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## CHAPTER 1

### 1.0 General Information

#### 1.1 Introduction

Nigeria is lagging behind in agricultural statistics production. She is yet to conduct the National Agricultural Census 2006/2008. In addition, the regular agricultural surveys could not be undertaken because of lack of funding support since 1996 which equally compounded the weak data situations on agriculture in Nigeria.

The project titled “Nigeria Agricultural Sample Census (NASC) 2006/08” is aimed to principally address the weakness in agricultural statistics production in Nigeria. The project is located in Nigeria to cover all the states of the Federation including the Federal Capital Territory, Abuja.

The National Bureau of Statistics (NBS) in conjunction with Federal Ministry of Agriculture and Water Resources (FMA&WR) are the implementers of the project. The Federal Government of Nigeria, Food and Agricultural Organization and other International Development Partners such as UNDP, USDA, WB, UNICEF and European Union are to provide funding support for the project

The project will kick start in terms of operation in the 3<sup>rd</sup> quarter of 2006 while the project duration will be 18 calendar months. The project’s, main sub projects are three namely:

- The Pilot Test
- The Modern Agricultural Holdings
- The Main Census

The project will be driven by an inter-ministerial committee on NASC (2006/08) which will perform the dual role of policy formulation and management of the census. However, sub-technical committees will be constituted to provide technical advice and direction on the census project.

The programme for the World Census of Agriculture 2000 is the eighth in the series for promoting a global approach to agricultural census taking.

The first and second programmes were sponsored by the International Institute for Agriculture (IIA) in 1930 and 1940. Subsequent ones up to 1990 were promoted by Food and Agriculture Organisation of the United Nations (FAO). FAO recommends that each country should conduct at least one agricultural census in each census programme decade and its programme for the World

Census of Agriculture 2000 for instance corresponds to agricultural census to be undertaken during the decade 1996 to 2005.

Many countries do not have sufficient resources for conducting an agricultural census. It therefore became an acceptable practice since 1960 to conduct agricultural census on sample basis for those countries lacking the resources required for a complete enumeration.

In Nigeria's case a combination of complete enumeration and sample enumeration is adopted whereby the rural (peasant) holdings are covered on sample basis while the modern holdings are covered on complete enumeration. The project name National Agricultural Sample Census derives from this practice. Nigeria through the National Agricultural Sample Census (NASC) participated in the 1970's, 1980's, 1990's programmes of the World Census of Agriculture.

Nigeria is lagging behind in agricultural statistics production. Nigeria failed to conduct the agricultural census in 2003/2004 because of lack of funding. The FOS (now NBS) with other stakeholders could not undertake the census because of funding support. The NBS regular annual agricultural surveys since 1996 had been epileptic and many years of backlog of data set are still unprocessed. The data situation on agriculture in Nigeria is weak. The baseline agricultural data is yet to be updated while the annual regular surveys suffered set back. There is an urgent need by the governments (Federal, State, LGA), sector agencies, FAO and other International Organizations to come together to undertake the agricultural census exercise which is long overdue.

The conduct of 2006/2008 National Agricultural Census Survey is now discussed in the project by starting with pilot exercise in the first quarter of 2007 while the actual census will take place in June, 2007 and concluded in the first quarter of 2008.

## **1.2 Census Objective**

- a) To provide basic data on structure of agriculture.

An agricultural census should be part of an integrated system of Agricultural statistics with the objective of providing primary data on the structure of the agricultural sector such as size of holdings, land tenure etc. which do not change quickly over time. These slow changing aspects relate to organizational structure whose analysis helps to explain in a general way causal structure relating to technological changes, economics of scale etc.

The data is also needed for constructing socio economic indicators of agrarian reform and rural development and also for socio economic policy formulation and the establishment of national priorities.

- b) To provide a frame for other subsequent agricultural surveys.  
Current agricultural statistics in Nigeria are collected through annual sample surveys. Census listings can be used as frame for the selection of the sample; this provides an important savings because the preparation of frame itself generally consumes a significant part of the budget allocation for the sample survey.
- c) Provision of data which will be useful for administrative purposes at the Local Government Area (LGA) level.  
The Census results can be obtained for small administrative units LGA's). Such information sometimes is required by law for local planning or for practical purposes such as irrigation projects or project on regionalization or on agro-climatic and ecological basis. These data help to prepare plans for formulating policies for rural development.
- d) Data produced are expected to help the government at different levels in the formulation of policies on agriculture aimed at attainment of food security and poverty alleviation.

### **1.3 Census Design**

The National Agricultural Sample Census (NASC) is executed under two major components. They are the household-based for the traditional sector and the establishment-based for the Modern Agricultural Holdings/Sector.

#### **1.3.1 Pilot Design**

Preparation for the take off of the actual census in the third quarter of 2007 commences with the pilot test scheduled for second quarter 2007. The essence of the exercise is to test relevant survey instruments including (New) field equipment to be used to promote data quality during the census. Twelve (12) states in the country (two states per zone) are planned to be used for the pilot exercise. In each selected state, two local government areas (LGAs) are to be studied.

#### **Training of field work**

##### **First level training – Training of Trainers (TOT)**

30 trainees will be trained. 24 trainees (2 per state) will be selected as trainers for 2nd level training at NBS state offices. Duration – 3 days (30<sup>th</sup> May – 1<sup>st</sup> June '07).

## **Second level training – State Training**

This will cover twelve (12) selected states. Sixteen (16) officers will be trained per state (i. e. 10 enumerators, 5 supervisors and 1 state officer). Altogether 192 persons will be trained at this level. Each of the 6 zonal controllers will visit at least one state within their zones. Duration – 5 days (4<sup>th</sup> – 8<sup>th</sup> June '07).

### **Field work arrangement**

5 teams comprising 10 enumerators & 5 supervisors will be used per state. A team is made up of 2 enumerators and 1 supervisor. 4 teams will cover household component (NISH). 1 team will cover establishment component (NISE). Duration for fieldwork 11<sup>th</sup> – 15<sup>th</sup> June '07.

### **Household component (NISH)**

8 enumerators and 4 supervisors constituted into 4 teams of 2 enumerators and 1 supervisor will conduct household interviews. The teams will cover 4 EAs in 5 days. A team will cover 1 EA in 5 days.

Workload of team in an EA includes:

- Household listing
- Selection of 10 HUs for GHS.

Stratify the housing units into farming and non-farming housing units. Thereafter, stratify the farming housing units (FHU) into crop, livestock keeping and fishing housing units.

Select systematically 5 crop farming, 5 livestock keeping and 5 fishing farming housing units for interview.

Administration of questionnaire in selected HUs:

- GHS questionnaire in 10 HUs.
- Crop holding questionnaire in 5 CFHUs.
- Livestock keeping holding questionnaire in 5 LFHUs.
- Fishing farming holding questionnaire in 5 FFHUs

Survey a maximum of 2 farms. Lay yield plot for farm(s) surveyed and witness harvesting later in the year. Complete form LMP1 for capturing local units of measurement of agricultural products

### **1.3.2 Main census design**

The census will be carried out in all the states of the federation and the Federation Capital Territory (FCT), Abuja. It is expected to cover both urban and rural farmers in all the 774 Local Government Areas in the federation. Detailed gender analysis will be done with the data gathered. Enquiry will be made into the following activities:

- i). Holding characteristics and legal status of holder
- ii) Access to land and land utilization
- iii) Access to credit;
- iv) Employment of labour in agriculture
- v) Crop farming (area and production)
- vi) Use of fertilizers, pesticides and insecticides
- vii) Use of improved seedlings
- viii) Farm implements/equipment
- ix) Prices paid and received by farmers
- x) Market channels
- xi) Livestock and poultry by sex and type
- xii) Fisheries
- xiii) Forestry products and uses
- xiv) Transportation
- xv) Availability and access to storage facilities etc.
- xvi) Access to information communication technology (ICT) in agriculture
- xvii) Wild-life and uses.

### **Sample Design**

A two-phase sampling scheme would be adopted for the traditional or peasant sector of the census. The first phase provides some baseline data on every Local Government Area (LGA). In this phase, the domain of reporting will be at Local Government Level (LGA).

The phase two is for the crop cutting exercise involving laying of yield plot(s) and harvesting. The domain of reporting in this phase is the state.

### **Selection Procedure**

It will consist of two (2) Phases and two (2) stages selection process. In the 1<sup>st</sup> phase, 1<sup>st</sup> stage, 20 enumeration areas (EAs) will be sampled from each of the 774 LGAs, in the country, making a total of 15,480 EAs to be canvassed in the whole country.

Systematic selection procedure will be used to select this number of EAs from the National Population Commission (NPC) frame of EAs in the country. The procedure will require obtaining the total number of EAs in each Local Government Area (LGA). This number will be divided by 20 to get the sampling interval (S.I.). A random start (R.S) is chosen, and it is picked as the first selection. Consequently, add the sampling interval (S.I.) to the random start for second selection, and so on till the

required 20<sup>th</sup> selected EA is obtained. This is done for all the LGAs in the country. Thereafter, apply the listing questionnaire to all 15,480 EAs.

For the 1<sup>st</sup> phase, 2<sup>nd</sup> stage, 10 housing units will be systematically selected from each selected E.A. At this stage, the GHS and holding questionnaires will be applied. Before applying holding questionnaire, all farming housing units will be stratified into three groups; crop, livestock and fishing. Select 5 HUs, 5 HUs and 5 HUs respectively for crop, livestock and fishing.

In the 2<sup>nd</sup> phase, 1<sup>st</sup> stage, the EAs to be selected will be state-wise and from first phase EAs. Hence, the domain of reporting will be at the state level. Sixty (60) EAs will be selected in each state of the federation and 60 EAs from Abuja (FCT) making a total of 2,220 to be canvassed for throughout the country in this phase. As was done earlier, systematic selection process will be used in selecting these EAs.

For the second stage in this phase, 5 crop farming housing units will be selected systematically from each of the sixty (60) EAs selected for each state and FS1, FS2 and YCE will be applied to each of the crop farming unit.

### Estimation Procedure

The estimation procedure is such that the probability of selecting the housing unit will be  $f_k$  and the probability of selecting the EA is  $f_j$  hence  $f$  is the product of:

$$f_j f_k = \frac{1}{W_{jk}},$$

Where,

$$f_j = \frac{n}{N} \quad \text{and} \quad f_k = \frac{h}{H}$$

First phase:

Estimate at LGA level:

$$\begin{aligned} \hat{Y}_L &= \frac{N}{n} \sum_{j=1}^n \frac{H}{h} \sum_{k=1}^k X_{ijk} \\ &= \frac{N}{n} \frac{H}{h} \sum_{j=1}^n \sum_{k=1}^k X_{ijk} \\ &= W_{ijk} \sum_{j=1}^n \sum_{k=1}^k X_{ijk} \end{aligned}$$



Estimate at state level:

$$\hat{Y}_s = \sum_{L=1}^{nL} \hat{Y}_L$$

Estimate at national level:

$$\hat{Y}_{national} = \sum_{s=1}^{37} Y_s$$

Where,

$\hat{Y}_L$  is the local government estimate

$N$  = total number of EAs in the  $i^{\text{th}}$  LGA

$n$  = selected number of EAs in the  $i^{\text{th}}$  LGA

$H$  = total number of housing units listed in the  $j^{\text{th}}$  EA

$h$  = selected number of housing units in the  $j^{\text{th}}$  EA

$X_{ijk}$  = is the value of the element in the  $K^{\text{th}}$  housing unit of  $j^{\text{th}}$  EA in the  $i^{\text{th}}$  LGA

$W_{jk}$  = is the weight.

