



Food and Agriculture Organization  
of the United Nations

# **Rural Livelihoods Information System**

## **(RuLIS)**

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**Technical notes on concepts and definitions  
used for the indicators derived from  
household surveys**

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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## Abbreviations

APPI - Agricultural Producer Price Index

CPI - World Bank's consumer price index

FPI - Food Price Index

GDP - Gross domestic product

GNI - Gross national income

ha – Hectare

IAEG - Inter-Agency and Expert Group

ICLS - International Conference of Labour Statisticians

ICSE - International Classification by Status in Employment

IFAD - International Fund for Agricultural Development

ILO – International Labour Organization

IMF - International monetary fund

ISIC - International Standard Industrial Classification of All Economic Activities

LSMS - Living Standard Measurement Study

MAD - Median Absolute Deviation

MBOs - Member-based organisations

NEET - Not (engaged) in education, employment or training

PPP - Purchasing power parity

RIGA - Rural Income Generating Activities

RLM- Rural Livelihoods Monitor

RuLIS - Rural Livelihoods Information System

SDGs - Sustainable Development Goals

SHDP - Smallholder farmers' Dataportait

SPF-I - Social Protection Floor Initiative

TLUs - Tropical Livestock Units

USD – United States dollar

WDI – World Development Indicators





## Introduction

Information on rural incomes, livelihoods and living conditions plays a fundamental role in understanding medium and long term trends in the structural transformation of agriculture and rural economies. Comparable data are required to properly design, monitor and assess the impact of context-specific policies aimed at making the transformation more inclusive to reduce rural poverty, hunger and inequality.

Accessible, timely and comparable information on rural incomes, livelihoods and their evolution, however, is not available in many countries, nor easily accessible. Much of the data on rural development needs to be computed from the household level, and gathered through surveys. Research institutions usually have the capacity to process microdata from surveys; however, they do not have easy access to large pools of harmonized micro- and macro-level information from different countries, let alone harmonized indicators across countries. Policy makers and practitioners often lack the capacity to process complex sets of information.

To fill this gap, FAO, the World Bank and IFAD have decided to collaborate in developing a Rural Livelihoods Information System (RuLIS). RuLIS will scale-up the production and compilation of data on incomes, livelihoods and rural development from a large pool of countries, and link them to policy making. RuLIS will thus use and process the microdata with the aim of:

- providing a wide set of harmonized indicators and variables on rural livelihoods;
- lowering the costs for individual users of accessing microdata and a set of indicators computed from this microdata;
- improving the harmonization of rural livelihoods indicators built from microdata,
- promoting transparent standardized methodologies to compute variables and indicators and easily accessible tools to replicate and customize the computation.

In recent years, several projects have provided information on income and livelihoods in rural areas. In chronological order, the first is the [Rural Income Generating Activities](#) project (FAO, n.d.a). RIGA started as a joint research project with the World Bank which made its data available to users upon request. As of December 2015, RIGA covered 42 surveys from 22 countries in Africa, Latin America, Asia and Eastern Europe. The second project that has provided related information is the [Smallholder farmers' Dataportait](#) (FAO, n.d.b). SHDP is a research project focusing on rural transformation and smallholders. As of 2017, SHDP covers 29 surveys from 19 countries. The third and the most recent is the Rural Livelihoods Monitor (RLM), which started the creation of a wider database of micro and macro level information on rural livelihoods, with the broad approach inherited by RuLIS. Following these projects, RuLIS is a major database to access cross-country comparable data and information on rural incomes, livelihoods and their evolution.

RuLIS is using surveys for which microdata is available to compute a set of indicators.<sup>1</sup> It is important to emphasise that the microdata collected in the processed surveys allow computing *comparable* indicators. For some indicators, RuLIS builds upon the methodology developed and adopted by the RIGA project.<sup>2</sup> The RIGA scripts and procedures were deeply revised, integrated and extended to RuLIS. In general, while the objective of RIGA was generating an analysis and providing policy support, RuLIS includes a more standardised dataset which is meant to be a tool for analysis and wider dissemination.

In practice, RuLIS will make available:

- 116 ready-made indicators from household surveys;
- 15 ready made macro indicators from other sources (World Bank);
- a web-based facility allowing to build customized indicators from microdata without accessing the micro-data - where micro-data are not accessible;
- access to bulk-download of indicators and up to 277 cleaned variables per survey, where microdata are publicly available;
- documentation on how data were processed, in the form of syntax files, implementation and validation notes.

Through these items, RuLIS aims at facilitating and decreasing the cost of using and processing information for different types of users. Less expert users will likely use mostly the ready-made indicators, while more expert users may use the cleaned variables and syntax files.

