

Components of Income Aggregate: “Uganda National Household Survey 2005-6¹”

Prepared for the Rural Income Generating Activities (RIGA) Project²

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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 Household Survey (UNHS) is a nationally representative household survey, carried out over twelve months from May 2005 until April 2006 as part of Ugandan Bureau of Statistics (UBOS) integrated household survey program, in place since the 1980s. The survey is the first wave of a panel for which the follow-up data collection took place in 2012-2013. It collected data using five modules (socio-economic; agricultural; community; market; and qualitative), obtaining information at the individual, household, plot, business and community levels.

The sample for the UNHS was drawn using a two-stage probability sampling procedure, the first stage of which randomly selected enumeration areas (EAs) using probability proportional to size from the 2002 Uganda Population and Housing Census as the sample frame. 783 EAs were selected to be representative of the general household and internally displaced populations³. In the second stage, 10 households were randomly drawn from each EA using a simple random sampling approach. The full sample comprised 7,417 households, with 1,699 in urban areas and 5,718 in the rural space.

¹ The information in this document relies substantially upon the UNHS 2005/2006 Report on the Socio-Economic Module, available from: <http://catalog.ihsn.org/index.php/catalog/2348>.

² 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>.

³ Initially 600 EAs were selected from the survey from each district. However, following that draw, the survey team determined the need to select 153 more EAs from 10 districts in order to ensure a large enough sample. Furthermore, given the high prevalence of internally displaced persons in Northern Uganda, 30 additional EAs were drawn from the IDP camps.

The survey was sampled to be nationally representative at the district level. In order to obtain nationally representative statistics from the UNHS data, it is necessary to apply the sampling weights provided in the data. The sampling weights variable in the original data is called “HMULT”; it is renamed to “WEIGHT” in the RIGA datasets.

The various modules of the UNHS RIGA data can be linked by the variable HH. “URBAN” is the variable that identifies whether households reside in rural or urban areas. There are 5,670 rural and 1,699 urban households in the RIGA dataset.

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. **Unless otherwise noted, all variables included in the aggregate income variable are net of costs.**

An average rural household size in Uganda is comprised of 5.8 persons⁴. All money amounts are in Ugandan Shillings (Ush). In 2005, the official exchange rate⁵ was Ush 1,780.70 = \$1.00. **The income aggregates are calculated at the household level and all aggregates are annualized.**

Comments

- When the original data reports answer such as “don’t know,” “not sure”, etc. values are recoded to missing “.” in all files.
- Own consumption from crop production is calculated using two approaches, the first using information from the agricultural module of the survey (as input to the variable CROPINCOME1) and the second utilizing the data on own consumption from the expenditures module of the survey (input to CROPINCOME2). In both cases the value of own consumption is imputed using median prices calculated at various administrative and crop-unit levels where prices are obtained based on sales and purchase values from the production module, the expenditures module and the community market prices module. In the case of own consumption from the agricultural module, the quantities are based upon the share of total harvest allocated to household consumption.
- Own consumption from livestock production is calculated uniquely from the information reported in the agricultural module.
- Quantities of crop production were collected in standard metric and local measurement units, with information regarding the condition of the item in question (e.g. shelled versus unshelled). A series of conversion factors were provided with the original dataset allowing quantities to be converted into kilograms.
- Size of parcel area is measured in square meters by both GPS and respondent’s estimates. The former was replaced with the latter in some cases where the GPS information was missing.
- For Transfer income, two estimates are calculated: gross and net. The household income aggregate, however, considers the gross value rather than net.

⁴ RIGA project calculations.

⁵ Official exchange rate (period average) obtained from the World Bank World Development Indicators database.

- The classifications of wage employment activities into industry categories follow the United Nations International Standard Industrial Classification of all Economic Activities (ISIC) codes. Given these standards, the employment sectors include: (1) Agriculture, Livestock 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. Each job was then classified as being skilled, unskilled or unknown based on the occupational classification of this employment.
- The classification of non-farm enterprise activities (self employment income) into industries categories follows the same classification system as the employment section.
- 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. Outlier checks were performed by a relevant sorting category (e.g. crop code if dealing with crop income) and by an administrative level (district), provided at least 30 observations per sorting group.
- 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. Using these criteria, 58 households are dropped from this survey.
- Participation and income share variables for all income components are included in the final income aggregate

The programs that calculate each household's income aggregate component are summarized in Table 1. Tables 2 and 3 summarize the results from the final income aggregate.