Second phase:

Estimate at state level:

$$\hat{Y}_s = \frac{N}{n} \sum_{j=1}^n \frac{Fu}{m} \sum_{k=1}^m X_{jk}$$

$$= \frac{N}{n} \cdot \frac{Fu}{m} \sum_{j=1}^n \sum_{k=1}^m X_{jk}$$

$$= W_{jk} \sum_{j=1}^n \sum_{k=1}^h X_{ik}$$

Estimate at national level:

$$\hat{Y}_{national} = \sum_{s=1}^{37} Y_{si}$$

Where,

$\hat{Y}_s$  is the state estimate

$N$  = total number of EAs in the  $S^{\text{th}}$  state

$n$  = selected number of EAs in the  $S^{\text{th}}$  state

$Fu$  = total number of housing units listed in the  $j^{\text{th}}$  EA

$m$  = selected number of farming housing units in the  $j^{\text{th}}$  EA

$X_{jk}$  is the value of the element in the  $K^{\text{th}}$  housing unit of the  $j^{\text{th}}$  EA

$W_{jk}$  is the weight

### 1.3.3. Modern Agric. Holdings (frame updating)

Updating of the frame for Modern Agricultural Holdings in 2006/2007 in 36 states including Abuja is considered as part of the preparations/pilot for the take-off of the NASC in 2006/2008. The list will be distributed to states for the exercise in 2006/2008.

## CHAPTER 2

### 2.0 Role of Census Personnel

#### 2.1 Enumerators/Interviewers

The success of any survey depends on enumerator's ability to collect accurate information from the respondent.

The role of the enumerator includes the following:

- Location of the structures and households in the sample census which are assigned to him/her by the supervisor.
- Identifying the holders in the household and conducting interview with them.
- Checking completed records to be sure that all questions were asked and the responses neatly and legibly written.

Before each training session, you as an enumerator should study the manual along with the questionnaire, writing down any question you do not understand to avoid mistakes.

During training the enumerator practicing interviewing with another enumerator will see and hear demonstration interviews conducted in front of the class by the trainers as example of the interview technique. The enumerator will also practice reading the questionnaire aloud to a partner several times so that he/she will become confident in reading questions aloud.

During training, there will be role playing, in which the enumerator will practice interviewing with another enumerator.

The next phase will be correcting questionnaires which contain errors after which the trainer shall use a properly completed questionnaire to correct the class.

During training, the enumerator will actually interview household members and the holders. The enumerator will be required to check and edit your work just as you will do in the actual work.

#### 2.2 Supervisors

Supervision during field work is part of the training and data collection process. The supervisor will play the roles of continuing the enumerators' training and ensuring good quality of the NASC data.

The supervisor will do as follows:

- Observe some of the enumerators' interview to ensure politeness, asking questions properly and interpreting the ideas correctly.
- Spot check some addresses selected to ensure that the enumerator interviewed the right households.

- Spots check some of the selected addresses to ensure that all the holders within the households are studied.
- Review each question to be sure it is complete and consistent.
- Meet with each enumerator regularly to discuss performance and future assignments.
- Help the enumerator to resolve problems he/she may find with location of households or with difficult respondents.

### **2.3 State Officers**

The state officer is to oversee the totality of the fieldwork in the state by resolving issues and challenges faced by supervisors and enumerators. He/She is expected to visit both enumerators and supervisors during the field activities.

### **2.4 Zonal Controllers**

The zonal controller will coordinate the activities of the census in his / her geographical zone. The states in each zone are to report the progress of work and problems to their Zonal controller.

### **2.5 Monitoring Officers from HQ**

The officers to be involved in monitoring of field work should do the following:

- Adequate and regular communication among all team members.
- Frequent and close monitoring of the interviewers, by means of random checkup visits.

### **2.6 Co-ordinators from HQ**

The coordinators are to oversee the activities of the census in the zones, to ensure compliance with census design.

### **2.7 Facilitators (Consultants)**

They are to oversee the activities of the census in its entirety to ensure compliance with census design.

## CHAPTER 3

### 3.0 Census Instruments

#### 3.1 Listing Form

Every housing unit in each sample EA is to be listed on this questionnaire which therefore provides the frame from which households to be interviewed are selected. It also collects information on the number of farms, holders, livestock, fishing and crops cultivated.

#### 3.2 GHS Questionnaire

The General Household Questionnaire collects information on the characteristics of members of the household such as name, sex, educational attainment, occupation etc.

#### 3.3 Holding Questionnaire

The holding questionnaires are the core census questionnaires and collect information on the following areas:

##### 3.3.1. Crop

Ownership of holding and characteristics of holders:

- Access to land
- Access to funds
- Source of inputs/equipment
- Crops grown
- Use of fertilizers
- Improved seedlings/seeds
- Employment
- Machinery and equipment
- Area and production
- Storage facilities
- Market channel

##### 3.3.2. Livestock/Poultry

- Livestock and poultry kept
- Source of inputs
- Employment
- Stock changes
- Sales
- Source of funds
- Processing methods

### **3.3.3. Fishing**

- Type of fishing sites
- Source of inputs
- Fish production by type
- Sales
- Source of funds
- Employment
- Processing facilities
- Storage facility
- Market channel

### **3.3.4. Forestry**

- Legal form of ownership
- Access to funds
- Sources of inputs
- Area planted by source
- Output of forest products
- Employment

## **3.4. Modern Agricultural Holding Questionnaire**

### **3.4.1. Crop**

### **3.4.2. Livestock/Poultry**

### **3.4.3. Fishing**

### **3.4.4. Forestry**

## CHAPTER 4

### 4.0 Training

#### 4.1. HQ-Level Training (First Level)

This is the Training of Trainers (TOT) involving the headquarters staff. About thirty-five (35) trainers will be trained, out of which twenty-four (24) will go and train at the zonal level at the rate of four (4) trainers per zone.

#### 4.2. Zonal - Level Training (Level)

This training will be carried out at the six zonal headquarters (Ibadan, Calabar, Enugu, Jos, Kaduna and Maiduguri). Six (6) officers will be trained per state, (State Officer, Scrutiny officer, 2 field officers (NISH) and two field officers (NISE). Six officers each from FMA&RD & FME) will also be trained along with NBS staff. In all about 240 persons will be trained at this second level.

#### 4.3. State - Level Training (Third Level)

Those trained at the Zones will now go to their states to train the enumerators, supervisors and other categories of field staff. The training will be supervised by the headquarter staff. Zonal Controllers will coordinate the training within their zones. State considered to be weak shall be monitored by the coordinators from the Headquarters.

## CHAPTER 5

### 5.0 Completion of Questionnaire

How to complete household listing form

### 5.1 Completing form HH

Col.1: Ensure that all buildings are given NBS numbers serially.

Col. 2: Many structures have distinct addresses given by the local authorities but where these are not given, NBS identifying numbers (col.1) will suffice.

Col. 3: The use of HU should be indicated by codes ranging from 1 (residential) to 10 or 0 (other).

Col. 4: All residential HUs should be listed serially. A residential unit is one that has been coded 1, or 4 or 5 in col. 3

Note: An HU may have more than one HH. As such all households in a residential HU (col. 4) must be listed in col. (5) before listing the next HU.

Col. 5: List the households serially; all households in the housing units should be listed. The EA should be revisited to ensure that all households are enumerated.

Col. 6: The name of the person acknowledged by other members as head of the household and who has primary authority and responsibility for the household's affairs should be entered.

Col. 7: Apart from the head of household, other members may operate their own crop farms. Tick "yes" if any member of the HH operates a farm, otherwise "no".

Col. 8: This is a new addition to the listing form. All crop farming housing units identified in col. 7 are listed serially here.

Col. 9: All crop farming households found in crop farming HU's in col. 8 should be listed serially here.

Col10: Apart from the head of household, other members could be holders. Record the total number of such members of household.



- Col11: List the total number of crop farm(s) operated by all farmers in the household.
- Col.12 - 17: Deal with Cereals. Tick (√) those grown by members of the household.
- Col.18-26: Deal with Tubers/Roots. Tick (√) those grown by members of the household.
- Col.27-34: Deal with Leguminous Crops. Tick (√) those grown by members of the household.
- Col.35-37: Deal with Industrial Crops. Tick (√) those grown by members of the household.
- Col.38 - 40: Deal with Oil Seeds. Tick (√) those grown by members of the household.
- Col.41-43: Deal with the Citrus Crops. Tick (√) those grown by members of the household.
- Col. 44 -46: Deal with Oil Crops. Tick (√) those grown by members of the household.
- Col.47-56: Deal with Other Fruits. Tick (√) those grown by members of the household.
- Col. 57-64: Deal with tree crops. Tick (√) those grown by members of the household.
- Col. 65-79: Deal with other crops. Tick (√) those grown by members of the household.
- Col. 80: Separates Livestock HU from non-livestock HU. Tick “yes” for livestock HU and “no” for non-livestock HU
- Col. 81-88: Deal with type of livestock. Tick (√) those kept by the household.
- Col. 89-93: Deal with type of poultry. Tick (√) those kept by the household.
- Col.94: Deal with type of Fishing. If a household is engaged in fishing, tick “yes” and “no” otherwise.
- Col. 95-96: Disaggregate fishing into “hunting” and fish culture (farming). Tick (√) as appropriate.

**Note:** It is possible for one holder to be engaged in both.

- Col. 97: Deal with other type of fishing. Specify as appropriate.
- Col. 98: Deal with enterprises. Tick (√) as appropriate: “yes” or “no”.
- Col. 99: Deal with the type of enterprise. See the codes on page 1 of the listing questionnaire and enter as appropriate.

## HOW TO COMPLETE HOLDING QUESTIONNAIRE CROP FARMING (HQ1)

### 1.1 CROP FARMING (HQ1)

#### Introduction:

This section deals with instruction for filling Crop holding questionnaire.

The holding questionnaire will be used to collect general information on every crop holding belonging to any of the households in the selected housing units.

Please remember to take along this manual of instruction when you are going for enumeration as it will be very useful to you. You will have to refer to it from time to time as you encounter difficulty.

#### Recording the Response

There are two types of questions in the holding questionnaire.

- (i) Pre-coded question
- (ii) Open ended question

##### a. Pre – coded Questions

The responses that are pre-coded are listed in the questionnaire. To record a respondent’s answer you merely circle the (code) which corresponds to the reply.

Ques. 32 What problems do you have during storage?

Problems	Yes	No
(01) Theft	1	2
(02) Pests	1	2
(03) Lack of modern storage facilities	1	2
(04) Inadequate Market	1	2
(05) Others (specify.....)	1	2

In some cases, a pre-coded question will include an ‘other’ category. The ‘other’ category occurs when the respondent’s answer is different from any of the pre-coded responses listed for the question. When this happens for a particular question you must always write the respondent’s answer in the space provided.

b. Open-ended Questions

The answers to some questions are not pre-coded. In entering the response for these ‘open-ended’ questions you must write the respondent’s answer in the space provided rather than circling a particular code.

Ques. 4 What is the major economic activity of the holder? (specify).....

