

# Nigeria - General Household Survey Panel, Farm Area Measurement Validation Study 2013

**National Bureau of Statistics - Federal Government of Nigeria**

Report generated on: May 25, 2017

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# Sampling

## Sampling Procedure

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The plot size plays a significant role in the accuracy of plot area measurement using the various methods, the validation sample was stratified on four plot size strata to ensure we could test the various methods on larger plots, which are much more rare. Four states were purposefully selected based on safety and past performance in area measurement (Benue, Osun, Oyo, and Kogi). Using the second wave of the GHS panel as the sample frame and the GPS measurement of the plot taken in the post-planting visit, every plot was assigned to some plot-size strata (strata 1:  $\leq 1000$  sq. meters; strata 2: 1000-2500 sq. meters; strata 3: 2500-5000sq. meters; strata 4:  $> 5000$  sq. meters). One hundred plots were then randomly selected from each stratum. This process yielded the selection of 400 plots (211 households). However, in order to maximize the sample at minimal added cost, we included all plots from the selected households, not only the plots that were selected in the first step (totaling 518 plots).

From the 518 selected plots, 23 plots were unable to be measured (5 due to land disputes, 4 due to respondent refusal, 14 for other reasons). Therefore, the total number of plots measured and included in the farm area measurement validation study is 495, coming from a total of 202 households.

Stratification by plot size in the validation sample results in the unequal probability of plot selection within households from the GHS-Wave 2 sample. Household-level sampling weights were calculated for the validation sample to make them representative of the same household population sampled in Wave 2. Refer to Annex I of the Basic Information Document for details on the construction of the sampling weights.

# Questionnaires

## Overview

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The survey consists of a single questionnaire instrument which includes in-field GPS measurement details, compass and rope measurement details, and the farmer self-reported area estimate.

## Data Collection

### Data Collection Dates

Start	End	Cycle
2013-03-01	2013-03-29	N/A

### Data Collection Mode

Face-to-face [f2f]

### Data Collectors

Name	Abbreviation	Affiliation
National Bureau of Statistics	NBS	Federal Government of Nigeria

### SUPERVISION

Ten NBS enumerating field staff (along with assistants) were deployed to the four states in groups. Two staff covered Oyo State, 2 staff covered Osun State, 2 staff covered Kogi State, and 4 staff covered Benue State. Supervisors from the Nigeria National Bureau of Statistics and The World Bank, LSMS team were present for the duration of fieldwork and made roving visits to observe and ensure the proper protocols were followed.

## Data Processing

No content available

# Data Appraisal

No content available

## File Description



## Variable List

## secta

Content	This dataset provides information from "Land Experiment Questionnaire 2013", Section A: Household Identification
Cases	495
Variable(s)	15
Structure	Type: Keys: ()
Version	
Producer	
Missing Data	

## Variables

ID	Name	Label	Type	Format	Question
V1	state	State code	discrete	numeric	
V2	lga	LGA code	discrete	numeric	
V3	sector	Sector	discrete	numeric	
V4	ea	Enumeration area code	discrete	numeric	
V5	ric	RIC code	discrete	numeric	
V6	hhid	Household identification	discrete	numeric	
V7	plotid	Plot ID	discrete	numeric	
V8	enum_id	Enumerator ID	discrete	numeric	
V9	hh_weight	Household sampling weight for area measurement study	discrete	numeric	
V10	q9b	Date	discrete	character	What date was it completed?
V11	q10b	Date	discrete	character	What date was it checked?
V12	q11a	Sheet of	discrete	numeric	Sheet of
V13	q11b	Sheet of	discrete	numeric	Sheet of
V14	q12a	Time started	discrete	character	Time started?
V15	q12b	Time completed	discrete	character	Time completed?

**sectb**

Content	This dataset provides information from "Land Experiment Questionnaire 2013", Section B: Plot Identification
Cases	495
Variable(s)	8
Structure	Type: Keys: ()
Version	
Producer	
Missing Data	

**Variables**

ID	Name	Label	Type	Format	Question
V16	state	State code	discrete	numeric	
V17	lga	LGA code	discrete	numeric	
V18	sector	Sector	discrete	numeric	
V19	ea	Enumeration area code	discrete	numeric	
V20	ric	RIC code	discrete	numeric	
V21	hhid	Household identification	discrete	numeric	
V22	plotid	Plot ID	discrete	numeric	
V23	q14	Crops grown on plot	discrete	character	Are crops grown on plot?

