Past 12 months 2- Last growing season that has been harvested **M04_02** Starting: Month: Yr: **M04_03** Ending: Month: Yr:

M04_04 How many different sweetpotato fields does your household have.....*[during recall period]*? **M04_04A** near the house? **M04_04B** in upland areas? **M04_04C** in lowland areas

											During the MAJOR harvest month(s) of ..				During the MINOR harvest months						
M04_05B	**M04_06**	**M04_07A**	**M04_7B**	**M04_08**	**M04_09**	**M04_10**	**M04_11**	**M04_12**	**M04_13**	**M04_14**	**M04_15** How many		**M04_16** Each time		**M04_17** How many		**M04_18** Each time		**M04_19**		**M04_19C**
Location of plot	Area of the plot (Quantity)	Area Units	Who manages the plot?	Plot has WFSP?	Plot has YFSP?	Plot has OFSP?	Plot has PFSP?	Est. Total No. Different varieties of SP	Inter-cropped?	Tell us in which months did your hh harvest large quantities of SP or which you harvested minor quantities for consumption or for sale	times did your hh harvest per day?, per week?, or per month? or just once?		your HH harvests, how much did it harvest? (Units codes are below)		times did your HH harvest per day?, per week?, or per month? or just once?		Each time your HH harvests, how much did it harvest? (Units codes are below)		Amount Sold		Value of Total Sale
		1-M^2	1-Male					on the plot		0- No harvest	Times	Unit	Qty	Unit	Times	Unit	Qty	Unit	Qty	Unit	Local
1-near house		2-acre	2-Female							1- Months of minor harvest		1- Day				1- Day					Currency
2-upland		3-Ha	3-Both	0-No	0-No	0-No	0-No		0-No	2- Months of major harvest		2- Week		(codes		2- Week		(codes		(codes	
3-lowland		4-Are		1-Yes	1-Yes	1-Yes	1-Yes		1-Yes	9- N/A not in recall period		3- Month		below)		3- Month		below)		below)	
		5Tim		8-DK	8-DK	8-DK	8-DK		8-DK	Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar		4- Time				4- Time					

Units of Measure

01- Kg	03-100 Kg Maize Equiv. Bag	05- 70 Kgs Maize Equiv. Bag	07- 50 Kg Maize Equiv. Bag	09- 10 Kg Maize Equiv. Bag	11- 20 Ltr Can	13- 5 Ltr Can	15- Tons	17- Gorogoro	19- Small basin	21- Other-Specify
02- Numbers	04- 90 Kg Maize Equiv. Bag	06- 60 Kg Maize Equiv. Bag	08- 25 Kg Maize Equiv. Bag	10- 25 Ltr Can	12- 10 Ltr Can	14- 1 Ltr Can	16- Ox Cart	18- Debe	20- Big basin	

M04_19D Exchange Rate *Local/USD* *Will assume is currency of the country in A00* **C20** Who manages the money received from sweetpotato sales in the household? 1- Male 2- Female 3- Both

M04_21 Tell me the three most important ways that you spent the money that you earned from selling sweetpotato: ***(Put 1 when mentioned and 0 if not mentioned, and 99 if not applicable)***

M04_21A	School fees	**M04_21D**	Pay house rent	**M04_21G**	Rent land	**M04_21J**	Buy farm inputs (seed, etc.)	**M04_21M**	Buy bicycle	**M04_21P**	Ceremony (e.g. funeral)	**M04_21S**	Buy meat or fish
M04_21B	Furniture	**M04_21E**	Construction of house	**M04_21H**	Buy land	**M04_21K**	Buy large livestock (cow, goat)	**M04_2N**	Buy vehicle	**M04_21Q**	Buy salt, sugar	**M04_21T**	Buy other foods
M04_21C	Medical bills	**M04_21F**	Pay dowry	**M04_21I**	Pay labor	**M04_21L**	Buy small livestock (chicken, etc)	**M04_21O**	Leisure	**M04_21R**	Buy vitamin A rich food	**M04_21U**	Other
										M04_21V	Specify:		

M04_22 *If OFSP and Non-OFSP were sold:* For the same amount sold, does OFSP get a higher, lower, or same price as white-fleshed sweetpotato? 1- Higher 2- Lower 3- Same 4- Same, but sells faster 8-N/A

Figure 4.1 presents the questionnaire is recommended for collecting data under this module.

M04_01. What is the reference recall period for this interview? 1=Year 2=Last growing season that has been harvested. We have built flexibility into the selected recall period because some may use this module for monitoring progress each season; others for a longer recall period. In most surveys, the maximum recall period is for 12 months.

M04_02. What is the starting month and year for this recall period?

M04_03. What is the ending month and year for this recall period?

