

Components of the Income Aggregate: “Encuesta de Hogares, Bolivia 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 Bolivia Encuesta de Hogares (EH) was carried out over a period of 2 months, November and December 2005. The primary sampling unit, the Unidad Primaria de Muestreo (UPM), is composed of 80 to 150 households in high density areas, and of 150 to 350 households in low density areas. 205 UPM are in urban areas and 150 in rural areas. In each UPM, 6 to 12 households are selected, creating a total sample of 4,086 households.

There are 1,448 rural households and 2,638 urban households in the dataset. In the original datasets, URB_RUR is the variable distinguishing urban from rural households. In the calculation of the income aggregate, URB_RUR is renamed to URBAN in order to use the same variable name across different surveys.

Since the sample is not self-weighting, household weights (expansion factors) were calculated based upon the probability of selection. The average household size in Bolivia is 4.08 persons.² In the original dataset, the money amounts are either in the local currency, the Boliviano, or in US dollar. The amounts in US dollar were converted in Boliviano using the November official exchange rate, which was 8.07 Bs = 1.0 USD.³ **The income aggregates are calculated at the household level and all aggregates are annualized.**

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 Estimation obtained from Bolivia Encuesta de Hogares 2005.

³ Official exchange rate obtained from the World Development Indicators database.

The household-level modules of the EH survey can be linked using the unique household identifier, folio. This variable is renamed HH for consistency across countries within the study. The overall sample is not self-weighting; therefore, the household weight variable, factor, should be applied to all descriptive analyses. Again here, for consistency purposes, “factor” is renamed “weight”.

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 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.
- In the Crop Production section, the reference period is the previous 12 months, which contains the previous crop season. Two total crop income variables are created: *cropincome1* and *cropincome2*. *Cropincome1* includes estimates of crop expenditures based on the production expenditure module of the household questionnaire. *Cropincome2* includes estimates of own crop consumption based on the Food Expenditure module of the household survey.
- For the Livestock, Other Income, Agricultural Rent (Agrant) and Transfers sections, the reference period is the previous 12 months.
- Other Income includes income from non-farm rental assets and other miscellaneous non-labor income.
- For Transfer income, two estimates are calculated: gross and net. The household income aggregate, however, considers the gross value rather than net.
- Agrant calculates gross income from the rental of agricultural land.
- In the Wage employment section, the reference period is the previous 12 months
- The classification of wage employment activities into industries follows the United Nations International Standard Industrial Classification (ISIC) Rev. 3 codes. Given the survey classification of each employed household member by industry, 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.
- Earnings from wage employment are net and include all in-cash and in-kind benefits in cash received from the employer.
- The Self Employment (SelfEmp) section accounted for income from non-farm enterprises owned by the household. The reference period was the last 12 months. Income from non-farm enterprises is disaggregated by industry (following the ISIC Rev.3 Codes) in order to convey information regarding the diversity of household activities. In the case of Bolivia 05, the participation rate in self-employment activities is very high (79%), and 65.44% of the households involved in these activities are in the agricultural sector. Also, almost 50% of

these non farm enterprises count only one worker. A consequence of the high participation in self-employment is the low participation in agricultural wage employment, only 9.6%.

- 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, 10 households are dropped from this survey.
- Only information on present household members is considered 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 since they can still serve as primary income sources. In this survey, all household members are considered present, since there is no information on how long they have been absent from the household during the last 12 months
- 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 created income aggregate. This table can also be viewed, with the individual components disaggregated, in Microsoft Excel from the file Income.xls.

Table 1

Program Name (.do)	Input Data Files	Output Data Files	Output Variables
Sample	base_eh_2005_pob_y_viv	Sample	
Prices	bolivia_gastos_alimentos bolivia_agricola Sample	Prices	pricedata1 pricedata2 pricedata3 pricedata4 pricedata5 pricedata6
Foodown	S7F S13a1 Prices Sample	Foodown	pricedata7 pricedata8 pricedata9 foodowncropimp foodownlivstockimp foodpurchimp foodnonpurchimp
Rentagric	base_eh_2005_pob_y_viv Sample	Rentagric	farmrntimp
Cropincome2	bolivia_agricola	cropbypr	Cropincimp