The indicators covered in RuLIS are organised in ten clusters, as follows:

1. Income and Productivity
2. Poverty and Inequality
3. Employment and Education
4. Social Protection
5. Land
6. Livestock
7. Inputs, Technology and Credit
8. Infrastructure and Services
9. Shocks and Migration
10. Sample Characteristics

The definition of these clusters is merely practical; as such it responds to the need for users to understand what type of information is found in each of them.

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<sup>1</sup> In November 2018, RuLIS included 57 surveys from 38 countries. The list of processed surveys can be found in Annex 1. The list of indicators can be found in Annex 2.

<sup>2</sup> The RIGA project aimed at constructing mainly comparable income measures from household surveys in order to provide annualized benchmark aggregates which, despite differences in the quality of information in each survey, would be suitable for cross-country analyses (Carletto *et al.*, 2007).

Whenever possible, indicators are cross-tabulated with a set predetermined variables, which allow classifying households and individuals. These are labelled as “qualifiers” and are as follows<sup>3</sup>:

1. Expenditure quintiles, based on the consumption expenditure.
2. Gender; At the household level, the households are classified as “including only female adults”, “including only male adults” and “including both male and female adults” whereas at the individual level data, the information is tabulated for males and females.
3. Share of income from agriculture; households in which more than or equal to 30 percent of total income is derived from agriculture are distinguished from those with less than 30 percent of total income from agriculture, and those with no income from agriculture.
4. Small-scale food producers, vs non-small-scale food producers. The small-scale food producers are defined on the basis of the FAO proposal to the Inter-Agency and Expert Group (IAEG) on the Sustainable Development Goals (SDGs) for monitoring indicators of Goal 2.3.<sup>4</sup>
5. Urban and rural areas, based on the national definition used in the surveys.

RuLIS was built by using a wide variety of surveys, which are inevitably based on slightly different assumptions, concepts, definitions and priorities. This means that virtually no survey is entirely equal to another. Even when surveys are promoted in the framework of the same project – as it is the case of the Living Standard Measurement Study (LSMS) of the World Bank – questions, samples and criteria change among surveys, as adjustments are made to the local context and through time. This widespread heterogeneity has required some degree of flexibility in the computation of variables and indicators, as there is a fundamental trade-off between the possibility of including a survey in the pool processed under RuLIS and the degree of comparability of the information. As a rule of thumb, surveys were considered for processing only if they would allow computing a significant amount of indicators, with priority assigned to the cluster of income and productivity – and/or when the methodologies for computing certain pre-determined variables appeared comparable to those promoted within RuLIS. Pre-determined calculations were extensively used for certain variables, notably consumption and food consumption expenditure. Whenever this was available in a given survey dataset, the RuLIS team did not re-compute it.

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<sup>3</sup> Due to data availability, some indicators are only cross-tabulated with a limited set of qualifiers. This reduced cluster of qualifiers encompasses the following three qualifiers: share of income from agriculture, small-scale producers and urban and rural areas.

<sup>4</sup> In a nutshell, the *Proposed Methodology for Computing and Monitoring the Sustainable Development Goal Indicators 2.3.1 and 2.3.2* (FAO, n.d.c) proposes to define small-scale food producers as producers who:

- operate an amount of land falling in the first two quintiles (the bottom 40 percent) of the cumulative distribution of land size at national level (measured in hectares); and
- operate a number of livestock falling in the first two quintiles (the bottom 40 percent) of the cumulative distribution of the number of livestock per production unit at national level (measured in Tropical Livestock Units – TLUs); and
- obtain an annual economic revenue from agricultural activities falling in the first two quintiles (the bottom 40 percent) of the cumulative distribution of economic revenues from agricultural activities per production unit at national level (measured in Purchasing Power Parity Dollars). An additional absolute cap is applied for European and North American countries, to exclude producers earning a revenue higher than 34,387 Purchasing Power Parity Dollars per year.

The computation of indicators in RuLIS is organised in two steps. In the first step, a set of scripts and procedures are applied to the survey data for obtaining primary variables. These are vectors of  $n$  observations, one for each of the  $n$  households, and are assembled in a .csv file. Scripts and procedures in this first step are largely survey-specific; but useful for the final outlier detection procedure, which is homogeneously run on the variables derived from the surveys. In the second step, these variables are combined to obtain indicators. The RuLIS team is using Stata to generate the variables. Currently, the indicators are computed using R.<sup>5</sup> The R codes will also become available on the RuLIS website. The *do* files used to compute variables are partly made available to users via the website under the country documentation folders.<sup>6</sup> The RuLIS team is working to release Stata do-files for all surveys and all indicators.

The vast majority of indicators is developed by processing and analyzing household-based surveys. Other indicators, already available from other international data repositories; such as FAOSTAT and the World Bank, are also included in the pool of indicators. This type of indicators is only available at the national level.