**sectc**

Content	This dataset provides information from "Land Experiment Questionnaire 2013", Section C: Farm Survey Recordings
Cases	495
Variable(s)	10
Structure	Type: Keys: ()
Version	
Producer	
Missing Data	

**Variables**

ID	Name	Label	Type	Format	Question
V24	state	State code	discrete	numeric	
V25	lga	LGA code	discrete	numeric	
V26	sector	Sector	discrete	numeric	
V27	ea	Enumeration area code	discrete	numeric	
V28	ric	RIC code	discrete	numeric	
V29	hhid	Household identification	discrete	numeric	
V30	plotid	Plot ID	discrete	numeric	
V31	q15a	Area	discrete	numeric	Farmer's report of plot area - area?
V32	q15b	Unit	discrete	numeric	Farmer's report of plot area - unit?
V33	q15c	Source	discrete	numeric	Farmer's report of plot area - source?

**sectc1**

Content	This dataset provides information from "Land Experiment Questionnaire 2013", Section C: Farm Survey Recordings
Cases	4980
Variable(s)	12
Structure	Type: Keys: ()
Version	
Producer	
Missing Data	

**Variables**

ID	Name	Label	Type	Format	Question
V34	state	State code	discrete	numeric	
V35	lga	LGA code	discrete	numeric	
V36	sector	Sector	discrete	numeric	
V37	ea	Enumeration area code	discrete	numeric	
V38	ric	RIC code	discrete	numeric	
V39	hhid	Household identification	discrete	numeric	
V40	plotid	Plot ID	discrete	numeric	
V41	q16a	Point from	discrete	character	Point from?
V42	q16b	Point to	discrete	character	Point to?
V43	q17a	Compass front	discrete	numeric	Compass bearing - front?
V44	q17b	Compass back	discrete	numeric	Compass bearing - back?
V45	q18	Distance in meters	discrete	numeric	What is the distance in meters?

**sectc2**

Content	This dataset provides information from "Land Experiment Questionnaire 2013", Section C: Farm Survey Recordings
Cases	495
Variable(s)	15
Structure	Type: Keys: ()
Version	
Producer	
Missing Data	

**Variables**

ID	Name	Label	Type	Format	Question
V46	state	State code	discrete	numeric	
V47	lga	LGA code	discrete	numeric	
V48	sector	Sector	discrete	numeric	
V49	ea	Enumeration area code	discrete	numeric	
V50	ric	RIC code	discrete	numeric	
V51	hhid	Household identification	discrete	numeric	
V52	plotid	Plot ID	discrete	numeric	
V53	q19	Computed perimeter (meters)	discrete	numeric	What is the computed perimeter (meters)?
V54	q20	Computed area (sq meters)	discrete	numeric	What is the computed area (Sq meters)?
V55	q21	Closing error (%)	discrete	numeric	What is the closing error (%) ?
V56	q22a	GPS perimeter (meters)	discrete	numeric	What is the GPS readings - perimeter(meters)?
V57	q22b	GPS area (sq meters)	discrete	numeric	What is the GPS readings - area (sq meters)
V58	q23	GPS accuracy	discrete	numeric	What is the GPS accuracy - meters?
V59	q24	Weather condition	discrete	numeric	What is the weather condition?
V60	q25	Tree cover	discrete	numeric	Is there a tree cover?

## shapemetrics\_nigeria\_public

### Content

Cases 398

Variable(s) 32

Structure Type:  
Keys: ()