**The Holding Questionnaire (Crop farming) – HQ1**

The holding questionnaire is a booklet consists of 18 sections with 35 questions

- Section I: Holding Characteristics
- Section II: Access to land
- Section III: Access to funds/credits
- Section IV: Sources of inputs/equipment
- Section V: Input Utilization: quantity and cost
- Section VI: Other farm expenditures
- Section VII: Persons engaged in crop farming
- Section VIII: Area and Production
- Section IX: Consumption from own production
- Section X: Sales from own production (Farmgate )
- Section XI: Sales from own production (Open Market prices)
- Section XII: Set Aside from own production
- Section XIII: Post Harvest losses
- Section XIV: Own Processing

Section XV: Storage facilities

Section XVI: Market Channel

Section XVII: Export Channel

Section XVIII: Forestry

Section XIX: Impressionistic questions

**Holding Identification Section:** This is the section that makes each questionnaire unique for data processing and analysis.

Write down the name of the State, LGA, Sector, Town/Village and EA with their codes where applicable.

The HU serial number, HH serial number, Master Sample household number, Number of holders in HH, Number of farms operated are to be copied from the listing form. Also, Name of holder, Age of holder, Highest level of education attained, Relation to the head of HH, size of holders HH are to be obtained from the respondent's (Holder). The number of farms recorded must equal to the number farms in question 15 (column 1)

Remark is for status of the completion of a questionnaire.

**Response Status:** This indicates the status of each questionnaire, the appropriate option is expected to be circled.

### **SECTION 1: Holding Characteristics**

In this section we obtain general information about the characteristics of the holding.

**Question 1:** Membership of Agric Society circle 'Yes' if holder belong to an Agric Cooperative Society and 'No' if otherwise.

**Question 2:** Is holding owned by Holder?

A holding can solely be owned by one person or two members of a household could be joint owners of the holding or even members of two separate households could be joint owners of a holding. The appropriate is to be circled i.e. if individual circle 'yes'

**Question 3:** Registration: This is to inquire whether the holding is registered.

If registered, record the amount of money used for registration e.g. N2,000

**Question 4:** What is the other major economic activity of the holder? (Specify)

Other economic activity include agricultural services, hunting, tailoring, teaching, tapping, manufacturing etc. which the holder could engage in, that is in addition to his crop farming activities . Write in the space provided the other major economic activity.

**Note:** where there is no other major economic activity, write 'none'

## **SECTION II: Access to Land**

### **Question 5: Category of tenure**

The holding could belong to any of the land tenure explained below:

- (a) This covers the land owned by the holder or members of his household. They have the right to determine the nature and extent of its use as well as right of transfer. It does not include area of land owned but rented to others. Land held in this form could be categorised into:
  - (i) **Bought:** Land purchased and which transfers right of ownership to the holder. It also includes land on long term lease usually ranging from 30-39 years.
  - (ii) **Inherited:** Land operated under hereditary tenure and under the term lease ranging from 30-99 years
  - (iii) **Given:** Land operated peacefully for a long term such as 30 years by the holder without legal ownership or title. It is normally got rent free from family or village head.
- (b) **Family Land**

Land in this category is held under a kind of arrangement which provides for joint or communal use of the land by tradition or tribal conditions.
- (c) **Rented Land**

Land rented from others may be for a fixed amount of money or produce in exchange for services. Under this arrangement the administration and management of this holding in general are the responsibility of the hold
- (d) **Land Squatter**

Land under this category may either be private or public property but occupancy occurs without the consent of the owner although it is tolerated by him/her.
- (e) **Other forms of tenure**

This land held under tenure different from those described above.

Having described each category to the holder, circle the appropriate code to the responses in column 3. Write the local unit name e.g. heaps, kadada, ridges and the number e.g. 345 heaps, 83 kadada.

**Question 6:**

If rented, indicate the type of rent i.e. rented for money, for produce, for money and produce, for service and others (specify). Circle the appropriate code. In addition, give name of local units e.g. heap and number of local units e.g. 1250 in columns 4 & 5 respectively.

**Question 7:**

Land type used for farming: This is divided into three categories:

- (a) Upland: This is the type of land that gets water through rainfall.
- (b) Lowland: This is type of land mostly found in swampy areas and not irrigated.
- (c) Irrigated: These are the lands purposely provided with water other than rain e.g. (from rivers, ponds, lakes, wells)

For each category, circle 1 for 'yes' if applicable and 2 for 'No'. More than one option is allowed.

**SECTION III: Access to Funds**

**Question 8:** Funds used by source

It is a 'yes' or 'No' response question. Tick the appropriate box; 1 for 'yes' and 2 for 'no'.

**Question 9:** All sources of credit used by holder should be ticked; 1 for 'yes' and 2 for 'no'.

**Question 10:** For all sources used state the amount and interest where applicable in naira e.g. amount N25,500, interest N1,500

**SECTION IV: Sources of input/equipment**

**Question 11:** Against each input/equipment tick the source(s) applicable and where 'others' is indicated write the name.

**SECTION V: Input Utilization; capital cost**

**Question 12a**

Col 1: Crop code, for crop name in Col2

Col2: Write the name of the seed/seed e.g. guinea corn, cassava stick

Col 3: Number of quantity used e.g. 23

Col 4: Name of local unit e.g. mudu, tiya, yam set  
Col 5: For weight per unit e.g. 2.6kg, 4.1kg  
Col 6: for price per local unit e.g. N75  
Col 7: Price per kg  
Col 8: Quantity in kg i.e. col 3 multiply by col 5  
Col 9: Value in naira i.e. col 7 multiply by col 8

**Question 12b:** Treat as in question 12a

**Question 12c:** Agricultural machinery, in col1 record the number of hours, col2 record the price per hour and col3 record the cost (col 1 by col 2)

## **SECTION VI: Other Farm Expenditures**

**Question 13:** Indicate your other farm expenditure for only crop farming in the survey year. Write down the number of hours in column 1, cost per hour in column 2 and total cost in column 3 for applicable farming activity.

TAKE NOTE:- Fund for farm Input Q12 a&b and Q13 cannot be more than the fund available in Q10 i.e. if fund in Q10 is N50,000, input expenditure cannot be more N50,000 but could be less

## **SECTION VII: Persons engaged in crop farming**

**Question 14a:** Find out how many people regularly work on his farm and give details as stated. The question is in quarters.

**Working proprietor:** This is the owner of the crop farm who put in a number of hours of work in a day regularly.

**Unpaid family member:** Members of the crop farmer's household who worked on the farm without pay.

**Apprentices :** Persons engaged by the crop farmer to learn and work on the farm without pay.

**Paid employees:** They are hired people to work on the farm for pay.

**Question 14b:** Record the wages paid for each category of worker and input where necessary.

M = Male

F = Female

Total = M + F

## **SECTION VIII: Area and Production**

**Question 15:** There are seven (7) large rows in the first column. If the crop farmer has three (3) farms, it is expected that the first three rows will accommodate the information from the farms; so that you record farm No. 1, 2, 3 in that order

Col 1: For farm number

Col 2: Crop name e.g. Beans, you may have more than one crop in a farm i.e. farm number 1 may have beans, maize, cassava

Col 3: Leave for office use

Col 4: Is the number of units measure for area

Col 5: Is the name of local unit of measure e.g. heaps, stand kadada

Col 6: This is the conversion of column 4 and column 5 of the farm land e.g. 0.4 hectares.

Col 7: This is for the number of units of measure for production from the farm

Col 8: This is for the name of the units of measure for production e.g. basket, sack, keg

Col 9: This is for the weight of one unit of measure e.g. 100kg, 50kg, 25Lt, 50Lt

Col 10: Production i.e. output from a farm for a named crop (maize) i.e. column 7 multiply column 9

Examples of unit of measure for production:

Bags/Sacks (Small, Medium and large/big)

Baskets (Small, Medium and large/big)

Basin (Small, Medium and large/big)

Bunches for plantain

Tuber for yam

Bundle, Demi, Wheel barrow, Pick-up

Jerry can, Keg, Rubber, Drum

## **SECTION IX: Consumption from own production**

### **Question 16(a – d) – Quarterly**

This is to obtain information on holder's consumption from what he/she produced.

Col 1: For crop name e.g. maize, groundnut

Col 2: For crop code (office use)

Col 3: Number of local units consumed e.g. 12, 15

Col 4: Name of local units of measure of quantity consumed e.g. keg, bag

Col 5: weight of local unit of measure e.g. 25kg, 50Lt.

Col 6: Price per local unit of measure e.g. N1, 800; N2, 750.

Col 7: price per kg

Col 8: Quantity in kg (col 3 multiply by col 5)

Col 9: Total value is col 7 multiply by col 8.



## SECTION X

### Question 17(a – d): Sales at farm gate prices – Quarterly

This is to obtain information on sales from own production at farm gate prices. Complete as in question 16(a – d).

## SECTION XI

### Question 18(a – d): Sales at open market - Quarterly

This is to obtain information on sales from own production at open market prices. Complete as in question 16(a – d).

## SECTION XII

### Question 19: Set Aside from own production

This is to obtain information on what the holder set aside from own production . Complete as in question 16(a – d).

## SECTION XIII

### Question 20: Post Harvest Losses

Complete columns 1 – 7 as in question 16 and tick appropriate cause of loss in columns 8 – 11.

**TAKE NOTE:- Consumption, Sales at farm gate, Sales at open market, Set Aside, Post Harvest loss and Export quantities cannot be more than production in Q15**

## SECTION XIV

### Questions 21(a &b): Own Processing Facility

This is to capture own processing facilities.

**Capacity** - means the quantity that a facility can process.

**Installed Capacity** – means quantity that can be processed .

**Utilized Capacity** – means quantity actually processed

Col 1: For name of facility

Col 2: For Installed capacity (kg/lt)

Col 3: For Utilized capacity (kg/lt)

**NOTE:** Utilized capacity cannot be greater than Installed capacity, but could be equal to it.

## **SECTION XV**

### **Question 22: Own Storage Facility**

This is to capture own storage facility of the holder. Treat as in question 21.

## **SECTION XVI**

### **Question 23: Market Channel**

Ask the crop farmer if he sold his farm produce in any of the market channel listed and circle the appropriate option(s) code.

## **SECTION XVII**

### **Question 24: Export Channel**

This is to inquire whether the farmer exports any of his/her produce. If 'yes', please complete as in question 16.

## **SECTION XVIII: Forestry**

**Question 25:** Asked whether the holder have forestry, if 'yes' circle 1, otherwise circle 2 for 'no', it allows multiple response.

**Question 26:** Treat as in question 25

## **SECTION XIX: Impressionistic questions**

### **Question 27: Comparison of season**

This is to compare the current season with previous season; ranks/grades: better, same, worse and don't know. Only one column is to be marked for each factor.

**Question 28:** Treat as in question 27

**Question 29:** Problems have been listed (01 – 09) for each tick 1 for 'yes' and 2 for 'no' as applicable.

**Questions 30, 31, 32, 33, 34, 35:** Treat as in question 29.

**Question 36:** It is on ownership or access to ICT , Treat as in question 29

## LIVESTOCK QUESTIONNAIRE

**Holding Identification:** Fill in the identification section accordingly.

**Question 1(a):** Type of livestock kept

Against each stock, circle '1' for yes if the livestock farmer has the stock or '2' for no if he does not have. Do not circle both for a particular stock. Any stock that is not listed in col. 1 but owned by the livestock farmer should be written in the space provided for others.

**Question 1(b): Type of Poultry Kept**

Treat as in question 1(a) above.

**Question 2(a): Sources of Livestock Input**

Type of livestock feeds have been provided and coded from 01 - 09. Against each input, identify the source(s) where the livestock farmer got his input and tick the appropriate column. It can be from one or more sources.

