

# Components of the Income Aggregate: “Encuesta de Niveles de Vida, Nicaragua 2001”<sup>1</sup>

*Prepared for the Rural Income Generating Activities (RIGA) Project<sup>2</sup>*

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*December, 2008*

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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 Nicaragua *Encuesta Nacional de Hogares Sobre Medición de Niveles de Vida* (National Household Survey for the Measurement of Living Standards; EMNV) was carried out over a period of nine months in 2001. Household surveys took place from February 1 until November 15, 2001.

The sample for the EMNV was drawn using a two-stage stratified sampling procedure using the census segments from the Seventh National Population Census and Third National Housing Census (1995) as the Primary Sampling Units (PSUs). The Secondary Sampling Units (SSUs) are two, urban and rural, by which the census segments were divided. From urban clusters, 12 dwelling units were selected, while from each rural cluster, two “compact segments” were selected, each containing 5 dwelling units. The sampling units used were the (1) dwelling unit; (2) household and (3) person.

4,676 households from 428 PSUs were selected for the final sample, however only 4,191 households have complete surveys in the raw data, indicating that over 10% of the households were lost or did not complete the survey. There are 1,839 rural households and 2,352 urban households in the dataset. In the original datasets, I05 is the variable distinguishing urban from rural households. Rural is defined as all areas with fewer than 1,000 inhabitants, which lack access to power, industrial and/or commercial establishments and street grids and that have

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<sup>1</sup> The information provided in this document relies substantially upon the Data User’s Manual (*Manual de Usuario de la Base de Datos*), provided with the 2001 Nicaragua EMNV data. It should be noted that such document was prepared prior to the elaboration of the survey.

<sup>2</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/lsm>.

dispersed populations. In the calculation of the income aggregate, I05 is renamed to URBAN in order to use the same variable name across different surveys.

Since the sample is not self-weighting, population weights for individuals and households were calculated based upon the probability of selection. The average household size in Nicaragua is 5.3 persons.<sup>3</sup> All money amounts are in the local currency, Córdobas. In 2000, the official exchange rate was 13.34 NIO = 1.0 USD.<sup>4</sup> **The income aggregates are calculated at the household level and all aggregates are annualized.**

The various household-level modules of the EMNV survey can be linked using the two variables that create the unique household identifier: I00A and I00B. 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

- 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.
- Household weights were assigned using the expansion factor “peso2”. All income estimates are weighted using this factor.
- 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.
- 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 two-week Food Booklet 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.
- Rentagric calculates gross income from the rental of agricultural land and net income from sharecropped land.
- For Transfer income both gross and net income estimates are calculated. The income aggregate, however, considers only the gross transfers estimate.
- In the Wage employment section, the reference period is the duration of employment as specified by the respondent 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. All individuals 6 years and older were interviewed.

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<sup>3</sup> Estimate based on results of the 2001 EMNV. Results available from the Nicaragua National Institute of Statistics and Censuses at: <http://www.inec.gob.ni/estadisticas/indicadoresemnv.htm>.

<sup>4</sup> Castro-Leal, Florencia T. et al, 2003, Nicaragua Poverty Assessment: Raising Welfare and Reducing Vulnerability, World Bank. Report No. 26128-NI. December 23.

- The classification of wage employment activities into industries and skilled/unskilled categories follow the United Nations International Standard Classification of Occupations (ISCO) 88 codes and the *Clasificador Uniforme de Rama de Actividad de Nicaragua* (CUAEN) which corresponds with the UN International Standard Industrial Classification for All Economic Activities (ISIC). 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 of contributions and taxes and include all in-cash and in-kind benefits in cash received from the employer.
- The Self Employment (Selfemp) section accounted for income from nonfarm enterprises owned by the household. The reference period was the last 2 weeks for revenues. For expenditures, the reference period is chosen by the respondent. Income from nonfarm enterprises is disaggregated by industry (following the ISIC codes) in order to convey 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 this criteria, 33 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. Thus, drop if S2P11 > 6 & S2P2 != 1.
- 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.