Version

Producer

Missing Data

## Variables

ID	Name	Label	Type	Format	Question
V61	hhid	Household identification	discrete	numeric	
V62	plotid	Plot ID	discrete	numeric	
V63	date	Date	discrete	character	
V64	start_time_gpx	Start_time	discrete	numeric	
V65	end_time	End_time	discrete	numeric	
V66	time_mm_ss_gpx	Total time of perimeter walk (time format mm:ss)	discrete	numeric	
V67	time_dmin_gpx	Total time of perimeter walk, units are minutes	discrete	numeric	
V68	num_vert	Number of verticies defining perimeter	discrete	numeric	
V69	walk_speed_gpx	Units: m/min	discrete	numeric	
V70	vert_density	Using number of gpx vertices & perimeter length. (meters per vertex)	discrete	numeric	
V71	perimeter_gpx	Perimeter from GPX, meters	discrete	numeric	
V72	area_gpx	Area of plot from GPX, acres	discrete	numeric	
V73	altitude_gpx	Altitude at starting point	discrete	numeric	
V74	proximity	Proximity	discrete	numeric	
V75	nproximity	Proximity	discrete	numeric	
V76	depth	Depth	discrete	numeric	
V77	ndepth	Depth	discrete	numeric	
V78	girth	Girth	discrete	numeric	
V79	ngirth	Girth	discrete	numeric	
V80	range	Range	discrete	numeric	
V81	nrangle	Range	discrete	numeric	
V82	detour	Detour	discrete	numeric	
V83	ndetour	Detour	discrete	numeric	
V84	for2010_avg	Average percent forest along perimeter, extracted by vertex	discrete	numeric	
V85	for2010_max	Max percent forest along perimeter, extracted by vertex	discrete	numeric	
V86	ag_pct	Landscape-level percent cultivated area (1km resolution), by plot centerpoint	discrete	numeric	
V87	dem	Elevation of plot centerpoint, extracted by plot centerpoint. (meters)	discrete	numeric	
V88	slp	Slope at plot centerpoint, extracted by plot centerpoint. (percent)	discrete	numeric	

ID	Name	Label	Type	Format	Question
V89	rat	Surface area ratio (surface area divided by planimetric area), by plot centerpoint	discrete	numeric	
V90	zs_dem_mean	Average elevation over plot area, may be missing for very small plots. (meters)	discrete	numeric	
V91	zs_rat_mean	Average surface area ratio over plot area, may be missing for small plots. Unitless	discrete	numeric	
V92	zs_slp_mean	Average slope over plot area, may be missing for very small plots. (meters)	discrete	numeric	





## State code (state)

File: secta

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 7-30

Valid cases: 495  
 Invalid: 0

## LGA code (lga)

File: secta

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 701-3033

Valid cases: 495  
 Invalid: 0

## Sector (sector)

File: secta

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-2

Valid cases: 495  
 Invalid: 0

## Enumeration area code (ea)

File: secta

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 120-4186

Valid cases: 495  
 Invalid: 0  
 Minimum: 120  
 Maximum: 4186

## RIC code (ric)

File: secta

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 1001-1510

Valid cases: 495  
 Invalid: 0  
 Minimum: 1001  
 Maximum: 1510

## Household identification (hhid)

File: secta

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 6  
 Decimals: 0  
 Range: 70011-300230

Valid cases: 495  
 Invalid: 0  
 Minimum: 70011  
 Maximum: 300230

## Plot ID (plotid)

File: secta

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-9

Valid cases: 495  
 Invalid: 0

## Enumerator ID (enum\_id)

File: secta

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 1-10

Valid cases: 495  
 Invalid: 0

## Household sampling weight for area measurement study (hh\_weight)

File: secta

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 16  
 Decimals: 0  
 Range: 3191.00701935081-21835.2134488321

Valid cases: 494  
 Invalid: 1  
 Minimum: 3191  
 Maximum: 21835.2

## Date (q9b)

File: secta

**Overview**

Type: Discrete  
 Format: character  
 Width: 10

Valid cases: 345  
 Invalid: 0

**Literal question**

What date was it completed?

## Date (q10b)

File: secta

**Overview**

Type: Discrete  
 Format: character  
 Width: 10

Valid cases: 141  
 Invalid: 0

**Literal question**

What date was it checked?

## Sheet of (q11a)

File: secta

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-1

Valid cases: 491  
 Invalid: 4

**Literal question**

Sheet of

## Sheet of (q11b)

File: secta

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-2

Valid cases: 491  
 Invalid: 4

**Literal question**

Sheet of

## Time started (q12a)

File: secta

**Overview**

Type: Discrete  
 Format: character  
 Width: 5

Valid cases: 423  
 Invalid: 0

**Literal question**

Time started?

## Time completed (q12b)

File: secta

**Overview**

Time completed (q12b)

File: secta

Type: Discrete  
Format: character  
Width: 5

Valid cases: 417  
Invalid: 0

**Literal question**

Time completed?

