

Components of the Income Aggregate: “Living Standards Survey, Ghana 2005”

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 Ghana Living Standards Survey (GLSS) was carried out in a period of 12 months in 2005. Six years after the fourth round of the Living Standards Survey (GLSS4), there was a need to update the indicators with a fifth round. However, contrary to the four first rounds that were limited to the broad national and ecological indicators, the fifth round is at the district level in order to better monitor and evaluate poverty at that level.

The survey objective was to study 8,700 households in 580 EAs; however, only 8,686 households completed the survey. The sample is comprised of 5,099 rural households (58.70%) and 3,587 urban households (41.30%). In the original datasets, URBRUR is the variable distinguishing urban from rural households. Rural is defined as all areas with fewer than 1500 inhabitants in the 1984 population census.² In the calculation of the income aggregate, URBRUR is renamed to URBAN in order to use the same variable name across different surveys.

The sample is not self-weighting; in fact, disproportionately larger samples were drawn from regions with smaller populations. The methodology for weights used for the GLSS 5 is the same as the one used for the GLSS 4. Using the household listing from the 2000 population and housing census conducted by the Ghana Statistical Services, the GLSS 5 employed a two-stage stratified random sampling design.³ First the Enumeration Areas (EAs) within regions were

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>.

² GLSS4 Data User’s Guide.

³ GLSS Report on the Fifth Round (GLSS5).

selected proportionate to the population, then within the EAs, 15 households were randomly selected for participation in the survey. The average household size in Ghana was 4.18 persons.⁴ All money amounts are in the local currency, Cedi. In 2005, the official exchange rate was 9,068 Cedi = 1.0 USD.⁵ The income aggregates are calculated at the household level and all aggregates are annualized.

The various household-level modules of this survey can be linked using the two variables that create the unique household identifier: CLUST and NH. These variables are combined to create the unique identifier HH for consistency across countries within the study.

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

Comments

- In all sections, the raw data undergoes a transformation (it is annualized, aggregated, taken from person to household level, etc) before a check for outliers takes place.
- The original data codes responses such as “don’t know,” “ignored,” “not sure”, and so on, with a “99”, “999”, “9999” etc. These values are recoded to missing “.” in all files.
- In the Crop Production section, the reference period is the previous 12 months. Two total crop income variables are created: *cropincome1* and *cropincome2*. *Cropincome1* includes estimates of own crop consumption based on the agricultural production module of the household questionnaire. *Cropincome2* includes estimates of own crop consumption based on the food expenditure section of the questionnaire in which household consumption was recorded and updated periodically over a given time frame.
- Within the Crop Production section the portion related to the harvest of roots, fruits and vegetables has a reference period of 2 weeks. This information is not annualized, as it is assumed that these crops are not harvested multiple times a year. The same procedure was applied to the survey for Ghana 1998, thus ensuring comparability.
- Own consumption from the food expenditures module is estimated as the annual consumption of home-produced food items, reported in 11 visits at 33 day intervals for a total of 363 days covered, essentially one year. Quantities of consumption are valued using imputed prices from the production, expenditure and prices questionnaires.
- For the Livestock, Other Income, Rentagric, and Transfers sections, the reference period is the previous 12 months.
- Other Income includes income from non-labor sources.
- Rentagric calculates gross income from the rented and sharecropped agricultural land.
- For Transfer income, two estimates are calculated: gross and net. The household income aggregate, however, considers the gross value rather than net.
- Private transfers consider all in-cash and in-kind transfers received that were specified by the household as bearing no obligation for repayment. Pensions include the state pension, social

⁴ Estimate based on results of the GLSS5.

⁵ Exchange rate used comes from the World Bank World Development Indicators database.

security and other retirement benefits. Social transfers comprise all other non-specified central government transfers to the household.

- In the Wage employment section, the reference period is the duration of employment as specified by the respondent in the questionnaire for the main and secondary jobs held in the last 12 months. All household members 7 years and older were interviewed.
- 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, 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. Each job was then classified as being skilled, unskilled or unknown based on the occupational code.
- Earnings from wage employment include all in-cash and in-kind benefits in cash received from the employer.
- The Self Employment (Selfemp) section accounted for income from two non-farm enterprises owned by the household. For expenditures, the reference period was the last 3 months. For revenues, the reference period is the last 3 months and for other revenues the reference period is the last 2 weeks. In both cases, enterprises that did and did not operate in the last 2 weeks are asked about their economic activity separately. The classification of non-farm enterprise activities into industries categories also follows the ISIC categories listed above. We couldn't determine if revenue from sales and revenue from exports were reported separately (section 10D). Therefore, we dropped the revenue from exports as only 3 observations reported these.
- 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% of total income) are dropped from the final income aggregate. Using these criteria, 123 households are dropped from this survey.
- Only present household members who are not heads are kept in the final income aggregate. Present is defined as a having been absent from the households for 6 or fewer months in the previous 12 months for non-head household members. Household heads are included regardless of their location status because in their position they can still serve as primary income sources. Thus, drop if $S1Q22 > 6$ & $REL \sim 1$.
- Participation and income share variables are also 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 created income aggregate.