**Question 2(b): Sources of Poultry Input**

Treat as in question 2(a) above.

**Question 3(a): Input Utilization (Livestock)**

Col. 3: Enter the name of the input used in local unit

Col. 4: Enter the number of the local units

Col. 5: Enter the weight (kg) per local unit

Col. 6: Enter the price (₦) per local unit for any of the livestock input.

**Question 3(b): Input utilization (poultry)**

Adopt the same procedure as in 3(a) above.

**Question 3 (c): Input utilization (others)**

Adopt the same procedure as in 3(a) above.

**Question 4:** Employment in livestock farming

Check section VII question 10 of crop farmer for details.

**Question 5(a): Stocks and changes in stocks**

For each type of livestock, the changes from initial population to number sold must be indicated where applicable.

**Question 5(b):** Stocks and changes in stocks

For each type of poultry, the changes from initial population to number sold must be indicated where applicable.

**Question 6:** Poultry/Diary Products

- i Egg should be recorded in number of crates.
- ii Milk should be recorded in litres
- iii Cheese should be recorded in Kilogramme
- iv Other diaries should be recorded, in either number, litres or kilogramme depending on the specification.

**Question 7(a):** Sales of livestock

Sales of live animals should be recorded in naira (₦) and on quarterly basis.

**Question 7 (b):** Treat as in 7 (a) above.

**Question 7 (c):** Treat as in 7 (a) above.

**Question 8: Sources of Funds**

Record amount of funds from all sources that are applicable and sum up.

**Question 9: Processing Facilities: For each of the processing facility, enter the number:**

- i. available capacity
- ii. utilized capacity

**Question 10: Preservation Methods**

Five methods of preservation have been listed: For each one that is applicable, indicate available capacity against utilized capacity.

**Question 11: Market Channel**

Find out where the livestock farmer sold his/her produce in the survey year and circle as many as applicable. No one market channel should be blank. Circle either "1" for yes or "2" for no; but not both.

**Question 12:**

- i. Ask the livestock farmer if he/she exported his/her produce. If yes, tick the type in the box provided.
- ii. If yes, write the name of the country he/she exported his/her produce to.
- iii. Find out the quantity of each type he/she exported and write it down.

**Impressionistic Questions**

**Question 13:** Here, there are four (4) factors and four grades for each factor.  
Only one grade should be marked, for each factor.

**Question 14:** Treat as in question 13 above.

**Question 15:** Circle “1” for yes and “2” for no for each associated with purchasing inputs.

**Question 16:** Treat as in question 15 above.

**Question 17:** Treat as in question 15 above.

**Question 18:** Treat as in question 15 above.

**Question 19:** Treat as in question 15 above.

**Question 20:** Treat as in question 15 above.

**Question 21(a):** Ask the livestock farmer if he/she has access to any of the listed ICT facilities and circle “1” for yes or “2” for no for each facility.

**Question 21(b):** Ask the livestock farmer if he/she owns any of the listed ICT facilities and circle and circle “1” for yes or “2” for no for each facility.

**Question 22:** Attestation should be given by the enumerator and the supervisor.

## **FISHING QUESTIONNAIRE**

**Holding identification:** Fill in the identification section correctly before proceeding to the questions below.

### **Question 1: Type of fishing sites**

Six types of fishing sites have been listed in col. 1. Indicate by ticking (√) against the type of fishing site(s).

### **Question 2: Sources of fishing inputs by type (for fish farmers)**

Ten types of fish inputs have been listed in col. 1. Any other one used but was not listed can be written under others. Against each input, indicate the source(s) where the input was received.

### **Question 3: Quantities (kg) of fishing inputs by type (for fish farmers)**

Ten types of fish inputs have been listed in col. 1. Any other one used but was not listed can be written under others. Against each type, indicate the quantity (kg) for each quarter of the survey year.

**Question 4(a): Aquatic production (local unit) by type (for fish hunters)**

Twelve types of aquatic products have been listed in col. 1. Write down the name of local unit of production in col. 2. Also enter the quantity (no. of local units) produced of each applicable type on quarterly basis.

**Question 4(b): Fish production (in local unit) by type (for fish farmers)**

Against each type of fish listed, give the name of the local unit produced and the quantity (no. of local units) produced on quarterly basis.

**Question 5(a): Quantities (in local unit) of aquatic production sold by type (for fish hunters)**

Against each type of aquatic product listed, give the name of the local unit sold and the quantity (no. of local units) sold on quarterly basis.

**Question 5(b): Quantities of fish products sold (for fish farmers)**

For each type of fish product, provide name of local unit and quantity per quarter.

**Question 6: Funds committed to fishing by source (for both fish farmers and fish hunters)**

Six types of sources have been identified. Write the amount from each source applicable and sum it vertically.

**Question 7(a): Fixed assets by type (for fish hunters)**

For each fixed asset the fish hunter has enter:

- i. Year of construction or purchase
- ii. Cost of construction or purchase (in naira)
- iii. Accumulated depreciation in naira
- iv. Net value in naira

**Note:** that net value = cost of construction or purchase minus accumulated depreciation.

**Question 7(b): Fixed assets by type (for fish farmers)**

Treat as in question 7(a) above.

**Question 8(a): Current assets acquired during the survey year (for fish hunters)**

- Col. 1: Lists of current assets has been provided
- Col. 2: Write the number (say 1, 2, 3 etc) of any one acquired during the survey year
- Col. 3: Write the cost in (₦) of a unit. Suppose the fish hunter bought four units, find the average cost of one unit and enter it.
- Col. 4: The total cost should be the number he bought multiplied by the unit cost. Suppose he bought three (3) nets and the average cost of one is ₦ 2,000; then total cost should be  $3 \times \text{₦}2,000.00 = \text{₦}6,000.00$

**Question 8(b): Current assets acquired during the survey year (for fish farmers)**

Treat as in question 8(a) above.

**Question 9: Employment in fishery (for both fish farmers and fish hunters)**

Treat as question 10 section VII of crop farmer's questionnaire.

**Question 10: Pond capacity by type of pond (capacity is number of fish or size in square metres)**

For any applicable type of pond, write down the:

- i. Installed capacity
- ii. Utilized capacity

**Question 11 Processing Facilities**

Against each applicable facility, enter:

- i. the available capacity (in kg)
- ii. the utilized capacity (in kg)
- iii. cost of the facility in naira

**Question 12: Storage facilities**

Treat as in question 11 above.

**Question 13: Market Channel**

Ask the fish farmer where he/she sells his/her catch(s). He or she can sell at one or more market channel(s).

**Question 14: Export Channel**

Ask if the fish farmer or fish hunter exported his/her catch(es). If 'yes', the name of the country of export should be written in question 14(a) while the quantity (kg) exported should be provided in question 14(b).

### **Impressionistic Questions**

Questions 15 and 16 follow the same pattern as question 18 and 19 of livestock farming questionnaire.

- Question 17:** List down all the problems the fish farmer encountered when purchasing fish input.
- Question 18:** List all the problems the fish farmer/hunter encountered when purchasing fishing tools.
- Question 19:** List all the problems the fish farmer/hunter encountered during his/her production process.
- Question 20:** List all the problems the fish farmer/hunter encountered during fish processing.
- Question 21:** List all the problems the fish farmer/hunter had for storage.
- Question 22:** List down all the problems the fish farmer/hunter had during marketing of products.
- Question 23:** Seven suggestions which might be helpful in improving fish farming/hunting activities in the country are provided. They are not exhaustive. Anyone that is not included in the list shall be considered as others. Please tick as appropriate the box/boxes that is/are applicable.
- Question 24:** Ask the fish farmer/hunter if he/she has access to any of the listed ICT facilities and circle as appropriate. Note that only one column should be circled for each ICT facility, that is, either “Yes” or “No” and not both, see question 27 of crop farmer (HQ 1) for details.
- Question 25:** Ownership of ICT facility: Ownership of ICT facility can come through purchase, raffle draw, outright gift or inheritance, among others. So if you own any of the facilities circle (“yes”) otherwise (“no”).
- Question 26:** Attestation should be given by both the enumerator and the supervisor.



## **FORESTRY**

### **Holding Questionnaire (Forestry) – FORM HQ 4**

#### **Holding Identification:**

Fill in the identification section correctly before proceeding to the questions below.

#### **Question 1: Legal form of ownership**

Five (5) legal forms of ownership have been provided. Please tick '√' in the appropriate box the one that is applicable.

#### **Question 2: Access to funds**

Six (6) sources of access to fund have been provided. Ask the holder which one(s) is/are applicable and tick (√) in the appropriate box(es).

#### **Question 3: Sources of inputs**

Five (5) different sources of input have been provided. Find out from the holder which one(s) is/are applicable and tick (√) in the appropriate box(es).

#### **Question 4: Quantity and Cost of Input**

Seven (7) types of inputs have been identified. Against any applicable one, give the:

- i. Quantity used either in number or in kilogram
- ii. Cost in naira of the particular input.

#### **Question 5: Area planted by source**

Thirteen (13) tree species have been identified. Against each one that is planted, write the area in (ha).

#### **Question 6: Outputs of forest products**

Eight (8) forest products have been listed. Against any one that is applicable give:

- i. the quantity as indicated
- ii. the value in naira.

#### **Question 7: Employment by category of labour**

Six (6) Categories of labour are indicated. Write the number of male and female engaged in each category as well as the total wages paid.

#### **Question 8: Fixed Assets by Type**

Four fixed assets have been indicated. Give the cost of purchase for any applicable one.

**Question 9: Access to ICT Facilities:**

Access to ICT facilities means, that you have the opportunity to use the facility. Thus, if you listen to a radio set (whether from your own or from your neighbour's), you have access to a radio facility. So for radio circle ("yes"). Circle ("yes") or ("no") for each of the other six facilities.

**Question 10: Ownership of ICT Facility:**

Ownership of ICT facility can come through purchase, raffle draw, outright gift or inheritance, among others. So if you own any of the seven facilities circle ("yes") otherwise ("no").

**MODERN AGRICULTURAL HOLDINGS**

**CROP FARMING QUESTIONNAIRE**

**SECTION 1:**

1. Name of holding: This is the official registered name of the establishment, e.g. Kalex and Sons Ltd.
2. Physical/location address: This is the place where the establishment has its registered office e.g. No. 3, Awolowo road, Ikeja. If the location is outside the town or village, write distance in km.
3. State: The name of the state where the establishment is located.
4. LGA: This is the LGA of the state where the establishment is located.
5. Town or nearest town: This is the town where the registered office of the establishment is located or the town nearest to the registered office.
6. Year of commencement: This is the calendar year in which the establishment started operation. It may be different from the year it was registered.
7. Contact person: This must be a responsible member of the establishment, holding executive/administrative position (e.g. manager, accountant, director etc).
8. Contact person's address: This is the address of the contact person, preferably the official location address.
9. Telephone number: This could be that of the establishment itself or that of the contact person.
10. The holding (establishment) is part of a multi-unit enterprise if it has its headquarters in a different location (town or state) to which it reports at a regular interval (monthly, quarterly, annually, etc).

11. This should be treated as 1 and 2 above.
12. Operation during the survey year: What is required here is the number of months out of 12 months that the establishment was active (doing business). For instance, if it was in operation for eight (8) months, write 08 in the two boxes provided.
13. Legal form of ownership: Mark "X" in only one box against the option that applies.
14. Sources of funds: For every source used by the holder, state the amount and interest to the nearest naira. The total is the sum from all applicable sources.

