Federal Republic of Nigeria

National Bureau of Statistics (NBS)

GENERAL HOUSEHOLD SURVEY - PANEL (GHS-PANEL)

Wave 5 2023/2024

Basic Information Document

VERSION 1

(NOVEMBER 2024)

ACRONYMS

BMGF   Bill and Melinda Gates Foundation
CAPI   Computer Assisted Person Interview
EA   Enumeration Area
FCT, Abuja Federal Capital Territory, Abuja
GHS   General Household Survey
GHS-Panel General Household Survey-Panel (panel subcomponent of GHS)
HNLSS Harmonized National Living Standards Survey
ICT   Information and communication technology
LGA   Local Government Area
LSMS   Living Standards Measurement Study
LSMS-ISA Living Standards Measurement Study – Integrated Surveys on Agriculture
NASS   National Agricultural Sample Survey
NBS   National Bureau of Statistics
PSU   Primary Sampling Unit
TOE   Training of Enumerators
TOT   Training of Trainers
WB   World Bank

Contents

1.0   Introduction

The purpose of the present document is to provide detailed information on the General Household Survey-Panel (GHS-Panel) fielded by the National Bureau of Statistics (NBS) in 2023-2024. This survey is the fifth wave of a panel survey of households. The GHS-Panel is the result of a partnership that the NBS has established with the Bill and Melinda Gates Foundation (BMGF) and the World Bank (WB). The ability to follow the same households over time makes the GHS-Panel a powerful tool for studying and understanding income generating activities and socio-economic outcomes in Nigeria. The GHS-Panel is the first panel survey to be carried out by NBS.

The original GHS-Panel sample was subcomponent of the larger General Household Survey (GHS) survey. The GHS is a cross-sectional survey of 22,200 households carried out periodically throughout the country and was last conducted in 2010. Under the work of the partnership, a full revision of the questionnaire was undertaken and at the same time a sub-sample of the GHS was randomly selected to form the sample of the GHS-Panel. The original GHS-Panel consists of 5,000 households of the GHS collecting additional data on agricultural activities, other household income activities, and household expenditure and consumption. As the focus of this panel component is to improve data from the agricultural sector and link this to other facets of household behaviour and characteristics, the GHS-Panel questionnaire drew heavily on the Harmonized National Living Standards Survey (HNLSS – a multi-topic household survey) and the National Agricultural Sample Survey (NASS – the key agricultural survey). The fifth wave of the GHS-Panel was carried out in two visits (post-planting visit in July - September 2023 and post-harvest visit in January - March 2024).

This GHS-Panel is part of a larger, regional project in Sub-Saharan Africa to improve agricultural statistics. Nigeria is one of the eight countries being supported by the WB, through funding from the BMGF, to strengthen the production of household-level data on agriculture. This regional project, the Living Standards Measurement Study-Integrated Surveys on Agriculture (LSMS-ISA) has the over-arching objective of improving our understanding of agriculture in Sub-Saharan Africa – specifically, its role in household welfare and poverty reduction.

The present document is designed to provide an overview of Wave 5 of the GHS-Panel. Wave 5 consisted of two visits to each household: the post-planting visit occurred directly after the planting season to collect information on preparation of plots, inputs used, labour used for planting, and other issues related to the planting season for the agriculture questionnaire as well as administer a household and community questionnaire. The post-harvest visit occurred after the harvest season and collected information on crops harvested, labour used for cultivating and harvesting activities, and other issues related to the harvest cycle for the agriculture questionnaire. A household and community questionnaire were also administered in the post-harvest visit.

The Basic Information Document for the GHS-Panel 2010/2011 (Wave 1), 2012/2013 (Wave 2) 2015/2016 (Wave 3), and 2018/2019 (Wave 4) all contain additional background information and should be used in conjunction with this document.

2.0   The Survey Instruments

The GHS-Panel Wave 5 consisted of three questionnaires for each of the two visits. The **Household Questionnaire** was administered to all households in the sample. The **Agriculture Questionnaire** was administered to all households engaged in agricultural activities such as crop farming, livestock rearing, and other agricultural and related activities. The **Community Questionnaire** was administered to the community to collect information on the socio-economic indicators of the enumeration areas where the sample households reside.[1]

GHS-Panel Household Questionnaire*:* The Household Questionnaire provided information on demographics; education; health; labour; childcare; early child development; food and non-food expenditure; household nonfarm enterprises; food security and shocks; safety nets; housing conditions; assets; information and communication technology; economic shocks; and other sources of household income. Household location was geo-referenced in order to be able to later link the GHS-Panel data to other available geographic data sets (forthcoming).

GHS-Panel Agriculture Questionnaire*:* The Agriculture Questionnaire solicited information on land ownership and use; farm labour; inputs use; GPS land area measurement and coordinates of household plots; agricultural capital; irrigation; crop harvest and utilization; animal holdings and costs; household fishing activities; and digital farming information. Some information is collected at the crop level to allow for detailed analysis for individual crops.

GHS-Panel Community Questionnaire*:* The Community Questionnaire solicited information on access to infrastructure and transportation; community organizations; resource management; changes in the community; key events; community needs, actions, and achievements; social norms; and local retail price information.

The Household Questionnaire was slightly different for the two visits. Some information was collected only in the post-planting visit, some only in the post-harvest visit, and some in both visits. See Section 7.2.1 for more details.

The Agriculture Questionnaire collected different information during each visit, but for the same plots and crops. See Section 7.2.2 for more details.

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[1] The Community Questionnaire does not collect information from communities in the sociological sense. The data cannot be used to represent communities in Nigeria. The data collected at the community level represent information that is common to the households selected for inclusion in the selected sample enumeration areas (EAs).

The Community Questionnaire collected prices during both visits, and different community level information during the two visits. See Section 7.2.3 for more details.

The contents of each questionnaire for the GHS-Panel post-planting and GHS-Panel post-harvest are outlined below.

Table 2-1: GHS-Panel Household Wave 5 Questionnaire – Post-Planting Visit

Section	Topic	Respondent	Description
Cover	Cover	Field staff	Household identifiers, enumerator and supervisor identifiers, date and time of interview, questions to determine agricultural households, and observation notes by enumerator regarding the interview
1	Household Roster	All individuals	Roster of individuals living in the household, relationship to the household head, gender, year of birth, age, marital status, spouse identification, religion, parental status, date and reason of joining household if new, migration
1A	Migration in the Last 12 Months	Individuals 15 years and above who have been away for at least 1 month over the past 12 months	Migration experiences of current household members in the last 12 months: reasons, destination and purposes of absence
1B	Migration in the Past 10 Years	Individuals 15 years and above who have been away for at least 3 months over the past 10 years	Current household members' migrating experiences in the past 10 years. Excludes any migration episode/activity that happened in the past 12 months and that has been already reported in Section 1A
1C	Absentee Roster (Non-Household Members)	Household head or most knowledgeable person	Collects information on former household members who have migrated within or outside the country in the past 10 years and are not current household members
1D	Migration Aspirations	Individuals 15 years and above. No proxy respondent permitted	Migration desires, plans and failed attempts
1E	Remittances	Individuals 10 years and above	Remittances received (from abroad and from within Nigeria)
3	Health	All individuals	General health status, health care utilization and cost of health services,

Section	Topic	Respondent	Description
			functioning and disability status, and use of bed net
4A	Labour	Individuals 5 years and above	Labour market participation during the last 7 days, temporary absence, job search, and wage work (includes benefits, time of work, and payment)
4B	Work Activities in the Last 12 Months	Individuals 5 years and above	Collects information about the work activities of household members in the last 12 months.
5A	Savings and Insurance	Individuals 15 years and above	Savings made and insurance
5B	ICT – Mobile Phone Banking	Individuals 10 years and above	Access to mobile phone and Internet
5C	Credit	Household head or most knowledgeable person	Credit history including loans received, loans pending, or loan refusals
6A	Meals Away from Home	Most knowledgeable person	Value of food consumed outside the home during the last 7 days
6B	Food Expenditure	Person responsible for food preparations or food purchases	Quantity and value of food consumed within the household during the last 7 days, and quantity and value of food purchased during the last 30 days
6C	Aggregate Food Consumption	Person responsible for food preparations or food purchases	Number of days the household consumed each food group item during the last 7 days
7	Non-food Expenditure	Person responsible for household purchases	Non-food expenditure during the last week/last month/last 12 months
8	Petrol	Household head or most knowledgeable person	Experience of buying petrol over the past 30 days, including (how much was purchased, at what cost, issues faced when purchasing petrol, and reasons for purchasing it); awareness of the government petrol subsidy program and support for its reform.
9	Food Security	Person responsible for food preparations or food purchases	Food security status of the household during the last 7 days/last 12 months
10	Household Assets	Household head or most knowledgeable person	Durable goods currently possessed by the household
11	Other Household	Household head or	Miscellaneous income received by the

Section	Topic	Respondent	Description
	Income	most knowledgeable person	household

Table 2-2: GHS-Panel Agriculture Wave 5 Questionnaire – Post-Planting Visit

Section	Topic	Respondent	Description
Cover	Cover	Field staff	Household identifiers, enumerator and supervisor identifiers, date of interview
11A	Plot Roster	Farmer, owner or manager of plot	Roster of all plots owned and/or managed by the household, farmer estimated area, GPS measured area, GPS measured location of the plot, decision maker of the plot
11B1	Land Inventory	Most knowledgeable person on household farm operations	Plot acquisition, tenure (legal title, ownership document), rental arrangement, sharecropping arrangement, use rights (collateral, inheritance)
11C1	Household Labour	Most knowledgeable person on household farm operations	Household labour that worked on the plot. Includes information on amount of time spent by each person
11C2	Hired and Exchange Labour		Hired and free/exchange labour that worked on the plot. Includes information on amount of time spent by each person-type and payments made to hired labour
11E	Seed Acquisition	Most knowledgeable person on household farm operations	Source (left over, free and purchased), quantity and cost of seeds used (including transportation cost)
11F	Planted Crops	Most knowledgeable person on household farm operations	Roster of all the field and tree crops cultivated on the plot, seeds planted, last completed production of tree/permanent crops, expected harvest
11I	Animal Holdings	Owner or caretaker of animals	Farm animals owned by the household and commercial activity with these animals
11J	Animal Costs	Owner or caretaker of animals	Livestock farmer caretaker activities and costs
11K1	Animal Power and Dung	Owner or caretaker of animals	Earnings from animal power and animal dung
11K2	Milk Production	Owner or caretaker of animals	Amount of production and commercial activity with milk
11K3	Egg Production	Owner or caretaker of animals	Amount of production and commercial activity with eggs
11L1	Extension Services	Most knowledgeable person	Main source (government and non-governmental) of agricultural advice

Section	Topic	Respondent	Description
11L2	Extension Sources	Most knowledgeable person	Services provided by main source of agricultural advice. Includes frequency of visits and usefulness of the information provided
12	Digital Farming Information	Most knowledgeable farmer. Households selected to participate	Farmers access, use, and experience with digital farming services in the rainy season