	_croprd.dta price_prod_ea., _district, _substrat, cropcode.dta			
Employment.do	HHQ/hsec7.dta HHQ/hsec7b.dta HHQ/hsec8.dta	Employment.dta	The following variables are disaggregated by skill level (_1=skilled; _2=unskilled; _3=unknown skill level): wge1 "Agriculture and fishing" wge2 "Mining" wge3 "Manufacturing " wge4 "Electricity & Utilities" wge5 "Construction" wge6 "Commerce" wge7 "Transport, Storage, & Comm." wge8 "Finance, insurance and real estate" wge9 "Services" wge10 "Other"	Annualization of wage income assumes 4.3 weeks per month. When the number of months worked in a job is missing, it is imputed using the median number of months worked in the industry of that job.
Selfemp.do	HHQ/hsec9.dta	Selfemp.do	selfimp1 "Net HH Income from Non-Ag Business-Agr, Fishing" selfimp2 "Net HH Income from Non-Ag Business-Mining" selfimp3 "Net HH Income from Non-Ag Business-Manuf" selfimp4 "Net HH Income from Non-Ag Business-Utilities" selfimp5 "Net HH Income from Non-Ag Business-Construct" selfimp6 "Net HH Income from Non-Ag Business-Commerce" selfimp7 "Net HH Income from Non-Ag Business-Transp.,Storage, Comm" selfimp8 "Net HH Income from Non-Ag Business-Finance,Ins,Real Estate" selfimp9 "Net HH Income from Non-Ag Business-Services" selfimp10 "Net HH Income from Non-Ag Business-Miscellaneous"	30 observations reported owning an enterprise in operation during the previous 12 months, but without reporting any income or expenditures related to the enterprise in that period. These observations were dropped.

Rentagric.do	AGQ/asec2a.dta AGQ/asec2b.dta	Rentagric.dta	farmrnr – annual income from renting out agricultural land farmrntexp – annual expenditure on renting in agricultural land farmrnt (gross revenues from agricultural land rented out)	
Transfers.do	HHQ/hsec10.dta	Transfers.dta	privtrans (remittances and assistance received locally and from abroad) pubtrans (pension and insurance benefits) transfersgross (sum of incoming private and public transfers)	
Other.do	HHQ/hsec12b.dta	Other.dta	otherinc (income from interest on financial assets)	
Cropincome.do	AGQ/asec6a.dta AGQ/asec2a1.dta a AGQ/asec2b1.dta a AGQ/asec6b.dta AGQ/asec7a.dta AGQ/asec7b.dta	cropexp1.dta first_season.dta second_season.dta a	seedexp fertexp pestexp laborex soldcrop_kg1 harvestcrop_kg1 ownconsq1 storedq1 harvaway1 harlostq1 harvestquant1 feedanimq1 soldcrop_kg2 harvestcrop_kg2 ownconsq2 storedq2 harvaway1 harlostq2 harvestquant2 feedanimq2	58 observations report hiring in labour but do not report the amount spent on that labour. Median daily wages are estimated at various administrative levels to value those days of hired labour expenditure.

		cropinc.dta	<p>harvestvimp soldvimp storedvimp harlostvimp anifeedvimp ownconsvimp harvawayvimp</p> <p>cropincome1- Annual net income from crop activities (own cons from agricultural module), imputed. cropincome2- Annual net income from crop activities (own cons from expenditures module), imputed.</p>	
		Cropincome.dta		
Livestock.do	<p>AGQ/asec10a.dta</p> <p>AGQ/asec11a.dta AGQ/asec11b.dta</p> <p>livstinc.dta livstexp.dta livstbyprod.dta</p>	<p>livstinc.dta</p> <p>livstexp.dta</p> <p>livstbyprod.dta</p> <p>Livestock.dta</p>	<p>livstsoldv (Annual value of sold livestock.) livstpurchv (Annual value of purchased livestock.) livstgiftrecv (Annual value of livestock received as gift.) livstgiftgivv (Annual value of livestock given as gift.) livstslaughv (Annual value of slaughter livestock.) livstbornv (Annual value of livestock born.) livstdiedv (Annual value of livestock died.)</p> <p>livstexplab (Annual value of livestock expenditure (labour). livstexpfeed (Annual value of livestock expenditure (feed).) livstexptreat (Annual value of livestock expenditure (medical treatment).) livstexpother (Annual value of livestock expenditure (other).) livstexp (Annual value of livestock expenditure (all)</p> <p>livstinc</p>	<p>Net livestock income considers income from livestock sales, byproduct sales, gifts received, and own consumption, net of expenditures on livestock purchases,</p>