Having specific start and ending times will help avoid confusion, especially when combining data across countries.

M04_04. How many sweetpotato fields did your household have during the *recall period.* Place the actual number of separate plots/fields of sweetpotato found in three distinct locations in the relevant boxes:

M04_0A Near the house **M04_04B** In upland areas **M04_04C** In lowland areas

The table with Questions M04_05B through M04_19C captures information concerning area and production on a per PLOT basis for sweetpotato production and sales. This will enable us to more precisely determine yields and the proportion of production attributable to men and women, albeit on a recall basis. Up to five plots can be recorded. If a household has more than five plots, attach an additional form.

For each plot, fill in the following questions:

M04_05B. Where is the plot located? 1-near house 2-upland 3-lowland

Note once the table is completely filled, verify that the answers in this column is consistent with the information reported in M04_04 *in terms of number of each location of plot.*

M04_06. What was the area of the plot?

M04_07A. Record the UNIT for the plot size: 1= M^2 2=Acre 3=Ha (10,000 sq meters) 4=Are (100 sq meters) 5=Timad (2500 sq meters)

M04_07B. Who manages the plot? Record the gender of the person most responsible for managing the plot. If the respondent insist it is both a man and a woman, record both. 1-Male 2-Female 3-Both

For the following four questions use the survey tool showing the different flesh colors of the 4 major sweetpotato flesh types. Many local languages do NOT have a color for orange. So never presume that people can distinguish orange from yellow.

M04_08. Was the variety grown white-fleshed (WFSP) 0=No 1=Yes 8=Don't know (DK)

M04_09. Was the variety grown yellow-fleshed (YFSP) 0=No 1=Yes 8=DK

M04_10. Was the variety grown orange-fleshed (OFSP) 0=No 1=Yes 8=DK

M04_11. Was the variety grown purple-fleshed (PFSP) 0=No 1=Yes 8=DK

M04_12. Record the total number of all distinct sweetpotato varieties on this plot. *Note that you can have different varieties of the same flesh color.*

M04_13. Was this plot intercropped? 0=No 1=Yes 8=DK. Intercropping of sweetpotato with maize, cassava and legumes occurs. When the sweetpotato is intercropped, the yield of sweetpotato will be affected. Hence, this indicator helps interpret the production data.

M04_14. On this plot, please tell us in which months your hh harvest large quantities of sweetpotato? These are **major** harvest months. For every specific month mentioned, record a **2** in the box for that month.

On this plot, please tell us in which monthsyour hh harvest small quantities of sweetpotato? These are **minor** harvest months. For every specific month mentioned, record a **1** in the box for that month.

Then in all of the remaining boxes for non-mentioned months, record a **0**,

M04_15. During the **MAJOR** harvest month(s) of.... (mention the months with 2 in their boxes), how many times did you harvest your sweetpotato? Was it per day, per week, or per month or perhaps even just once for the whole field.

Under Unit, *record the appropriate time reference period:* 1-Day 2-Week 3-Month 4-Time

Then, under Times, *fill in the quantity for the* Unit *specified.* For example: two weeks would be:

Times	Unit
2	2

M04_16. Each time you went to do one of these bigger harvests, how much did you harvest? *The codes for the UNIT OF HARVEST are shown below the table. If you are carrying a representative container, show it to the interviewee at this time. First, find out what the Unit of measure was and record that under Unit (from provide codes 01-21); then under* Quantity (Qty) record the number of those Units harvested.

Then you will repeat the same approach for the MINOR harvest months.

M04_17. During the **MINOR** harvest month(s) of…. (mention the months with 1 in their boxes), how many times did you harvest your sweetpotato? Was it per day, per week, or per month or number of times.

Under Unit, *record the appropriate time reference period:* 1-Day 2-Week 3-Month 4-Time

Then, under Times, *fill in the quantity for the* Unit *specified.* For example: 2 times a month would be:

Times	Unit
2	3

M04_18. Each time you went to do one of these minor, smaller harvests, how much did you harvest? *The codes for the UNIT OF HARVEST are shown below the table. If you are carrying a representative container, show it to the interviewee at this time. First, find out what the Unit of measure was and record that under Unit (from provide codes 01-21); then under* Quantity (Qty) record the number of those Units harvested.

Farmers tend to remember amounts of sweetpotato sold easier than harvested, because this tends to be done in larger amounts, less often. Hence, for each plot, we are asking for an estimate of total amount sold.

M04_19. For this plot, what was the amount of sweetpotato sold? Record the amount under Qty and the Unit, based on the codes provided).