Table 2-3: GHS-Panel Community Wave 5 Questionnaire – Post Planting Visit

Section	Topic	Respondent	Description
Cover	Cover	Field staff	Community identifier variables, enumerator and supervisor identifiers, date and time of interview
C1	Respondents Characteristics	Community Focus Group	Respondent characteristics. Includes position in the community and education level
C2	Food Prices	Market Food Sellers	Prices of food items in the community
C3	Labour	Community Focus Group	Labour hired for agricultural activities by famers in the community
C4	Land Prices and Credit	Community Focus Group	Land acquisition, land prices and credit
C5	Community Infrastructure and Transportation	Community Focus Group	Infrastructure availability and means of transportation to the infrastructure in the community
C6	Community Organizations	Community Focus Group	Characteristics of organizations in the community
C7	Community Resource Management	Community Focus Group	Resource availability and the resource management in the community

Table 2-4: GHS-Panel Household Wave 5 Questionnaire – Post Harvest Visit

Section	Topic	Respondent	Description
Cover	Cover	Field staff	Household identifiers, enumerator and supervisor identifiers, date and time of interview, questions to determine agricultural households, and observation notes by enumerator regarding the interview
1	Household Roster	All individuals	Roster of individuals living in the household, relationship to the household head, gender, year of birth, age, marital status, spouse identification, religion, parental status, date and reason of joining household if new, migration
2	Education	Individuals 3 years and above	Educational attainment, school characteristics, expenditures, repetition
2B	Early Child Development	Individuals 4 years to 6 years old	This section consists of 20 core items that cover four domains: early literacy skills, early numeracy skills, executive functioning, and socioemotional development
2C	Childcare	Individuals 7 years or younger	Collects information on households' use and/or access to childcare services.
3A	Subjective Skills	Individuals 15 years and above	Captures individual's goal-setting capacity. Goal-setting capacity is a process that establishes specific, time-based behaviours that are measurable, achievable, and realistic that will allow people to fulfil their goals.
3B	Migration Aspirations	Individuals 15 years and above	Collects information on the desires or plans of adult household members to migrate out of their present community
3C	Time Use	Individuals 15 years and above	Captures the amount of time household members spend doing various daily activities including paid work, caring for children, domestic chores, and so on in the last 24 hours prior to the visit.
3D	Women Dietary Diversity	Women 15 to 49 years old	Collects information on women's nutrition diet for the previous day
4A	Labour	Individuals 5 years and above	Labour market participation during the last 7 days, temporary absence, job search, and wage work (includes benefits, time of work, and payment)

Section	Topic	Respondent	Description
4B	Anthropometry	Primary guardian of the child	Assessment of the nutritional status of children who are less than 60 months.
5A	Meals Away from Home	Most knowledgeable person	Value of food consumed outside the home during the last 7 days
5B	Food Expenditures	Person responsible for food preparations or food purchases	Quantity and value of food consumed within the household during the last 7 days, and quantity and value of food purchased during the last 30 days
5C	Aggregate Food Consumption	Person responsible for food preparations or food purchases	Number of days the household consumed each food group item during the last 7 days
6	Non-food Expenditures	Person responsible for household purchases	Non-food expenditure during the last week/last month/last 6 months/last 12 months
7	Food Security	Person responsible for food preparations or food purchases	Food security status of the household during the last 30 days/last 12 months
8	Non-farm Enterprises	Owner or manager of enterprises	Roster of non-farm enterprises/activities run by members of the household, characteristics and operating status, loan, stock, costs and profit, constraints
9	Housing	Household head or most knowledgeable person	Homeownership and characteristics of home (type of roof, floor, outside wall, number of rooms, type of cookstove and cooking fuel, electricity connection, drinking water source, sanitation facility, refuse collection)
10	Food Consumption Shocks	Person responsible for food preparations or food purchases	Collects information on the effects of external conditions on a household's normal food consumption practices.
11	Safety Nets	Household head or most knowledgeable person	Household access to and utilization of safety nets
12	Economic Shocks	Household head or most knowledgeable person	Economic shocks affecting the household and coping mechanism adopted by the household

Table 2-5: GHS-Panel Agriculture Wave 5 Questionnaire – Post Harvest Visit

Section	Topic	Respondent	Description
Cover	Cover	Field staff	Household identifiers, enumerator and supervisor identifiers, date of interview

A1	Plot Roster	Farmer, owner or manager of plot	Follow-up on use of land listed in post-planting visit, farmer estimated area, GPS measured area, GPS measured location of the plot, decision maker of the new plots (i.e. added since post-planting visit)
A2a	Household Labour	Most knowledgeable person on household farm operations	Household labour that worked on the plot. Includes information on amount of time spent by each person
A2b	Hired and Exchange Labour	Most knowledgeable person on household farm operations	Hired and free/exchange labour that worked on the plot. Includes information on amount of time spent by each person-type and payments made to hired labour
11C2	Input Use on Plot	Farmer, owner or manager of plot	Pesticide use, herbicide use, inorganic fertilizer use, organic fertilizer use, animal traction, equipment and machinery use
11C3	Input Acquisition	Most knowledgeable person on household farm operations	Cost of purchased input, organic fertilizer from own production, cost of machinery
A3i	Field Crop Harvest	Most knowledgeable person on household farm operations	Timing of harvest, quantity of harvested crops, estimated value, expected harvest
A3ii	Crop Disposition	Most knowledgeable person on household farm operations	Sale of unprocessed crops, processing of crops, sale of processed crops, other crop disposition
A3iii	Tree and Permanent Crop Harvest	Most knowledgeable person on household farm operations	Timing of harvest, quantity of harvested crops, estimated value
PHL1	Post-Harvest Labour - Household	Most knowledgeable person on household post-harvest operations	Household labour that worked on post-harvest activities of the harvested crops. Includes information on amount of time spent by each person
PHL2	Post-Harvest Labour – Hired and Exchange	Most knowledgeable person on household post-harvest operations	Hired and free/exchange labour that worked on post-harvest activities of the harvested crops. Includes information on amount of time spent by each person-type and payments made to hired labour
A4	Agricultural Capital	Household head or most knowledgeable person	Ownership and value of agricultural machinery and tools owned by the household
A5b	Extension	Most knowledgeable	Services provided by various source of

secta

	Services	person	agricultural advice (government and non-government). Includes frequency of visits and usefulness of the information provided
12	Digital Farming Information	Most knowledgeable person. Households randomly selected to participate	Farmers access, use, and experience with digital farming services in the rainy season

Table 2-6: GHS-Panel Community Wave 5 Questionnaire – Post-Harvest Visit

Section	Topic	Respondent	Description
Cover	Cover	Field staff	Community identifier variables, enumerator and supervisor identifiers, date and time of interview
C1	Respondents Characteristics	Community Focus Group	Respondent characteristics. Includes position in the community and education level
C2	Labour	Community Focus Group	Labour hired for agricultural activities by male and female farmers in the community
C3	Social Norms	Community Focus Group	Appreciation of prevailing social norms
C4	Community Changes	Community Focus Group	Changes in the community compared to 3 years ago
C5	Community Key Events	Community Focus Group	Key events in the community in the last 3 years
C6	Community Needs, Actions, and Achievements	Community Focus Group	Discussion on the needs in the community
C6b	Expectations on Climate Extremes and Past Experience	Community Focus Group	Farmer's expectations, approaches to reducing impact and previous experiences
C8	Food Prices	Market Food Sellers	Prices of food items in the community

Some changes were made in the questionnaires between Waves 4 and 5 to improve the questionnaire while maintaining comparability between the two waves as much as possible. Table 2-7 and Table 2-8 outline these changes for the post-planting and post-harvest visits, consecutively.

Table 2-7: Wave 4 to Wave 5 Comparison, Post-Planting

Questionnaire	Section	Notes
Household Questionnaire	Cover	Questions added in Wave 5: AG1a, AG1b, AG1c
		Questions re-numbered from Wave 4 to Wave 5: AG1a » AG1 AG2a » AG2 AG4 » AG3 AG5 » AG4
	Section 1: Household Roster	Questions added in Wave 5: Q17, Q29b, Q34b, Q35-Q38, Q39a-Q42l
		Questions dropped in Wave 5: Q7, Q8a, Q14, Q30-Q34
		Questions re-numbered from Wave 4 to Wave 5: Q8 » Q16 Q12 » Q18 Q13 » Q19 Q13a » Q19a Q13b » Q19b Q13c » Q19c Q13d » Q19d Q13a1 » Q20 Q13b1 » Q21 Q16 » Q22 Q17a » Q23 Q18a » Q24 Q19 » Q25 Q20 » Q26 Q21 » Q27 Q22 » Q28 Q23 » Q29 Q24 » Q30 Q25 » Q31 Q26 » Q32 Q27 » Q33 Q28 » Q34 Q29 » Q39
	Section 1A: Migration in the Last 12 Months	Added in Wave 5
	Section 1B: Migration in the Past 10 Years	Added in Wave 5
	Section 1C: Absentee Roster	Added in Wave 5

Questionnaire	Section	Notes
	Section 1D: Migration Aspirations	Added in Wave 5
	Section 1E: Remittances	Reformulated module in Wave 5. Previously asked in the post-harvest visit, but in Wave 5 it was included in the post-planting visit.
	Section 3: Health	Previously asked in the post-harvest visit
		Questions dropped in Wave 5: Q22a Q22b Q22c Q22d Q35a Q35b Q35c Q51-Q58
		Questions added in Wave 5: Q9a
	Section 4: Labour	Updated module to accommodate to the definitions of the International Labour Organization (ILO).
	Section 4B: Work Activities in the Last 12 Months	Added in Wave 5
	Section 5A: Savings and Insurance	Reformulated module in Wave 5
	Section 5B: ICT – Mobile Phone Banking	Questions added in Wave 5: Q1b Q1c Q8a Q15a
	Section 5C: Credit	Questions added in Wave 5: Q17, Q19, Q20, Q21, Q22
		Questions re-worded or options modified in Wave 5: Q3, Q27
		Questions re-numbered from Wave 4 to Wave 5: Q7 » Q13 Q8 » Q14 Q9 » Q15 Q10 » Q18 Q11 » Q19 Q16 » Q23 Q17 » Q27 Q18 » Q3 Q19 » Q5 Q20 » Q6 Q21 » Q7 Q22 » Q8 Q23 » Q9 Q24 » Q10 Q25 » Q11 Q26 » Q12 Q27 » Q16