## **SECTION 2:**

- 15 (a): **Employment:** We are interested in the number of persons that worked in the establishment during the survey year, by sex, for both Nigerians and non-Nigerians. Four types of workers are classified as follows:
- i. **Working Proprietors:** These are the owners of the business who put in a number of hours of work a day regularly.
  - ii. **Unpaid Family Workers:** Members of the proprietor's household who worked, without pay, in the establishment.
  - iii. **Paid Employees:** Non members of household who are hired, on a regular basis, to work **for pay** in the establishment.
  - iv. **Apprentices:** Persons engaged by the proprietor to **learn the trade**, and work, without pay, in the establishment.
- 15(b): **Earnings/Wages:** What is required here is the annual wage bill (in naira) for each category of workers, by sex for both nationals (Nigerians) and foreigners (non-Nigerians).

## **SECTION 3: Area of land under cultivation by crop**

16. **Name of Crop:** List the name(s) of crop(s) the establishment planted and the area of each crop (in hectare)

**Note:** in the case of mixed cropping same area should be recorded for each crop.

#### **SECTION 4: Production during the year**

17. Col.1: Crops – the name of the crop(s) that was/were planted by the establishment should be entered here.

Col.2: Code – for office use.

Col.3: Quantity produced (kg) – the quantity produced for each crop should be entered here.

Col.4: Value of production – the value of production (in naira) for each crop should be entered here.

#### **SECTION 5: Sales by crop during the year**

18. This should be treated like (17) above.

#### **SECTION 6: Forestry**

19. What is required here is to circle “1” for yes if he has or circle “2” for no if he doesn’t have. If yes, he will indicate the use(s) to which he puts the forest products by circling all that are applicable from options a to e.

20. If the establishment is engaged in any of the forestry industries mentioned, then circle all applicable.

#### **SECTION 7: Fixed assets**

21(a): For each type of fixed asset, give the number owned by the establishment (col.2), year of purchase or construction (col.3), initial cost of purchase or construction (col.4), allowance for wear and tear i.e. depreciation (col.5) and the net value (col.6).

Note: If there are two or more (of one type of asset) purchased/constructed in different years:

a) Give the average year of purchase/construction.

b) Sum up all cost of purchases/construction.

21(b): Cost of inputs: For each input applicable, give the quantity (in kg or litre) and the value (in naira).

21(c): For each activity, give the amount spent during the period covered.

## **SECTION 8: Other receipts during the year**

22. You are required to give the details of other receipts of your establishment during the year by source(s) as itemized below. For each type of receipt, give the quantity sold and the cost in (naira).

## **SECTION 9: Agricultural Processing Facilities and Marketing Channels**

23. Tell us how the establishment processes its products by marking any of the applicable facilities.
24. Marketing Channel: Here, tell us how you dispose of your output through sales. Four (4) sale locations are listed:
- i. Within your LGA: i.e. in the LGA where your establishment is located.
  - ii. Within the state: i.e. in the state where your establishment is located.
  - iii. In other state (within Nigeria): i.e. in other state within Nigeria.
  - iv. In other country: It means outside Nigeria.

Three market outlets (channels) are listed column-wise: distributorship, wholesale and retail. Mark 'X' in as many cells as are applicable.

25. Circle "yes" if you export your product, otherwise circle "no". If yes, tell us the country of export and the quantity (in kg) exported.
26. Suggestion for improvement: Each of the eight suggestions requires the circling of either "yes" or "no" but not both.

## **SECTION 10: ICT Indicators**

27. Access to ICT facility means that you have opportunity to use the facility. Thus, if you listen to a radio set (whether from your own or from a neighbour's), you have access to a radio facility. So for radio, circle "yes". Circle "yes" or "no" for each of the other six facilities.
28. Ownership of ICT facility: Ownership of ICT facility can come through purchase, raffle draw, outright gift or inheritance, among others. So if you own any of the seven facilities circle "yes", otherwise "no".

## LIVESTOCK/POULTRY QUESTIONNAIRE

### Section one: Holding Identification

1. Name of holding: This is the official registered name of the establishment (e.g. A.B. Lamide and Sons limited)
2. Physical/location address: This is the place where the establishment has its registered office (e.g. Plot 1,265 Kingsway Road, G. R. A. Ikeja).
5. Town or nearest town: This is the town where the registered office of the establishment is located or town nearest to the registered office.
6. Year of Commencement: This is the calendar year in which the establishment started operation. It may be different from the year it was registered.
7. Contact person: This must be a responsible member of the establishment, holding executive /administration position (e.g. manager, accountant, director, etc)
9. Telephone number: It could be that of the establishment itself or that of the contact person.
10. The holding (establishment) is part of a multi-unit enterprise if it has its headquarters in a different location (town or state) to which it reports at regular intervals (monthly, quarterly, annually, etc)
11. Should be treated as 1 and 2 above.
12. Operation during the survey year: What is required is the number of months out of 12 months that the establishment was active (doing business). For instance, if it was in operation for 8 months, write 08 in the two boxes provided.
13. Legal form of ownership: Mark "X" in only one box against the option that applies.
14. Sources of funds: For every source used by the holder, state the amount and interest to the nearest naira. The "total" is the sum from all applicable sources.

### Section two: Employment.

15. Employment: We are interested in the number of persons that worked in the establishment during the survey year, by sex, for both Nigerians and non-Nigerians. Four types of workers are classified as follows:

- Working proprietors: These are the owners of the business who put in a number of hours of work a day regularly.
- Unpaid family workers: members of the proprietor’s household who work, without pay, in the establishment.
- Paid employees: Non-members of household who are hired, on a regular basis, to work for pay in the establishment.
- Apprentices: persons engaged by the proprietor, to learn the trade, and work without pay in the establishment.

15(b): Earnings/wages: What is required here is the annual wage bill (in naira) for each category of workers, by sex for both nationals (Nigerians) and foreigners (non-Nigerians).

### **Section three: Livestock Counts and Products:**

16(a): Number of livestock heads (counts), by sex should be provided for each type of livestock.

Note 1: Total (column 4) is the sum of columns 5 and 6.

Note 2: Column 6 is sum of columns 7 and 8.

Note 3: “Code” should be left blank for office use

16(b): Quantities (in kg) and values (in naira) of livestock products should be given for each type of livestock. To obtain value, multiply quantity by average price per kilogramme of livestock product.

### **Section four: Poultry counts and products**

17(a): Fill this table in the same way as 16(a).

**Note:** “Total number” (col. 4) = Col. 5 + Col. 6 + Col. 7 + Col. 8.

17(b): Quantity of meat (in kg) and quantity of eggs (in crates) should be given for each type of poultry. For each product, give the value in naira, using market price or factory price which ever is possible.

### **Section Five: Fixed Assets**

18(a): For each type of fixed asset, give the number owned by the establishment (Col. 2), year of purchase or construction (Col: 3), initial cost of purchase or construction (Col. 4), allowance for wear and tear i.e. depreciation (Col. 5) and the net book value (Col. 6).

**Note:** “if there are two or more (of one type of asset) purchased/constructed in different years”

- a) give the average year of purchase of/construction.
- b) sum up all costs of purchases/ construction.

### **Section Six: Costs of inputs and general operation expenses.**

18(b): Quantities of “day-old chicks” and “parent/grandparent stock” should be given in numbers.

“Drugs/vaccine” and “others” should be given in appropriate (but specified) units.

Feeds should be given in kg or other appropriate (but specified) units. Value in naira is total cost of each input used by the establishment during the survey year.

18(c): For each operating expense (listed from 1 to 13), give total amount payable for the year whether the expense has been paid or not. For instance total “rates and rents” must be the sum actually paid and that due but not yet paid.

### **Section Seven: Marketing Channel**

(19) Receipts from sale of livestock/poultry and by-products:

For live animals and live birds, quantity sold should be in numbers. Five blank rows are provided for five types of live animal sold (and kept) by the establishment. Similarly four blank rows are provided for live birds sold.

Quantity of hides and skins sold should be in kg. For milk it should be in litres, for other dairies (kg), for eggs (crates) and for other (kg or other appropriate but specified units).

(20) Section eight: Processing Facilities

Against each processing facility owned (and used ) by the establishment, tick (mark X) in appropriate box

(21) Here, tell us how you dispose of your output through sales . Four sale locations are listed

- within your LGA: ie in the LGA where your establishment is located (see section one above).



- within the state: i.e. in the State where your establishment is located (see also section one above).
- in other countries means outside Nigeria.

There market outlets (channels) are listed column wise: distributorship, wholesale and retail. Tick (√) as many cells as are applicable.

(23) You are to compare the survey year with the preceding year, under each of four factors: weather, output, income and price. If for instance output in the survey year was better than in the preceding year, mark “X” in the third row, second column.

**Note:** For each row, only one cell should be marked. In all, only four cells should be marked.

(24) This should be treated as 23 above. We are asking for your expectation in next season, the year after the survey year in question.

(25) Suggestion for improvement: Each of eight suggestions requires the circling of “yes” or “no”.

### **Section Nine: ICT Indicators**

26 Access to ICT facility means you have opportunity to use the facility. Thus, if you listen to a radio set (whether from your own or from a neighbour’s) you have access to a radio facility. So for radio, circle “yes”. Circle “yes” or “no” for each of the other six facilities.

27 Ownership of ICT facility can come through purchase, raffle draw, outright gift or inheritance, among others. So if you own any of the seven facilities circle “yes”, otherwise circle “no”.

### **FISHING QUESTIONNAIRE**

Section 1:

- 1 Name of holding: This is the official registered name of the establishment. e.g. Okoro and Sons Ltd.
- 2 Physical/location address: This is the place where the establishment has its registered office e.g. No 5, Amakiri Road, Port Harcourt. If the location is outside the town or village, write the distance in km.
- 3 State: The name of the state where the establishment is located.
- 4 LGA: This is the LGA of the state where the establishment is located.

- 5 Town or nearest town: This is the town where the registered office of the establishment is located or the town nearest to the registered office.
- 6 Year of commencement: This is the calendar year in which the establishment, started operation. It may be different from the year it was registered.
- 7 Contact person: This must be a responsible member of the establishment, holding executive/administrative position (e.g. manager, Accountant, Director etc).
- 8 Contact person's address: This is the address of the contact person, preferably the official location address.
- 9 Telephone number: This could be that of the establishment itself or that of the contact person.
- 10 The holding (establishment) is part of a multi-unit enterprise if it has its headquarters in a different location (town or state) to which it reports at a regular interval (monthly, quarterly, annually etc).
- 11 This should be treated as 1 and 2 above.
- 12 Operation during the survey year: What is required here is the number of months out of 12 months that the establishment was active (doing business). For instance, if it was in operation for eight (8) months, write 08 in the two boxes provided.
- 13 Legal form of ownership: Mark "X" in only one box against the option that applies.
- 14 Sources of funds: For every source used by the holder, state the amount and interest to the nearest naira. The total is the sum from all applicable sources.

## **Section 2:**

- 15(a): Employment: We are interested in the number of persons that worked in the establishment during the survey year, by sex, for both Nigerians and non-Nigerians. Four (4) types of workers are classified as follows:
- i. **Working proprietors:** These are the owners of the business who put in a number of hours of work a day regularly.
  - ii. **Unpaid family worker:** Members of the proprietor's household who work, without pay, in the establishment.

