

APPENDIX 1: QUESTIONNAIRE TO FARMERS

Good morning/afternoon, Sir/ Madam _____. I am a PhD candidate from KNUST. I am working on a project concerned with Postharvest loss of fruits and vegetables along the value chain and its implication on micronutrient nutrient deficiency among women and children under five you could participate. Now, the project is just starting and we are completing a survey among participants to know more about their knowledge, attitudes and practices of post-harvest loss of fruits and vegetables along the value chain. The interview will take about 30 minutes. All the information we obtain will remain strictly confidential and your answers and name will never be revealed. Also, you are not obliged to answer any question you do not want to, and you may stop the interview at any time.

The objective of this study is to establish the relationship between Post harvest of fruits and vegetables and micronutrient deficiencies. This is not to evaluate or criticize you, so please do not feel pressured to give a specific response and do not feel shy if you do not know the answer to a question. I am not expecting you give a specific answer; I would like you to answer questions honestly, telling me about what you know, how you feel, the way you live and how you eat and prepare food. Feel free to answer questions at your own pace.

Do you agree to participate in this interview?

Yes ___ No ___ *If yes, continue to the next question; if no, stop the interview.*

Do you have any question before we start? (*Answer questions*).

May I start now?

Date of interview:

- 1) Name of Interviewer..... Tel No.....
- 2) District.....
- 3) Town/Village.....
- 4) Respondent's ID.....
- 5) Gender: 1) Male 2) Female
- 6) What is your educational status? Tick as appropriate
a) Primary / Middle/JSS b) Secondary /SSS d) Tertiary e) Islamic education f) none g) other.....
- 7) What type(s) of work (major) do you do in addition to farming?
- 8) How long have you been in the fruits and vegetable business?yrs
- 9) How many acres of fruits and vegetable land do you cultivate now.....
- 10) Which vegetables or fruits do you grow on your farm?
- 11) Which is your major?

- 12) Is postharvest loss a problem to you? a) Yes [] b) No []
- 13) Where do the losses occur most? a) after harvest b) storage c) transporting d) other (specify).....
- 14) Please name the varieties you cultivate for your major crop. a) b) c)
- 15) Source of planting materials? a) MOFA b) other farmers c) seedling banks d) other please specify
- 16) What informs your crop choice a) Market preference b) ease of cultivation c) very portable d) less postharvest damage
- 17) Who does the crop harvesting? a) Farmer b) trained assistants c) hired labour d) other please specify.....
- 18) After harvesting where does the produce go? a) market b) store house c) home d) others please specify

HARVESTING AND HARVESTING OPERATIONS

- 19) How do you harvest your produce? a) Manual b) mechanical
- 20) If Manual, then specify. a) By knife cutting b) by hand twisting c) cutlass d) others please specify
- 21) What is the average maturity period of produce? a) 2-3 months b) 3-4months c) 4-5month d) if different please specify.....
- 22) What time of the day do you harvest your fruits? a) Early in the morning b) after sunset (evening) c) any time of the day
- 23) At what stage of maturity of the fruit do you harvest? a) When fully ripe b) when partially ripe c) when green and unripe
- 24) How do you check for the maturity of your produce before harvesting? a) By hand feel b) By visual observation c) Uses an instrument to measure
- 25) Do you grade your produce immediately after harvesting? a) Yes () b) No ()
- 26) What quality indicators do you use for grading your produce? a) colour b) size c) Weight d) shape e) Physical blemishes

27) What quantity of produce do/did you now harvest from your plot?

28) What quantity of produce do you sell on farm? a) all b) half c) quarter

29) Do you encounter insect pest on the vegetable? a) Yes () b) No ()

30) What is the nature of damage they cause? Please State

.....
.....

31) Apart from the pest do your crops experience some disease problems?

a) Yes [] b) No []

32) Do you know what causes these diseases?

.....
.....

33) Please describe the type, quantity and value of losses you incur during harvesting and the immediate post-harvest processing.