Questionnaire	Section	Notes
	Section 6A: Meals Away from Home	No changes
	Section 6B: Food Expenditure	Questions re-numbered from Wave 4 to Wave 5: Q5a » Q3 Q6a » Q4 Q7a » Q5 Q8 » Q6 Q9 » Q7 Q10 » Q8
	Section 6C: Aggregate Food Consumption	Added in Wave 5. Previously asked in the post-harvest visit
	Section 7: Non-food Expenditure	In Wave 5 questions Q5 and Q6 were asked for the last 12 months
	Section 8: Petrol	Added in Wave 5
	Section 9: Food Security	Questions re-numbered from Wave 4 to Wave 5: Q5 » Q4 Q6 » Q5 Q7 » Q6 Q8 » Q1
	Section 10: Household Assets	Questions added in Wave 5: Q7
	Section 11: Other Household Income	Added in Wave 5. Previously asked in the post-harvest visit
Agriculture Questionnaire	Section 11A: Plot Roster	Questions added in Wave 5: Q1a, Q1b, Q1c, MQ1M, MQ4B
		Questions re-numbered from Wave 4 to Wave 5: Q4aa » Q3_number Q4a » MQ1 Q4b » Q3_unit Q4b1 » MQ4a Q4c » MQ3 Q6a » Q5a Q6b » Q5b Q6c » Q5c Q6d » Q5d Q27 » Q4
	Section 11B1: Land Inventory	Questions added in Wave 5: Q4b, Q24a, Q24b, Q52a
		Questions re-numbered from Wave 4 to Wave 5: Q6 » Q7

Questionnaire	Section	Notes
		Q7 » Q8
		Q8 » Q9
		Q8a » Q11
		Q9 » Q12
		Q10cc » Q17
		Q10dd » Q18
		Q10e » Q19
		Q13 » Q20
		Q13a » Q21
		Q14 » Q22
		Q14a » Q23
		Q16a » Q25
		Q16 » Q26
		Q17 » Q24
		Q14a1 » Q29
		Q14ab1 » Q30
		Q19 » Q31
		Q19a » Q32
		Q20 » Q33
		Q21 » Q34
		Q22 » Q35
		Q23a » Q36
		Q23b » Q37
		Q23c » Q38
		Q24 » Q39
		Q25a » Q40
		Q25 » Q41
		Q26a » Q42
		Q26 » Q43
		Q28 » Q44
		Q28a » Q45
		Q29a » Q46
		Q31 » Q47
		Q32 » Q48
		Q33 » Q49
		Q34 » Q50
		Q35a » Q51
		Q35b » Q52
		Q35 » Q53
		Q37a » Q54
		Q37b » Q55
		Q39 » Q56

Questionnaire	Section	Notes
		Q40 » Q57
		Q41 » Q58
		Q42 » Q59
		Q43 » Q60
		Q44 » Q61
		Q45 » Q62
		Q46 » Q63
		Q47 » Q64
		Q48 » Q65
		Q49 » Q66
		Q50 » Q67
		Q51 » Q68
		Q11a » Q69
		Q11b » Q70
		Questions re-worded or options modified in Wave 5: Q9, Q24, Q65
	Section 11C1: Household Labor, Hired and Exchange Labor	Questions re-numbered from Wave 4 to Wave 5: Q2a » Q2_1
		Q2 » Q3_1
		Q3 » Q4_1
		Q3a » Q5_1
		Q4 » Q6_1
		Q4a_1 » Q7_1_1
		Q4a_2 » Q7_2_1
		Q4a_3 » Q7_3_1
		Q4a_4 » Q7_4_1
		Q4a_5 » Q7_5_1
		Q5a » Q2_2
		Q5 » Q3_2
		Q6 » Q4_2
		Q6a » Q5_2
		Q7 » Q6_2
		Q7a_1 » Q7_1_2
		Q7a_2 » Q7_2_2
		Q7a_3 » Q7_3_2
		Q7a_4 » Q7_4_2
		Q7a_5 » Q7_5_2
		Q8a » Q2_3
		Q8 » Q3_3
		Q9 » Q4_3
		Q9a » Q5_3
		Q10 » Q6_3

Questionnaire	Section	Notes
		Q10a_1 » Q7_1_3 Q10a_2 » Q7_2_3 Q10a_3 » Q7_3_3 Q10a_4 » Q7_4_3 Q10a_5 » Q7_5_3 Q13a » Q8_1 Q14a » Q9_1 Q15a » Q10_1 Q16a » Q11a_1 Q17a_1 » Q12a_1_1 Q17a_2 » Q12a_2_1 Q17a_3 » Q12a_3_1 Q17a_4 » Q12a_4_1 Q17a_5 » Q12a_5_1 Q13b » Q8_2 Q14b » Q9_2 Q15b » Q10_2 Q16b » Q11a_2 Q17b_1 » Q12a_1_2 Q17b_2 » Q12a_2_2 Q17b_3 » Q12a_3_2 Q17b_4 » Q12a_4_2 Q17b_5 » Q12a_5_2 Q13c » Q8_3 Q14c » Q9_3 Q15c » Q10_3 Q16c » Q11_3 Q17c_1 » Q12a_1_3 Q17c_2 » Q12a_2_3 Q17c_3 » Q12a_3_3 Q17c_4 » Q12a_4_3 Q17c_5 » Q12a_5_3
	Section 11E: Seed Acquisition	No changes
	Section 11F: Planted Field and Tree Crops	Questions added in Wave 5: Q14
	Section 11I: Animal Holdings	Questions added in Wave 5: Q18a, Q19bb
	Section 11J: Animal Costs	Questions added in Wave 5: Q24, Q25, Q26

Questionnaire	Section	Notes
	Section 11K1: Animal Power and Dung	Questions added in Wave 5: Q2a, Q4a
	Section 11K2: Milk Production	Questions added in Wave 5: Q11a
	Section 11K3: Egg Production	No changes
	Section 11L1: Extension Services I	No changes
	Section 11L1: Extension Services II	No changes
	Section 12: Digital Farming Information	Added in Wave 5
Community Questionnaire	Section C1: Respondents Characteristics	No changes
	Section C2: Food Prices	No changes
	Section C3: Labour	Questions re-worded or options modified in Wave 5: Q11a
	Section C4: Land Prices and Credit	No changes. Previously asked in post-harvest
	Section C5: Community Infrastructure and Transportation	Previously asked in post-harvest
		Questions added in Wave 5: Q5a
	Section C6: Community Organizations	Previously asked in post-harvest. Modified code for 'other specification' option
	Section C7: Community Resource Management	Previously asked in post-harvest. Modified code for 'other specification' option

Table 2-8: Wave 4 to Wave 5 Comparison, Post-Harvest

Questionnaire	Section	Notes
Household Questionnaire	Cover	Questions re-numbered from Wave 4 to Wave 5: AG2a » AG2

Questionnaire	Section	Notes
		AG4 » AG5
		Questions dropped in Wave 5: Q6_day, Q8a, Q8b, Q8c, Q13, Q31, Q32
		Questions added in Wave 5: Q12, Q13, Q13a, Q13b, Q14, Q15, Q15a, Q17, Q22b, Q29b, Q34b, Q35, Q36, Q37, Q38, Q39a, Q39b, Q39c, Q39d, Q39e, Q39f, Q39g, Q39h, Q39i, Q39j, Q39k, Q40c, Q40d, Q45, Q42aa, Q42c, Q42e, Q42h
	Section 1: Household Roster	Questions re-numbered from Wave 4 to Wave 5: Q4a » Q4 Q4 » Q6 Q5a » Q8 Q5b » Q9 Q6_month » Q10 Q6_year » Q11 Q7 » Q16 Q11 » Q18 Q12 » Q19 Q13a_1 » Q19a Q13a_2 » Q19b Q13a_3 » Q19c Q13a_4 » Q19d Q13b » Q20 Q13c » Q21 Q15 » Q22a Q16 » Q23 Q17 » Q24 Q18 » Q25 Q19 » Q26 Q20 » Q27 Q21 » Q28 Q22 » Q29 Q23 » Q30 Q24 » Q31 Q25 » Q32 Q26 » Q33 Q27 » Q34 Q28 » Q39 Q29 » Split into Q40a and Q40b Q30 » Q41 Q33 » Q44 Q31b » Q42a Q31d » Q42b

Questionnaire	Section	Notes
		Questions added in Wave 5: Q4, Q5a, Q12, Q13b, Q13c, Q21, Q21a, Q21b, Q22
		Questions dropped in Wave 5: Q19, Q21, Q23a
		Questions re-worded or options modified in Wave 5: Q23a-Q23r
	Section 2: Education	Questions re-numbered from Wave 4 to Wave 5: Q2 » Q1 Q3 » Q2 Q4 » Q3 Q13 » Q14 Q13a » Q11 Q13b » Q13 Q13c » Q13a Q14 » Q14a Q20 » Q22a Q22 » Q22b
	Section 2B: Early Child Development	Added in Wave 5
	Section 2C: Childcare	Added in Wave 5
	Section 3A: Subjective Skills	Added in Wave 5
	Section 3B: Migration Aspirations	Added in Wave 5
	Section 3C: Time Use	Reformulated module in Wave 5. Previously asked in post-planting
	Section 3D: Women Dietary Diversity	Added in Wave 5
	Section 4A: Labour	Reformulated module in Wave 5
	Section 5A: Meals Away from Home	No changes
	Section 5B: Food Expenditure	Questions re-numbered from Wave 4 to Wave 5: Q5a » Q3 Q6a » Q4 Q7a » Q5 Q8 » Q6 Q9 » Q7

Questionnaire	Section	Notes
		Q10 » Q8
	Section 5C: Aggregate Food Consumption	Questions added in Wave 5: Q9
	Section 6: Non-food expenditure	In Wave 5 questions Q5 and Q6 were asked for the last 12 months
	Section 7: Food Security	Questions re-numbered from Wave 4 to Wave 5: Q5 » Q4 Q6 » Q5 Q7 » Q6 Q8 » Q1
		Questions added in Wave 5: Q2a, Q15c
		Questions dropped in Wave 5: Q23a, Q23b, Q24, Q25, Q26
	Section 8: Nonfarm Enterprises	Questions re-numbered from Wave 4 to Wave 5: Q1c » Q1 Q1b » 2b Q4a1 » Q4ab Q4b1 » Q4aa Q4c » Q4b Q5a » Q5 Q5b » Q7 Q9 » Q8 Q10 » Q9 Q11 » Q10 Q12 » Q11 Q12a » Q11b Q13a » Q12a Q14a » Q13a Q14b » Q13b Q15 » Q14 Q16 » Q15 Q16a » Q19 Q17 » Q15b Q20 » Q17 Q21 » Q18 Q22 » Q19 Q23a1 » Q24_1 Q23a2 » Q24_2 Q27a » Q30