The following notes at hand describe the concepts and definitions used for computing variables and indicators in each of the clusters.

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<sup>5</sup> The list of indicators, their labels and grouping, is reported in Annex 2, while the list of variables is reported under Annex 3.

<sup>6</sup> The list of surveys for which the do files are available as of December 2018 can be found in Annex 6.

# 1. Income and productivity

Total household income may be composed of income from wage employment (both agricultural and non-agricultural), self-employment, crop and livestock production, fishery and forestry activities, transfers, and other sources, such as non-labour earnings. RuLIS provides a comprehensive measure of household income, based on the resolution concerning household income and expenditures statistics adopted by the 17th International Conference of Labour Statisticians (ICLS). This includes information on the above mentioned different sources of income.<sup>7</sup> To enhance comparability, all monetary figures were first deflated to 2011 using the World Bank's consumer price index (CPI) and later on converted into constant 2011 international USD using the World Bank's PPP conversion factor.<sup>8</sup> This procedure has been applied within all clusters for monetary figures.

## Employee income – wages

Wages are employees' compensations received either in cash or kind from primary, secondary and any additional jobs held in a 12-month period, including benefits received from the employer.

## Income from self-employment

This component includes earnings from all household enterprises (including *non*-farm enterprises). It is a net figure that includes cash and in-kind earnings and non-durable expenditures for all household enterprises over a 12-month period. It should be noted that the first industry category for self-employment represents agricultural processing activities, which should be distinguished from agricultural production activities that come from crop and livestock activities described below. Further, when the information is available, total income is weighted by the share of the enterprise owned by the household, as non-farm enterprises may often be owned by more than one household.

## Income from on-farm activities

Household income from on-farm activities consists of incomes from crop production, livestock production, fisheries and aquaculture, and forestry activities. These components refer in fact to a *gross* income, which is defined as an operating surplus (i.e. revenues minus operating costs) without taking into account the depreciation of assets as such information is usually not available in household surveys. Moreover, due to difficulties in measuring taxes in a rural context, direct taxes or employment-related obligations are also not deducted from the calculation of income from on-farm activities.

## *Income from crop production*

*The total revenues from crop-related activities* are determined as the sum of i) revenues from crop production; ii) revenues from by-products production; and iii) revenues from sharecropping

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<sup>7</sup> “Income” in this context does not include proceedings from trading that involve no processing. This means that if a household buys or sells livestock for a livelihood during the course of the year or if it buys grain from other farmers immediately, post-harvest and then stores it, the corresponding income is not taken into account. Please see ILO (2003).

<sup>8</sup> CPI and PPP data are available from the Worldbank (n.d.a; n.d.b).

activities. Gross income from crop production is equal to the monetary value of the total quantity harvested minus operating costs and minus the monetary value of product wasted. In general, the value of the total quantity harvested is the value of all crop quantities used for different purposes, including those marketed (e.g. crop sold, bartered or provided as payments in kind to hired labour) and consumed (e.g. value of crop consumed by the household or retained for use in future production). Operating costs comprise all variable costs (payments in cash, all kinds of agricultural inputs, such as fertiliser and seeds, and occasional labour) and fixed costs (hired labour, land rent and technical assistance costs). Similarly, gross income from by-product production equals the total value of by-products produced, including all its market and own final uses, minus operating costs. Finally, revenues from sharecropping are added to crop income. Sharecropping activities refer to an agricultural system in which a landowner allows a tenant to use the land in return for a share of the land produces.

Table 1.1 reports all the components of income described above that are derived from crop-related activities, distinguishing revenues from costs. Part A refers to the revenues and costs of crop production strict sense, Part B relates to revenues and costs of by-products production, and Part C refers to revenues from sharecropping activities.<sup>9</sup> The approach is similar to the one proposed in the RIGA project, apart from a few details.

**Table 1.1** Crop production: revenues and costs

Revenues (+)	Costs(-)
<b>A. Crop production</b>	
Crop sold	Inputs paid in cash
Crop for own consumption	Land Rent
Crop used as feed	Technical assistance/extension costs
Crop stored	Crop saved for seed
Crop used for byproducts	Crop used for paying labour
Crop given as gift	Crop used for paying rent
Crop saved for seed	Crop used for paying inputs
Crop used for paying labour	Crop given out in sharecropping agreement (sharecrop out)
Crop used for paying rent	Crop wasted
Crop used for paying inputs	
Crop given out in sharecropping agreement (sharecrop out)	
Crop wasted	
<b>B. By-products production</b>	
By-product sold	Crop used for by-products
By-product used for barter or used for payment in kind	Total value of input purchased, comprise those reimbursed in kind
By-product used for own consumption	

<sup>9</sup> Taxes and deductions are normally not reported in household surveys. In several countries, and particularly for rural households, this may reflect reality, as most activities are conducted on an informal basis, and taxes are hardly applied on income of households.