M04_19C. How much money did you make from the total amount of sweetpotato sold? *Record the total amount in the local currency.*

M04_19D. Find out from your supervisor what the current exchange rate of the local currency is compared to dollars. Record that in the box provided, for example: 102 Kenyan Shillings/ $USD.

M04_20. Who manages the money received from sweetpotato sales in the household? Record the appropriate answer: 1- Male 2-Female 3-Both

M04_21. Tell me three most important ways that you spent the money that you earned during the recall period from selling sweetpotato. Twenty-one items are presented, plus a space for writing in a mentioned item that is not on the pre-coded list **(M04_21V)**. Put a 1 in the box of each mentioned item; a zero in the rest.

M04_22. If OFSP was sold, for the same amount, does OFSP get a higher, lower or the same price as white-fleshed sweetpotato? Record the appropriate response.

1=Higher price 2=Lower price 3=Same price 4=Same price but sells faster 9=N/A

A. **Production.** We will use the following example to demonstrate how production is determined for each plot:

M04_14 On this plot, please tell us in which months did your hh harvest large quantities of SP? **(Major months)** On this plot, in which months did you harvest small quantities of sweetpotato? **(Minor months)** *Fill in zero for any month when there was no harvest from the plot.*												**During the MAJOR harvest month(s) of ..** **M04_15** How many times did your hh harvest per day?, per week?, or per month? or just once?		**M04_16** Each time your HH harvests, how much did it harvest? (Units codes are below)		**During the MINOR harvest months** **M04_17** How many times did your HH harvest per day?, per week?, or per month? or just once?		**M04_18** Each time your HH harvests, how much did it harvest? (Units codes are below)		**M04_19** Amount Sold		**M04_19C** Value of Total Sale
0- No harvest 1- Months of minor harvest 2- Months of major harvest 9- N/A not in recall period												Times	Unit 1- Day 2- Week 3- Month 4- Time	Qty	Unit (codes below)	Times	Unit 1- Day 2- Week 3- Month 4- Time	Qty	Unit (codes below)	Qty	Unit (codes below)	Local Currency
Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar											
0	0	0	1	2	2	1	1	0	0	0	0	3	2	1	1 0	3	3	1	1 3	1	0 7	5 5 0 0

1) First determine the number of Major and Minor months:
   Tot_major_months= 2 (Aug, Sept); **M04_MINOR=3** (July, October, November)
2) Second, calculate the amount in kilograms produced in **EACH Major** harvest month:
   Unit of measure 10 is a 25 liter can equivalent to 20.0 kgs of sweetpotato. 1 can was harvest per visit (M04_16_CALC). The frequency of visits was 3 times per week X 4 weeks per month: or 12 visits to the field for a major harvest month. Per major harvest month: 12 visits X 20 kgs/visit=240 kgs. Major harvest period: 2 months X 240 kgs/month =480 kgs
3) Third calculate the amount in kilograms produced in **EACH Minor** harvest month:
   Unit of measure 13 is a 5 liter can equivalent to 3.045 kgs of sweetpotato. 1 can was harvest per visit (M04_18_CALC). Then the frequency of visits was 3 times per month: or 3 visits to the field for a minor harvest month. So, per major harvest month: 3 visits X 3.045 kgs/visit = 9.135 kgs. Minor harvest period: 3 months X 9.14 kgs/month=27.4 kgs. Therefore: For this plot: Total production = 480 + 27.4 = 507.4 kgs produced.

B. **Yield on the plot.** Yield is typically reported in tons/hectare. From A, we have production in kilograms, which is divided by 1000 to be in tons. From **M04_06 & M04_07A,** we determine the area in hectares (plot_area_ha), using the following conversion factors:

If M04_07A=1 (meters squared),	then plot_area_ha = M04_06/10000
If M04_07A=2 (acres)	then plot_area_ha= M04_06*0.40468564224
If M04_07A=3 (hectares)	then plot_area_ha = M04_06
If M04_07A=4 (are)	then plot_area_ha = M04_06/100
IF M04_07A=5 (timad)	then plot_area_ha = M04_06*0.25

Yield is Production (tons)/plot_area_ha.

C. **Assigning production figures to OFSP.** In addition to determining total sweetpotato production on the plot, we will estimate the OFSP production.

If M04_10= 1 (OFSP grown) and all the other 3 types (M04_08; M04_09; M04_11) = 0, then Proportion_OFSP=1

If M04_10=1 (OFSP grown) and only 1 other flesh type is grown, then Proportion_OFSP = .5

If M04_10=1 (OFSP grown) and 2 other flesh types are grown, then Proportion_OFSP = .33

If M04_10=1 (OFSP grown) and 3 other flesh types are grown, then Proportion_OFSP = .25

Tot_OFSP_Production = Proportion OFSP # Tot_SP_Production