Questionnaire	Section	Notes
		Q28 » Q31
	Section 9: Housing	Reformulated module in Wave 5. Previously asked in post-planting
	Section 10: Food Consumption Shocks	Added in Wave 5
	Section 11: Safety Nets	Questions added in Wave 5: Q4b, Q4c, Q4d,Q4e,Q4f
		Questions re-numbered from Wave 4 to Wave 5: Q1 » Q2 Q1c » Q3 Q2a » Q4a Q3 » Q5 Q4 » Q6 Q5 » Q7 Q4a » Q8 Q6 » Q9
	Section 12: Economic Shocks	No changes
Agriculture Questionnaire	Section A1: Plot Roster	Questions re-numbered from Wave 4 to Wave 5: Q1aa » Q1a Q1a » Q1b Q2 » Q9 Q2b » Q10 Q2c » Q11 Q8a » Q12 Q8b » Q13 Q8c » Q14
		Questions added in Wave 5: Q2, Q5b,
		Questions dropped in Wave 5: Q9, Q10, Q11
	Section A2a: Household Labour	Questions added in Wave 5: Q1
		Questions re-numbered from Wave 4 to Wave 5: Q1b » Q2 Q1c » Q3 Q1d » Q4
	Section A2b: Hired and Exchange Labour	Questions re-worded or options modified in Wave 5: In Q7-Q11 'Supervision' option was added
		Questions added in Wave 5: Q6_6_1, Q6_6_2, Q6_6_3, Q11_6_1, Q11_6_2, Q11_6_3
		Questions re-numbered from Wave 4 to Wave 5: Q2a » Q1_1

Questionnaire	Section	Notes
		Q2 » Q2_1
		Q3 » Q3_1
		Q3a » Q4_1
		Q4 » Q5_1
		Q4a_1 » Q6_1_1
		Q4a_2 » Q6_2_1
		Q4a_3 » Q6_3_1
		Q4a_4 » Q6_4_1
		Q4a_5 » Q6_5_1
		Q5a » Q1_2
		Q5 » Q2_2
		Q6 » Q3_2
		Q6a » Q4_2
		Q7 » Q5_2
		Q7a_1 » Q6_1_2
		Q7a_2 » Q6_2_2
		Q7a_3 » Q6_3_2
		Q7a_4 » Q6_4_2
		Q7a_5 » Q6_5_2
		Q8a » Q1_3
		Q8 » Q2_3
		Q9 » Q3_3
		Q9a » Q4_3
		Q10 » Q5_3
		Q10a_1 » Q6_1_3
		Q10a_2 » Q6_2_3
		Q10a_3 » Q6_3_3
		Q10a_4 » Q6_4_3
		Q10a_5 » Q6_5_3
		Q13a » Q7_1
		Q14a » Q8_1
		Q15a » Q9_1
		Q16a » Q10_1
		Q17a_1 » Q11_1_1
		Q17a_2 » Q11_2_1
		Q17a_3 » Q11_3_1
		Q17a_4 » Q11_4_1
		Q17a_5 » Q11_5_1
		Q13b » Q7_2
		Q14b » Q8_2
		Q15b » Q9_2
		Q16b » Q10_2

Questionnaire	Section	Notes
		Q17b_1 » Q11_1_2
		Q17b_2 » Q11_2_2
		Q17b_3 » Q11_3_2
		Q17b_4 » Q11_4_2
		Q17b_5 » Q11_5_2
		Q13c » Q7_3
		Q14c » Q8_3
		Q15c » Q9_3
		Q16c » Q10_3
		Q17c_1 » Q11_1_3
		Q17c_2 » Q11_2_3
		Q17c_3 » Q11_3_3
		Q17c_4 » Q11_4_3
		Q17c_5 » Q11_5_3
	Section 11C2: Input Use on Plot	Questions added in Wave 5: Q10, Q13
		Questions re-numbered from Wave 4 to Wave 5:
		Q10 » Q1
		Q11a » Q2a
		Q11b » Q2b
		Q11_conv » Q2_conv
		Q1 » Q3
		Q2a » Q4a
		Q2b » Q4b
		Q2_conv » Q4_conv
		Q1a » Q5
		Q36_1 » Q6_1
		Q36_2 » Q6_2
		Q36_99 » Q6_96
		Q36_os » Q6_os
		Q37a » Q7a
		Q37b » Q7b
		Q37a_conv » Q7_conv
		Q38a » Q8a
		Q38b » Q8b
		Q38a_conv » Q8_conv
		Q39a » Q9a
		Q39b » Q9b
		Q39a_conv » Q9_conv
		Q36 » Q11
		Q37a » Q12a
		Q37b » Q12b
		Q37_conv » Q12_conv

Questionnaire	Section	Notes
		Q19 » Q14 Q20 » Q15 Q21 » Q16 Q23 » Q17 Q25 » Q18 Q26 » Q19 Q27 » Q20 Q34 » Q21
	Section 11C3: Input Acquisition	Questions re-numbered from Wave 4 to Wave 5: Q6b » Q7 Q7 » Q8 Q8a » Q9a Q8b » Q9b Q29 » Q10 Q10 » Q11
	Section A3i: Field Crop Harvest	Questions re-numbered from Wave 4 to Wave 5: Q4_a » Q4_1 Q4_b » Q4_2 Q4a1 » Q5a Q4a2 » Q5b Q4b » Q6 Q4c_a » Q7_1 Q4c_b » Q7_2 Q5 » Q8 Q6i » Q9a Q6ii » Q9b Q6_4 » Q9c Q6_2 » Q9d Q6a » Q10 Q6b » Q11 Q6c1 » Q14a Q6c2 » Q14b Q7 » Q12 Q8_a » Q13_1 Q8_b » Q13_2 Q6d1 » Q15a Q6d2 » Q15b Q6d4 » Q15c Q6d2a » Q15d Q6e » Q16
	Section A3ii: Crop Disposition	Questions re-numbered from Wave 4 to Wave 5: Q1a » Q3a

Questionnaire	Section	Notes
		Q1c » Q3b Q1d » Q3c Q1b » Q3d Q3 » Q4 Q4 » Q5a Q4b » Q5b Q5a » Q6 Q6 » Q7 Q7 » Q8 Q8 » Q9 Q10 » Q11 Q10a » Q12 Q11aa » Q13 Q12a » Q14 Q13a » Q15 Q14a » Q16 Q15a » Q17 Q16a » Q18 Q17a » Q19 Q18a » Q20 Q18aa » Q21 Q25 » Q22 Q20a » Q23a Q20b » Q23b Q20c » Q23c Q21 » Q24 Q22 » Q25 Q23 » Q26 Q26 » Q27 Q27 » Q28
	Section A3iii: Tree and Permanent Crops Harvest	Questions re-numbered from Wave 4 to Wave 5: Q7 » Q17 Q8a » Q18a Q8b » Q18b Q9 » Q19 Q10_a » Q20_1 Q10_b » Q20_2 Q11 » Q21 Q12a » Q22a Q12b » Q22b Q13a » Q23a Q13c » Q23b

Questionnaire	Section	Notes
		Q13d » Q23c Q13b » Q23d Q14 » Q24
	Section PHL1: Post-Harvest Labour - Household	Questions added in Wave 5: Q1, Q5
		Questions re-worded or options modified in Wave 5: Q4
		Questions re-numbered from Wave 4 to Wave 5: Q1b » Q2 Q1c » Q3 Q1d » Q4
	Section PHL2: Post-Harvest Labour – Hired and Exchange	Questions re-worded or options modified in Wave 5: Q7, Q12
	Section A4: Agricultural Capital	Questions re-numbered from Wave 4 to Wave 5: Q1a » Q1 Q1 » Q2 Q2a » Q3 Q2 » Q4 Q6 » Q5 Q7 » Q6
	Section A5b: Extension Services	Questions re-numbered from Wave 4 to Wave 5: Q1a » Q1 Q3a » Q4 Q9 » Q5
	Section 12: Digital Farming Information	Added in Wave 5
Community Questionnaire	Section C1: Respondent Characteristics	No changes
	Section C2: Labour	Questions added in Wave 5: Q11a, Q12a
	Section C3: Social Norms	Added in Wave 5
	Section C4: Community Changes	No changes
	Section C5: Community Key Events	No changes
	Section C6: Community Needs,	No changes

Questionnaire	Section	Notes
	Actions, and Achievements	
	Section C6b: Expectations on Climate Extremes and Past Experience	Added in Wave 5
	Section C8: Food Prices	Questions re-numbered from Wave 4 to Wave 5: Q2 » Q2b

3.0   Wave 5 Sample and Weights

The original GHS-Panel sample was fully integrated with the 2010 GHS sample. The GHS sample consisted of 60 Primary Sampling Units (PSUs) or Enumeration Areas (EAs), chosen from each of the 37 states in Nigeria. This resulted in a total of 2,220 EAs nationally. Each EA contributed 10 households to the GHS sample, resulting in a sample size of 22,200 households. Out of these 22,200 households, 5,000 households from 500 EAs were selected for the panel component, and 4,916 households completed their interviews in the first wave.

After nearly a decade of visiting the same households, a partial refresh of the GHS-Panel sample was implemented in Wave 4 and maintained for Wave 5. The refresh was conducted to maintain the integrity and representativeness of the sample. The refresh EAs were selected from the same sampling frame as the original GHS-Panel sample in 2010. A listing of households was conducted in the 360 EAs, and 10 households were randomly selected in each EA, resulting in a total refresh sample of approximately 3,600 households. In addition to these 3,600 refresh households, a subsample of the original 5,000 GHS-Panel households from 2010 were selected to be included in the new sample. This "long panel" sample of 1,590 households was designed to be nationally representative to enable continued longitudinal analysis for the sample going back to 2010. The long panel sample consisted of 159 EAs systematically selected across Nigeria's six geopolitical zones.

The combined sample of refresh and long panel EAs in Wave 5 that were eligible for inclusion consisted of 518 EAs based on the EAs selected in Wave 4. The combined sample generally maintains both the national and zonal representativeness of the original GHS-Panel sample. Due to attrition, the number of households from the long panel interviewed in Wave 5 was 1,376.

To collect detailed and accurate information on seasonal changes in consumption and agricultural activities, the GHS-Panel households are visited twice: first after the planting season (post-planting visit) between July and September, and second after the harvest season (post-harvest visit) between January and March. All households are visited twice, regardless of whether they participated in agricultural activities. Some important factors such as labour, food consumption, and expenditures are collected during both visits. Unless otherwise specified, for the information collected in both visits, this report will show the most recent information, collected during the post-harvest visit.

Tables 1.1, 1.2, and 1.3, in the Appendix, summarize the Wave 5 sample of the GHS-Panel. Table 1.1 presents the sample of households that were successfully interviewed in both visits of the GHS-Panel, broken down by zone and sector, as well as the long panel sample and refresh sample. The final sample consisted of 4,715 households, of which 1,376 were from the long panel sample and 3,339 from the refresh sample. Although 518 EAs were identified for the post-planting visit, conflict events prevented interviewers from visiting eight EAs in the North West zone of the country. Therefore, the final number of EAs visited both post-planting and post-

harvest comprised 157 long panel EAs and 354 refresh EAs. The combined sample is also roughly equally distributed across the six geopolitical zones.

