

Components of Income Aggregate: “National Panel Survey- Uganda 2010-2011”

Prepared for the Rural Income Generating Activities (RIGA) Project¹

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This document provides the survey-specific details associated with the income aggregate construction. For more information about the RIGA project, please refer to <http://www.fao.org/es/esa/riga>. For additional detail regarding the overall RIGA income aggregate construction approach, please refer to Carletto, et al (2007), “Rural Income Generating Activities Study: Methodological note on the construction of income aggregates” found on the RIGA website.

The Uganda National Panel Survey (UNPS) was carried out for twelve months from November 2010 to October 2011. The survey is the second wave of a panel for which the first wave of data collection took place in 2009/2010. It collected data using Household, Agricultural and Community questionnaires and obtained information at the individual, household, plot, business and community levels.

The UNPS 2010-2011 sample is a subset of about 2,716 households, selected from the 2,975 households that were visited during the Uganda National Household Survey (UNHS) 2009-2010. Stating from the next survey, part of the sample will be replaced by new households extracted from the updated sample frames developed by the Uganda Bureau of Statistics (UBoS) from the 2012 population census.

Contrary to UNHS 2009/10, the UNHS 2010/11 has only one set of sampling weights. It is called *wgt10* and was renamed *weight* in RIGA. In the original datasets, the various household-level modules of the 2010/11 UNPS data can be linked by the variable HHID. Agricultural module datasets can be linked either with the HHID variable or by combining HHID with the unique plot identifier, PLOTID. The variable HHID is renamed “hh” in RIGA datasets.

In the original datasets, “urban” is the variable that identifies whether households are located in urban or rural areas. There are 2,108 rural households and 508 urban households in the dataset. In addition, the variables “AGhh” indicate whether any member of the household in the The

¹ The RIGA Project is a collaboration between FAO, the World Bank and American University in Washington, D.C. Original data can be obtained from the World Bank’s Living Standards Measurement Study by visiting the LSMS website at: <http://www.worldbank.org/lsm>

variable takes on value “1” if the household is in the agricultural sector and “0” otherwise. In total, there are 2,208 households in agriculture and 508 non-agricultural households.

Regarding income from different sources, revenues and costs were disaggregated when such information was available. The disaggregated sources for each income component are summarized in output variables column of Table 1. The net variables and the data files included in the final total income aggregate (Income.dta) are in **bold**. **Unless otherwise noted, all variables included in the aggregate income variable are net of costs.**

An average household size in Uganda is 5.3 persons². All money amounts are in Ugandan Schillings (UGX). In 2011, the official exchange rate³ was UGX 2,523= \$1.0. **The income aggregates are calculated at the household level and all aggregates are annualized.**

Comments

- All calculations, data cleaning and data imputations are computed using Stata.
- In all sections, the raw data undergoes a transformation (it is annualized, aggregated, taken from person – household level, etc) before a check for outliers takes place.
- The industry codes used for classifying wage employment follow the United Nations International Standard Industrial Classification (ISIC) standards. Given the survey classification of each employed household member by industry, the employment sectors include: Agriculture and fishing, Mining, Manufacturing, Electricity and utilities, Construction, Commerce, Finance insurance and real state, Services and Unknown.
- The classification of non-farm enterprise activities into industries categories follows the same classification system as the employment section. Given these standards, the non-farm enterprise sectors include: (1) Agriculture, Livestock, Hunting and Fishing, (2) Mining, (3) Manufacturing, (4) Electricity and Utilities, (5) Construction, (6) Commerce, (7) Transportation, Storage and Communications, (8) Finance, Insurance and Real Estate, (9) Services and (10) Other Industries.
- For all sections, whenever information was available regarding the share of a business, enterprise, or any other income activity owned by the household, the income earned from that activity was weighted by the share owned by the household.
- A final outlier check is imposed at the end of the Aggregateincome.do file in which households with income shares from any given activity greater than or less than 3 (300%) are dropped from the final income aggregate.
- Participation and income share variables for all income components are included in the final income aggregate

Note on crop prices

Calculating crop prices from the agricultural module of the household survey required data transformation due to inexact reporting of quantities and total values of crops sold gathered during the field activities. Once the production prices were quantified in kilograms through the

² RIGA project calculations.