- iii. **Paid employees:** Non-members of household who are hired, on a regular basis, to work for pay in the establishment.
  - iv. **Apprentices:** Persons engaged by the proprietor to learn the trade, and work without pay in the establishment.
- 15(b): **Earning/Wages:** What is required here is the annual wage bill (in naira) for each category of workers, by sex for both nationals (Nigerians) and foreigners (non-Nigerians).

### Section 3:

- 16 **Fish Farmers:** What you are required to do is to list the type of fish cultured in (col.2), the quantity cultured (kg) in (col. 4). The value (in naira) of the fish cultured in (col. 5), the quantity harvested (in kg) in (col. 6) and the value (in naira) of the quantity harvested in (col. 7).
- 17 **Fish Hunters:** We want to know the following:
- i. Name of each type of fish caught should be entered in (col. 2), the quantity (in kg) of each type of fish caught in( Col. 4) and value of (in naira) of each type of fish caught in (col. 5).
- 18 **Method of preservation:** Four (4) modes of preservation are listed. Mark “X” in any cell as applicable.
- 19 **Type of equipment:** Six (6) types of equipment are listed. Give the number of any applicable.
- 20 **Fish Inputs:** Quantity and cost: Six (6) types of input are listed in (col. 2). Against any applicable one, give the quantity (kg) used in (Col. 3) and the cost (in naira) of that quantity used in (Col. 4).
- 21 **Sales of Fish Products:** Quantity and value: The sales of five (5) types of fish are listed. Against each one applicable, give the quantity sold in (Col. 3), and the value (in naira) of the quantity sold in (Col. 4).

### Section 4:

- 22(a) **Fixed Assets:** For each type of asset applicable (Col. 1), give the year of purchase or construction in (Col.2), the number acquired (Col.3), cost (in naira) of purchase or construction (Col. 4), depreciation (Col. 5), and net value (in naira) column 6.
- 22(b) **Fish Farming:** Thirteen types of operating expenses are listed. Against each applicable one, give the amount (in naira) in its corresponding cell.

**Section 5:**

- 23 Total receipts during the year: You are required to give the details of your receipts from sale as itemized in (Col. 2), the quantity sold (Col. 3) and the amount (in naira) of the quantity sold in (Col. 4).

**Section 6:**

- 24 Fish Processing Facilities: Tell us how the establishment processes its products by marking 'x' for any each applicable one in its corresponding cell.
- 25 Marketing channel: Here, tell us how you dispose of your output through sales. Four (4) sale locations are listed:
- within your LGA
  - outside your LGA but within the state
  - in other state(s) within Nigeria
  - in other countries (export).

Three market outlets (channels) are listed column-wise:

- distributorship
- wholesale
- retail

Mark "X" in as many cells as are applicable.

**Section 7:**

- 26 Tell us if you export your product by circling 'yes' otherwise circle "no", If "yes", tell us the country of export and the quantity (in kg) exported.
- 27 Here then are four (4) factors and there are four (4) grades for each factor. Only one column should be marked.
- 28 The same as in question 27
- 29 Suggestion for improvement: Each of the eight (8) suggestions requires the circling of either "yes" or "no" but not both.

**Section 8:**

- 30 **ICT Indicators:** Access to ICT facility means that you have the opportunity to use the facility. Thus, if you listen to a radio set (whether from your own or from

your neighbour's), you have access to a radio facility. So for radio circle "yes". Circle "yes" or "no" for each of the other six facilities.

- 31 **Ownership of ICT Facility:** ownership of ICT facility can come through purchase, raffle draw, outright gift or inheritance, among others. So if you own any of the seven facilities circle "yes", otherwise "no".

**Section 9:**

**Remarks: Give your remark as you deem fit.**

**Section10:**

**Certification:** You are required to complete this section.

## CHAPTER 6

### 6.0 Phase II (Crop Cutting) Plans/Arrangement

The EAs to be selected will be state-wise and from first phase EAs. Hence, the domain of reporting will be at the state level. Sixty (60) EAs will be selected in each state of the Federation including FCT, Abuja making a total of 2,220 EAs to be canvassed. As was done earlier, systematic selection process will be used in selecting these EAs.

In the second stage in this phase five (5) crop farming housing units will be selected systematically from each of the sixty (60) EAs selected for each state and FCT, Abuja. Forms FS1, FS2 and YCE will be administered to each of them. Alternatively, if the Global Positioning System (GPS) equipment is readily available, form FS1 may be modified for obtaining the farm area. Lying of yield plot can be done to get estimated quantity of yield from the farm which can be compared with the farmer's recall of harvest.

## CHAPTER 7

### **GLOBAL POSITIONING SYSTEM (GPS)**

GPS stands for Global positioning system. The Global positioning system (GPS) is a satellite-based navigation system made up of a network of 24 satellites placed into orbit by the U.S. department of defence. GPS was originally intended for military applications, but in the 1980s, the government made the system available for civilian use. GPS works in any weather conditions, anywhere in the world, 24 hours a day.

### **Uses of GPS**

- i To conduct a farm survey
- ii To monitor enumerators, whether farm survey was actually done.
- iii To construct NISH, NISE and SAS frames that has true geographic bearing with the earth surface.
- iv Measuring terrain features that are difficult to measure by conventional means.
- v. Positioning offshore oil platforms.
- vi Updating road data with a GPS receiver in a car.
- vii Car navigation
- viii Determining camera – carrying aircraft positions to reduce reliance on fixed masks in aerial photography.

### **HOW IT WORKS**

GPS Satellites circles the earth twice a day in a very precise orbit and transmit signal information to earth. GPS receivers take this information and use triangulation to calculate the user's exact location. Essentially, the GPS receiver compares the time a signal was transmitted by a satellite with the time it was received. The time difference tells the GPS receiver how far away the satellite is. Now, with distance measurements from a few more satellites, the receiver can determine the user's position and display it on the unit's electronic map.

### **USING GARMIN ETREX LEGEND GPS TO DETERMINE AREA OF A PLOT**

Two methods can be used:

1. way-point method
2. Tracking method

Way-points: A waypoint is a location that you mark on a map (or the earth's surface). It can be an address, an existing map feature, a point of interest, an empty spot on the map, or any other point you wish. In this case, waypoints would represent boundary edges for plots of land.

This method is most suitable for farms with regular shapes.

**Procedure:**

1. Switch on the GPS receiver. Sketch your farmland on paper.
2. Wait for 1-2 minutes for GPS to initialize and locate satellites. Also make sure that the satellite reception is good (i.e. satellite signal bar is high) before the point is marked, for better result.
3. Cycle to the main page by pressing the QUIT key repeatedly. On the main page select MARK to mark your present position as a waypoint.
4. Note the waypoint ID and indicate the position in your sketch. Select the OK button to mark the point.
5. Move to the next point, cycle to the satellite page to make sure the satellite reception is good and repeat step 4.
6. When all the points, have been acquired (or marked), go to the office and download the positions of the marked points.
7. Plot and calculate the area of the farmland.

To view the stored waypoint:

- Cycle to the main page:
- Select find and go to waypoints.

To plot and calculate the area using ArcGIS

- Start ArcMap and Open the NBS\_GIS project file.
- Start Editing the Farmlands layer
- Plot the boundaries of the farmlands and press F2 when you have plotted the last one.
- Open the attribute table to view the Area of the Farmland.

**Tracking Method:** This method is most suitable for features with curved or irregularly shaped boundaries e.g. water bodies e.t.c. It involves moving along the



boundary with the GPS automatically locating points at intervals along your path. These intervals could be timed or automatic.

### **Procedure**

1. Switch on the GPS receiver. Sketch your farmland on paper
2. Wait for 1-2 minutes for GPS to initialize and locate satellites. Also make sure that the satellite reception is good (i.e. satellite signal bar is high) before the point is marked for better result.
3. Cycle to the main page by pressing the QUIT key repeatedly. On the main page, select TRACK.
4. On the TRACK page, select to begin tracking.
5. Walk round the survey path
6. Stop and save the track when prompted.
7. Download track data to PC, select the track and check track properties for area.

### **Transferring data from GPS to computer**

1. Install the GPS software (map source) if not installed.
2. connect the GPS to the computer with USB or COM from a device:
3. Verify that the device is powered on, properly connected to the computer
4. Launch the Map source Software.
5. From the transfer menu, select Receive from Device.
6. Choose the desired device or click to find Device. The name of the connected device is displayed in the Device field.
7. Place a check mark next to the items you want to transfer to Map Source from the GPS unit.
8. Click Receive. The data is sent to Map Source.
9. Click on Tabs to view waypoints, tracks, routes e.t.c.

### **Note:**

- Satellite reception by GPS receivers has to have a direct view with the sky so do not stay under shed, indoor or near building that may obscure the reception.
- Always cycle to the satellite page to ensure that it's tracking (4) satellites and the signal strength is high before reading is taken. If the signal strength is not high, raise the GPS and avoid obstructing its view.
- Do not obstruct the GPS antenna.
- Study the GPS manual properly before use.



## CHAPTER 8

### 8.0 Fieldwork Arrangement

#### 8.1 Pilot Survey

Four supervisors and eight enumerators per selected state will be used for collecting data on peasant holding questionnaires while updating/compilation of frame of modern agricultural holdings (MAH) will be done by one supervisor and two enumerators per selected state. Preparation for the take off of the actual census in July 2007 commences with the pilot test scheduled for second quarter 2007. The essence of the exercise is to test relevant survey instruments including (New) field equipment to be used to promote data quality during the census. Twelve (12) states in the country (two states per zone) are planned to be used for the pilot exercise. In each selected state, two local government areas (LGAs) are to be studied.

#### Training for field work

##### First Level Training – Training of Trainers (TOT)

30 trainees will be trained. 24 trainees (2 per state) will be selected as trainers for 2<sup>nd</sup> level training at NBS state offices. Duration – 3days.

##### Second Level Training – State Training

This will cover twelve (12) selected states. Sixteen (16) officers will be trained per state (i.e. 10 enumerators, 5 supervisors and 1 state officer). Altogether 192 persons will be trained at this level. Each of the 6 zonal controllers will visit at least one state within their zones. Duration – 5 days.

#### Field work Arrangement

5 teams comprising 10 enumerators & 5 supervisors will be used per state. A team is made up of 2 enumerators and 1 supervisor. 4 teams will cover household component (NISH). 1 team will cover Establishment component (NISE). Duration for fieldwork – 5 days.

#### Household Component (NISH)

8 enumerators and 4 supervisors constituted into 4 teams of 2 Enumerators and 1 supervisor will conduct Household interviews. The teams will cover 4 EAs in 5 days. A team will cover 1 EA in 5 days. Workload of team in an EA includes:

- Household listing
- Selection of 10 HUs for GHS.

Stratify the housing units into farming and non-farming housing units. Thereafter, stratify the farming housing units (FHU) into crop, livestock keeping and fishing housing units. Select systematically 4 crop farming, 3 livestock keeping and 3 fishing farming housing units for interview.

Administration of questionnaire in selected HUs:

- GHS questionnaire in 10 HUs.
- Crop holding questionnaire in 4 CFHUs.
- Livestock keeping holding questionnaire in 3 LFHUs.
- Fishing farming holding questionnaire in 3 FFHUs

Survey a maximum of 2 farms. Lay yield plot for farm(s) surveyed and witness harvest later in the year. Complete form LMP1 for capturing local units of measurement of agricultural products.