<p align="center">**Table 3.1: Final Sample Composition**</p>

Zone		Long Panel Sample		Refresh Sample		Combined Sample	
		# of EAs	#of HH	# of EAs	#of HH	# of EAs	#of HH
NORTH CENTRAL							
	Urban	7	61	18	158	25	219
	Rural	19	180	42	408	61	588
	Total	26	241	60	566	86	807
NORTH EAST							
	Urban	3	26	10	100	13	126
	Rural	21	198	50	495	71	693
	Total	24	224	60	595	84	819
NORTH WEST							
	Urban	5	47	12	119	17	166
	Rural	21	196	42	413	63	609
	Total	26	243	54	532	80	775
SOUTH EAST							
	Urban	7	60	15	134	22	194
	Rural	19	169	45	430	64	599
	Total	26	229	60	564	86	793
SOUTH SOUTH							
	Urban	8	60	18	165	26	225
	Rural	18	157	42	389	60	546
	Total	26	217	60	554	86	771
SOUTH WEST							
	Urban	21	165	43	380	64	545
	Rural	8	57	17	148	25	205
	Total	29	222	60	528	89	750
TOTAL							
	Urban	51	419	116	1,056	167	1,475
	Rural	106	957	238	2,283	344	3,240
	TOTAL	**157**	**1,376**	**354**	**3,339**	**511**	**4,715**

3.1 Attrition in the Long Panel Sample

Since Wave 1, every effort has been made to track and interview households that had moved away from their original EA and keep attrition to a minimum. These efforts continued in Wave 5, particularly for the long panel sample. Households that had moved away from their previous location were interviewed in a separate tracking phase following both the post-planting and post-

harvest visits. Appendix Table 1.2 presents information on the movement and attrition of long panel households in EAs retained for the Wave 5 sample. Of the 1,590 households interviewed in Wave 1 within these 159 EAs, 1,376 households were successfully interviewed in both visits of Wave 5. This implies an overall attrition rate since 2010 across these EAs of 13.5 percent. However, attrition is highly variable across zones and sectors. The highest attrition was found in rural EAs in South West (28.8 percent) and the lowest attrition in rural EAs in North Central (5.3 percent). Attrition was also higher among urban (17.8 percent) than rural (11.4 percent) households. Table 1.2 further indicates the number of households that were interviewed in their original location and those that had moved and were interviewed in their new location. Overall, 168 long panel households had moved and were interviewed in their new location (over 10 percent of the sample). The highest number of households that had moved was in the urban area in South West (47 households, accounting for 25.7 percent of the sample).

Table 3.2: Distribution of Households in the Original Sample (long-panel)

		Original Sample* (2010)	Successfully Interviewed in W5 (2024)			HHs lost	Attrition (%)
			Original Location	Moved (Tracked)	Total		
NORTH CENTRAL							
	Urban	70	49	12	61	9	12.9
	Rural	190	173	7	180	10	5.3
	Total	260	222	19	241	19	7.3
NORTH EAST							
	Urban	30	22	4	26	4	13.3
	Rural	210	190	8	198	12	5.7
	Total	240	212	12	224	16	6.7
NORTH WEST							
	Urban	50	42	5	47	3	6.0
	Rural	230	183	13	196	34	14.8
	Total	280	225	18	243	37	13.2
SOUTH EAST							
	Urban	70	51	9	60	10	14.3
	Rural	190	160	9	169	21	11.1
	Total	260	211	18	229	31	11.9
SOUTH SOUTH							
	Urban	80	45	15	60	20	25.0
	Rural	180	130	27	157	23	12.8
	Total	260	175	42	217	43	16.5
SOUTH WEST							
	Urban	210	118	47	165	45	21.4
	Rural	80	45	12	57	23	28.8
	Total	290	163	59	222	68	23.4

TOTAL							
	Urban	510	327	92	419	91	17.8
	Rural	1,080	881	76	957	123	11.4
	TOTAL	**1,590**	**1,208**	**168**	**1,376**	**214**	**13.5**

*Among the 159 EAs selected for the long panel.

3.2 Survey Weights

As with any probability sample survey, sampling weights must be calculated and applied to produce estimates that are representative of the survey domains. The weights primarily reflect the inverse probability of inclusion of the interviewed households into the sample with adjustments to account for nonresponse/attrition and calibration to auxiliary data on population estimates. This section describes the different sets of weights calculated and included in the GHS-Panel wave 5 data. Three different weights were prepared for wave 5 of the GHS-Panel reflecting different subsamples and tailored to specific analytical objectives.

As described above, there are two main components of the wave 5 sample: the refresh and the long panel samples. The long panel sample is intended to be analysed independently since it constitutes a panel of households that extends back to wave 1. It therefore needs a dedicated weight. The other analytical sample considered for the GHS-Panel is the pooled or combined sample of longitudinal households and refresh households. The pooled sample will also of course need a separate weight.

In addition to the analytical samples, different weights are provided which are tailored to cross-sectional and longitudinal analysis using the GHS-Panel wave 5 data. While the GHS-Panel is primarily designed as a longitudinal survey and thus with longitudinal analysis as the primary goal, the survey could also provide valuable cross-sectional insights. Separate weights are provided which attempt to satisfy these two objectives

Thus, the three different sets of weights calculated and included in the GHS-Panel are:
1. *Longitudinal weights to be applied to the long panel sample*: used for analysis that seeks to track dynamics within long panel households across the 5 waves of the GHS-Panel
2. *Longitudinal weights to be applied to the combined sample*: used for analysis that seeks to track dynamics within all wave 5 households (long panel + refresh) between waves 4 and 5
3. *Cross-sectional weights to be applied to the combined sample*: used for analysis that seeks to provide representative estimates of the current population of Nigerian households at the time of wave 5 (2023/24).

Slightly different though closely related approaches were applied to calculate these three different weights. When calculating all three weights, only households successfully interviewed in both visits of wave 5 were considered.

The longitudinal weights for both the long panel and combined samples were constructed in the following stages:
1. The original weights calculated in wave 4 for each sample served as the base weights
2. An adjustment was performed to attempt to correct for and limit any attrition or nonresponse bias between wave 4 and wave 5. The adjustment was performed via a modelled response propensity using a logit model:

$$ln\left[\frac{p(x_i)}{1-p(x_i)}\right] = \alpha + \beta_1 X_i$$

where $p(x_i)$ is the probability that household i was selected for the long-panel sample *and* successfully interviewed and X_i is a vast set of household characteristics from wave 1 which are potentially correlated with the probability of response[2]. For the long panel sample, characteristics observed in wave 1 were used in the response propensity model while for the combined sample characteristics from wave 4 were used. Following estimation of the logit model, the predicted probability of each household being interviewed, $\hat{p}(x_i)$, is derived using the model parameters. In principle, the inverse of the predicted probability could serve as the adjustment factor applied to the weights. However, in practice the unit-level inverse predicted probability is not taken as the adjustment factor, but rather the units are sorted into response (i.e., coverage) classes and the adjustment applied uniformly within those response classes[3]. Response classes were created according to the decile of predicted probability (i.e., 10 classes) within each Zone and applied a conversion factor that takes the ratio of the sum of base weights for all targeted households over the sum of base weighs for the successfully interviewed households. The adjustment factor is then applied to the base weights to arrive at the adjusted weight
3. The weights were calibrated to reflect the distribution of the target population. For both the long panel and combined samples, the longitudinal weights were calibrated to (1) reflect the total number of households in each Zone in 2010 (i.e. during the first wave of the GHS-Panel).
4. Lastly, for the combine sample, outlier weights were truncated applying lower and upper bounds that correspond to the maximum and minimum values of the wave 4

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[2] The set of characteristics included in the response propensity model include characteristics of the household head (sex, age, religion, marital status, education, employment status), household composition (by age group and sex), employment status of adult household members, asset ownership of the household, economic activities of the household, housing characteristics, and per capita consumption expenditures.
[3] This sorting into response classes is performed to limit the potential for extreme weight adjustments that will increase the variance of the weights and thereby harm precision of survey estimates.

weights (while also maintaining the calibrated parameters in step 3). No trimming was deemed necessary for the longitudinal long panel weights.

The cross-sectional weights were constructed in three stages:
1. The original weights calculated in wave 4 for the combined sample served as the base weights
2. The base weights were then adjusted for non-response using the same response propensity modelling approach described above for the longitudinal weights.
3. The weights were calibrated to reflect the distribution of the underlying population at the time of the wave 5 survey. Official population projections for 2023 were used as calibration constraints reflecting the individual population of males and females in each state. The population estimates used are displayed in Table 3.2.1.

All three weights can be found in the cover page data files for both the post-planting (*secta_plantingw5.dta*) and post-harvest (*secta_harvestw5.dta*). The variable names in both data files are *wt_wave5* for the longitudinal weights applied to the combined samples, *wt_longpanel_wave5* for the long-panel longitudinal weights, and *wt_cross_wave5* for the cross-sectional weights.

Table 3.3: 2023 Population Projections

States	Estimated population in 2023		
	All	Male	Female
Abia	4,232,255	2,127,444	2,104,811
Adamawa	5,017,720	2,536,948	2,480,772
Akwa Ibom	5,044,286	2,563,738	2,480,548
Anambra	6,061,011	3,072,679	2,988,332
Bauchi	8,529,872	4,343,273	4,186,599
Bayelsa	2,583,352	1,324,755	1,258,597
Benue	6,259,867	3,155,279	3,104,588
Borno	6,207,654	3,219,622	2,988,032
Cross River	4,490,963	2,285,025	2,205,938
Delta	5,737,314	2,886,914	2,850,400
Ebonyi	3,315,180	1,620,558	1,694,622
Edo	4,874,613	2,463,332	2,411,281
Ekiti	3,667,047	1,857,994	1,809,053
Enugu	4,768,489	2,328,974	2,439,515
Gombe	4,058,199	2,134,985	1,923,214
Imo	5,548,808	2,792,332	2,756,476
Jigawa	7,687,056	3,874,507	3,812,549
Kaduna	9,249,537	4,675,735	4,573,802
Kano	15,671,491	8,247,996	7,423,495
Katsina	10,661,373	5,417,952	5,243,421
Kebbi	5,711,801	2,861,791	2,850,010

Kogi	4,557,686	2,300,684	2,257,002
Kwara	3,626,882	1,830,471	1,796,411
Lagos	13,710,862	7,099,635	6,611,227
Nasarawa	2,948,849	1,488,799	1,460,050
Niger	6,965,970	3,530,480	3,435,490
Ogun	6,512,195	3,237,586	3,274,609
Ondo	5,422,399	2,734,103	2,688,296
Osun	4,494,970	2,281,253	2,213,717
Oyo	8,127,483	4,081,195	4,046,288
Plateau	4,807,502	2,397,353	2,410,149
Rivers	7,616,859	3,916,364	3,700,495
Sokoto	6,501,265	3,272,361	3,228,904
Taraba	3,689,513	1,884,197	1,805,316
Yobe	3,728,525	1,935,521	1,793,004
Zamfara	5,990,131	2,999,060	2,991,071
FCT	3,171,148	1,653,344	1,517,804
Nigeria	**221,250,127**	**112,434,239**	**108,815,888**

Source: National Population Commission population projections.

