

**Components of Income Aggregate:**  
**“NATIONAL SURVEY ON HOUSEHOLD LIVING  
CONDITIONS AND AGRICULTURE , NIGER 2011”**

*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 Niger National Survey on Household Living Conditions and Agriculture was carried out for twelve months from July 2011 to January 2012. The survey is divided into two parts that is to say that every household is visited twice. The first visit takes place between July and September 2011 after the planting season. The second passage was made after the harvest season, since November 2011 to January 2012. It collected data using Household, Agricultural and Community questionnaires and obtained information at the individual, household, plot, business and community levels. The pilot test of the questionnaires and field procedures was implemented in January - March 2011

The sample was chosen using a random two stage process<sup>2</sup>. The target population is drawn from households in all eight regions of the country with the exception of certain strata found in Arlit (Agadez Region) because of difficulties in going there, the very low population density, and collective housing. The full sample contained 3,968 households in 270 Primary Sampling Units (PSU).

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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/lsm>.

<sup>2</sup> For a complete explanation of the sampling plan, read the document “Niger\_ECVMA\_Sample\_Design” elaborated by Mario Navarrese.

The survey was sampled to be nationally representative. In order to obtain nationally representative statistics, it is necessary to apply the sampling weights provided in the data. The sampling weights variable in the original data (*RAWDATA\Ponderation\_23\_10\_2012.dta*) is called “hhweight”; it is renamed to “weight” in the RIGA datasets.

The various household-level modules of this survey can be linked using the two variables that create the unique household identifier: GRAPPE (renamed as PSU) and MENAGE (renamed as HH). These variables are combined to create the unique identifier HHID for consistency across countries within the RIGA database.

In the original datasets, URBRUR is the variable distinguishing urban from rural households. In the calculation of the income aggregate, URBRUR is renamed to URBAN in order to use the same variable name across RIGA surveys. The sample is comprised of 1,538 (38.76%) urban households and 2,430 (61.24%) rural households

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

An average household size in Niger is 6.41 persons<sup>3</sup>. All money amounts are in Niger FCA. In 2011 the official exchange rate was 470.7 FCFA = 1 USD<sup>4</sup>. **The income aggregates are calculated at the household level and all aggregates are annualized.**

## 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.
- At plot level, analysis was done only keeping those parcels found during both waves.
- Quantities harvested and sold were collected in both unit of local measurement (UML) and in kilograms. Comparisons between the two measures revealed that the UML data were more reliable; and thus chosen for the construction of the IA.
- The variables *uses\_uml\_\** are the quantities from different crop and livestock uses. Their summation should correspond to total quantities harvested. While this is the case for the rainy season, there were inconsistencies for the dry season. Because the wet season comprises of the majority of information used in *Cropincome*, these small discrepancies in the dry season are ignored.
- Crop revenue is calculated as the sum of all income components from different uses. For crop sales, values were also reported by respondents in FCFA.

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<sup>3</sup> RIGA project calculations.

<sup>4</sup> Exchange rate used comes from the National Institute of Statistics of Niger.

- Size of parcel area is measured in square meters by both GPS and respondent's estimates. The former was replaced with the latter in some cases where the GPS information was missing.
- Prices from crop production have been created from different sources: from Food Consumption (FC) module, from the Agricultural Production (AP) questionnaire and from the Community modules. The general method is generating unitary prices for each crop and take later the median price for each UML but at different geographical level. In this survey, we geographically disaggregated prices: at PSU level, village, commune, department, region, milieu and at national level.
- Even RIGA usually privileges the second source of information (Agricultural Production), in this survey we noticed that possible prices (created as value of sold divided quantities sold) from it are not so frequently available (approximately, focusing on the most important items produced in Niger for instance, there are only 177 unitary prices for millet, 15 for sorgho, 3 for mais and 11 for rice).
- Therefore, to estimate the crop income, the quantities of crop produced, sold, gifted, etc. were firstly multiplied times the prices from Food Consumption module. If specific price for each item/UML is missing, we replace with prices from AP module. More specifically, from the expenditure module we generated prices considering the purchased, own consumed and gifted quantities.
- Some conversion on quantities were done if values by this multiplications remained missing<sup>5</sup>.
- For the dry season, the single amount of crop value is multiplied also for the number of cycle of production of crops.
- 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 during the last 7 days.
- Evaluation of own consumption follows the same prices set described above.
- For the Livestock, Other Income, and Transfers sections, the reference period is the previous 12 months.
- Do-file for Rentagric income is present, but this does not contribute as income component. Indeed, questions in the section 1 "Access to Land" (Part 1) distinguish which is the plot tenure (question 1.16) but then we have information limited on the potential incomes receivable from selling and renting out land (question 1.20 – 1.21). Only in the case of mortgage or renting in, there is the actual indication of amount paid (question 1.22). Hence, we were not simply able to compute the actual net income on annual farm rental.