Table 1

Program Name (Do file)	Input Data Files	Output Data Files	Output Variables
Sample	CONSING.DTA	Sample.dta	
Prices	EMNV26.DTA EMNV29.DTA EMNV30.DTA PRECIOS.DTA EMNV10.DTA Sample.dta	Prices.dta	pricedata1 pricedata2 pricedata3 pricedata4 pricedata5 pricedata6 pricedata7 pricedata8

			pricedata9 pricedata10 pricedata11 pricedata12
Food	EMNV10.DTA Prices.dta	Food.dta foodown.dta foodown_Crop.dta foodown_livestock dta	Foodpurchimp Foodfreeyimp Fooddownyimp Foodbartyimp Foodown
Agbyprod1	EMNV30.DTA  EMNV31.DTA	livstbyprod.dta  cropbyprod.dta	livstbyprsold1imp livstbyprconsimp cropbyprimp livstbyprimp
Agbyprod2	EMNV42.DTA  EMNV43.DTA	backyardallbyprod1.dta  backyardallbyprod2.dta	livstbypr2imp patiocons2imp livstbypr3imp
Aglabor	EMNV32.DTA EMNV33.DTA EMNV34.DTA	labortemp1.dta labortemp2.dta labortemp3.dta farmlabor.dta	jorn1imp jorn2imp jorn3imp laboreximp
Cropincome1	EMNV27.DTA EMNV25.DTA EMNV26.DTA	cropexp.dta cropincfores.dta cropincprice.dta  cropinc1.dta  cropinc2.dta	Cropexpimp Forestincimp pricedata1 pricedata2 pricedata3 pricedata4 pricedata5 ownconsimp cropsoldimp cropstoredimp cropotherimp croplostimp
Cropincome2	EMNV40.DTA EMNV39.DTA	Backyardcropexp.dta Backyardcropinc.dta	cropexp1imp owncons2imp cropsold2imp
Cropincome3	Cropbyprod.dta Backyardcropexp.dta Backyardcropinc.dta cropexp.dta cropincfores.dta cropinc1.dta	<b>Cropincome.dta</b>	<b>cropincome1</b> <b>cropincome2</b>

	cropinc2.dta farmlabor.dta foodown_crop.dta otherincome.dta		
Employment1	EMNV03.DTA	Employ1.dta Employ2.dta	wgeimp
Employment2	EMNV03.DTA Employ1.dta Employ2.dta	Employ3.dta <b>Employment.dta</b>	Wgeimp wgeimp1_1 wgeimp2_1 wgeimp3_1 wgeimp4_1 wgeimp5_1 wgeimp6_1 wgeimp7_1 wgeimp8_1 wgeimp9_1 wgeimp10_1 wgeimp1_2 wgeimp2_2 wgeimp3_2 wgeimp4_2 wgeimp5_2 wgeimp6_2 wgeimp7_2 wgeimp8_2 wgeimp9_2 wgeimp10_2 wgeimp1_3 wgeimp2_3 wgeimp3_3 wgeimp4_3 wgeimp5_3 wgeimp6_3 wgeimp7_3 wgeimp8_3 wgeimp9_3 wgeimp10_3
Livestock1	EMNV29.DTA	livstexp.dta livstinc.dta	livstinpt1imp livstsold2imp
Livestock2	EMNV41.DTA	backyardlivstexp.dta backyardlivstinc.dta	livstininputimp livstsoldimp patioconsimp