4.0   Training of Field Staff and Data Entry Operators for the Survey

4.1 Training Design

Two levels of training were mounted for both the post-planting and the post-harvest visits. The first level was organized at NBS Headquarters in Abuja and was called the Training of Trainers (TOT). The participants in the TOT became the resource persons for the next level of training. The top management staff of the survey team participated in the TOT, which lasted for six days in the case of the post-planting and seven days for the post-harvest. The core training materials for the 2nd level training were harmonized and finalized during the TOT. The persons trained in the TOT were then sent to carry out the second level training.

The second level training (Training of Enumerators, TOE) for the post-planting visit was conducted over a ten-day period, while that of the post-harvest visit lasted for 13 days. In both visits' trainings, substantial amount of time was dedicated to theory, but also included practical aspects including use of Survey Solutions (CAPI) platform and field practice. Participants in the training were Zonal Controllers, State Officers, Field Supervisors, Field Interviewers, and Data Editors (also called Survey Solutions Supervisors). Training instructions were given to the field staff by the resource persons from the management team (NBS) with support from the World Bank technical missions. About four or five resource persons were sent to each training centre to perform the training.

Specifically, the training consisted of (i) classroom instructions on the questionnaire, concepts and definitions, (ii) interview techniques, (iii) methods and field practices in performing actual interviews to ensure that field interviewers fully understood the questionnaire (iv) Survey Solutions CAPI, and (v) data review/checks and data management. In addition, participants did actual interviews in the field with households that were not scheduled to be part of the actual survey sample. Most of the training instructions are detailed in the interviewer's and supervisor's manuals which are also available.

4.2 Evaluation of Field Personnel and Data Editor

At the end of the training session, trainees were assessed according to both a test that was administered on the material covered in the training process, and an evaluation by the resource persons. Based on the results of the tests some interviewers and data editors were removed from the survey.

5.0   Field Work

5.1 Organization of Fieldwork

Data were collected by teams consisting of a supervisor and between 2 to 5 interviewers. The number of teams varied from state to state depending on the number of EAs identified using Wave 4 data. The teams moved in a roving manner and data collection lasted for between 20 – 30 days for each of the post-planting and post-harvest visits. Additional details on the structure of the visits are available in Section 7.

The GHS-Panel Wave 5 was administered in two visits: post-planting (July - September 2023) and post-harvest (January – March 2024). A tracking phase was conducted after both visits in October-November 2023 and April-May 2024 to interview long panel households that had moved from their location in the previous visit (Wave 4 post-harvest) or any household that had moved between the post-planting and post-harvest visits in Wave 5.

Among the GHS-Panel Wave 5 enumeration areas (EAs), 106 EAs were selected to participate in a mixed-mode study for measuring agricultural labor and inputs. This study targeted 937 households in these randomly selected agricultural/rural EAs in Nigeria. Phones and sim cards were distributed to these households during the post-planting visit. The households that agreed to participate in the study were called each month (4 rounds of phone calls in total) and information about the inputs use of up to three plots were collected in each call using the days since the last completed interview as a reference period. During the post-harvest, the reference period used for the targeted households was the last completed interview (including the monthly phone calls received in between the post-planting and post-harvest visit) in the modules (A2a) Household on-plot labour, (A2b) Hired on-plot labour, and (11c2) Input use in plots. Additional files will be included as part of the GHS-Panel data that include the data collected for these modules during the 4 rounds of phone calls.

5.2 Gift to Households

As a show of appreciation for the panel households' continued participation, all households that were located, were given a gift (even if they refused to participate). Gifts were given during both the post-planting and post-harvest visits and consisted of different types of food flask (container for storing food). Additionally, the gifts (food flasks) were presented to the Community leader and their deputy to show appreciation for their participation to the community survey as well as for facilitating the interviews with the households within their community. Recipients were very appreciative of the gifts and in many cases were essential to ensure continued participation in the panel.

5.3 Pre-loaded Information

Basic information on every household was pre-loaded in the CAPI assignments for each interviewer. The information was pre-loaded to (1) assist interviewers in locating and identifying the household and (2) ensure that each pre-loaded unit (person, plot, etc.) is properly addressed and easily matched to previous visits. Basic household information (location, household head name, phone number, etc.) was pre-loaded in both visits for all households.

In addition, in the post-planting visit, the list of individuals from Wave 4 and their basic characteristics were uploaded for households. This helped maintain the panel of individuals and ensure the status of each individual was confirmed in Wave 4. In the post-harvest visit, several information was pre-loaded that was collected in the post-planting visit. This included (1) the list of individuals and their basic characteristics, (2) the list of plots of land and their basic characteristics and (3) the list of crops cultivated on each plot of land.

5.4 Fieldwork Monitoring and Evaluation

As an additional aid to ensuring good quality data, extensive monitoring was done of the field work. There were three levels of monitoring and evaluation. The first level of monitoring followed immediately after the zonal training. One (1) monitor was assigned to 2 states and all states were covered, including Federal Capital Authority, Abuja (FCT, Abuja). This monitoring was carried out by the technical team from the zonal training (i.e. the trainers) which included individuals from the Head Office of NBS. The second monitoring was carried out by NBS state officers and zonal controllers and took place over an extended period during the fieldwork. The third and final monitoring took place no later than a week before the end of fieldwork. The team involved in the third monitoring was selected from the team that carried out the first monitoring.

During first and second monitoring, the monitors made sure that proper compliance with the procedures as contained in the manual were followed, effected necessary corrections and tackled problems that arose. Where problems were found, these were corrected either directly or through a revisit to the household for verification of information or for further information.

6.0   Household Tracking Exercise

There were two separate tracking exercises conducted in Wave 5. The first was conducted directly following the post-planting visit and the second following the post-harvest visit. During the post-planting tracking exercise, households from the original sample that moved since the last time they were interviewed (either Wave 1, Wave 2, Wave 3, or Wave 4) and the first visit of Wave 5 were tracked. During the post-harvest tracking exercise, households that moved between the post-planting and post-harvest visits of Wave 5 were tracked. During the main interview period of the post-harvest and post-planting visits, interviewers were instructed to complete a tracking form for all households who had relocated. In the case of households that moved to nearby locations, i.e. within the enumeration area, the interviewers were instructed to locate these households and administer the questionnaires.

6.1 Tracking States and Staff Assignments

Both tracking exercises were conducted by staff of the panel management team with support from interviewers in each of the applicable states. In states with two or less households to be tracked, the tracking was conducted by state staff only. Tables 6.1 and 6.2 below show the states where the tracking exercises took place, the number of households to be tracked and the number of field staff that were engaged in the activity.

Table 6.1: Number of Households to be Tracked and Allocation of Field Staff
POST PLANTING TRACKING

Destination State	Total HHs to be tracked	Number of interviewers	Number of fieldwork days
Abia	12	2	10
Adamawa	4	1	7
Akwa Ibom	28	4	12
Anambra	12	2	10
Bayelsa	2	1	3
Benue	5	1	9
Borno	2	1	3
Cross River	12	2	10
Delta	14	2	12
Ebonyi	2	1	3
Edo	24	3	14
Ekiti	13	2	11
Enugu	12	2	10
Gombe	1	1	2
Imo	22	2	19

Jigawa	2	1	3
Kaduna	19	3	11
Kano	5	1	9
Katsina	4	1	7
Kebbi	1	1	2
Kogi	6	1	10
Kwara	24	4	10
Lagos	49	6	14
Nasarawa	1	1	2
Niger	4	1	7
Ogun	25	3	14
Ondo	15	3	9
Osun	9	2	8
Oyo	24	3	14
Plateau	7	1	12
Rivers	22	3	12
Sokoto	3	1	5
Taraba	7	1	12
Yobe	1	1	2
Zamfara	1	1	2
FCT	14	2	12
TOTAL	**408**	**68**	

Table 6.2: Number of Households to be Tracked and Allocation of Field Staff
POST-HARVEST TRACKING

Destination State	Total HHs to be tracked	Number of interviewers	Number of fieldwork days
Abia	9	3	7
Adamawa	9	3	8
Akwa Ibom	8	3	7
Anambra	6	1	9
Bayelsa	4	2	5
Benue	15	1	20
Borno	1	2	2
Cross River	3	2	5
Delta	4	2	5
Ebonyi	3	2	3
Edo	9	1	12
Ekiti	7	1	8
Enugu	4	2	5

Imo	2	2	3
Kaduna	2	2	3
Kano	1	2	2
Katsina	1	2	2
Kogi	1	2	2
Kwara	5	1	7
Lagos	22	2	14
Ogun	5	1	9
Ondo	9	1	15
Osun	2	2	3
Oyo	10	1	14
Plateau	3	2	6
Rivers	8	1	12
Taraba	3	2	4
Yobe	1	2	2
FCT	5	1	5
TOTAL	**162**	**51**	

6.2 Training of Tracking Staff

Training for both tracking exercises was conducted at the NBS head office for panel staff that would be involved in the tracking activity. The trained headquarters persons were to train their partner staff as well as state officers in their assigned state. A number of trainers also had the responsibility of training staff from states where no headquarters staff were slated to visit. The tracking fieldwork for the post-planting occurred from October 9 to November 17, 2023, while the post-harvest tracking was fielded over the period April 29 to May 16, 2024.

6.3 Tracking Methodology

The tracking of households included the following steps:
- Discussion of the set of tracking households with relevant GHS-Panel interview team to obtain all information necessary. Use this information to finalise the list of households that will be tracked.
- In order to properly prepare for the tracking field activities, the tracking exercise was initiated by the panel management team while at NBS head office. Contact was made with most of the households to be tracked by using the phone numbers given in the tracking questionnaire. Information was also used from the contact information on the questionnaires. That is, where households could not be contacted using the information in the tracking questionnaire, the contact information for family, friends and neighbours which was collected in the household questionnaire were also used. These preliminary tracking activities proved to be a very useful exercise in confirming the location of the relocated household and laying out the plan for the

tracking fieldwork. Also, the opportunity was taken during the preliminary exercise, to obtain directions to households' new addresses and to set appointments for the interview.

- In cases where there was no useful phone information (either in the tracking questionnaire or household contact information) and the new address of the household was not known, the original location of the household was visited and effort made to obtain phone numbers for the household or the address. When information on the address was obtained, the household was visited by the team in charge of the state to which the household had moved.
- The required questionnaires were then administered to the household by the tracking team upon locating the household and securing their cooperation.

6.3.1 Tracking Households with Unknown Locations

Households with an unknown new address have been included as a part of the state in which they were originally located. It was the responsibility of the head office staff going to the original state of these "unknown" households to make an effort to gather further information on the place to which the household had relocated. This effort was made prior to the head office staff member's visit to the state. In cases where the household had moved to a new state, the new household location was passed to the staff member visiting the state to which the household had relocated. This household then became a part of that staff member's tracking assignment. If the household had moved to another location within the original state, then it was included as a tracking assignment of the head office staff member in that state.

