

# Components of the Income Aggregate: “Encuesta de Condiciones de Vida, Guatemala 2006”

*Prepared for the Rural Income Generating Activities (RIGA) Project<sup>1</sup>*

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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.*

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The Guatemala Encuesta de Condiciones de Vida (Living Conditions Survey; ENCOVI) household surveys took place from March through September, 2006. The sample for the 2006 ENCOVI was drawn using the *Marco Maestro de Muestreo (MMM)* formed by 15,511 Primary Sampling Units (UPMs) equivalent to 2,127,915 occupied households with an average of 137.19 households per UPM. Attrition was expected to be approximately 2% and the total sample of completed surveys was 13,693 households, inclusive of 68,739 persons.

There are 7,878 rural households and 5,808 urban households in the dataset. In the original datasets, *AREA* is the variable distinguishing urban from rural households. Urban is defined as the Guatemala Department, its urbanized suburbs, and the officially recognized centers of other departments and municipalities.<sup>2</sup> Rural is not specifically defined but, by definition, it applies to all areas not encompassed by the definition of urban. In the calculation of the income aggregate, *AREA* 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 Guatemala is 5 persons.

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<sup>1</sup> 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/lsms>.

<sup>2</sup> The definition is valid for the 1964, 1973 and 1981 Census, and estimates for 1990 and 1994. For the 1950 census the definition was "Localities of more than 2000 inhabitants and localities of 1500-2000 inhabitants if running water is supplied to houses." Source: UN World Urbanization Prospects: The 1999 Revision; <http://157.62.21.4/SHARE1/UN%20Demographics/technote/english/notes/table02.htm> (United Nations Demographic Yearbook-Historical Supplement 1st issue, DYB-CD, data from 1948 to 1997).

All money amounts are in the local currency, Quetzals. In 2006, the official exchange rate was 7.60 Qz = 1.0 USD.<sup>3</sup> **The income aggregates are calculated at the household level and all aggregates are annualized.**

The household-level modules of the ENCOVI survey can be linked using the unique household identifier, *NUM\_HOG*. This variable is renamed HH for consistency across countries within the study. To merge the community and price questionnaire modules with the household questionnaire, the variables REGION, DEPTO and AREA should be used.

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

- Household weights were created using the expansion factor “*FACTOR2*”. All households were assigned household weights in estimating income.
- 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 own crop consumption based on the agricultural production module of the household questionnaire. *Cropincome2* includes estimates of own crop consumption based on section XIII (Expenses and consumption) and XVI (agriculture activities) completed by each household surveyed.
- For the Livestock, Other Income, Rentagric and Transfers sections, the reference period is the previous 12 months.
- Other Income includes income from nonfarm rental assets.
- For Transfer income, two estimates are calculated: gross and net. The household income aggregate, however, considers the gross value rather than net.
- Rentagric calculates gross income from the rental of agricultural land.
- In the Wage employment section, the reference period is the duration of employment as specified in the questionnaire for the primary and secondary full-time and part-time jobs held in the last 7 days and, if not in the last 7 days, all work in the last 12 months.
- The classification of wage employment activities into industries and skilled/unskilled categories follow the United Nations International Standard Industrial Classification (ISIC) and the International Standard Classification of Occupations (ISCO) 88 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.

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<sup>3</sup> World Bank’s World Development Indicators.

- The Self Employment (SelfEmp) section accounted for income from nonfarm enterprises owned by the household. The reference period was the last 12 months. Income from nonfarm enterprises is disaggregated by industry (following the ISIC Codes) in order to convey information regarding the diversity of household activities.
- 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, 4 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.
- Participation and income share variables are also included in the final income aggregate
- **Note on Income from own-produced food from the expenditure module:** In this section, questions 7 to 11 aggregate the quantity of food obtained from the following sources: own-production, donation/gift, in-kind payments, taken from business, and barter. However, for 727 observations (out of 731,273), it is not possible to determine the quantity of food obtained from each source because households identified two or more categories as the source of their consumption. As a result, we allocate the reported quantity consumed of each item (of the 727 in question) to one source category according to the frequency with which that category was reported for all consumption overall. As “foodown” (food from own-production) was the most frequently reported source, we allocated consumption first to this category when it was among one of the reported sources for the given item. In the event that the household did not report the consumed item as being source from own-production, the assignment of categories, in order of priority was then the following: (2) gifts; (3) own-business; (4) in-kind payment; (5) barter. This imputation affects 0.09 percent of the observations.

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**

<b>Program Name (.do)</b>	<b>Input Data Files</b>	<b>Output Data Files</b>	<b>Output Variables</b>
Sample	01_Vivienda_ENC06.dta	Sample	
Prices	05_AlimentosDetalle_ENC06.dta 16_AgropAgricolaDetalle_ENC06.dta 22_AgropPecuariaDetalle_ENC06.dta	price_prod_area.dta price_prod_depto.dta price_prod_regio.dta price_prod_unit.dta price_purch_area.dta price_purch_depto.dta price_purch_regio.dta	pricedata1 pricedata2 pricedata3 pricedata4 pricedata5 pricedata6 pricedata7