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<sup>5</sup> To recap, the order of prices used in the estimation is (from the more disaggregated geographical level to the national level): unitary price from purchased, own consumed and gifted quantities (from expenditure module); if values remain missing, we use price/unit from AP module. Finally, we also convert quantities in one of possible UML in which price is not unknown.

- Other Income includes nonfarm rental income, capital/financial income and alimony.
- 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. Public transfers include pensions, social transfers and scholarship. Pensions include retirement pension, civil and retirement. Social transfers comprise widow pensions and disability pensions. Scholarship is the amount of grant/financial aid received in the past 12 months as indicated in Section 2 – Education.
- 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 5 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 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 socio-professional category of this employment (q. 4.25).
- Earnings from wage employment include all in-cash and in-kind benefits in cash received from the employer (included the value of meals).
- The Self Employment (Selfemp) section accounted for income from non-farm enterprises owned by the household. For both expenditures and revenues, the reference period was the last 30 days or the last month that the enterprise was in business. For taxes paid by enterprise instead, the reference period is the last 12 months. The classification of non-farm enterprise activities into industries categories also follows the ISIC categories listed above.
- 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, 27 households are dropped from this survey.
- All raw datasets can be found in the folder “RAWDATA”. For the original datasets related to Agricultural questionnaires<sup>6</sup> however, we cleaned the raw data by using the do-files in “PROGRAM” folder<sup>7</sup>.
- 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.

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<sup>6</sup> More specifically, these datasets from Agricultural Questionnaire refer: for first wave, Section 1, Section 2 and Section 3. For second wave, Section 2 and Section 4.

<sup>7</sup> These do-files were named as each section. They load datasets from “RAWDATA” and save cleaned data in “CLEANDATA”.

**Table 1**

Do file	Input data files	Output data files	Main variables constructed
	HHQ*= household questionnaire AGQ*= agricultural questionnaire CQ*= community questionnaire		
Sample.do	HHQ1\ecvmasection00_p1.dta HHQ2\ecvmasection00_p2.dta	Sample.dta	
Prices.do	AGQ2\ecvmaas2e_p2.dta AGQ1\ecvmaas3e_p1 HHQ1\ecvmaali_p1 HHQ2\ecvmaali_p2 CQ1\ecvmacoms07_p1 CQ2\ecvmacoms07_p2	price_purch_*.dta price_purch_psu_*.dta price_purch_village_*.dta price_purch_commune_*.dta price_purch_dep_*.dta price_purch_region_*.dta price_purch_milieu_*.dta price_prod_uml_* price_prod_psu_* price_prod_village_* price_prod_commune_* price_prod_dep_* price_prod_region_* price_prod_milieu_*	price_purch_* price_purch_village_* price_purch_commune_* price_purch_dep_* price_purch_region_* price_purch_milieu_* price_prod_uml_* price_prod_psu_* price_prod_village_* price_prod_commune_* price_prod_dep_* price_prod_region_* price_prod_milieu_*
Food.do	HHQ1\ecvmaali_p1 HHQ2\ecvmaali_p2	Food.dta Foodown.dta Foodown_crop.dta Foodonw_livestock.dta	foodgift foodown foodpurch foodowncrop

		Foodown_gift.dta	foodownlivstock
Rentagric.do	AGQ1\ecvmaas1p1.dta	Rentagric.dta	
Cropincome.do	AGQ2\ecvmaas2ap1.dta  AGQ2\ecvmaas2bp1.dta AGQ2\ecvmaas2cp1.dta AGQ2\ecvmaas2ap2.dta  AGQ2\ecvmaas2dp2.dta AGQ1\ecvmaas3ap1.dta  AGQ1\ecvmaas3cp1.dta AGQ1\ecvmaas3dp1.dta AGQ1\ecvmaas3ep1.dta	crop_parcel_rainy.dta crop_inputs_rainy.dta crop_inputs_oth_rainy.dta  crop_labor_rainy.dta agri_work_rainy.dta  crop_parcell_all_rainy.dta	crop_sale_rainy_uml residual_rainy crop_transf_rainy_uml  crop_own_rainy_uml crop_gift_rainy_uml  crop_seed_rainy_uml crop_feed_rainy_uml crop_stock_rainy_uml crop_rev1_rainy crop_exp_rainy
Cropincome_bis.do	AGQ1\ecvmaas3ep1.dta AGQ2\ecvmaas2ap2.dta AGQ2\ecvmaas2dp2.dta  AGQ2\ecvmaas2ep2.dta AGQ2\ecvmaas05_p2.dta	crop_id_dry.dta crop_labor_dry.dta crop_inputs_dry.dta  crop_arbor.dta crop_inputs_oth_dry.dta	crop_sale_dry_uml residual_dry crop_own_dry_uml  crop_seed_dry_uml crop_feed_dry_uml  crop_gift_dry_uml