6.4 Identifying Tracked Households in the Data

Tracked households are identified in the cover sheet data set. For households interviewed during the post-planting tracking exercise, see *trackedw5pp* in the data file *secta_plantingw5*. For households interviewed during the post-harvest tracking exercise, see *trackedw5ph* in the data file *secta_harvestw5*.

7.0   Data Management and Description of Datasets

7.1 Data Management

7.1.1   CAPI

Wave five exercise was conducted using Computer Assisted Person Interview (CAPI) techniques. All the questionnaires (household, agriculture, and community questionnaires) were implemented in both the post-planting and post-harvest visits of Wave 5 using the CAPI software, Survey Solutions. The Survey Solutions software was developed and maintained by the Living Standards Measurement Unit within the Development Economics Data Group (DECDG) at the World Bank. Each enumerator was given a tablet which they used to conduct the interviews. Overall, implementation of survey

using Survey Solutions CAPI was highly successful, as it allowed for timely availability of the data from completed interviews.

7.1.2   Data Communication System

The data communication system used in Wave 5 was highly automated. Each field team was given a mobile modem which allowed for internet connectivity and daily synchronization of their tablets. This ensured that head office in Abuja had access to the data in real-time. Once the interview was completed and uploaded to the server, the data was first reviewed by the Data Editors. The data was also downloaded from the server, and Stata dofile was run on the downloaded data to check for additional errors that were not captured by the Survey Solutions application. An excel error file was generated following the running of the Stata dofile on the raw dataset. Information contained in the excel error files were then communicated back to respective field interviewers for their action. This monitoring activity was done on a daily basis throughout the duration of the survey, both in the post-planting and post-harvest.

7.1.3   Data Cleaning

The data cleaning process was done in three main stages. The first stage was to ensure proper quality control during the fieldwork. This was achieved in part by incorporating validation and consistency checks into the Survey Solutions application used for the data collection and designed to highlight many of the errors that occurred during the fieldwork.

The second stage cleaning involved the use of Data Editors and Data Assistants (Headquarters in Survey Solutions). As indicated above, once the interview is completed and uploaded to the server, the Data Editors review completed interview for inconsistencies and extreme values. Depending on the outcome, they can either approve or reject the case. If rejected, the case goes back to the respective interviewer's tablet upon synchronization. Special care was taken to see that the households included in the data matched with the selected sample and where there were differences, these were properly assessed and documented. The agriculture data were also checked to ensure that the plots identified in the main sections merged with the plot information identified in the other sections. Additional errors observed were compiled into error reports that were regularly sent to the teams. These errors were then corrected based on re-visits to the household on the instruction of the supervisor. The data that had gone through this first stage of cleaning was then approved by the Data Editor. After the Data Editor's approval of the interview on Survey Solutions server, the Headquarters also reviews and depending on the outcome, can either reject or approve.

The third stage of cleaning involved a comprehensive review of the final raw data following the first and second stage cleaning. Every variable was examined individually for (1) consistency with other sections and variables, (2) out of range responses, and (3) outliers. However, special care was taken to avoid making strong assumptions when resolving potential errors. Some minor errors remain in the data where the diagnosis and/or solution were unclear to the data cleaning team.

7.2 Description of Datasets

The GHS-Panel Wave 5 was administered in two visits: first after the planting season (Post-Planting Visit) between July and September and second after the harvest season (Post-Harvest Visit) between January and March. During each visit two questionnaires were administered to the household respondents (Household Questionnaire and Agricultural Questionnaire) and a third questionnaire was administered at the level of the enumeration area (Community Questionnaire). The tracking phases were completed in October/November 2023 (post-planting) and April/May 2024 (post-harvest). The tracking data was integrated into the post-planting and post-harvest structure, even though the data were actually collected in the tracking phase. The questionnaires implemented for tracking households were identical to those used in the main interview phase.

7.2.1 Household Data

In the Household Questionnaire, some of the modules were administered in both the post planting and post-harvest visit and others were only administered during one of the two visits. This should be taken into account when using the datasets.

Group 1: These modules were administered in both visits. For these topics we have complete information at two points in time during the year of the survey.
- Household Roster
- Migration Aspirations
- Labour
- Meals Away from Home
- Food Consumption and Expenditure
- Aggregate Food Consumption
- Non-food Expenditure
- Food Security

Group 2: These modules only appeared in either the post-planting or the post-harvest visit.
- Post-planting only
  - Migration Past 12 Months
  - Migration Past 10 Years
  - Absentees
  - Remittances
  - Health
  - Work Activities in the Last 12 Months
  - Savings and Insurance
  - ICT – Mobile Phone Banking
  - Credit

- o Petrol
- o Household Assets
- o Other Household Income
- Post-harvest only
  - o Education
  - o Early Child Development
  - o Childcare
  - o Subjective skills
  - o Time Use
  - o Women Dietary Diversity
  - o Anthropometry
  - o Nonfarm Enterprises
  - o Housing
  - o Food Consumption Shocks
  - o Safety Nets
  - o Economic Shocks

Table 7-1 and Table 7-2 show the sections of the Household Questionnaire and their corresponding datasets.

Table 7-1: Post-planting Household datasets

Section	Section Name	Dataset Filename
Cover	Cover	secta_plantingw5
1	Household Roster	sect1_plantingw5
1A	Migration in the Last 12 Months	sect1a_plantingw5
1B	Migration in the Past 10 Years	sect1b_plantingw5
1C	Absentee Roster (Non-Household Members)	sect1ca_plantingw5 sect1c_plantingw5
1D	Migration Aspirations, Plans and Failed Attempts	sect1d_plantingw5
1E	Remittances	sect1e_plantingw5
3	Health	sect3_plantingw5
4A	Labour	Sect4a_plantingw5
4B	Work Activities in the Last 12 Months	sect4b_plantingw5
5A	Savings and Insurance	sect5a1_plantingw5
		sect5a2_plantingw5
5B	ICT – Mobile Phone Banking	sect5b_plantingw5
5C	Credit	sect5c1_plantingw5
		sect5c2_plantingw5
6A	Meals Away from Home	sect6a_plantingw5
6B	Food Expenditure	sect6b_plantingw5
6C	Aggregate Food Consumption	sect6c_plantingw5

7	Non-Food Expenditures	sect7a_plantingw5
		sect7b_plantingw5
		sect7c_plantingw5
8	Petrol	Sect8_plantingw5
9	Food Security	sect9_plantingw5
10	Household Assets	sect10_plantingw5
11	Other Household Income	sect11_plantingw5

Table 7-2: Post-harvest Household datasets

Section	Section Name	Dataset Filename
Cover	Cover	secta_harvestw5
1	Household Roster	sect1_harvestw5
2	Education	sect2_harvestw5
2B	Early Child Development	sect2b_harvestw5
2C	Childcare	sect2c_harvestw5
3A	Subjective Skills	sect3a_harvestw5
3B	Migration Aspirations, Plans and Failed Attempts	sect3b_harvestw5
3C	Time Use	sect3c_harvestw5
3D	Women Dietary Diversity	sect3d_harvestw5
4A	Labour	Sect4a_harvestw5
4B	Anthropometry	sect4b_harvestw5
5A	Meals Away From Home	sect5a_harvestw5
5B	Food Expenditures	sect5b_harvestw5
5C	Aggregate Food Consumption	sect5c_harvestw5
6	Non-food Expenditures	sect6a_harvestw5
		sect6b_harvestw5
		sect6c_harvestw5
7	Food Security	sect7_harvestw5
8	Non-farm Enterprises	sect8a_harvestw5
		sect8b_harvestw5
		sect8c_harvestw5
		sect8d_harvestw5
9	Housing	sect9_harvestw5
10	Food Consumption Shocks	sect10_harvestw5
11	Safety Nets	sect11a_harvestw5
		sect11b_harvestw5
12	Economic Shocks	sect12_harvestw5

7.2.2 Agriculture Data

It should be noted that in the Agriculture Questionnaire, the plot roster and land inventory information collected during the post-planting visit was updated during the post-harvest visit in the Land section to identify plots that have been disposed of since the first, post-planting visit.[4] As with the Household Questionnaire, some modules were administered in both visits. For these modules, during the post-harvest visit, information was gathered on the activities since the post-planting interview.

Table 7-3 and Table 7-4 show the sections of the Agriculture Questionnaire and their corresponding datasets.

Table 7-3: Post-planting Agriculture datasets

Section	Section Name	Dataset Filename
11A	Plot Roster	sect11a_plantingw5
		sect11a1_plantingw5
11B1	Land Inventory	sect11b1_plantingw5
11C1	Household Labour Hired and Exchange Labour	sect11c1a_plantingw5
		sect11c1b_plantingw5
11E	Seed acquisition	sect11e1_plantingw5
		sect11e2_plantingw5
11F	Planted Crops	sect11f_plantingw5
11I	Animal Holdings	sect11i_plantingw5
11J	Animal Costs	sect11j_plantingw5
11K1	Animal Power and Dung	sect11k1_plantingw5
11K2	Milk Production	sect11k2_plantingw5
11K3	Egg Production	sect11k3_plantingw5
11L1	Extension Services	sect11l1_plantingw5
11L2	Extension Sources	sect11l2_plantingw5
12	Digital Farming Information	sect12_plantingw5

Table 7-4: Post-harvest Agriculture datasets

Section	Section Name	Dataset Filename
A	Cover-Filter	sectaa_harvestw5
A1	Plot Roster	secta1_harvestw5
A2a	Household Labour	secta2a_harvestw5
A2b	Hired and Exchange Labour	secta2b_harvestw5
11C2	Input Use on Plot	secta11c2_harvestw5
11C3	Input Acquisition	secta11c3_harvestw5
		secta11c3q12_harvestw5

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[4] In theory, some plots in Wave 5 can be matched to Wave 1, 2,3 and 4 using the characteristics of the plots. However, the plot description and codes were not prefilled from previous waves. Thus plots cannot be merged across waves using plot IDs.

Section	Section Name	Dataset Filename
A3i	Field Crop Harvest	secta3i_harvestw5
A3ii	Crop Disposition	secta3ii_harvestw5
A3iii	Tree and Permanent Crop Harvest	secta3iii_harvestw5
PHL1	Post-Harvest Labour - Household	sectaphl1_harvestw5
PHL2	Post-Harvest Labour – Hired and Exchange	sectaphl2_harvestw5
A4	Agricultural Capital	secta4_harvestw5
A5b	Extension Services	secta5b_harvestw5
12	Digital Farming Information	secta12_harvestw5

7.2.3 Community Data

Table 7-5 and Table 7-6 show the sections of the Community Questionnaire and their corresponding data sets.