				fodder, vet services, labour, gifts out and other non-specified livestock production expenditures.
Aggregateincome.d o	Sample.dta Rentagric.dta Cropincome.dta Livestock.dta Employment.dta Otherincome.dta Selfemp.dta Transfers.dta	Income.dta	agr_wge nonagr_wge crop1 crop2 livestock other selfemp transfers totincome1 totincome2	For each income source, participation variables are constructed (prefixed by "p_") as well as share variables (prefixed by "sh1" or "sh2") Different aggregations of income sources are also constructed such as onfarm (crop and livestock), offfarm (agr_wge nonagr_wge, other, selfemp, transfers), non-farm (non-agrwge and selfemp) nonag (nonagr_wge, other, selfemp, trnsfers) and agricultural (agr_wge, crop and livestock). A final outlier check is incorporated that drops households that end up with income shares from the major categories (sh2agr_wge, sh2nonagr_wge, sh2crop2, etc) as greater than 300%. 58 observations dropped as a result.

Table 2

<i>Uganda 2005</i>	5670 Rural HH Observations	Rural, Weighted, Shillings						Rural, Weighted, USD	
<i>Variable</i>		<i># Participants</i>	<i>Participati on Rate</i>	<i>Returns to Participation - Participant HHs</i>	<i>Returns to Participati on- 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 Participati on- Participant HHs</i>	<i>Returns to Participati on- All HHs</i>
agr_wge	Wage Employment- Agriculture	1,374	24%	204,654	48,814	10%	5%	115	27
nonagr_wge	Wage Employment- Nonfarm	1,110	20%	1,098,154	218,047	11%	23%	617	122
crop1	Crop Production	4,966	87%	255,605	222,765	42%	23%	144	125
livestock	Livestock Production	3,260	57%	68,787	39,316	6%	4%	39	22
selfemp	Non-ag Self Employment	2,223	39%	938,711	361,466	18%	38%	527	203
transfer	Total Transfers	2,448	43%	135,835	58,226	13%	6%	76	33
other	Other Income Sources	198	3%	122,699	4,266	0%	0%	69	2
totincome1	Total Household Income- crop1	5,648	100%	956,288	952,900	100%	100%	537	535

Percent Rural (Weighted)	82.20%
USH/USD 2005	1,780.70

1. Source data: Uganda National Household Survey 2005/6
2. Exchange rate is the official rate of LCU per US dollar, 2005 (Source: World Bank WDI)
3. The variable "crop1" is distinguished from "crop2" in the way home consumption of own production of crops (owncons) is calculated. In crop1, owncons is the amount reported in the crop section of the questionnaire. For crop2, owncons is calculated from the "Consumption of Own Produce" section of the household questionnaire. Total household income "totincome1" and "totincome2" are therefore calculated with the corresponding crop income variable.
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 2005</i>	5670 Rural HH Observations	Rural, Weighted, Shillings						Rural, Weighted, USD	
		<i># Participants</i>	<i>Participati on Rate</i>	<i>Returns to Participation - Participant HHs</i>	<i>Returns to Participati on- 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 Participati on- Participant HHs</i>	<i>Returns to Participati on- All HHs</i>
<i>Variable</i>									
agr_wge	Wage Employment- Agriculture	1,374	24%	204,654	48,814	8%	4%	115	27
nonagr_wge	Wage Employment- Nonfarm	1,110	20%	1,098,154	218,047	11%	19%	617	122
crop2	Crop Production	5,068	89%	489,254	434,226	52%	37%	275	244
livestock	Livestock Production	3,260	57%	68,787	39,316	3%	3%	39	22
selfemp	Self Employment	2,223	39%	938,711	361,466	17%	31%	527	203
transfer	Total Transfers	2,448	43%	135,835	58,226	9%	5%	76	33
other	Other Income Sources	198	3%	122,699	4,266	0%	0%	69	2
totincome2	Total Household Income- crop1	5,657	100%	1,167,277	1,164,361	100%	100%	656	654

Percent Rural (Weighted)	82.20%
USH/USD 2005	1,780.70

1. Source data: Uganda National Household Survey 2005/6
2. Exchange rate is the official rate of LCU per US dollar, 2005 (Source: World Bank WDI)
3. The variable "crop1" is distinguished from "crop2" in the way home consumption of own production of crops (owncons) is calculated. In crop1, owncons is the amount reported in the crop section of the questionnaire. For crop2, owncons is calculated from the "Consumption of Own Produce" section of the household questionnaire. Total household income "totincome1" and "totincome2" are therefore calculated with the corresponding crop income variable.
4. All values reported are annual and net of costs (with the exception of income from transfers and land rent, which are gross receipts).