## State code (state)

File: sectb

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 7-30

Valid cases: 495  
 Invalid: 0

## LGA code (lga)

File: sectb

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 701-3033

Valid cases: 495  
 Invalid: 0

## Sector (sector)

File: sectb

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-2

Valid cases: 495  
 Invalid: 0

## Enumeration area code (ea)

File: sectb

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 120-4186

Valid cases: 495  
 Invalid: 0  
 Minimum: 120  
 Maximum: 4186

## RIC code (ric)

File: sectb

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 401-1510

Valid cases: 495  
 Invalid: 0  
 Minimum: 401  
 Maximum: 1510

## Household identification (hhid)

File: sectb

### Overview

Type: Discrete  
Format: numeric  
Width: 6  
Decimals: 0  
Range: 70011-300230

Valid cases: 495  
Invalid: 0  
Minimum: 70011  
Maximum: 300230

## Plot ID (plotid)

File: sectb

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 1-9

Valid cases: 495  
Invalid: 0

## Crops grown on plot (q14)

File: sectb

### Overview

Type: Discrete  
Format: character  
Width: 40

Valid cases: 495  
Invalid: 0

### Literal question

Are crops grown on plot?

## State code (state)

File: sectc

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 7-30

Valid cases: 495  
 Invalid: 0

## LGA code (lga)

File: sectc

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 701-3033

Valid cases: 495  
 Invalid: 0

## Sector (sector)

File: sectc

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-2

Valid cases: 495  
 Invalid: 0

## Enumeration area code (ea)

File: sectc

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 120-4186

Valid cases: 495  
 Invalid: 0  
 Minimum: 120  
 Maximum: 4186

## RIC code (ric)

File: sectc

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 401-1510

Valid cases: 495  
 Invalid: 0  
 Minimum: 401  
 Maximum: 1510



## Household identification (hhid)

File: sectc

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 6  
 Decimals: 0  
 Range: 70011-300230

Valid cases: 495  
 Invalid: 0  
 Minimum: 70011  
 Maximum: 300230

## Plot ID (plotid)

File: sectc

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-9

Valid cases: 495  
 Invalid: 0

## Area (q15a)

File: sectc

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 5  
 Decimals: 0  
 Range: 0.5-15500

Valid cases: 495  
 Invalid: 0  
 Minimum: 0.5  
 Maximum: 15500

**Literal question**

Farmer's report of plot area - area?

## Unit (q15b)

File: sectc

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-7

Valid cases: 495  
 Invalid: 0

**Literal question**

Farmer's report of plot area - unit?

## Source (q15c)

File: sectc

**Overview**

Source (q15c)

File: sectc

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 1-4

Valid cases: 494  
Invalid: 1

**Literal question**

Farmer's report of plot area - source?

## State code (state)

File: sectc1

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 7-30

Valid cases: 4980  
 Invalid: 0

## LGA code (lga)

File: sectc1

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 701-3033

Valid cases: 4980  
 Invalid: 0

## Sector (sector)

File: sectc1

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-2

Valid cases: 4980  
 Invalid: 0

## Enumeration area code (ea)

File: sectc1

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 120-4186

Valid cases: 4980  
 Invalid: 0  
 Minimum: 120  
 Maximum: 4186

## RIC code (ric)

File: sectc1

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 1001-1510

Valid cases: 4980  
 Invalid: 0  
 Minimum: 1001  
 Maximum: 1510

## Household identification (hhid)

File: sectc1

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 6  
 Decimals: 0  
 Range: 70011-300230

Valid cases: 4980  
 Invalid: 0  
 Minimum: 70011  
 Maximum: 300230

## Plot ID (plotid)

File: sectc1

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-9

Valid cases: 4980  
 Invalid: 0

## Point from (q16a)

File: sectc1

**Overview**

Type: Discrete  
 Format: character  
 Width: 2

Valid cases: 4980  
 Invalid: 0

**Literal question**

Point from?

## Point to (q16b)

File: sectc1

**Overview**

Type: Discrete  
 Format: character  
 Width: 2

Valid cases: 4980  
 Invalid: 0

**Literal question**

Point to?

## Compass front (q17a)

File: sectc1

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 3  
 Decimals: 0  
 Range: 0-367

Valid cases: 4980  
 Invalid: 0  
 Minimum: 0  
 Maximum: 367

**Literal question**

Compass bearing - front?

## Compass back (q17b)

File: sectc1

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 3  
 Decimals: 0  
 Range: 0-360

Valid cases: 2903  
 Invalid: 2077  
 Minimum: 0  
 Maximum: 360

**Literal question**

Compass bearing - back?