By-product given as gift

### C. Sharecropping activities

Crop received in sharecropping agreements

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Some of the crop production can be used for own consumption of the household. When the agricultural module does not explicitly collect information on the quantity of production used for own consumption, the evaluation of this component can rely on two different approaches. The first approach uses the agricultural module of the survey. The total amount sold, bartered, or saved as an input is subtracted from the total amount harvested to obtain an estimate of the amount consumed by the households. The second approach determines own consumption of crop products from the food expenditure section of the questionnaire<sup>10</sup>. The two approaches are described in the RIGA project. In RuLIS, quantities from the production side are used whenever they are deemed more accurate, to avoid double counting between food stored and food consumed. Both methods apply a similar approach in the estimation of the monetary value of the quantities produced for own consumption.

When possible, crop sales are computed using the median unit values of every crop for the closest possible geographic and sample entities (e.g., enumeration area, district, region, or national). When a price questionnaire is available and unit values cannot be computed directly from sales, analysts were advised to resort to information from this source.

#### *Income from livestock*

*Total revenue from livestock activities* includes monetary values of i) Live animals; ii) Livestock products (tradable outputs, i.e. meat, skins, milk, eggs, honey etc.) and by-products (non-tradable outputs, i.e. dung/manure, draught power) production; and (when available) iii) Livestock stock variations. Gross income from livestock activities is equal to the sales of livestock heads minus purchases of livestock heads and the total value of additional cash expenditures incurred for obtaining livestock production, including hired labour, fodder, medicine, vaccinations, utensils, the monetary value of crops used as feed, and the costs of technical assistance.

The monetary value of production includes the value of the sales of products and by-products, plus livestock products own-consumed and by-products used to pay for reimbursements for land, labour (or any other services received and for reimbursements for inputs borrowed or acquired on credit), minus the total value of production expenditures, including land, labour, services received, payments for credit, additional input and transport.

The stock variation component can be computed as the difference between closing stocks (value of herds at the end of the year) and the initial stocks (value of herds at the beginning of the year). In principle, this component accounts for the change in the value of livestock due to a change in the herds' headcount or due to variations in the age and weight of the livestock heads. If the information on the number of animals and the household self-evaluated values in the final and

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<sup>10</sup> The same methods are applied for the estimation of monetary values of the own consumption of livestock products.

initial reference periods is available, it is used to estimate the final and initial values of stocks, multiplying the number by the corresponding price.

Most household survey questionnaires, however, are not designed to capture the change in value of livestock heads, but only their number, and do not record the initial and final values of the herd. Hence in several cases, it is impossible to account for the change of value of the stock properly, and the stock variation component is missing in the computation of income from livestock. Table 1.2 reports all the components of income described above that are derived from livestock activities.

**Table 1.2 Livestock: revenues and costs**

Revenues (+)	Costs(-)
<b>A. Live animals : change in the cash value of the stock at the average price</b>	
Livestock sold (alive)	Livestock bought
Livestock gifts given away	Livestock additional expenditures <sup>11</sup>
	Crop used as feed
	Technical assistance/extension costs
<b>B. Livestock products and by-products production</b>	
Livestock by-/products sold	Livestock by-/products additional expenditures
Livestock products self-consumed	Livestock by-/products pay away
Livestock by-products self-used [also a cost in crop, e.g. dung used as fertilisers]	Livestock by-/products credit away
Livestock by-/products pay away <sup>12</sup>	
Livestock by-/products credit away <sup>13</sup>	
<b>C. Livestock stock variation = Closing/End-of-Year value – Initial/Beginning-of-Year value (if available)</b>	

As for crop production, the monetary value of the own-consumed livestock products is important in the computation of livestock income. Where own consumption amounts are not explicitly reported in the questionnaire, the values of own consumption are estimated using the same methods as described in the section on income from crop production.

### *Income from fisheries*

Revenues from fisheries are the sum of amounts received from catching, processing and trading activities and the rental of fishery tools excluding the net expenditures related to fishery activities. Gross income from fish catching and processing activities equals the monetary value of all fresh and processed fish for market and final consumption utilisation, minus operating costs. Gross income from fish trading is the income from selling in wholesale or retail fresh or processed fish bought from others, net from purchase expenditures and other operating costs. Table 1.3 describes the revenues and the costs for different components of fisheries.

<sup>11</sup> Total value of additional cash expenditures on hired labour [1], fodder[2], medicine[3], vaccination[4], utensils[5].