Stages of handling	Types of fruit / vegetables	Nature of loss (see code below)	Quantity of produce harvested (weight)	Estimated loss (quantity /weight)	Value of loss in Ghana cedis
Harvesting operations.					
Gathering, transport, packing etc at farm					
Grading and sorting operations at farm					
Temporal processing (Drying, curing, etc)					
Transport to home, store, or market					

1=Weight loss 2=Presence of insects 3=Destruction by rodents/birds 4=rotting of fruits 5=Wilting and shrinking 6= Microbial or disease infections 7=Spillage 8=Boring by insects 9=others (specify)

34) What is the price of your fruit / vegetable per unit? GH¢.....

35) What do you think should be done to minimize these losses?

a).....

b).....

LOSSES AT STORAGE AND STORAGE PRACTICES

36) Do you store some of the produce after harvest? a) Yes () b) No ()

37) If yes, where do you store them before marketing? a) on farm b) at home c) Storage facility d) others please specify.....

38) How do you store them a) In sacks b) In baskets c) on racks d) others please specify
.....

39) I have been trained on how to handle my produce during storage to prevent losses

a) Yes

b) No

40) How long does your vegetable store?

Fruit / vegetables crop	Days	Weeks	Months	Years

41) Describe the types, quantity and value of losses you incur during storage at home or farm.

Location of storage	Types of storage	Nature of loss –see	Quantity of produce harvested (weight)	Estimated losses (weight/ quantity)	Value of loss in Ghana cedis
Storage at home	Sacks				
	Baskets				
	Cartons				
	Racks				
Storage at storage facility	Sacks				
	Baskets				
	Cartons				
Storage on the farm	Sacks				
	Baskets				
	Cartons				
	Racks				

1=Weight loss 2=Presence of insects 3=Destruction by rodents/birds 4=Rotting of fruits
5=Wilting and shrinking 6= Microbial or disease infections 7=Spillage 8=Boring by insects
9=Others (specify)

42) Which storage facility do you keep your produce? a) Standard storage facility b)
Improved storage facility c) Common storeroom d) Other
(specify).....

43) How long do you store the produce?
Please (specify).....

44) How long does it take to sell your produce? Please Specify.....

45) What are the common causes of these losses?

- Lack of storage facilities
- Lack of education on storage practices
- Improper storage containers
- Pests
- Other (please specify) _____

Good morning/afternoon, Sir / Madam _____. I am a PhD candidate from KNUST. I am working on a project concerned with Postharvest loss of fruits and vegetables along the value chain and its implication on micronutrient nutrient deficiency among women and children under five you could participate. Now, the project is just starting and we are completing a survey among participants to know more about their knowledge, attitudes and practices to do with nutrition. The interview will take about 30 minutes. All the information we obtain will remain strictly confidential and your answers and name will never be revealed. Also, you are not obliged to answer any question you do not want to, and you may stop the interview at any time.

Do you agree to participate in this interview?

Do you have any question before we start? (*Answer questions*).

Date of interview:

- 1) Name of Interviewer..... Tel no.
- 2) District.....
- 3) Town/Village.....
- 4) Respondent.....
- 5) Gender: 1) Male 2) Female
- 6) What is your educational status? Tick as appropriate
a) Primary b) Middle/JHS c) Secondary /SHS d) Tertiary
e) Islamic education f) None g) other.....
- 7) What type(s) of work do you do in addition to trading?

8) How long have you been in the fruit / vegetables business?yrs

9) What type of trader are you? a) assembler b) retailer c) wholesaler d) other (specify).....

10) Please provide names for the most important communities where you get your produce. a)..... b)..... c).....

11) Where do you obtain your vegetable produce from?

a) on farm b) purchase from farmer c) purchase from wholesaler
d) purchase from retailers.

12) Please describe the types, quantity and value of losses you incur during purchasing and immediate post-purchase period.

