

**Components of the Income Aggregate:  
“Enquête Permanente Auprès Des Ménages,  
Madagascar 2001”**

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

*of the Agricultural Development Economics Division,*

*Food and Agriculture Organization*

*October, 2009*

---

*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 Madagascar Enquête Permanente Auprès Des Ménages (EPM) is a nationally representative survey which covered a twelve month period, from October 2000 to September 2001. The survey fieldwork was carried out in October and November 2001.

The sample for the EPM was drawn using a multi-stage stratified sampling procedure based on the 1986/7 Administrative Census. The primary sampling unit was the “Fokontany”, from which 303 clusters were selected (196 urban; 107 rural). The total sample is composed of a total of 5,080 households.

There are 1,979 rural households and 3,101 urban households in the dataset. In the original datasets, MIL2 is the variable distinguishing urban from rural households. In the calculation of the income aggregate, MIL2 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 Madagascar is 4.6 persons. All money amounts are in the local currency, Malagasy Francs (FMG). In 2001, the

---

<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>.

official exchange rate was 6,590 FMG = 1.0 USD<sup>2</sup>. **The income aggregates are calculated at the household level and all aggregates are annualized.**

The household-level modules of the EPM survey can be linked using the unique household identifier, IDMEN. This variable is renamed 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 are in **bold**. **All variables included in the aggregate income variable are net of costs, unless otherwise noted.**

### Comments

- Household weights were obtained from the expansion factor variable “POIDS” from the original data. 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 outlier values takes place.
- In the Crop Production section, the reference period is the previous 12 months, which contains the previous crop season. Only one total crop income variable is created: *cropincome1*. *Cropincome1* includes estimates of own crop consumption based on the agricultural production module of the household questionnaire.<sup>3</sup>
- For the Livestock, Other Income, Agricultural Rent and Transfers sections, the reference period is the previous 12 months.
- For the livestock income calculations, we did not include livestock expenditures (food, medicines, labor) into the income calculation, since the data on those expenditures are missing from the raw data. The only livestock costs considered are of purchased livestock. Stolen and lost livestock are also considered as losses to the household net livestock income.
- Other Income includes only income from non-farm rental assets, since no additional information on other miscellaneous non-labor income is included in this survey.
- In the household income aggregate, the gross value of the transfer income is considered instead of the net value.
- Agrent (agricultural rent) 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.

---

<sup>2</sup> Obtained from the World Bank World Development Indicators

<sup>3</sup> The second crop income variable, *cropincome2*, which is generally constructed for the RIGA income aggregates, would include estimates of own crop consumption based on the Food Expenditure module of the household survey. It was not created due to insufficient information in the survey regarding non-purchased food.

- 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 nonfarm enterprises owned by the household. The reference period was the previous 12 months. Income from nonfarm enterprises is disaggregated by industry (following the ISIC Rev.3 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 of the main income activities (agricultural wages; non-agricultural wages; crop; livestock; self employment; transfers; other) greater than or less than 3 (300%) are dropped from the final income aggregate.
- 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 S1Q10 > 6 & S1Q3 != 1.
- Participation and income share variables for all income components are included in the final income aggregate.
- The results are comparable to those of Madagascar 1993 and also of those of other surveys from the African region in the RIGA database.

The programs that calculate each household's income aggregate component are summarized in Table 1. Table 2 summarizes the results for rural households 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	DEMO	Sample		
Prices	expendb_q agric agric_h Sample	Prices	pricedata1 pricedata2 pricedata3 pricedata4 pricedata5 pricedata6 pricedata7 pricedata8 pricedata9 pricedata10 pricedata11 pricedata12	
Foodown	Temp2 Prices Sample	Foodown	cropconsyrimp livstconsyrimp	
Agrent	agricall Sample	<b>Agrent</b>	farmrntimp	
Cropincome	agricb agricc agricf Foodown Crop1 Sample	Crop1  <b>Cropincome</b>	Cropincimp Cropexplimp cropownimp Cropincome1imp	
Employment	Empl_a  Empl_b Empl_c Sample	employ1  employ2 <b>Employment</b>	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			livstrevimp livstexplimp livstconsyrimp livstexp2imp	

			livstincimp
Otherincome	avoir01_c Sample	<b>Otherincome</b>	nonfarmrntimp
Selfemp	ena01_c Sample	Hhexp Hhrev <b>Selfemp</b>	hhexpimp hhrevimp selfimp1 selfimp2 selfimp3 selfimp5 selfimp6 selfimp7 selfimp9 selfimp10
Transfers	transfb01_f1 Sample transinc socialtrans pensions	transinc  socialtrans pensions  <b>Transfers</b>	transincimp  socialtransimp pensionsimp  transferstotimp transfersgrossimp
AggregateIncome	Sample Agrent Cropincome Employment Livestock Otherincome Selfemp Transfers	Income	agr_wge nonagr_wge crop1 livestock selfemp transfer other totincome1

**Table 2**

<i>Madaqascar 2001</i>	1,956 Rural HH Observations	Rural, Weighted, Malagasy Franc (FMG)					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	165	9.20%	1,579,635	145,338	4.57%	4.50%	240	22	
<b>nonagr_wge</b>	Wage Employment- Nonfarm	292	17.40%	4,418,882	768,755	12.41%	23.80%	671	117	
<b>crop1</b>	Crop Production	1,596	79.71%	1,667,039	1,328,785	54.04%	41.14%	253	202	
<b>livestock</b>	Livestock Production	727	37.34%	730,273	272,679	9.12%	8.44%	111	41	
<b>selfemp</b>	Non-ag Self Employment	393	20.89%	2,675,112	558,939	11.16%	17.30%	406	85	
<b>transfer</b>	Total Transfers	370	19.85%	399,769	79,361	4.75%	2.46%	61	12	
<b>other</b>	Other Income Sources	829	42.59%	179,457	76,435	3.95%	2.37%	27	12	
<b>totincome1</b>	Total Household Income	1,940	99.11%	3,259,297	3,230,293	100.00%	100.00%	495	490	

<i>Percent Rural (Weighted)</i>	<b>75.99%</b>
<i>FMG/USD (2001)</i>	<b>6,590.00</b>

Notes:

1. Source data: 2001 Enquete Permanente Aupres Des Menages (EPM)
2. Exchange rate used comes from the official exchange rate from the World Development Indicators time 5, since one ariary (currency used in the WDI) equals five FMG.
3. All values reported are annual and net of costs (with the exception of income from transfers and land rent, which are gross receipts).