<sup>12</sup> Total value of reimbursements for land, labour or any other services received.

<sup>13</sup> Total value of reimbursements for inputs borrowed or acquired on credit.



**Table 1.3** Fisheries: revenues and costs

Revenues (+)	Costs (-)
<b>A. Fish-catching and processing activities</b>	
Captured fresh fish sold	Fishing gear expenditures
Captured processed fish sold	Hired labour expenditures
Captured fresh fish for own consumption	
Captured processed fish for own consumption	
<b>B. Trading activities</b>	
Traded fresh fish sold	Fresh fish purchases
Traded processed fish sold	Processed fish purchases
	Other related costs
<b>C. Rental of fishery gears</b>	

### *Income from forestry*

Forestry activities can be a major source of income. However, only few surveys collect information on forestry activities. When data is available, RuLIS computes income from forestry activities in a separate section. The methodology for income from forestry follows the general principles presented in the other sections taking into account cash and in-kind revenues minus operating costs. The possible revenues and the costs from forestry activities are presented in Table 1.4.

**Table 1.4** Forestry revenues and costs

Revenues (+)	Costs (-)
Income from forestry production	Input costs (seedlings, fertilisers, hired labour, etc.)
Income from forestry services	Machine rental costs
	Land rental costs
	Other related costs

### **Income from transfers**

This income component accounts for private and public transfers received by the household, both cash and in-kind. The definition of transfer income and the construction of its components are based on the RIGA methodology according to which private transfers refer to:

- Incoming remittances,
- Benefits from private organisations and/or associations and
- Gifts and contributions not associated with the performance of a job or the provision of a service.

According to the same methodology, public transfers are divided into:

- State-funded pensions and,

- Social benefits, which include welfare support, maternity benefits, and educational transfers.<sup>14</sup>

### Other sources of income

Other sources of income include non-labour income components that do not fall into the previous categories described above. The most important sources are: a) rent derived from land, real estate and owned assets, and b) any other unspecified source of income included in the survey questionnaire.

### Income shares

Although conceptually straightforward, the calculation of the shares of income from various sources is complicated by the presence of negative values in economic activities, where income is measured as a difference between revenues and costs. Negative values are meaningful from a conceptual point of view, as they imply a net loss for the household in the year of the survey. Therefore, they are retained in the calculation of the indicators.

There are, moreover, few cases in the dataset where negative values may appear in the mean of the shares for a group of household. This may typically arise in cases where some households have a negative income that is explained by a loss from a certain activity. These households that cause shares to be negative or bigger than one are not considered in the computation of the respective indicator.

### Income diversity

RuLIS uses the Herfindahl's concentration index to measure the degree of income concentration in the households. This index, which is commonly used to measure market concentration, is computed as follows:

$$HHI_i = \sum_{j=1}^n s_j^2$$

where  $HHI_i$  represents the Herfindahl index of activity  $i$  and  $s_j$  is the share of income from items  $j$  in total income from activity  $i$ . The index will, therefore, take a value between 0 and 1. The closer  $HHI_i$  is to 1, the higher the concentration is. The closer  $HHI_i$  is to 0, the more diversified is the household income.

The Herfindahl index for income is calculated by summing the squares of the share of incomes from different sources. Specifically, income from crop activities, income from livestock, other income from agriculture (forestry or fishery, if available), agricultural wages, non-agricultural wages, income from self-employment, transfers and other income sources are used in the calculation of this index.

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<sup>14</sup> Pensions and social benefits do not include benefits received from employers as those are reported under the wage employment component.

## Indicators

The value of production is defined as the total revenues from crop-, livestock-, fisheries- and forestry-related activities described in Tables 1.1 to 1.4. As an adequate measure of family and hired labour is not available for livestock activities, RuLIS provides the value of production per hectare and per labour day only for cropping activities. However, most surveys do not provide good information on crop labour measured in hours. Therefore, RuLIS provides the value of agricultural output per labour day, including family labour, hired labour and exchange labour depending on the availability of this information in the crop module of the survey questionnaire.

In addition to the median income from on-farm activities, RuLIS provides information on the average income from agriculture and on the average daily wage of paid employees in the agricultural sector. The employees with a low pay rate in agriculture aim to capture the percentage of employees that are working for low wages in the agricultural sector. It is defined as the percentage of employees whose annual earnings in agriculture is less than two-thirds (66 percent) of the median annual earnings of all employees in agriculture.