		price_purch_unit.dta	pricedata8
Food	05_AlimentosDetalle_ENC06.dta	Food.dta	fooddowncropimp fooddownlivstockimp foodfreeimp foodinkindimp foodbartimp foodpurchimp
Cropincome1	16_AgropAgricolaDetalle_ENC06.dta 17_AgropAgricolaInsumos_ENC06.dta 18_AgropAgricolaGastos_ENC06.dta 19_AgropTrabajadoresAgropecuarios_dta 20_AgropAsistenciaTecnica_ENC06.dta 25_AgropMantenimientoCrianzaAnimales_ENC06.dta	cropinput farmexp aglabor techassist cropexp	amountimp amount2imp tempexpimp permexpimp totaleximp farmtechexpimp cropexpimp
Cropincome2	16_AgropAgricolaDetalle_ENC06.dta Food_crop.dta Sample.dta cropexp.dta	cropinc forestsales landincome <b>Cropincome</b>	cropincimp cropinputimp ownconsimp forestsalesimp landincomeimp cropincome1imp cropincome2imp
Employment1	03_Base_de_Personas_ENC06.dta Sample.dta	employ1.dta employ2.dta <b>Employment</b>	wgeimp1_1 wgeimp1_2 wgeimp2_1 wgeimp2_2 wgeimp3_1 wgeimp3_2 wgeimp4_1 wgeimp4_2 wgeimp5_1 wgeimp5_2 wgeimp6_1 wgeimp6_2 wgeimp7_1 wgeimp7_2 wgeimp8_1 wgeimp8_2 wgeimp9_1 wgeimp9_2 wgeimp10_1 wgeimp10_2
Livestock1	21_AgropPecuariaEncabezado_ENC06.dta 22_AgropPecuariaDetalle_ENC06.dta 23_AgropSubProductosPecuariosEncabezado_ENC06.dta 24_AgropSubProductosPecuariosDetalle_ENC06.dta	livstrevenues livstbyprod	livstsoldimp livstbyprodsoldimp
Livestock2	25_AgropMantenimientoCrianzaAnimales_ENC06  Food.dta livstinput.dta livstrevenues.dta livstbyprod.dta	livstinput  <b>Livestock</b>	livstinputimp  livstincimp
Otherincome	03_Base_de_Personas_ENC06.dta Sample.dta	<b>Otherincome</b>	nonfarmrntimp otherincimp

Rentagric	14_AgropEncabezado_ENC06.dta Sample.dta	<b>Rentagric</b>	farmrntimp
Selfemp1	03_Base_de_Personas_ENC06.dta	hhrev1 hhrev2	hhrevimp
Selfemp2	hhrev1 hhrev2	<b>Selfemp</b>	selfimp1 selfimp2 selfimp3 selfimp5 selfimp6 selfimp7 selfimp8 selfimp9 selfimp10
Transfers	03_Base_de_Personas_ENC06.dta  pensions socialbenefits pubprivtransf	pensions socialbenefits pubprivtransf  <b>Transfers</b>	pensionsimp socialbenefit socialtransimp privtransimp privtrans pubtrans transfersgrossimp
AggregateIncome	Sample Cropincome Employment Livestock Otherincome Selfemp Transfers	<b>Income</b>	agr_wge nonagr_wge crop1 crop2 livestock selfemp transfer other totincome1 totincome2

**Table 2**

<i>Guatemala 2006</i>		7,875 Rural HH Observations		Rural, Weighted, Quetzales				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>		
<b>agr_wge</b>	Wage Employment- Agriculture	2,354	30.62%	13,212	4,046	18.75%	17.26%	1,738	532		
<b>nonagr_wge</b>	Wage Employment- Nonfarm	4,176	50.98%	19,351	9,865	28.84%	42.09%	2,545	1,298		
<b>crop1</b>	Crop Production	4,824	65.79%	2,522	1,659	10.15%	7.08%	332	218		
<b>livestock</b>	Livestock Production	3,335	46.19%	1,156	534	5.11%	2.28%	152	70		
<b>selfemp</b>	Non-ag Self Employment	2,509	32.81%	11,744	3,853	13.53%	16.44%	1,545	507		
<b>transfer</b>	Total Transfers	5,482	70.84%	4,685	3,319	23.10%	14.16%	616	437		
<b>other</b>	Other Income Sources	216	3.20%	4,986	159	0.53%	0.68%	656	21		
<b>totincome1</b>	Total Household Income	7830	99.49%	23,556	23,436	100.00%	100.00%	3,098	3,083		

<b>Percent Rural (Weighted)</b>	<b>46.30%</b>
<b>Quetzales/USD (July 1, 2000)</b>	<b>7.60</b>

Notes:

1. Source data: 2006 Encuesta de Niveles de Vida (ENCOVI).
2. Exchange rate used comes from the World Bank *World Development Indicators* database.
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
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>Guatemala 2006</i>	7,875 Rural HH Observations	Rural, Weighted, Quetzales					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>	
<b>agr_wge</b>	Wage Employment- Agriculture	2,354	30.62%	13,212	4,046	17.31%	16.15%	1,738	532	
<b>nonagr_wge</b>	Wage Employment- Nonfarm	4,176	50.98%	19,351	9,865	27.46%	39.38%	2,545	1,298	
<b>crop2</b>	Crop Production	6,284	80.68%	4,058	3,274	20.78%	13.07%	534	431	
<b>livestock</b>	Livestock Production	3,335	46.19%	1,156	534	3.11%	2.13%	152	70	
<b>selfemp</b>	Non-ag Self Employment	2,509	32.81%	11,744	3,853	12.51%	15.38%	1,545	507	
<b>transfer</b>	Total Transfers	5,482	70.84%	4,685	3,319	18.35%	13.25%	616	437	
<b>other</b>	Other Income Sources	216	3.20%	4,986	159	0.49%	0.64%	656	21	
<b>totincome2</b>	Total Household Income	7846	99.68%	25,131	25,051	100.00%	100.00%	3,306	3,295	

<b>Percent Rural (Weighted)</b>	<b>46.30%</b>
<b>Quetzales/USD (July 1, 2000)</b>	<b>7.60</b>

Notes:

1. Source data: 2006 Encuesta de Niveles de Vida (ENCOVI).
2. Exchange rate used comes from the World Bank World Development Indicators database.
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
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