Stages of handling	Nature of loss (see code below)	Quantity of produce harvested (weight)	Estimated loss (quantity /weight)	Value of loss in Ghana cedis
Gathering, packaging, etc. at purchasing point				
Transport to home				
Grading and sorting Operations at home				

1=Weight loss 2=Presence of insects 3=Destruction by rodents/birds 4=Rotting of fruits 5=Wilting and shrinking 6= Microbial or disease infections 7=Spillage 8=Boring by insects 9=Others (specify)

13) Do you readily get transport to carry your produce to the market centre? a) Yes ()
b) No ()

14) How do you usually transport purchased produce to your point of sale? a) By own vehicle b) By appropriate rent/hired vehicle c) By any available passing commercial vehicle d) By any available head-loaded porter f) other.....

15) Do you incur commodity losses from the point of purchase to the point of sale? a) Yes
b) No .

16) How do you determine the price of your produce? a) Production cost b) Availability or scarcity of the product c) Price of other competitors d) Other (specify)

17) What practice do you carry out when the vegetables reach the market? a) Sorting b) Washing c) other (specify).....

18) Please describe the losses you incur, including the quantity and value of losses during marketing of your processed produce.

Stages of handling	Types of fruit / vegetables	Nature of loss (see code below)	Quantity of produce harvested (weight)	Estimated loss (quantity /weight)	Value of loss in Ghana cedis
Loading and off-loading					
During transport to Market					
During wholesale Points					
During retail Points					

1=Weight loss 2=Presence of insects 3=Destruction by rodents/birds 4=Rotting of fruits 5=Wilting and shrinking 6= Microbial or disease infections 7=Spillage 8=Boring by insects 9=Others (specify)

19) Do you usually store produce? a) Yes () b) No ()

20) If yes, where do you store the produce? a) At home b) at market or sale point

21) Please describe the types, quantity and value of losses you incur during storage at home or market.

Location of storage	Types of storage	Nature of loss –(see below)	Quantity of produce harvested (weight)	Estimated losses (weight/ quantity)	Value of loss in Ghana cedis
Storage at home	Sacks				
	Baskets				
	Cartons				
	Sacks				
	Baskets				

Storage at storage facility	Cartons				
Storage at the market	Cartons				
	Sacks				
	Baskets				

1=Weight loss 2=Presence of insects 3=Destruction by rodents/birds 4=Rotting of fruits
5=Wilting and shrinking 6= Microbial or disease infections 7=Spillage 8=Boring by insects
9=Others (specify)

22) Which storage facility do you keep your produce? a) Standard storage facility b)
Improved storage facility c) Common storeroom d) Other
(specify).....

23) How long do you store the produce?
Please (specify).....

24) How long does it take to sell your produce? Please Specify.....

25) What is the price of your fruit / vegetable per unit? GH¢.....

26) What are the common causes of these losses?

- a) Lack of storage facilities
- b) Lack of education on storage practices
- c) Improper storage containers
- d) Pests
- e) Other (please specify) _____

27) What do you think can be done to reduce the losses?

.....
.....

APPENDIX II - QUESTIONNAIRE TO HOUSEHOLDS – WOMEN

Good morning/afternoon, Madam _____. I am a PhD candidate from KNUST. I am working on a project concerned with Postharvest loss of fruits and vegetables along the value chain and its implication on micronutrient nutrient deficiency among women and children under five you could participate. Now, the project is just starting and we are completing a survey among participants to know more about their knowledge, attitudes and practices to do with nutrition. The interview will take about 30 minutes. All the information we obtain will remain strictly confidential and your answers and name will never be revealed. Also, you are not obliged to answer any question you do not want to, and you may stop the interview at any time.

The objective of this study is to establish the relationship between Post harvest of fruits and vegetables and micronutrient deficiencies. This survey will ask you about the fruits and vegetables that you typically eat. Each question will be asking about a fruit OR a vegetable, how often or not often you eat fruits and vegetables and how you preserve them. There is no right or wrong answer and you will not be graded on the answers you choose, this is a survey about what you do and what you like to do. This is not to evaluate or criticize you, so please do not feel pressured to give a specific response and do not feel shy if you do not know the answer to a question. I am not expecting you give a specific answer; I would like you to answer questions honestly, telling me about what you know, how you feel, the way you live and how you eat and prepare food. Feel free to answer questions at your own pace.

Do you agree to participate in this interview?