## Distance in meters (q18)

File: sectc1

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 17  
 Decimals: 0  
 Range: 0.800000011920929-224

Valid cases: 4977  
 Invalid: 3  
 Minimum: 0.8  
 Maximum: 224

**Literal question**

What is the distance in meters?

## State code (state)

File: sectc2

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 7-30

Valid cases: 495  
 Invalid: 0

## LGA code (lga)

File: sectc2

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 701-3033

Valid cases: 495  
 Invalid: 0

## Sector (sector)

File: sectc2

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-2

Valid cases: 495  
 Invalid: 0

## Enumeration area code (ea)

File: sectc2

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 120-4186

Valid cases: 495  
 Invalid: 0  
 Minimum: 120  
 Maximum: 4186

## RIC code (ric)

File: sectc2

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 0  
 Range: 1001-1510

Valid cases: 495  
 Invalid: 0  
 Minimum: 1001  
 Maximum: 1510

## Household identification (hhid)

File: sectc2

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 6  
 Decimals: 0  
 Range: 70011-300230

Valid cases: 495  
 Invalid: 0  
 Minimum: 70011  
 Maximum: 300230

## Plot ID (plotid)

File: sectc2

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-9

Valid cases: 495  
 Invalid: 0

## Computed perimeter (meters) (q19)

File: sectc2

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 16  
 Decimals: 0  
 Range: 29.7999992370606-4287

Valid cases: 495  
 Invalid: 0  
 Minimum: 29.8  
 Maximum: 4287

**Literal question**

What is the computed perimeter (meters)?

## Computed area (sq meters) (q20)

File: sectc2

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 16  
 Decimals: 0  
 Range: 150.699996948242-89185.296875

Valid cases: 495  
 Invalid: 0  
 Minimum: 150.7  
 Maximum: 89185.3

**Literal question**

What is the computed area (Sq meters)?

## Closing error (%) (q21)

File: sectc2

**Overview**

## Closing error (%) (q21)

File: sectc2

Type: Discrete  
Format: numeric  
Width: 16  
Decimals: 0  
Range: 0-9.80000019073486

Valid cases: 495  
Invalid: 0  
Minimum: 0  
Maximum: 9.8

### Literal question

What is the closing error (%) ?

## GPS perimeter (meters) (q22a)

File: sectc2

### Overview

Type: Discrete  
Format: numeric  
Width: 4  
Decimals: 0  
Range: 24-1300

Valid cases: 495  
Invalid: 0  
Minimum: 24  
Maximum: 1300

### Literal question

What is the GPS readings - perimeter(meters)?

## GPS area (sq meters) (q22b)

File: sectc2

### Overview

Type: Discrete  
Format: numeric  
Width: 16  
Decimals: 0  
Range: 76.5800018310547-88324

Valid cases: 494  
Invalid: 1  
Minimum: 76.6  
Maximum: 88324

### Literal question

What is the GPS readings - area (sq meters)

## GPS accuracy (q23)

File: sectc2

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 3-4

Valid cases: 494  
Invalid: 1

### Literal question

What is the GPS accuracy - meters?

## Weather condition (q24)

File: sectc2

### Overview



## Weather condition (q24)

File: sectc2

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 1-6

Valid cases: 495  
Invalid: 0

### Literal question

What is the weather condition?

## Tree cover (q25)

File: sectc2

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 1-3

Valid cases: 495  
Invalid: 0

### Literal question

Is there a tree cover?

## Household identification (hhid)

### File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete	Valid cases: 398
Format: numeric	Invalid: 0
Width: 6	Minimum: 70041
Decimals: 0	Maximum: 300230
Range: 70011-300230	

## Plot ID (plotid)

### File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete	Valid cases: 398
Format: numeric	Invalid: 0
Width: 1	
Decimals: 0	
Range: 1-9	

## Date (date)

### File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete	Valid cases: 398
Format: character	Minimum: NaN
Width: 10	Maximum: NaN

## Start\_time (start\_time\_gpx)

### File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete	Valid cases: 393
Format: numeric	Invalid: 5
Width: 14	Minimum: -1893434365000
Decimals: 0	Maximum: -1893391876000
Range: -1893434365000--1893391876000	