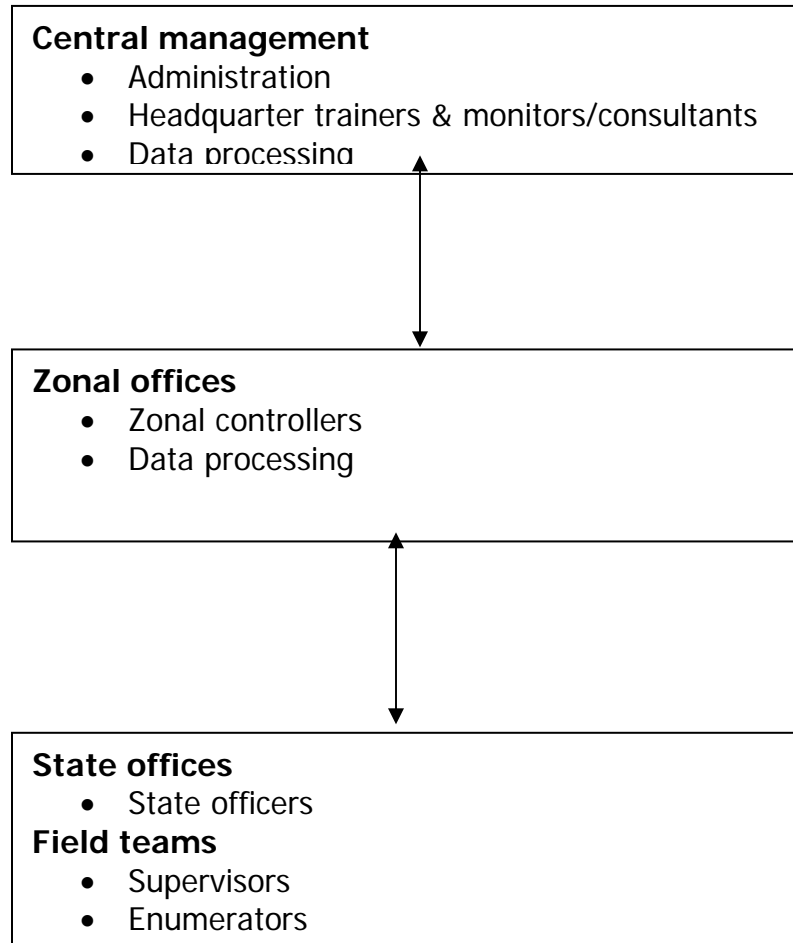
## **8.2 Main Census**

National Bureau of Statistics permanent staff will be used along with enumerators from FMA&WR and other stakeholders for data collection. A team of two enumerators and one supervisor will cover 20 EAs per LGA. A total of 60days will be used for data collection.

## **8.3 Modern agricultural holdings**

The fieldwork arrangement will be based on the frames compiled/updated for each state and Federal Capital Territory (FCT), Abuja. The frames would be obtained through farming establishments.

#### 8.4 NASC Organization Chart





## 8.6 Distribution of Field Personnel by States.

**Table 1: Distribution of States by LGAs, EAs and Number of Enumerator/Supervisor**

Zone & State	No of LGAs	No of EA per LGA	No of EAs per state	No of teams	No of enumerators	No of supervisors
<b>South East</b>						
Abia	17	20	340	17	34	17
Anambra	21	20	420	21	42	21
Ebonyi	13	20	260	13	26	13
Enugu	17	20	340	17	34	17
Imo	27	20	540	27	54	27
<b>Sub total</b>	95		1,900	95	190	95
<b>South West</b>						
Ekiti	16	20	320	16	32	16
Lagos	20	20	400	20	40	20
Ogun	20	20	400	20	40	20
Ondo	18	20	360	18	36	18
Osun	30	20	600	30	60	30
Oyo	33	20	660	33	66	33
<b>Sub total</b>	137		2,740	137	274	137
<b>South South</b>						
Akwa-Ibom	31	20	620	31	62	31
Bayelsa	8	20	160	8	16	8
Cross River	18	20	360	18	36	18
Delta	25	20	500	25	50	25
Edo	18	20	360	18	36	18
Rivers	23	20	460	23	46	23
<b>Sub total</b>	123		2,460	123	246	123
<b>North East</b>						
Adamawa	21	20	420	21	42	21
Bauchi	20	20	400	20	40	20
Borno	27	20	540	27	54	27
Gombe	11	20	220	11	22	11
Taraba	16	20	320	16	32	16
Yobe	17	20	340	17	34	17
<b>Sub total</b>	112		2,240	112	224	112
<b>North West</b>						
Jigawa	27	20	540	27	54	27
Kaduna	23	20	460	23	46	23
Kano	44	20	880	44	88	44
Katsina	34	20	680	34	68	34
Kebbi	21	20	420	21	42	21
Sokoto	23	20	460	23	46	23



Zamfara	14	20	280	14	28	14
<b>Sub total</b>	186		3,720	186	372	186
<b>North Central</b>						
Benue	23	20	460	23	46	23
Kogi	21	20	420	21	42	21
Kwara	16	20	320	16	32	16
Nassarawa	13	20	260	13	26	13
Niger	25	20	500	25	50	25
Plateau	17	20	340	17	34	17
Abuja	6	20	120	6	12	6
<b>Sub total</b>	121		2420	121	242	121
<b>Grand total</b>	774		15,480	774	1,548	774

## CHAPTER 9

### 9.0 Retrieval Arrangement

#### 9.1 Pilot

The monitoring officers who happened to be the trainers would take the retrieved data collected from the field to National Bureau of Statistics, headquarters-Abuja.

#### 9.2 Main Census

Data retrieval programme will be set up to avoid unnecessary delay in the data processing. Movement of completed records/ questionnaires would be monitored from the sub-office to the state office to the Zonal headquarters. Data retrieval will be in phases as the case with the field operations. All completed questionnaires for the census will be processed at the zonal offices.

## CHAPTER 10

### 10.0 Monitoring and Quality Checks

This is a program designed to control the quality of records from the fieldwork. Apart from the regular supervision, two levels of checks will be instituted namely; states and headquarters. The state-based quality check will involve quality check and the state officers and zonal controllers. The monitoring from headquarters will involve officers in the relevant departments and agencies.

### 10.1 Pilot

One of the two trainers at each selected state for training would wait behind to carry out the monitoring and quality check of the fieldwork.

### 10.2 Main Census

The monitoring/quality check would be carried out by the following officers: state officers, zonal controllers, officers from NBS HQs and coordinators from NBS HQs.

State officers are to oversee the work of the enumerators and supervisors in his/her state during fieldwork.

Each zonal controller is to ensure that quality work is done accordingly in the states under him/her.

The officers from NBS HQs and other agencies are to visit the enumerators and supervisors in the field to ensure that field arrangement is implemented appropriately.

The Coordinators are made up of consultants, directorate and other top management personnel. They are to ensure that the challenges encountered during the field work are adequately addressed. They are to oversee the fieldwork at zonal levels.

## CHAPTER 11

### CONCEPTS AND DEFINITIONS

#### 11.0 Introduction

It will help you understand this manual or book of instructions for supervisors and enumerators and the work you are to do if you become familiar with the following terms and definitions.

#### 11.1 Holding:

An agricultural holding is an economic unit of agricultural production under single management and comprising all land, livestock and fish farming kept wholly or partly for agricultural production purposes, without regard to title, legal form or size. The holding's land may consist of one or more parcels or (farms) located in one or more separate area in a Local Government Area. Any parcels located in another LGA should however be considered another holding.

#### 11.2 Holder:

Holder is a person who exercises management control over the operations of the agricultural holding, takes major decisions regarding the use of available resources and has a right over the farm proceeds.

#### 11.3 Household:

A household consist of person(s) who make arrangements individually or in groups, for providing themselves with food or other essentials for living. They usually, but not always, live under the same roof. The member may or may not be related.

#### 11.4 Farm:

A farm is a continuous area of land which is divided into one or more plots of land use. It may have semi permanent boundaries such as fence etc. In this manual and for the purpose of this agricultural census, the parcel and farm mean the same thing.

#### 11.5 Farming Household:

A household in which at least one of its members is a farmer i.e. have holdings.

#### 11.6 Head of Household:

The head of household is the person in the household acknowledged as head by the other members. The head has primary authority and responsibility for the household's affairs.

**11.7 A Compound/Address:**

All buildings and structures built on a piece of land with single ownership, usually such compound/address has one single street number.

**11.8 Building/Structure:**

This is a structure that exists on its own with external walls. There may be several such buildings in an address/compound. Example, in new Lagos (Surulere) the main building usually consists of one flat but a boy's quarter exists at the back yard either as living quarters or office. In this case we have two buildings in one address. In the rural area, a compound may consist of several buildings occupied by various members of the family. The father may live in one building; wives and their children may occupy others. Each structure so occupied may be considered as a building. In some places we have kitchen, barn, store or even toilet built separately. Each structure will be called a building.

**11.9 Housing Unit:**

This is a place of habitation of persons or household with a single main entrance and with exclusive right to use of the same basic amenities. For the face to face, room by room type of building, each room or set of rooms occupied under one arrangement with one recognised tenant is a housing unit.

**11.10 Master Sample:**

This is sample of households selected for study in each E.A. Apart from being studied in this census, the whole sample or part of it may be studied in other surveys.

# THE SURVEY EQUIPMENT GLOBAL POSITIONING SYSTEM (GPS)



## **1.0. INTRODUCTION**

Standardization of local measures of farm area is another step towards resolving the two major problems that make agricultural Statistics production in Nigeria complicated.

The other problem was resolved when similar survey was carried out in 2007 on standardization of local measures of production. With these two problems solved, agricultural statistics production in Nigeria would have been delivered from problems borne out of cultural diversity, which is not the making of farmers (respondents).

With advancement in technology, there is need for paradigm shift in the way farm survey is carried out. Hence this exercise also presents the opportunity to master the use of the new technology for farm survey (Global Positioning System).

The Global Positioning System (GPS) is a piece of technology used for variety of activities (navigating, mapping, etc). The advantage of this technology over the old method of farm survey (i.e compass, pole and tape) is enormous. It is more accurate in measurement, faster, easier and requires less number of people to use.

## 2.0. STEPS ON THE USE OF GPS

First walk round the farm boundary to observe the farm shape and possible obstacles on the farm

- Switch on the GPS by pressing the power button for 1-2 seconds
- Wait for 1-2 minutes for GPS to initialize and locate satellites just like when waiting while your computer is booting
- GPS will indicate **READY** before you can start navigating
- Make sure that the satellite is good i.e. a minimum of four satellites that are scattered is received
- Circle to the main page by pressing **QUIT** key repeatedly
- On the main page select **TRACK**
- On the **TRACK** page, select begin tracking
- Move the cursor to **OFF** click, it will move to **ON** then click again, **ON** will look dull indicating it is ready for survey work
- Mark your starting point
- Walk round the farm boundary
- Return to your starting point
- Stop and save, by moving the cursor to save mode and press, it will save by the date.
- The area of the surveyed will be shown on the screen, record in FS1 form and write the unit of area measurement (square metre)
- Count the number of heaps, ridges or stands and record against the area
- Write the name of crop grown there



- Before surveying another farm, move to **CLEAR** to rob off the previous farm. Otherwise there will be an overlap
- Repeat the same procedures to survey other farms
- 10 farms can be saved at a time after which you deleted them off to allow other farms to be surveyed
- Please note that you are to save the last ten farms you surveyed.

### 3.0. CROP CUTTING - FORMS (FS1, FS2, & YCE).

#### 3.1. DEFINITIONS:

3.1. i. **CROP CUTTING** is an objective measurement of cultivated land for mainly growing crop(s). This aspect of Agricultural Sample Survey focuses only crop(s) grown in a farm in order to get its area, harvested yield, local units in cultivation, pattern of cropping and the name of crop(s) grown.