Yes ____ No ____ *If yes, continue to the next question; if no, stop the interview.*

Do you have any question before we start? (*Answer questions*).

May I start now?

Date of interview:

1. Name of Interviewer..... Tel no.
2. District.....
3. Town/Village.....

Questions for person responsible for meal preparation and purchasing in the home

4. Respondent's ID.....
5. Tel phone number
6. How many people are in the household ?

7. How many people in the household are under five ?
8. Age of respondent a) 18–25 years b) 26–35 years c) 36–45 years d) 46–55 years
e) 56–65 years f) Over 65 years
9. **Ethnicity**
a. Akan [] b. Ewe [] c. Ga/Adangme [] d. Northerner[]
e. Others
Specify.....
10. **Marital Status**
a. Single [] b. Married [] c. Divorced[] d. Widowed[]
11. What is your educational status? Tick as appropriate
a) Primary b) Middle/JHS c) Secondary /SHS d) Tertiary
e) Islamic education f) None g) other.....
12. What is your current employment status ?
a) Employed b) unemployed c) student d) retired e) other please specify
13. What type(s) of work do you do in ?
14. What is your average monthly household income level ?
a. Less than 100 cedis b. 100 – 500 cedis c. 500 – 1000 cedis d. 1000 – 2000cedis
e. 2000 – 5000 cedis f. above 5000 cedis
15. Please provide names of the places where you get your fruits and vegetables.
a)..... b)..... c).....
16. Who do you obtain your fruits and vegetables from?
a) purchase from farmer b) purchase from wholesaler
c) purchase from retailers

ANTHROPOMETRY

ANTHROPOMETRIC MEASUREMENTS

VARIOUS MEASUREMENTS	VALUES
Height (cm)	
Weight (Kg)	
BMI (Kg/m ²)	

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LABORATORY MEASUREMENT

Hb	
Serum Ferritin	
C reactive Protein	

FRUITS AND VEGETABLE CONSUMPTION AND MICRONUTRIENT DEFICIENCY

Explain to the participant:

I am going to ask you some questions about iron deficiency as well as iron-rich foods, and please let me know if you need me to clarify any of my questions. Feel free to ask any questions you may have.

General signs of iron-deficiency anaemia deficiency

17. Have you heard about iron-deficiency anaemia?

- a. Yes
- b. No
- c. Don't know/no answer

18. If Yes:

Can you tell me how you can recognize someone who has anaemia?

-
-
- a. Less energy/weakness
 - b. Paleness/pallor
 - c. Spoon nails/bent nails (koilonychia)
 - d. More likely to become sick (less immunity to infections)
 - e. Other
 - f. Don't know

Consequences of iron-deficiency anaemia for women

19. What are the health risks for pregnant women of a lack of iron in the diet?

-
- a. Risk of dying during or after pregnancy
 - b. Difficult delivery
 - c. Other
 - d. Don't know

20. Do you know of any vegetables that help improve anaemia status in women?

- a. Yes
- b. No

21. If yes, can you list them

22. Certain fruits also help in the absorption of iron rich foods. Can you list them.

23. Some beverages decrease iron absorption when taken with meals. Which ones?

- a. Coffee
- b. Tea
- c. Other
- d. Don't know

24. Do you usually drink coffee or tea?

- a. Yes
- b. No
- c. Don't know

25. *If Yes:* Every day?

- a. Yes
- b. No
- c. Don't know

26. Are you currently on any supplements? Which are they?

- a. Iron supplements
- b. Folic acid supplements
- c. Other
- d. No

27. The table below is a list of fruits and vegetables commonly grown in this locality. Tick () how many times or not you consume these fruits and vegetables per week.