## End\_time (end\_time)

### File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete	Valid cases: 393
Format: numeric	Invalid: 5
Width: 14	Minimum: -1893434188000
Decimals: 0	Maximum: -1893391670000
Range: -1893434188000--1893391670000	

Total time of perimeter walk (time format mm:ss)  
(time\_mm\_ss\_gpx)

File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete  
Format: numeric  
Width: 14  
Decimals: 0  
Range: -1893455930000--1893454618000

Valid cases: 393  
Invalid: 5  
Minimum: -1893455930000  
Maximum: -1893454618000

Total time of perimeter walk, units are minutes (time\_dmin\_gpx)  
File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete  
Format: numeric  
Width: 5  
Decimals: 2  
Range: 1.16666666666667-23.0333333333333

Valid cases: 393  
Invalid: 5  
Minimum: 1.2  
Maximum: 23

Number of vertices defining perimeter (num\_vert)  
File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete  
Format: numeric  
Width: 3  
Decimals: 0  
Range: 6-131

Valid cases: 393  
Invalid: 5  
Minimum: 6  
Maximum: 131

Units: m/min (walk\_speed\_gpx)  
File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete  
Format: numeric  
Width: 16  
Decimals: 0  
Range: 18.730775562596-97.6941664519737

Valid cases: 393  
Invalid: 5  
Minimum: 18.7  
Maximum: 97.7

Using number of gpx vertices & perimeter length. (meters per vertex) (vert\_density)

File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete  
Format: numeric  
Width: 16  
Decimals: 0  
Range: 2.9461949062-18.0919101181667

Valid cases: 393  
Invalid: 5  
Minimum: 2.9  
Maximum: 18.1

## Perimeter from GPX, meters (perimeter\_gpx)

File: shapemetrics\_nigeria\_public

### Overview

Type: Discrete  
Format: numeric  
Width: 13  
Decimals: 0  
Range: 47.1391184992-1321.51734898

Valid cases: 398  
Invalid: 0  
Minimum: 47.1  
Maximum: 1321.5

## Area of plot from GPX, acres (area\_gpx)

File: shapemetrics\_nigeria\_public

### Overview

Type: Discrete  
Format: numeric  
Width: 15  
Decimals: 0  
Range: 0.0187042680277-21.762730618

Valid cases: 398  
Invalid: 0  
Minimum: 0  
Maximum: 21.8

## Altitude at starting point (altitude\_gpx)

File: shapemetrics\_nigeria\_public

### Overview

Type: Discrete  
Format: numeric  
Width: 5  
Decimals: 0  
Range: 46.3-585.1

Valid cases: 398  
Invalid: 0  
Minimum: 46.3  
Maximum: 585.1

## Proximity (proximity)

File: shapemetrics\_nigeria\_public

### Overview

Type: Discrete  
Format: numeric  
Width: 6  
Decimals: 2  
Range: 4.04549452523-131.349817247

Valid cases: 398  
Invalid: 0  
Minimum: 4  
Maximum: 131.4

## Proximity (nproximity)

File: shapemetrics\_nigeria\_public

### Overview

Type: Discrete  
Format: numeric  
Width: 4  
Decimals: 2  
Range: 0.392995837149-0.991844390695

Valid cases: 398  
Invalid: 0  
Minimum: 0.4  
Maximum: 1

## Depth (depth)

File: shapemetrics\_nigeria\_public

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 5  
 Decimals: 2  
 Range: 1.14211412876-40.6504766733

Valid cases: 398  
 Invalid: 0  
 Minimum: 1.1  
 Maximum: 40.7

## Depth (ndepth)

File: shapemetrics\_nigeria\_public

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 2  
 Range: 0.356613162961-0.920571317068

Valid cases: 398  
 Invalid: 0  
 Minimum: 0.4  
 Maximum: 0.9

## Girth (girth)

File: shapemetrics\_nigeria\_public

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 6  
 Decimals: 2  
 Range: 3.02909226283-101.155338897

Valid cases: 398  
 Invalid: 0  
 Minimum: 3  
 Maximum: 101.2

## Girth (ngirth)

File: shapemetrics\_nigeria\_public

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 2  
 Range: 0.284795564205-0.902464651553

Valid cases: 398  
 Invalid: 0  
 Minimum: 0.3  
 Maximum: 0.9

## Range (range)

File: shapemetrics\_nigeria\_public

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 6  
 Decimals: 2  
 Range: 20.8732549115-503.326289409