3.1.ii. A **FARM** can be defined as a piece of land with continuous boundary which is cultivated (prepared) for growing crops either in a short or in a long period of time.

Figure A below illustrates a farm.

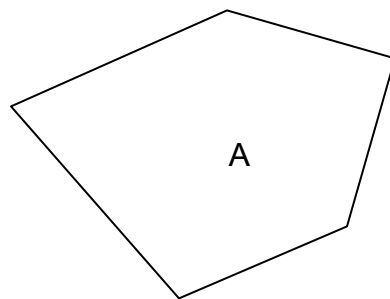


Fig. A

**3.1.iii. A FARM PLOT** means a farm or a part of a farm which carries a crop or a combination of crops. In this case, a farm plot can be taken as a **crop farm** since its area, number of local unit and crop grown can be got uniquely. For examples, Figure Bi and Bii below illustrate farms which are divided into several distinct parts (plots).

For figure Bi, there are three plots having identified continuous boundary each.

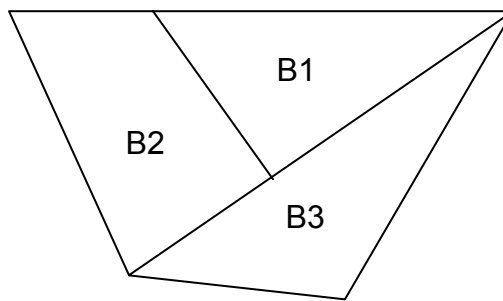


Fig. Bi

Figure Bii has three distinct patterns of planting, but no continuous boundary to separate them. Each of these distinct patterns of planting should be taken as a plot.

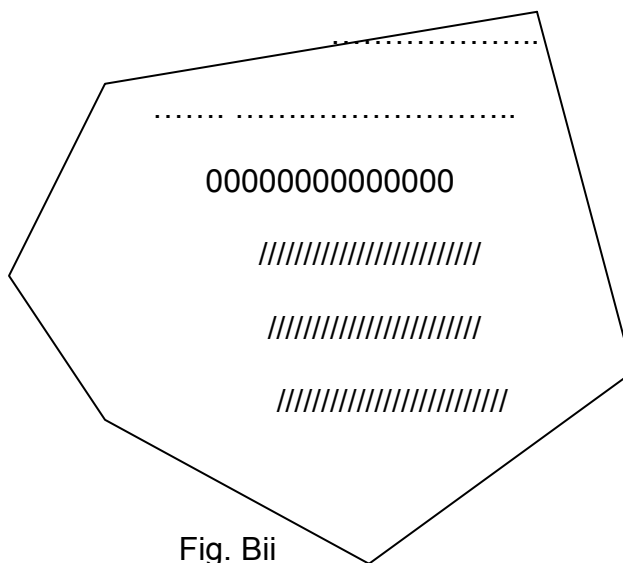


Fig. Bii

## **3.2. INSTRUCTION OF FARM SURVEY INSTRUMENTS**

### **3.2.1. VERIFICATION:**

Ensure that form **FS1** , **FS2** and **YCE** are written on top right side of farm survey 1, farm survey 2 and Yield Crop Estimate forms respectively.

Form FS1 captures **Area** of a farm (or a farm plot) as well as **local unit** and **crop grown**.

Form FS 2 shows **laying of yield plot** in a farm (or farm plot) as well as **its types** and **cropping pattern**.

Form YCE contains the **yield weight** of each harvested crop and the **crop name**.

### **3.1.2 IDENTIFICATION SECTION**

A set of completed questionnaires (i.e. FS1, FS2 and YCE) must have the same identification which must be corresponded to a completed listing form of the same survey year. Such as follows:

- State name and code
- LGA name and code
- EA name and code
- RIC code only (if available)
- Survey year must be indicated.

Ensure that they are carefully and appropriately filled.

### 3.2.3. CHARACTERISTICS OF THE FARMER (HOLDER)

Fill the following items on forms FS1, FS2, and YCE which must be consistent with a completed listing form of the reference year. The items are:

- HU serial No.
- HH serial No
- Name of Head of farming HH must be mentioned

### 3.2.4. FARM CHARACTERISTICS:

The following items should be carefully observed.

- **Farm Letter:** The alphabet letter should be given to each farm. Do it orderly. Starting from A to Z, etc.
- **Farm Plot:** The number of each farm plot must be given serially.
- **Total No. of Farms:** This means total number of farms (or farm plots) operated during a survey year. Write the most correct number after counting them appropriately.
- **The Name of Crop (s) grown:** The name of crop(s) grown during a survey year must be written carefully. For a farm (or a farm plot), maximum of four crops should be written out in case of mixed cropping pattern from major to minor.
- **Type of Yield Plot:** Must be clearly coded on forms FS2 and YCE. Use the yield of the crop or the crop name to carefully find out the appropriate type of yield plot to be inserted.

#### 4.0. HOW TO FILL FORM FS 1

##### 4.1. SECTION A: Farm Survey 1

- USING TRACKING METHOD BY GPS.

The Global Position System (**GPS**) will automatically draw a sketch map of the Farm or Farm plot(s) using **tracking method**. Carefully follow the movement on the farm or farm plot(s) from the starting point in either clockwise or anticlockwise direction through the boundary of the crop farm (or plot) in returning to the starting point.

##### 4.2. SECTION B: FARM SURVEY RECORDINGS

- **Columns 1:** Contains **Farm Letter** which can be arranged in alphabetical order of A to Z.
- **Column 2.** Contains **Farm Plot No.** This should be orderly recorded in numeric value such as 1, 2, 3 and so on. Be careful to put them in correct order.
- **Column 3:** Contains **Farm Area** in square metres (**M<sup>2</sup>**). Record the area obtained from a completed movement from tracking approach using GPS. Ensure that the area in GPS is put into square metre before recording the value obtained.
- **Columns 4 - 6:** Contain **Number of local unit** - ridge, heap, stand, etc. Count and record the number of local unit into **column 4**; write the local unit name into **column 5** and in **column 6** insert the code of local unit recorded in column 5 per surveyed farm.

- **Column 7:** Contains **List maximum of four crop names per farm from the most common to the least intensity.** List the name of each crop found per farm in the column provided. If the farm is a **newly cultivated land for planting without any crop**, it is very necessary to ask the farmer (holder) the name of intended crop(s) to be planted.
- **Column 8:** Contains **Crop code.** Insert the code against each named crop in column 7 appropriately.
- **Column 9:** Contains **Remarks.** This column is meant for personal observation (comment) during the survey activity.

## 5.0. HOW TO FILL FORM FS 2

### 5.1. RECORDS OF THE YIELD PLOT

The details of filling and coding form FS 2 are as follows:

- **Columns 1:** Contains **Farm Letter** which can be arranged in alphabetical order of A to Z. See the NOTE below the format.
- **Column 2.** Contains **Farm Plot No.** This should be orderly recorded in numeric value such as 1, 2, 3 and so on. Be careful to put them in correct order. See the NOTE below the format.
- **Columns 3 & 4:** Contain **crop grown** in a farm (or farm plot). Either sole or mixed cropping pattern, one crop must occupy a row with its name in column 3 and its code in column 4. Ensure that the crop name(s) and their code(s) are written correctly. See the NOTE below the format.

- **Column 5:** Contains **Cropping Pattern Code**. Trace column 5 down to the bottom where an arrow points to a box consist of codes. Inside the box pick a code appropriately.
  - **Column 6:** Contains **Code for Type of yield plot**. Follow column 6 to the bottom where an arrow points to a box of type of yield plots and their corresponding codes. Inside the box pick a code appropriately.
  - **Column 7:** Contains **No (Number) of Paces diagonally across the farm**. Walk diagonally across the surveyed farm to obtain total number of paces and record appropriately.
  - **Column 8:** Contains **Random Number Selected**. Take a table of random number to look for a number that is less or equivalent to total number of paces in column 7. This number will serve as centre point of laying yield plot using GPS.
  - **Column 9** contains **Laying of Yield Plot Area(M<sup>2</sup>) with GPS** in the farm (or the farm plot). From the established centre point, mark a small portion in the farm either in **circular** or **rhombus** shape to be covered for laying of yield plot. Then, take the GPS to measure the area and record in square metre.
- Column 10** contains **Remarks** which is opened to personal observation(s).

## 6.0. HOW TO FILL FORM YCE

The filling and coding of this form YCE is as follows:

### 6.1. SECTION A: This section contains:

- i. **Farm letter box:** Fill the box with the letter that matches FS1 and FS2. Do it appropriately.
- ii. **Farm plot No box:** Fill the box with the farm plot number that matches FS1 and FS2. Ensure it is correctly done.
- iii. **Type of Yield plot box:** Fill the box with the type of yield plot in form FS2 that matches it. Ensure it is done appropriately.

### 6.2. SECTION B: Farm Crop Yield Measurement

The measurement details can be filled / coded as follows:

- **ROW I** Contains **Name of crops in a plot**. This row is sub divided into four (4) columns labelled crop 1, crop 2, crop 3 and crop 4. Write only one crop name in each column. The crop name here must match FS2 column 3 – crop grown. Be careful.
- **ROW II** Contains **crop code**. If crop code is available write it appropriately otherwise leave it blank.
- **ROW III** Contains **No of stands/balls/tubers**. Write the actual number counted in the farm or plot(s) during the harvest. Do it with care.
- **ROW IV** Contains **yield measurement**. Record the weight measurements of each crop 1 - 4 that has been harvested. This main row is subdivided into three rows consisting of Field, Dry and Grain



weight respectively as well as data of harvesting. All weight measurements must be recorded in kilogram (kg).

**NOTE:**

**Field weight** is the weight obtained from fresh harvesting of matured crop(s).

**Dry weight** is the weight got from the harvested crop after keeping it for a period of time to dry or to remove moisture.

**Grain weight** is the weight of grain or seed obtained from the harvested crop after removing them from other materials in the harvested crop(s).

**6.3. SECTION C: Economic Tree Crop Yield Measurement**

This section can be edited or coded as follows:

- **Row I** Contains **Name of crops in the plot**. This row is sub divided into four (4) columns labelled crop 1, crop 2, crop 3 and crop 4. Write a crop name on each column. The crop name here must match FS2 column 3 – crop grown.
- **Row II** Contains **Code of trees in the farm**. If the code is available write it appropriately, otherwise leave it blank.
- **Row III** Contains **No of trees in the farm**. The trees should consist of both bearing and non-bearing ones. Record what you see in the farm accordingly.

- **Row IV** Contains **No of trees in a sample plot**. The trees must consist of both bearing and non-bearing ones. Record what you see in the farm according to the sample coverage.

**NOTE:**

**Bearing:** means the tree(s) that posses(s) fruit(s) or flower(s).

- **Row V** Contains **Field Yield Measurement**. Record the weight measurements in kilogram (kg) of each crop 1 - 4 that has been harvested. This main row is sub divided into three rows to record three types of measurement Pod, Wet and Dry weights as well as date of recording. Ensure that the right figure is recorded.

**NOTE:**

**Pod weight** is the weight obtained from fresh harvesting of fruits plucked on the tree(s).

**Wet weight** is the weight obtained after breaking the fruits plucked on the tree(s) to get the seed(s) or cotyledon(s).

**Dry weight** is the weight obtained after drying the moisture seed(s) or cotyledon(s).