FRUITS AND VEGETABLE GROUPS	6 - 7 times	3 - 5 times	1-2 times	Never
Kontomire (Cocoyam leaves)				
Wawa leaves (leaves of Triplochiton scleroxylon)				
Borkorborkor				
Ayoyo (Corchorus olitorius)				
Nsusua (Solanum sp.)				
Cocoa leaves				
Cowpea leaves				
Okro				
Tomatoes				
Cassava leaves				
Garden eggs				
leaves of Silk Cotton (Ceiba Pentandra)				
Lettuce				
Carrot				
Cabbage				
Sweet potato leaves				
Moringa				
Yellow pumpkins				
Orange flesh potatoes				
FRUITS				
Pear				
Pineapple				
Banana				

Orange				
Pawpaw				
Sweet apple				
Mango				
Watermelon				
Guava				
Tangerine				
Apple				
Lemon				
Others (please specify)				

28. What are some of the barriers to the consumption of these fruits and vegetables?

(underline any of the reasons that apply)

- a. Lack of knowledge on edibility and food uses of some vegetables
- b. Too much focus on commercial vegetable production
- c. Inadequate preparation and cooking skills
- d. Preparation of vegetable is time-consuming
- e. Vegetable soups consumption perceived as ‘old fashioned’ among younger generations
- f. Laziness
- g. Lack of knowledge on the nutritional value of vegetables
- h. Non-palatability of some vegetables- some have varied degrees of bitterness
- i. Belief that imported (processed) foods are better than local food
- j. Influence of adverts on processed foods, e.g. tomato paste, flavour enhancers
- k. Excessive use and wrong choice of agrochemicals on vegetables
- l. Lack of storage facilities
- m. Pricing

Fruits

- n. Seasonal availability
- o. Lack of knowledge of nutritional value
- p. Laziness (e.g., in peeling)
- q. Lack of storage facilities
- r. Contamination with agro-chemicals
- s. Pricing

29. How do you store your fruits and vegetables?

- a. In the refrigerator (below 5 °C)/cool box
- b. Covered (protected from insects, rodents, pests and dust)
- c. Separated from cooked or meat products
- d. Other
- e. Don't know/no answer

30. How do you manage left over fruits and vegetables?

- a. Discard
- b. Store in refrigerator
- c. Use for meal preparation next day
- d. Other _____
- e. Don't know

31. Please describe the types, quantity and value of losses you incur during storage at home .

Location of storage	Types of storage	Nature of loss –see code below	Quantity Purchased (weight)	Estimated losses (weight/ quantity)	Value of loss in Ghana cedis
Storage at home	Plastic bowls				
	Polythene bags				
	Metallic containers				
	Open bowls				
	Baskets				
	Racks				

1=Weight loss 2=Presence of insects 3=Destruction by rodents/birds 4=Rotting of fruits
5=Wilting and shrinking 6= Microbial or disease infections 7=Spillage 8=Boring by insects 9 =Excess
from cooking 10 = Left over 11 = other

32. What are the common causes of these losses?

- f. Lack of storage facilities
- g. Lack of planning
- h. Over buying
- i. Buying in bulk
- j. Lack of time
- k. Other (please specify) _____

Fruits and vegetables Wasting Behaviours

Instruction: Please, use the scale below to indicate how often you behave as described.

Scale: 1 – Never; 2 – Very Rarely, 3 – Rarely, 4 – Difficult to say; 5 – Occasionally; 6 – Very Frequently; 7 – Always

Note: If possible, present the items in random order.

Food waste behavior	1	2	3	4	5	6	7
Discarding unpalatable fruits and vegetables							
I throw away fruits and vegetables I do not like.							
I throw away dried out fruits and vegetables .							
I throw away wilted fruits and vegetables .							
I throw away fruits and vegetables that looks unpalatable.							
Buying as needed							
I only buy the fruits and vegetables I need.							
I buy in small amounts .							
I buy as much fruits and vegetables as I need at any one time.							
I avoid overshopping.							
Check the fruits and vegetables when purchasing to ensure that food is not broken or packaging is not damaged.							
Reduce purchasing of items that are much discarded							
Planning meals							
I plan meals for the next day.							
I make a plan before shopping.							