		crop_level_all_dry.dta	crop_rev1_dry
Cropincome_ter.do	crop_parcell_all_rainy.dta crop_level_all_dry.dta	Cropincome_rainy.dta Cropincome_dry.dta Cropincome.dta	croprev* cropexp  cropincome*
Livestock.do	AGQ2\ecvmaas4ap2.dta AGQ2\ecvmaas4cp2.dta AGQ2\ecvmaas4dp2.dta AGQ2\ecvmaas4ep2.dta AGQ2\ecvmaas4fp2.dta AGQ2\ecvmaas4gp2.dta	Livestock_id_4a.dta	
Livestock_bis.do	AGQ2\ecvmaas4hp2 AGQ2\ecvmaas4ip2.dta AGQ2\ecvmaas4jp2.dta	Livestock_id_4h.dta Livestock.dta	livexp livexp_noalim livrev_*  livstinc* livstinc*_noalim
Selfemp.do	HHQ1\ecvmaent_p1.dta	Selfemp.dta	selfimp1 selfimp2 selfimp3 selfimp4 selfimp5 selfimp6 selfimp7 selfimp8

			selfimp9 selfimp10
Employment.do	ecvmaind_p1p2.dta (HHQ*\SEC_4)	Employment.dta (Only RIGA variables)  \$TEMP\Employment_id_first.dta \$TEMP\Employment_id_second.dta \$TEMP\Employment_id.dta \$TEMP\employ1.dta \$TEMP\employ2.dta	wge1_1 - wge1_2 wge2_1 - wge2_2 wge3_1 - wge3_2 wge4_1 - wge4_2 wge5_1 - wge5_2 wge6_1 - wge6_2 wge7_1 - wge7_2 wge8_1 - wge8_2 wge9_1 - wge9_2 wge10_1 - wge10_2
Transfers.do	HHQ1\ecvmatrecus_p1.dta HHQ1\ecvmatemis_p1.dta HHQ1\ecvmarev_p1.dta HHQ1\ecvmaind_p1p2.dta	transprivinc_id.dta transprivexp_id.dta pensions_id.dta scholarship_id.dta Transfers_id.dta Transfers_hhl.dta Transfers.dta	privtransfer pubtransfer transprivexp transprivinc transfersgross transferstot
Otherincome.do	HHQ1\ecvmarev_p1.dta	Otherincome.dta	otherinc nonfarmrnt
Aggregateincome.do	Sample.dta  hhchar.dta  Rentagric.dta		agr_wge  nonagr_wge  crop1



	Cropincome.dta Livestock.dta Employment.dta Otherincome.dta Selfemp.dta Transfers.dta	Income.dta	crop2 livestock_1 livestock_2 otherincome selfemp transfers totincome1 totincome2
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**Table 2**

<i>Niger 2011</i>	2,430 Rural HH Observations	Rural, Weighted, Shillings					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	212	10.8%	156,488	16,864	4.41%	4.84%	332	36
nonagr_wge	Wage Employment- Nonfarm	199	8.1%	373,452	30,358	4.48%	8.72%	793	64
crop1	Crop Production	1,906	92.3%	201,664	43,671	27.68%	12.54%	428	93
livestock	Livestock Production	1,908	77.4%	89,978	69,602	5.62%	19.99%	191	148
selfemp	Non-ag Self Employment	1,386	60.1%	263,392	158,311	36.05%	45.46%	560	336
transfer	Total Transfers	1,239	57.8%	50,051	28,915	21.72%	8.30%	106	61
other	Other Income Sources	4	0.2%	275,515	487	0.00%	0.14%	585	1.0
totincome1	Total Household Income-crop1	2400	99.8%	348,852	348,208	100%	100%	741	740

<i>Percent Rural (Weighted)</i>	83.43
<i>FCFA/USD (2011)</i>	470.70

1. Source data: ENQUÊTE NATIONALE SUR LES CONDITIONS DE VIE DES MENAGES 2010-2011
2. Exchange rate is World Development Indicators
3. Crop1 own consumption is calculated from the "Food expenditure" module 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>Variable</i>	2,430 Rural HH Observations	Rural, Weighted, Shillings					Rural, Weighted, USD		
		<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	212	10.8%	156,488	16,864	3.23%	3.39%	332	36
nonagr_wge	Wage Employment- Nonfarm	199	8.1%	373,452	30,358	3.94%	6.11%	793	64
crop2	Crop Production	1,906	92.3%	201,664	192,651	47.62%	38.75%	428	409
livestock	Livestock Production	1,908	77.4%	89,978	69,602	8.90%	14.00%	191	148
selfemp	Non-ag Self Employment	1,386	60.1%	263,392	158,311	25.86%	31.84%	560	336
transfer	Total Transfers	1,239	57.8%	50,051	28,915	10.42%	5.82%	106	61
other	Other Income Sources	4	0.2%	275,515	487	0.00%	0.10%	585	1.0
totincome2	Total Household Income-crop2	2,403	99.9%	497,738	497,187	100%	100%	1,057	1,056

<i>Percent Rural (Weighted)</i>	83.43
<i>FCFA/USD (2011)</i>	470.70

1. Source data: 2010/2011 UNHS
2. Exchange rate is World Development Indicators
3. Crop2 own consumption is calculated from the "Food expenditure" module 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).