³ Exchange rate used comes from the World Bank database, World Development Indicators 2013

use of conversion factors, statistics resulted in unusually low mean and median values in round 2 compared to the unit price of round 1. Following consultations with the World Bank and the UBoS, we find that sales values reported during round 2 and used to compute round 1 unit prices were by mistake divided by 100. **Unit prices from round 2 were therefore multiplied by 100 in order to get the correct unit price, and therefore correct value of crop income.**

The programs that calculate each household's income aggregate component are summarized in Table 1. Table 2 summarizes the results from the created income aggregate.

Table 1. Files and Variables generating the Rural Income Aggregate

Do file	Input data files RAWHH= household questionnaire RAWAG= agricultural questionnaire	Output data files	Main variables constructed	Notes/Decisions
Sample.do	RAWHH \GSEC1.dta RAWHH \GSEC19.dta	Sample.dta		
Prices.do	RAWHH \GSEC15B.dta RAWAG \AGSEC5A.dta RAWAG \AGSEC5B.dta	price_purch_ea.dta price_purch_district.dta price_purch_region.dta price_purch_stratum.dta price_purch_urban.dta price_purch_itemcd.dta price_prod_ea.dta price_prod_district.dta price_prod_stratum.dta price_prod_region.dta price_prod_urban.dta price_prod_itemcd.dta price_fg_ea.dta price_fg_district.dta price_fg_stratum.dta price_fg_region.dta price_fg_urban.dta price_fg_itemcd.dta price_mrkt_ea.dta price_mrkt_dis.dta price_mkt_stratum.dta price_mrkt_region.dta price_mrkt_urban.dta price_mrkt_itemcd.dta pricep_prod_ea.dta pricep_prod_district.dta pricep_prod_stratum.dta pricep_prod_region.dta pricep_prod_urban.dta pricep_prod_itemcd.dta	price_purch_ea price_purch_district price_purch_region price_purch_stratum price_purch_urban price_purch_itemcd price_prod_ea price_prod_district price_prod_stratum price_prod_region price_prod_urban price_prod_itemcd price_fg_ea price_fg_district price_fg_stratum price_fg_region price_fg_urban price_fg_itemcd price_mrkt_ea price_mrkt_district price_mkt_stratum price_mrkt_region price_mrkt_urban price_mrkt_itemcd pricep_prod_ea pricep_prod_district pricep_prod_stratum pricep_prod_region pricep_prod_urban pricep_prod_itemcd	Created median prices for each crop at different administrative levels (enumeration area, districts, stratum region, locality) using the reported expenditures in the consumption module and the reported sales from the agricultural module.
Food.do	RAWHH \GSEC15B.dta	Foodown.dta Foodown_crop.dta Foodown_livestock.dta	foodexp foodexp_livst foodexp_crop foodpurch foodgift foodown	.

Other.do	RAWHH \GSEC11.dta Rentagric.do	Other.dta (it includes other incomes as income from properties and royalties)	otherinc other	
Rentagric.do	RAWHH \AGSEC2A.dta RAWHH \AGSEC2B.dta	Rentagric.dta	farmrnt	
Cropincome.do	RAWAG \AGSEC3A.dta RAWAG \AGSEC4A.dta RAWAG \AGSEC3B.dta RAWAG \AGSEC4B.dta RAWAG \ AGSEC10.dta RAWAG \ AGSEC9.dta	cropexp1.dta (inputs) cropinc.dta (revenues, other exp) machincost.dta extensioncost.dta Cropincome.dta	seedexp fertexp pestexp laborex extensioncost machincost harvestv soldcropv transportexp storedv harlostv anifeedv foodprodv ownconsv cropincome1 cropincome2	
Livestock.do	RAWAG \GAGSEC6AT1.dta RAWAG \GAGSEC6BT1.dta RAWAG \GAGSEC6CT1.dta RAWAG \GAGSEC7T1.dta RAWAG \GAGSEC8T1.dta	livstinc.dta transfersliv.dta livstexp.dta livstexplab livstexpfeed livstexpfeed livstexpfeed livstexpfeed livstexpfeed livstexpfeed livstexpfeed livstbyprod.dta Livestock.dta	livstborn livstsold livstexplab livstexpfeed livstexpfeed livstexpfeed livstexpfeed livstexpfeed livstexpfeed livstexpfeed livstexpfeed livstbyprodsold livstinc	
Selfemp.do	RAWAHH\GSEC12.dta	Selfemp.dta	selfimp1 selfimp2 selfimp3 selfimp4 selfimp5 selfimp6 selfimp7 selfimp8 selfimp9 selfimp10	
Employment.do	RAWHH \GSEC8.dta	Employment.dta	wge1_1 wge2_1	