I try to prepare meals that I can eat the next day.							
I make shopping lists before I go shopping.							
Storage							
Make sure those fresh fruits and vegetables ingredients are stored at the appropriate temperatures.							
Store the fruits and vegetables in order during purchase – “first-in, first-out”.							
Ensure the food ingredient storage area is safe (avoid spills, broken and damaged products).							
Food Preparation							
Make extra food in case it is needed only.							
Reduce using food ingredients that are easily damaged for preparing food							
Consider family needs and demands when preparing food.							
Use the leftover quality food for the preparation of other meals							
Prepare a variety of sizes of portion meals							
Sharing food							
I share the food I can't eat with people I know.							
I give away food I can't eat.							
I give away surplus fruits and vegetables to people who need it.							

I pass surplus food to people who are hungry							
Feeding Animals							
I feed leftover food to my pets.							
I feed leftover food to animals.							
I feed animals when I have excess fruits and vegetables							
I feed hungry animals with food I cannot eat.							
Others							

FOR CHILDREN

I am going to ask you some questions about your child (6 months to 5 years) in relation to iron deficiency, vitamin A deficiency as well as vitamin A and iron rich foods and Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

33. Child's name / code _____

34. Child's sex *a. Male* *b. Female*

35. Child's age _____ Last birth day ____/____/____

36. Child's weight _____

37. Child's Height _____

38. Hb _____

39. Is child attending school? *a. Yes* *b. No*

40. What level of school is child attending now? *a. Crèche* *b. Nursey* *c. Kindergarten*
d. Other (please specify) _____

41. Is your child breast feeding? *a. Yes* *b. No*

42. Was the child breast fed (Older children)? *a. Yes* *b. No*

43. Is your child currently on any supplements? Which are they?
a. Iron supplements
b. Vitamin A supplements
c. Other
d. No

44. Have you heard about iron deficiency in children?
a. Yes
b. " No
c. " Don't know/no answer

45. If Yes: Can you tell me how you can recognize a child who lacks iron in his or her body?

- _____
-
- _____
- a. Weakness/feels less energetic*
 - b. Be more likely to become sick (less immunity to infections)*
 - c. Pale ness*
 - d. Other*

- e. Don't know

46. What causes iron deficiency in children ?

- a. Poor variety of foods
- b. Eat too little food/not eat much (poor intake)
- c. Lack of breast feeding
- d. Other
- e. Don't know

47. Do you know of any vegetables that help improve iron status in children ?

- a. Yes
- b. No

48. If yes, can you list them

49. What are the health risks for infants and young children of a lack of iron in the diet?

- a. Delay of mental and physical development
- b. Other
- c. Don't know

50. The table below is a list of fruits and vegetables commonly grown in this locality. Tick () how many times or not your child consumes these fruits and vegetables per week.

FRUITS AND VEGETABLE GROUPS	6 - 7 times	3 - 5 times	1-2 times	Never
Kontomire (Cocoyam leaves)				
Wawa leaves (leaves of Triplochiton scleroxylon)				
Borkorborkor				
Ayoyo (Corchorus olitorius)				
Nsusua (Solanum sp.)				
Cocoa leaves				

Cowpea leaves				
Okro				
Tomatoes				
Cassava leaves				
Garden eggs				
leaves of Silk Cotton (Ceiba Pentandra)				
Lettuce				
Carrot				
Cabbage				
Sweet potato leaves				
Moringa				
Yellow pumpkins				
Orange flesh potatoes				
FRUITS				
Pear				
Pineapple				
Banana				
Orange				
Pawpaw				
Sweet apple				
Mango				
Watermelon				
Guava				
Tangerine				
Apple				
Lemon				
Others (please specify)				