The list of indicators on income and productivity is as follows. The indicators extracted from existing international data repositories are presented in *italics*:

1. Agricultural income (livestock, crop, fishery, forestry, ag wage), share of total income (%);
2. Non-agricultural income, share of total income (%);
3. On-farm income (livestock, crop, fishery, forestry), share of total income (%);
4. Median income from farm activities, PPP (constant 2011 international USD);
5. Agricultural wage, share of total income (%);
6. Average daily income per capita, PPP (constant 2011 international USD);
7. Transfers (public and private) as a share of total income (%);
8. Concentration index (Herfindahl) of total income (real number);
9. Agricultural output per labour day, PPP (constant 2011 international USD);
10. Value of agricultural production sold at the market, share of total value of agricultural production (%);
11. Value of crop used for own consumption, share of total value of crop production (%);
12. Value of production per hectare/year, PPP (constant 2011 international USD);
13. Average annual income from agriculture, PPP (constant 2011 international USD);
14. Average daily wage in agriculture, PPP (constant 2011 international USD);
15. Low pay rate in agriculture (%);
16. *(National, WDI data) - Agriculture, forestry, and fishing, value added per worker (constant 2000 USD);*
17. *(National, WDI data) - Agriculture, value added (percent of GDP);*
18. *(National, WDI data) - Agriculture, value added (annual % growth).*

## 2. Poverty and inequality

To date, close to 800 million people around the world live in extreme poverty and are struggling to make their living (UN, n.d.a). Poverty may be marked by hunger, malnutrition, limited access to health and education services and social exclusion.

International poverty welfare aggregates (and poverty lines), however, are not adjusted for rural/urban differences in the cost of living and are applied to a spatially unadjusted aggregate. This makes it difficult to compute standard poverty measures for rural and urban areas and to classify households as poor and non-poor using the international poverty lines – such as those set by the World Bank at USD 1.9 PPP/day and USD 3.2 PPP/day. Such classification may likely lead to biases in the estimation of poverty in rural and urban areas. Therefore, adjusted poverty lines for urban and rural areas were computed in the past (Ravallion *et al.*, 2007; World Bank, 2007), essentially through adjustments for the higher cost of living faced by households in urban areas.<sup>15</sup> However, no similar effort could be undertaken in the current framework of RuLIS. For this reason, poverty gaps and headcounts at the international poverty lines are reported at the national level only, from the World Development Indicators dataset of the World Bank.

At the same time, work is underway to strengthen the conceptualization and the measurement of poverty in rural (as opposed to urban) areas<sup>16</sup>. In the meanwhile RuLIS is computing only a limited set of poverty indicators, which are likely to be less biased by the heterogeneity in the definition of rural areas. This include, among others, the Engel ratio – share of food expenditure in total expenditure – and the share of working poor in total employment<sup>17</sup>.

On inequality, RuLIS provides the per capita income and per capita expenditures disparity between rural and urban areas. A Gini coefficient of per capita expenditure is calculated for measuring inequality. A Gini coefficient of 1 (or 100%) corresponds to maximal inequality and a coefficient of 0 to maximal equality.

The list of indicators on poverty and inequality is presented below. The indicators extracted from existing international data repositories are presented in *italics*:

1. Engel's ratio (annual food expenditures over annual total expenditures) (%);
2. Gini coefficient for per capita expenditure (real number);

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<sup>15</sup> The poverty lines of USD 1.08 and USD 2.15 a day, measured in 1993 purchasing power parity (PPP) were adjusted for the higher cost of living in urban areas. As a result, estimates of global poverty were by about 10 percent higher than previous estimates (World Bank, 2007).

<sup>16</sup> RuLIS team has processed a variable called poor-dev in the datasets that corresponds to the societal poverty line based on a recent research undertaken at the World Bank proposes a national poverty threshold of USD 1 + half of the median value of per capita expenditure in the country (Jolliffe and Prydz, 2017). This parametrization reflects a 'typical national poverty line', given the level of income. The intercept is 1 USD, which can be considered as a minimum average consumption threshold when income is equal to zero. RuLIS team is also planning upcoming work on multidimensional poverty in rural areas.

<sup>17</sup> The share of working poor in total employment measures the share of persons who, despite being in employment, live in a poor household. A person is considered poor if his or her consumption falls below the national poverty line reported by the World Bank.

3. Working poor, share of total employment, ages 15 and above (%);
4. Mean log deviation of income (real number);
5. Per capita expenditure disparity between urban and rural areas, urban to rural ratio (real number);
6. Per capita income disparity between urban and rural areas, urban to rural ratio (real number);
7. Per capita expenditure disparity between households with and without emigrants, ratio of average total expenditure in the two groups (real number);
8. *(National, WDI data) - Poverty gap at national poverty lines (%)*;
9. *(National, WDI data) - Poverty headcount ratio at national poverty lines (% of population)*.
10. *(National, WDI data) - Poverty headcount ratio at USD 1.90 a day (2011 PPP) (% of population)*;
11. *(National, WDI data) - Poverty gap at USD 1.90 a day (2011 PPP) (%)*;
12. *(National, PovcalNet data) - Poverty headcount ratio at USD 3.20 a day (2011 PPP) (% of population)*;
13. *(National, PovcalNet data) - Poverty gap at USD 3.20 a day (2011 PPP) (%)*.