			wge3_1 wge4_1 wge5_1 wge6_1 wge7_1 wge8_1 wge9_1 wge10_1 wge1_2 wge2_2 wge3_2 wge4_2 wge5_2 wge6_2 wge7_2 wge8_2 wge9_2 wge10_2	
Transfers.do	RAWHH \GSEC11.dta	Transfers.dta	transfersgross pubtransimp privtransimp	
Aggregateincome .do	Sample.dta Rentagric.dta Cropincome.dta Livestock.dta Employment.dta Other.dta Selfemp.dta Transfers.dta	Income.dta	agr_wge nonagr_wge crop1 crop2 livestock other selfemp transfers totincome1 totincome2	

Table 2.

<i>Uganda 2011</i>	2,068 Rural HH Observations	Rural, Weighted, Shillings						Rural, Weighted, USD	
<i>Variable</i>		<i># Participants</i>	<i>Participation Rate</i>	<i>Returns to Participation- Participant HHs</i>	<i>Returns to Participation- All HHs</i>	<i>Share of Total Income- All HHs (Mean of Shares)</i>	<i>Share of Total Income- All HHs (Share of Means)</i>	<i>Returns to Participation- Participant HHs</i>	<i>Returns to Participation- All HHs</i>
agr_wge	Wage Employment- Agriculture	417	19.6%	509,884	99,812	8.48%	5.67%	202	40
nonagr_wge	Wage Employment- Nonfarm	468	22.7%	2,202,436	500,841	14.04%	28.43%	873	199
crop1	Crop Production	1,848	83.7%	719,710	383,364	44.92%	21.76%	285	152
livestock	Livestock Production	1,445	63.5%	311,290	197,722	5.23%	11.22%	123	78
selfemp	Non-ag Self Employment	879	39.6%	1,127,571	446,421	18.89%	25.34%	447	177
transfer	Total Transfers	580	26.7%	355,623	95,013	6.95%	5.39%	141	38
other	Other Income Sources	154	6.7%	579,373	38,704	1.48%	2.20%	230	15.3
totincome1	Total Household Income-crop1	2045	97.4%	1,808,099	1,761,876	100%	100%	717	698

<i>Percent Rural (Weighted)</i>	83,43%
<i>Shillings/USD (2011)</i>	2,523.00

1. Source data: 2010/2011 UNHS
2. Exchange rate is World Development Indicators
3. Crop2 own consumption is calculated from the "Food expenditure" module of the household questionnaire.
4. All values reported are annual and net of costs (with the exception of income from transfers and land rent, which are gross receipts).

Table 3.

<i>Uganda 2011</i>	2,068 Rural HH Observations	Rural, Weighted, Shillings					Rural, Weighted, USD		
<i>Variable</i>		<i># Participants</i>	<i>Participation Rate</i>	<i>Returns to Participation- Participant HHs</i>	<i>Returns to Participation- All HHs</i>	<i>Share of Total Income- All HHs (Mean of Shares)</i>	<i>Share of Total Income- All HHs (Share of Means)</i>	<i>Returns to Participation- Participant HHs</i>	<i>Returns to Participation- All HHs</i>
agr_wge	Wage Employment- Agriculture	417	19.6%	509,884	99,812	7.86%	4.98%	202	40
nonagr_wge	Wage Employment- Nonfarm	468	22.7%	2,202,436	500,841	13.19%	24.99%	873	199
crop2	Crop Production	1,848	83.7%	719,710	625,559	41.95%	31.21%	285	248
livestock	Livestock Production	1,445	63.5%	311,290	197,722	11.74%	9.87%	123	78
selfemp	Non-ag Self Employment	879	39.6%	1,127,571	446,421	17.24%	22.28%	447	177
transfer	Total Transfers	580	26.7%	355,623	95,013	6.84%	4.74%	141	38
other	Other Income Sources	154	6.7%	579,373	38,704	1.19%	1.93%	230	15.3
totincome2	Total Household Income-crop2	2,055	98.4%	2,037,138	2,004,071	100%	100%	807	794

<i>Percent Rural (Weighted)</i>	83.43%
<i>Shillings/USD (2011)</i>	2,523.00

1. Source data: 2010/2011 UNHS
2. Exchange rate is World Development Indicators
3. Crop2 own consumption is calculated from the "Food expenditure" module of the household questionnaire.
4. All values reported are annual and net of costs (with the exception of income from transfers and land rent, which are gross receipts).