HOUSEHOLD HUNGER SCALE

Num.	Question	Response	Code & notation
D01	In the past 30 days, did you worry that your household would not have enough food?		Yes = 1 No = 0 >> D03
D02	How often did this happen?		Rarely (once or twice in the past 30 days) = 1 Sometimes (three to ten times in the past 30 days) = 2 Often (more than ten times in the past 30 days) = 3
D03	In the past 30 days, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?		Yes = 1 No = 0 >> D05
D04	How often did this happen?		Rarely (once or twice in the past 30 days) = 1 Sometimes (three to ten times in the past 30 days) = 2 Often (more than ten times in the past 30 days) = 3
D05	In the past 30 days, did you or any household member have to eat a limited variety of foods due to a lack of resources?		Yes = 1 No = 0 >> D07
D06	How often did this happen?		Rarely (once or twice in the past 30 days) = 1 Sometimes (three to ten times in the past 30 days) = 2 Often (more than ten times in the past 30 days) = 3
D07	In the past 30 days, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?		Yes = 1 No = 0 >> D09
D08	How often did this happen?		Rarely (once or twice in the past 30 days) = 1 Sometimes (three to ten times in the past 30 days) = 2 Often (more than ten times in the past 30 days) = 3
D09	In the past 30 days, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?		Yes = 1 No = 0 >> D11
D10	How often did this happen?		Rarely (once or twice in the past 30 days) = 1 Sometimes (three to ten times in the past 30 days) = 2 Often (more than ten times in the past 30 days) = 3

D11	In the past 30 days, did you or any other household member have to eat fewer meals in a day because there was not enough food?		Yes = 1 No = 0 >> D13
D12	How often did this happen?		Rarely (once or twice in the past 30 days) = 1 Sometimes (three to ten times in the past 30 days) = 2 Often (more than ten times in the past 30 days) = 3
D13	In the past 30 days, was there ever no food to eat of any kind in your household because of lack of resources to get food?		Yes = 1 No = 0 >> D15
D14	How often did this happen?		Rarely (once or twice in the past 30 days) = 1 Sometimes (three to ten times in the past 30 days) = 2 Often (more than ten times in the past 30 days) = 3
D15	In the past 30 days, did you or any household member go to sleep at night hungry because there was not enough food?		Yes = 1 No = 0 >> D17
D16	How often did this happen?		Rarely (once or twice in the past 30 days) = 1 Sometimes (three to ten times in the past 30 days) = 2 Often (more than ten times in the past 30 days) = 3
D17	In the past 30 days, did you or any household member go a whole day and night without eating anything because there was not enough food?		Yes = 1 No = 0 >> MODULE E
D18	How often did this happen?		Rarely (once or twice in the past 30 days) = 1 Sometimes (three to ten times in the past 30 days) = 2 Often (more than ten times in the past 30 days) = 3

Now I would like to talk about what you eat on a daily basis. The next set of questions asks about specific type of foods you may have eaten during the last 24 hours.

1	Foods made from grains: Porridge, bread, rice, pasta/noodles or other foods made from grains	Yes = 1 No = 0
2	White roots and tubers and plantains: White potatoes, white yams, manioc/cassava/yucca, cocoyam, taro or any other foods made from white-fleshed roots or tubers, or plantains	Yes = 1 No = 0
3	Pulses (beans, peas and lentils): Mature beans or peas (fresh or dried seed), lentils or bean/pea products, including hummus, tofu and tempeh	Yes = 1 No = 0
4	Nuts and seeds A: Any tree nut, groundnut/peanut or certain seeds, or nut/seed “butters” or pastes	Yes = 1 No = 0

5	Milk and milk products: Milk, cheese, yoghurt or other milk products but NOT including butter, ice cream, cream or sour cream	Yes = 1 No = 0
6	Organ meat: Liver, kidney, heart or other organ meats or blood-based foods, including from wild game	Yes = 1 No = 0
7	Meat and poultry: Beef, pork, lamb, goat, rabbit, wild game meat, chicken, duck or other bird	Yes = 1 No = 0
8	Fish and seafood: Fresh or dried fish, shellfish, or seafood	Yes = 1 No = 0
9	Eggs: Eggs from poultry or any other bird	Yes = 1 No = 0
10	Dark green leafy vegetables: List examples of any medium-to-dark green leafy vegetables, including wild/foraged leaves	Yes = 1 No = 0
11	Vitamin A-rich vegetables, roots and tubers: Pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside	Yes = 1 No = 0
12	Vitamin A-rich fruits: Ripe mango, ripe papaya	Yes = 1 No = 0
13	Other vegetables:	Yes = 1 No = 0
14	Other fruits:	Yes = 1 No = 0