### 3. Employment and education

Employment is a central component of livelihoods in rural areas. Moreover, information on a person's health and educational status complement the picture of a person's well being.

#### Employment

The concepts of employment and unemployment adopted in RuLIS are based on the resolution of the 13<sup>th</sup> International Conference of Labour Statisticians (ICLS) in October 1982 (ILO, 1982). According to this resolution, the concept of employment refers to “*all persons above a specified age who during a specified brief period, either one week or one day, were in the following categories: a) paid employment (whether at work or with a job but not at work); or b) self-employment (whether at work or with an enterprise but not at work). Temporary absence from work includes reasons such as illness, maternity and parental leave, holiday, training, and industrial disputes*”.

In October 2013, the 19th International Conference of Labour Statisticians adopted a new resolution on the statistics of work, employment and labour underutilization (ILO, 2013). This identifies five forms of work, which are expected to be measured separately to meet different objectives. Accordingly, persons engaged in the production of goods, *mainly or exclusively intended for own final use by the household or family* —e.g. production and processing of goods from agriculture, fishing, and hunting and gathering— are no longer considered to be in employment, and are measured separately as a form of work. Employment refers to work performed for others in exchange *for pay or profit*. This new standard, however, will be consolidated in household-based surveys in the coming years. For this reason, information found in the currently available surveys is still based on the old definition of employment. Thus, for now RuLIS adopts only the old standard of the 13<sup>th</sup> International Conference of Labour Statisticians.

Further international standards and classifications such as the ICSE 93 (International Classification by Status in Employment) and the ISIC (International Standard Industrial Classification of all economic activities) classification are used in the computation of indicators providing information on the labour market.

According to ICSE-93 (ILO, 1993), the indicator of status in employment distinguishes between two categories of total employed: a) wage and salaried workers (also known as employees) and b) self-employed workers.

- a) Employees are workers who hold a paid employment job. Paid employment jobs are those jobs where the incumbents hold explicit or implicit employment contracts which give them a basic remuneration and this remuneration is independent of the revenue of the unit for which they work.
- b) Self-employment jobs are those jobs where the remuneration is directly dependent upon the profits derived from the goods and services produced. Self-employment jobs can be performed with or without employees. The subcategories of the self-employed are:
  - b.1 Employers who have engaged, on a continuous basis, one or more persons to work for them as employee(s).
  - b.2 Own-account workers who have not engaged any employees to work for them.

- b.3 Members of producers' cooperatives who are workers of a cooperative producing goods and services.
- b.4 The contributing family workers who work in a market-oriented establishment operated by a related person living in the same household.

The International Standard Industrial Classification of All Economic Activities (ISIC) classifies entities on the basis of the activity they carry out.<sup>18</sup> The ISIC revision used in the classification of industries for surveys included in RuLIS is chosen by taking into account the year of the survey; that is, the latest version of the ISIC but needs to be confirmed by the survey documentation.

Indicators on labour input are expressed in number of days, as surveys typically provide information on labour days for different activities. Only a limited number of surveys contain information on hours worked: Even though this would capture labour input more accurately, the number of countries for which RuLIS could provide such information would be very few. Additionally, recalling the average number of days worked instead of hours is typically more accurate.

## Education

In this domain RuLIS provides data on youth that are neither in employment, nor in education or training (NEET), and the literacy rate of the adult population. These two indicators are among the most frequently available in the pool of surveys. They monitor the educational attainment of the youth who are not in employment, and the share of persons who can read and write a simple statement.

## Indicators

The employment-to-population ratio is defined as the percentage of employed persons in the working age population (ILO 2015). A high ratio indicates that a significant proportion of a country's population is employed, while a low ratio means that a large share of the population is not involved directly in market-related activities because they are either unemployed or outside the labour force.

Following the identification of persons in employment, the share of the population working in agriculture is computed using the ISIC classification and disaggregated by gender as well as for 15-24 years old.

Persons in employment are further disaggregated by status in employment using the ICSE classification. Accordingly, the share of employees, self-employed and own-account workers with contributing family workers working in agriculture is computed in RuLIS.

The NEET share captures young people who are inactive for reasons other than participation in education and young people who are unemployed. The indicator is calculated for the population aged 15-24 years.

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<sup>18</sup> For full details on different revisions and links to crosswalks between previous revisions, please see UN (n.d.b).