Table 1

do file	input dta files	output dta files	output variables
Sample.do	sec0.dta pov_gh5.dta	Sample.dta	
prices.do	sec8a2.DTA sec8c1.DTA sec8c2.DTA SEC8H .DTA Sample.dta	prices.dta	pricedata1 pricedata2 pricedata3 pricedata4 pricedata5 pricedata6

	Prices\Prices.dta		pricedata7 pricedata8 pricedata9 pricedata10 pricedata11 pricedata12
Foodown.do	SEC8H .DTA Prices.dta Sample.dta	cropown.dta livstowndta Foodown.dta	cropownimp livstowndimp foodown
Agrent.do	sec8a3.dta	agrent.dta	agrentimp
Rentagric.do	SEC8a1.DTA Sample.dta	aggrentinc.dta Rentagric.dta	farmrntincimp shrcropincimp farmrntimp
Cropincome	SEC8C2.DTA SEC8C1.DTA SEC8C1.DTA SEC8C2.DTA Sample.dta SEC8F.DTA Sample.dta SEC8E.DTA Sample.dta SEC8G.DTA Sample.dta cropinc.dta byprodinc.dta cropown.dta agrentinc.dta agrent.dta cropexp.dta otheraginc.dta	sect8prices.dta cropinc.dta cropexp otheraginc.dta byprodinc.dta Cropincome.dta	cropexpimp pricedata1a- pricedata6a cropsoldimp cropinputimp shrcropincimp sharecropexpimp totaharvestimp cropown1imp laborexpimp cropexpimp cropincome1 cropincome2
Employment1	SEC4B.DTA SEC4C.DTA	employ1.dta employ2.dta	wge (by industry, skilled) wgem

Employment2	SEC4D.DTA SEC4E.DTA Sample.dta employ1.dta employ2.dta employ3.dta employ4.dta	employ3.dta employ4.dta Employment.dta	wgeimp
Livestock.do	SEC8F.DTA SEC8A2.DTA SEC8E.DTA SEC8G.DTA Sample.dta livstown.dta livstexp.dta livstinc.dta livstbyproduct.dta livstbyproduct2.dta	livstexp.dta livstpurch.dta livstinc.dta Livestock.dta	livstexpimp livstpurchimp livstsoldimp livstrentimp livstownimp byprodinc1imp byprodinc2imp livstincimp
Otherincome.do	SEC11C.DTA SEC7.dta Sample.dta othinc1.dta othinc2.dta	othinc1.dta othinc2.dta Otherincome.dta	othinc1imp othinc2imp otherincimp
Selfemp.do	SEC10A.DTA SEC10C1.DTA SEC10C2.DTA SEC10D1.DTA SEC10D2.DTA SEC10D3.DTA SEC10D4.DTA SEC10B.DTA sample.dta selfemp1.dta selfemp2.dta selfemp3.dta	selfemp1.dta selfemp2.dta selfemp3.dta Selfemp.dta	selfemp1imp selfemp2imp selfemp3imp selfempimp
Transfers.do	SEC11A.dta SEC11B.dta SEC11C.dta Sample.dta transferprivout.dta transferprivinc.dta	transferprivout.dta transferprivinc.dta pensions.dta Transfers.dta	transfersentimp transferincimp pensionsimp socialtransimp pubtrans privtrans

	pensions.dta		transfersgrossimp transferstotimp
Aggregateincome	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

Table 2

<i>Ghana 2005</i>	4979 Rural HH Observations	Rural, Weighted, Cedi						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	180	4%	5899850	249,984	3%	4%	651	28
nonagr_wge	Wage Employment- Nonfarm	583	13%	9162973	1,222,461	9%	19%	1,010	135
crop1	Crop Production	4307	84%	2229255	1,863,526	47%	29%	246	206
livestock	Livestock Production	2394	43%	392330	167,122	3%	3%	43	18
selfemp	Non-ag Self Employment	2034	41%	5942645	2,427,976	27%	38%	655	268
transfer	Total Transfers	1790	36%	1106201	393,823	10%	6%	122	43
other	Other Income Sources	220	5%	451812	20,317	0.4%	0.3%	50	2.2
totincome1	Total Household Income-crop1	4922	99%	6433006	6,345,209	99%	100%	709	700
Percent Rural (Weighted)	56.58%								
Shillings/USD (2009)	9,068								
Notes:									
1. Source data: 2005 Living Standards Survey (GLSS).									
2. Exchange rate used is the period average official exchange rate from the World Development Indicators.									
3. The variable "crop1" is distinguished from "crop2" in the way home consumption of own production of crops (owncons) is calculated. In crop1, owncons equals total harvest minus crop sold, crop allocated for sharecropping expenditure, and crop allocated for seed, fodder and byproducts. For crop2, owncons is calculated from the "Consumption of Own Produce" section (Section 8H) 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>Ghana 2005</i>	4979 Rural HH Observations	Rural, Weighted, Cedi						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	180	4%	5899850	249,984	3%	3%	651	28
nonagr_wge	Wage Employment- Nonfarm	583	13%	9162973	1,222,461	8%	17%	1,010	135
crop2	Crop Production	4360	85%	3286947	2,790,547	49%	38%	362	308
livestock	Livestock Production	2394	43%	392330	167,122	3%	2%	43	18
selfemp	Non-ag Self Employment	2034	41%	5942645	2,427,976	26%	33%	655	268
transfer	Total Transfers	1790	36%	1106201	393,823	10%	5%	122	43
other	Other Income Sources	220	5%	451812	20,317	0.3%	0.3%	50	2.2
totincome2	Total Household Income-crop2	4932	99%	7356167	7,272,230	99%	100%	811	802
Percent Rural (Weighted)	56.58%								
Shillings/USD (2009)	9,068								
Notes:									
1. Source data: 2005 Living Standards Survey (GLSS).									
2. Exchange rate used is the period average official exchange rate from the World Development Indicators.									
3. The variable "crop1" is distinguished from "crop2" in the way home consumption of own production of crops (owncons) is calculated. In crop1, owncons equals total harvest minus crop sold, crop allocated for sharecropping expenditure, and crop allocated for seed, fodder and by products. For crop2, owncons is calculated from the "Consumption of Own Produce" section (Section 8H) 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).									