Valid cases: 398  
 Invalid: 0  
 Minimum: 20.9  
 Maximum: 503.3

## Range (nrange)

File: shapemetrics\_nigeria\_public

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 2  
 Range: 0.305933221143-0.853789655398

Valid cases: 398  
 Invalid: 0  
 Minimum: 0.3  
 Maximum: 0.9

## Detour (detour)

File: shapemetrics\_nigeria\_public

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 7  
 Decimals: 2  
 Range: 51.4783816308-1322.13172887

Valid cases: 398  
 Invalid: 0  
 Minimum: 51.5  
 Maximum: 1322.1

## Detour (ndetour)

File: shapemetrics\_nigeria\_public

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 4  
 Decimals: 2  
 Range: 0.314594217638-0.896012287431

Valid cases: 398  
 Invalid: 0  
 Minimum: 0.3  
 Maximum: 0.9

## Average percent forest along perimeter, extracted by vertex (for2010\_avg)

File: shapemetrics\_nigeria\_public

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 1-59

Valid cases: 398  
 Invalid: 0  
 Minimum: 1  
 Maximum: 59

## Max percent forest along perimeter, extracted by vertex (for2010\_max)

File: shapemetrics\_nigeria\_public

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 1-60

Valid cases: 398  
 Invalid: 0  
 Minimum: 1  
 Maximum: 60

Landscape-level percent cultivated area (1km resolution), by plot centerpoint (ag\_pct)

File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete	Valid cases: 398
Format: numeric	Invalid: 0
Width: 2	Minimum: 0
Decimals: 0	Maximum: 78
Range: 0-78	

Elevation of plot centerpoint, extracted by plot centerpoint. (meters) (dem)

File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete	Valid cases: 398
Format: numeric	Invalid: 0
Width: 3	Minimum: 33
Decimals: 0	Maximum: 584
Range: 33-584	

Slope at plot centerpoint, extracted by plot centerpoint. (percent) (slp)

File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete	Valid cases: 398
Format: numeric	Invalid: 0
Width: 8	Minimum: 1.3
Decimals: 0	Maximum: 79.3
Range: 1.33557-79.32341	

Surface area ratio (surface area divided by planimetric area), by plot centerpoint (rat)

File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete	Valid cases: 398
Format: numeric	Invalid: 0
Width: 8	Minimum: 1
Decimals: 0	Maximum: 1.3
Range: 1.001091-1.270546	

Average elevation over plot area, may be missing for very small plots. (meters) (zs\_dem\_mean)

File: shapemetrics\_nigeria\_public

#### Overview

Average elevation over plot area, may be missing for very small plots. (meters) (zs\_dem\_mean)

File: shapemetrics\_nigeria\_public

Type: Discrete  
Format: numeric  
Width: 8  
Decimals: 0  
Range: 33.3364-578.1554

Valid cases: 398  
Invalid: 0  
Minimum: 33.3  
Maximum: 578.2

Average surface area ratio over plot area, may be missing for small plots. Unitless (zs\_rat\_mean)

File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete  
Format: numeric  
Width: 6  
Decimals: 0  
Range: 1.0011-1.2587

Valid cases: 398  
Invalid: 0  
Minimum: 1  
Maximum: 1.3

Average slope over plot area, may be missing for very small plots. (meters) (zs\_slp\_mean)

File: shapemetrics\_nigeria\_public

#### Overview

Type: Discrete  
Format: numeric  
Width: 7  
Decimals: 0  
Range: 2.4135-75.2358

Valid cases: 398  
Invalid: 0  
Minimum: 2.4  
Maximum: 75.2



## Related Materials

### Questionnaires

#### Land Experiment Questionnaire 2013

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Title Land Experiment Questionnaire 2013  
Country Nigeria  
Language English  
Filename nigeria\_landexperiment\_qx.pdf

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### Technical documents

#### Nigeria Land Experiment Instruction Manual 2013

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Title Nigeria Land Experiment Instruction Manual 2013  
Country Nigeria  
Language English  
Filename nigeria\_landexperiment\_manual.pdf

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#### Nigeria Land Experiment, Basic Information Document

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Title Nigeria Land Experiment, Basic Information Document  
Country Nigeria  
Language English  
Filename nigeriaexp\_bid\_december2016.pdf

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