	bolivia_subproductos Foodown Sample	cropinc Cropincome	Cropexpimp Cropbyprexpimp Cropincome1imp Cropincome2imp
Employment	base_eh_2005_pob_y_viv Sample	employ1 employ2 Employment	wgeimp1_2 wgeimp2_2 wgeimp3_2 wgeimp4_2 wgeimp5_2 wgeimp1_1 wgeimp2_1 wgeimp3_1 wgeimp4_1 wgeimp5_1 wgeimp6_2 wgeimp7_2 wgeimp8_2 wgeimp9_2 wgeimp10_2 wgeimp6_1 wgeimp7_1 wgeimp8_1 wgeimp9_1 wgeimp10_1
Livestock	bolivia_pecuaria.dta Foodown Sample Livstinc Livstbyprodinc Foodown Livstexp	Livstinc Livstexp Livestock	livstinptimp livstboughtimp foodownlivstockimp livstsoldimp livstbyprsoldimp livstincimp
Otherincome	base_eh_2005_pob_y_viv Sample	Otherincome	nonfarmrntimp otherincimp
Selfemp	base_eh_2005_pob_y_viv Sample	ENA1 ENA2 Selfemp	hhexpimp hhrevimp selfimp1 selfimp2 selfimp3 selfimp4 selfimp5 selfimp6 selfimp7 selfimp9 selfimp10
Transfers	base_eh_2005_pob_y_viv Sample transinc socialtrans pensions	transinc socialtrans pensions Transfers	transincimp socialtransimp pensionsimp transferstotimp transfersgrossimp
AggregateIncome	Sample Rentagric Cropincome Employment	Income	agr_wge nonagr_wge crop1 crop2

	Livestock Otherincome Selfemp Transfers		livestock selfemp transfer other totincome1 totincome2
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Table 2

<i>Bolivia 2005</i>		1748 Rural HH Observations		Rural, Wiegthed, Bolivianos				Rural, Wiegthed, USD	
<i>Variable</i>		<i>Rural, Wiegthed, Bolivianos</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	167	7.19%	7,985	574	4.77%	5.39%	990	71
nonagr_wge	Wage Employment- Nonfarm	376	18.11%	12,605	2,283	13.11%	21.45%	1,563	283
crop1	Crop Production	1,213	73.93%	2,496	1,845	25.30%	17.33%	309	229
livestock	Livestock Production	835	48.62%	1,111	540	7.64%	5.08%	138	67
selfemp	Non-ag Self Employment	1,382	83.00%	5,169	4,290	38.69%	40.30%	641	532
transfer	Total Transfers	450	26.48%	3,214	851	9.37%	8.00%	398	106
other	Other Income Sources	74	3.63%	7,200	261	1.12%	2.45%	893	32
totincome1	Total Household Income	1727	99.19%	10,731	10,645	100.00%	100.00%	1,330	1,320

Percent Rural (Weighted)	42.84%
Boliviano/USD (2005)	8.07

- Notes:
1. Source data: Encuesta de Hogares 2005
 2. Exchange rate used is 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 is calculated from the question in the agricultural production section of the household questionnaire that asks about household consumption of agricultural production. For crop2, owncons is calculated from the Food Expenditure 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

Bolivia 2005		1748 Rural HH Observations		Rural, Wiegthed, Bolivianos				Rural, Wiegthed, 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	167	7.19%	7,985	574	4.70%	5.30%	990	71
nonagr_wge	Wage Employment- Nonfarm	376	18.11%	12,605	2,283	13.01%	21.09%	1,563	283
crop2	Crop Production	1,299	78.88%	2,564	2,023	28.95%	18.69%	318	251
livestock	Livestock Production	835	48.62%	1,111	540	6.96%	4.99%	138	67
selfemp	Non-ag Self Employment	1,382	83.00%	5,169	4,290	36.31%	39.64%	641	532
transfer	Total Transfers	450	26.48%	3,214	851	8.96%	7.86%	398	106
other	Other Income Sources	74	3.63%	7,200	261	1.11%	2.41%	893	32
totincome2	Total Household Income	1727	99.19%	10,910	10,822	100.00%	100.00%	1,353	1,342

Percent Rural (Weighted)	34.40%
Boliviano/USD (2005)	8.07

- Notes:
1. Source data: Encuesta de Hogares 2005
 2. Exchange rate obtained from the World Development Indicators (Official exchange rate, LCU per \$US, period average).
 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 calculated from the question in the agricultural production section of the household questionnaire that asks about household consumption of agricultural production. For crop2, owncons is calculated from the Food Expenditure section of the household questionnaire. Total household income "totincome1" and "totincome2" are therefore calculated with the corresponding crop income variable.
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