Livestock3	livstbyprod.dta backyardallbyprod1.dta backyardallbyprod2.dta backyardlivstexp.dta backyardlivstinc.dta livstexp.dta livstinc.dta foodown_livestock.dta	<b>Livestock.dta</b>	<b>livstincimp</b>
Otherincome2	EMNV16.DTA  EMNV17.DTA	otherinc1.dta  otherinc2.dta otherinc.dta	nonfarmrntimp otherinc1imp otherinc2imp otherincimp
Otherincome2	EMNV36.DTA EMNV21.DTA farmexp.dta techassistexp.dta otherinc.dta	farmexp.dta techassistexp.dta <b>Otherincome.dta</b>	farmsvexpimp farmtechexpimp <b>otherfarmexpimp</b> <b>nonfarmrntimp</b> <b>otherincimp</b>
Rentagric	EMNV22.DTA  EMNV23.DTA rentagricinc.dta rentagricexp.dta	rentagricinc.dta  rentagricexp.dta <b>Rentagric.dta</b>	farmrntincimp shrcropincimp shrcropexpimp <b>farmrntimp</b> <b>shrcropimp</b>
Selfemp	EMNV06.DTA EMNV07.DTA  Nonfarm1.dta Nonfarm2.dta	Nonfarm1.dta  Nonfarm2.dta <b>Selfemp.dta</b>	Hhexpmatimp Hhexplabimp hhrev1imp hhexpimp <b>selfimp1</b> <b>selfimp2</b> <b>selfimp3</b> <b>selfimp4</b> <b>selfimp5</b> <b>selfimp6</b> <b>selfimp7</b> <b>selfimp8</b> <b>selfimp9</b> <b>selfimp10</b>
Transfers	EMNV16.DTA EMNV18.DTA	pensions.dta privtransfer.dta <b>Transfers.dta</b>	Pensionsimp Transferincimp <b>Transfersgrossimp</b>
Aggregateincome	Sample	Income	Agr_Wge

	Cropincome Employment Livestock Otherincome Rentagric Selfemp Transfers		Nonagr_wge Crop1 Crop2 Livestock Selfemp Transfers Other Totincome1 Totincome2
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**Table 2**

<i>Nicaragua 2001</i>		1828 Rural HH Observations		Rural, Wiegthed, Córdoba				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>
<b>agr_wge</b>	Wage Employment- Agriculture	734	39.38%	10,127	3,988	21.68%	19.30%	757	298
<b>nonagr_wge</b>	Wage Employment- Nonfarm	568	35.24%	17,011	5,994	11.68%	29.01%	1,272	448
<b>crop1</b>	Crop Production	1,571	83.62%	3,460	2,893	-9.00%	14.00%	259	216
<b>livestock</b>	Livestock Production	1,367	71.92%	3,812	2,741	14.20%	13.27%	285	205
<b>selfemp</b>	Non-ag Self Employment	438	26.24%	12,144	3,187	52.94%	15.42%	908	238
<b>transfer</b>	Total Transfers	680	38.67%	2,465	953	6.06%	4.61%	184	71
<b>other</b>	Other Income Sources	351	19.47%	4,658	907	2.43%	4.39%	348	68
<b>totincome1</b>	Total Household Income	1831	99.97%	20,670	20,663	100.00%	100.00%	1,546	1,546

<i>Percent Rural (Weighted)</i>	<b>38.79%</b>
<i>Córdoba/USD (2001)</i>	<b>13.37</b>

Notes:

1. Source data: 2001 Encuesta Nacional de Hogares Sobre Medición de Niveles de Vida (EMNV).
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 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**

<i>Nicaragua 2001</i>	1828 Rural HH Observations	Rural, Wiegthed, Córdoba					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>
<b>agr_wge</b>	Wage Employment- Agriculture	734	39.38%	10,127	3,988	0.00%	18.69%	757	298
<b>nonagr_wge</b>	Wage Employment- Nonfarm	568	35.24%	17,011	5,994	21.33%	28.09%	1,272	448
<b>crop2</b>	Crop Production	1,591	84.75%	4,208	3,567	21.14%	16.72%	315	267
<b>livestock</b>	Livestock Production	1,367	71.92%	3,812	2,741	14.29%	12.85%	285	205
<b>selfemp</b>	Non-ag Self Employment	438	26.24%	12,144	3,187	11.14%	14.94%	908	238
<b>transfer</b>	Total Transfers	680	38.67%	2,465	953	6.06%	4.47%	184	71
<b>other</b>	Other Income Sources	351	19.47%	4,658	907	4.60%	4.25%	348	68
<b>totincome2</b>	Total Household Income	1832	100.00%	21,337	21,337	100.00%	100.00%	1,596	1,596

<i>Percent Rural (Weighted)</i>	<b>38.78%</b>
<i>Córdoba/USD (2001)</i>	<b>13.37</b>

Notes:

1. Source data: 2001 Encuesta Nacional de Hogares Sobre Medición de Niveles de Vida (EMNV).
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 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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