Table 7-5: Post-planting Community datasets

Section	Section Name	Dataset Filename
Cover	Cover	sectc_plantingw5
C1	Respondents Characteristics	sectc1_plantingw5
C2	Food Prices	sectc2_plantingw5
C3	Labour	sectc3a _plantingw5
		sectc3b_plantingw5
C4	Land Prices and Credit	sectc4a_plantingw5
		sectc4b_plantingw5
		sectc4c_plantingw5
C5	Infrastructure and Transportation	sectc5_plantingw5
C6	Community Organizations	sectc6_plantingw5
C7	Community Resource Management	sectc7_plantingw5

Table 7-6: Post-harvest Community datasets

Section	Section Name	Dataset Filename
Cover	Cover	sectc_harvestw5
C1	Respondents Characteristics	sectc1_harvestw5
C2	Labour	sectc2a_harvestw5
		sectc2b_harvestw5
C3	Social Norms	sectc3_harvestw5

C4	Community Changes	sectc4_harvestw5
C5	Community Key Events	sectc5_harvestw5
C6	Community Needs, Actions, and Achievements	sectc6_harvestw5
C6b	Climate Extremes	sectc6b_harvestw5
C2	Food Prices	sectc8_harvestw5

7.2.4 Confidential information

Note that, for purposes of maintaining the confidentiality of the data, all names and addresses have been removed from the datasets. Additionally, the GPS coordinates have also been removed as these could be used to locate households and plots with accuracy.

7.2.5 Non-Standard Units Conversion Factors

Food and crop quantities are often reported in non-standard units in the data. In order to convert from non-standard units to the more widely understood standard units (kilograms and litres), two types of conversion factor are included in the datasets. The first is the conversion factors for food quantities in the food consumption file. The second is the conversion factors for crops to be used with the agricultural module. For more information on these files and how to use them, see Section 8.3.1.

8.0   Using the Data

8.1 File Structure

The data should always be used in conjunction with the questionnaire and the interviewer's instruction manual. Where there are no issues of confidentiality, all the variables from the questionnaire have been included in the data sets. In some cases, there is an additional variable which contains the "other specify" information that was written in the questionnaire. So, for example, if there is a variable with two parts question 5a and question 5b, a third variable, question 5c, might be added which would contain the other "specify information". In some cases, the other specify variable will be indicated with an "_os" attached to the variable name.

8.2 Merging Datasets

8.2.1 Household and Agriculture Datasets

All household and agriculture datasets in both the post-planting and post-harvest files contain a variable (**hhid**), which is a unique identifier for the household. This variable is used as the unique key variable in the merging of all household type datasets. In some of the other types of datasets, additional key variables may be required in the merging process. In the case of individual type files, the variable that uniquely identifies the individual in the household is **indiv**.

In order to merge any two individual type files, both the variables *hhid* and *indiv* would be used. In the agriculture datasets, plot files are merged using *hhid* and *plotid* while crop files are merged using *hhid, plotid* and *cropid.*

8.2.2   Post-Planting and Post-Harvest Datasets

Post-planting and post-harvest files can be merged using the methodology explained above. That is, the *hhid* is the same for a specific household in the post-planting and post-harvest visit. It should be noted that there was some attrition of households between the post-planting and post-harvest visits so some households in the post-planting files will not have a match in the post-harvest data sets. Note also that people may have left the households or joined them in the time between the two visits. Thus, the number of people per household will vary between visits.

8.2.3   Community Datasets

The community questionnaire is administered at the EA level so the location variables *lga* for local government area (LGA) and *ea* are unique for each community questionnaire. An additional variable *cluster_id* is included in each file which is a concatenation of *lga* and *ea* and therefore uniquely identifies each EA. Merging of community files within the round or with community files from the other round or with any of the household or agriculture files from either round should be done using the *lga* and *ea* variables, in that order.

8.3 Food and Crop Unit Measures

When collecting information on food or crop quantities (e.g. amount of food consumed, amount of crop harvested, etc.), respondents were allowed to report in any unit that they were most familiar with. Quite often, respondents provided quantities in non-standard units like "milk cup", "mudu", or "sack" (as opposed to standard units like kilograms, litres, etc.). In order to standardize the relative sizes of units, interviewers would show the respondent a photo of the unit including the difference sizes as applicable. The respondent would then indicate the appropriate size for the unit they are reporting in. This was particularly important for vaguely defined units such as "piece" or "heap" which are relatively common. For these units, item-specific photos were shown to the respondent.

8.3.1   Unit Conversion Factors

In order to utilise and compare quantities in different units they must be converted into a common unit using conversion factors. Prior to Wave 3, a market survey was conducted to collect conversion factors and reference photos for a wide array of food item/crop-units. This market survey was conducted in 12 States across the 6 Zones in order to capture difference in units and conversion across the country. Where there were sufficient observations, Zone-level conversions were calculated. In Wave 4, a small number of additional conversions were also

collected for additional units not previously included. In Wave 5, the conversion factors from Wave 4 were used without any changes.

In Wave 5, conversion factors are already provided in the relevant data files. For example, the dataset **sect6b_plantingw5.dta** contains question 2, which asks how much the household consumed of each food item. Question 2 has four main components: the quantity, the unit, the size (where applicable), and the conversion. The conversion variables all take the form of "***_cvn**". In order to convert the quantity to kilograms or litres, all the data user needs to do is multiply the quantity by the conversion. For question 2 in the example above, that would be **s6bq2a*s6bq2_cvn**.

Crop harvest conversion factors have a slightly different treatment from the other conversion factors in the GHS-Panel data. Conversion for some crops have been further adjusted based on the "condition" of the crop being reported. The condition in this case refers to the different forms that a crop can take. For example, maize can come unshelled (i.e. maize cobs) or shelled (i.e. maize grains removed from the cob). Respondents were asked to further specify the condition of the quantity of the crop they are reporting. In order to make quantities comparable, the conversions have been adjusted to account for the different conditions. In all cases, the conversions are adjusted to give the shelled equivalent quantity for unshelled crop. This adjustment was also applied for standard units like kilograms. For example, the conversion for one kilogram of *unshelled* maize will not be 1:1 since 1 kilogram of unshelled maize is not equal to 1 kilogram of shelled maize.

The conversion factors included in the data files cover a majority of item/crop-unit combinations observed in the data set, there are still some gaps where conversion factors are not available. There is an ongoing effort to fill these gaps and updated conversion factors will be released as they become available.

8.3.2   Reference Photo Album

The photos were collected in a systematic manner during the market survey prior to Wave 3 where the item-unit weights were also collected. During the market survey, interviewers were instructed to follow strict protocols when taking the photographs such as including a reference object (typically a standard sized bottle of water) to provide the respondent with a frame of reference for the size of the unit. For units with multiple sizes, all of the relevant sizes were taken in the same photo for easier comparison by the respondent. The reference photos taken during the market survey were compiled into an album that was printed and provided to all interviewers. Item-specific photos were included for noncontainer units (piece, heap, bunch, stalk) while only one photo of containers (e.g. milk cup, tiya, mudu) were included. The reference photo album that was used by interviewers is included with the additional documentation on the website (see "Photo Aids") The procedures used for collection of the reference photos as well as the conversion factors followed the guidelines laid out in a forthcoming guidebook produced by the LSMS team, *The Use of Non-Standard Units for the*

Collection of Food Quantity: A Guidebook for Improving the Measurement of Food Consumption and Agricultural Production in Living Standards Surveys.

9.0   Overall Problems and Challenges Faced During Wave 5

Designing and implementing a complex survey such as the GHS-Panel presents various challenges. In this section we outline some key issues that arose, lessons learned and make recommendations for the next wave of the survey.

9.1 GPS Measurement of Plots

During the post-planting visit, there were some challenges with measurement of plots using GPS devices. Only about 80 percent of plots were measured. Non-measurement was concentrated in several States. In some cases, this was the result of flooding (especially in South East), but in other cases the interviewers were reluctant to measure plots that were distant from the household (though still within the Local Government Area). During the post-harvest visit, interviewers were asked to measure plots that were not measured in the post-planting visit. Additional questions were added in the post-harvest agricultural questionnaire (*Section A1: Plot Roster*) and the measurement status of each plot was included in the plot roster prefilling form.

The majority of these plots were measured in the post-harvest visit. This increased the number of GPS measured plots to about 90 percent. Some plots could still not be measured due to flooding or security concerns in some areas.

9.2 Security Problems

The most significant challenge faced during Wave 5 was that 8 Enumeration Areas were inaccessible during the Post-Planting Visit due to insecurity. The EAs were located in the states of Zamfara, Katsina, Kebbi and Sokoto. In these areas, there were several areas that were impassable due to road blocks by security forces or were deemed too hazardous for field staff to visit. Security concerns were present in other localities within and outside of the North West. Sometimes, the teams had to adjust their plans based on the situation on the ground.

Further, the general security situation in the country prevented World Bank staff and consultants from observing and monitoring fieldwork directly. As described above, a further emphasis was placed on remote monitoring of the incoming data. The remote data quality monitoring framework will be further strengthened in future waves, though hopefully the security situation will have improved to allow direct monitoring.

Appendix 1: How to Obtain Copies of the Data

The data are available through the NBS web site:

https://www.nigerianstat.gov.ng/nada/index.php/

or through the LSMS-ISA website:

https://microdata.worldbank.org/index.php/

Users do not need to obtain the permission of the NBS to receive a copy of the data but will be asked to fill in a data access agreement. In this agreement, users agree to: (a) cite the National Bureau of Statistics as the collector of the data in all reports, publications and presentations; (b) provide copies of all reports, publications and presentation to the National Bureau of Statistics (see address below); and (c) not pass the data to any third parties for any reasons.

Biyi Fafunmi
Director, Agriculture and Business Enterprises Statistics Department
National Bureau of Statistics
No. 1 Wole Olanipekun Street,
Central Business District - 900211
FCT - Abuja
Nigeria
www.nigerianstat.gov.ng/nada
Email: biyifafunmi@nigerianstat.gov.ng

LSMS Database Manager
Living Standards Measurement Unit (DECLS)
The World Bank
1776 G St NW
MSN G 3-302
Washington, DC 20006
https://www.worldbank.org/en/programs/lsms
Email: lsms@worldbank.org

Appendix 2: Agriculture Land Conversion Factors

The table below shows the conversion factors used to convert self-reported land areas (for agricultural land area of crops planted and harvested) into hectares.

General Conversion Factors to Hectares

Zone	Unit	Conversion Factor
All	Plots	0.0667
All	Acres	0.4
All	Hectares	1
All	Sq Meters	0.0001
All	100 by 100 sq foot	0.0929
All	100 by 50 sq foot	0.04645
All	Football field	0.405

Zone Specific Conversion Factors to Hectares

Zone	Conversion Factor		
	Heaps	**Ridges**	**Stands**
North Central (1)	0.00012	0.0027	0.00006
North East (2)	0.00016	0.004	0.00016
North West (3)	0.00011	0.00494	0.00004
South East (4)	0.00019	0.0023	0.00004
South South (5)	0.00021	0.0023	0.00013
South East (6)	0.00012	0.00001	0.00041

Note: All conversion is to Hectares