The literacy rate is the percentage of people 15 years and above who can read and write with understanding, a simple statement about his/her everyday life.

The list of indicators included within the cluster Employment and Education is presented below. The last indicator that is presented in *italics* in the list below is extracted from existing international data repositories:

1. Employment in agriculture, ages 15+ (% of total employment);
2. Employment in agriculture, ages 15-24 (% of total employment);
3. Self-employed in agriculture, share of total employment in agriculture (%);
4. Employees in agriculture, share of total employment in agriculture (%);
5. Own-account and contributing family workers, share of total employment in agriculture (%);
6. Children employed in agriculture, 5-11 years old (% of total children in employment, aged 5-11);
7. Children employed in agriculture, 12-14 years old (% of total children in employment, aged 12-14);
8. Children employed in agriculture, 15-17 years old (% of total children in employment, aged 15-17);
9. NEET, youth neither in employment nor in education or vocational training, share of total youth ages 15-24 (%);
10. Employment-to-population ratio, ages 15+ (%);
11. Share of family labour input in total labour input for cropping activities (%);
12. Share of female family labour input in total family labour input for cropping activities, ages 15+ (%);
13. Share of hired non-family labour input in total labour input for cropping activities (%);
14. Share of children input in total family labour input for cropping activities, ages lower than 15 (%);
15. Adult literacy rate, ages 15+ (%);
16. *(National, WDI data) - Employment in agriculture (% of total employment);*
17. *(National, UNDP data) - Mean years of schooling of adults (years).*



## 4. Social protection

Social protection programmes aim at preventing or alleviating poverty, vulnerability and social exclusion. The UN Social Protection Floor Initiative (SPF-I) identifies two core sets of social security guarantees (ILO and WHO, 2009):

- a set of basic social transfers, both in cash and in kind, paid to the poor and vulnerable to enhance food security and nutrition, to ensure a minimum income security and access to essential services including education and health care, and;
- a set of basic services that ensures the availability, continuity and access to public services in some areas such as health, water and sanitation, education, food security, housing and other, identified according to national priorities.

The social protection indicators computed for RuLIS follow the methodology of the World Bank's ASPIRE Project (Aspire Program Classification, n.d.). This includes both public and non-public transfers, also referred to as "formal" and "informal" Social Protection<sup>19</sup> (SP).

The various types of public (or formal) transfer programmes are classified into two macro groups: *Social Insurance and Social Assistance*. On the other hand, the non-public (mostly informal) transfer programmes are also classified into two different groups: *domestic remittances, income and support from charities; and remittances from abroad*. Following the ASPIRE classification, in RuLIS the private transfers correspond to the sum of domestic private transfers and remittances from abroad. However, the labour market social protection measures that are part of the social protection in ASPIRE are not captured in RuLIS due to the non-availability of such data in most of the processed surveys.

To make the social protection indicators comparable across countries, the following criteria are applied to build social protection aggregates:

- aggregates are built at the *household level* and,
- aggregates are computed on an *annual basis*.

Data on Social Protection transfers are usually collected in different modules of the household questionnaires, while remittances - and especially international remittances - are collected either in a separate module or in a sub-section of the Migration module.

Data on Social Assistance (e.g. Free maize, Food/Cash-for-Work programme, School feeding programmes, etc) and Social Insurance (e.g. Pension Income), are included in a specific module, usually called "Social Transfers", "Social Assistance" or "Other Incomes". In many cases, programmes such as subsidised agricultural inputs and vouchers used for example for seeds and fertilisers do not have clear social component and are therefore excluded from the computation of social assistance programmes.

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<sup>19</sup> The literature often refers to this distinction as formal vs informal social protection. Given the available data in household surveys, the two classifications (public/non-public and formal/informal), although conceptually different, are considered equivalent.

In several surveys, social protection transfers are reported regarding the amount received by the household in a reference period. If the information on the reference period is missing in the data, the assumption is made that the amount collected by the interviewer refers to a one year period. This assumption, however, is only used in the absence of any relevant information about the particular programme. Moreover, in the absence of information on the amount transferred, these observations are excluded from the computation. To ensure cross-country comparability, values are converted using Purchasing Power Parity (PPP) factors in constant 2011 international USD.

For in-kind transfers (e.g. kilogram of free maize received, food for work programme, free food), it is necessary to convert physical amounts into monetary values. Usually, each questionnaire asks the respondent to report the cash value of the transfer. In case there are some cash values missing, but quantities are given, missing values are imputed using the median of the values reported by other respondents. If the questionnaire does not include any cash value, missing values are imputed by using either external sources or microdata available in the food consumption section of the household questionnaire.

Once all the amounts are reported in the same unit of measurement and reference period, values are aggregated at the household level according to the classification criteria as described above.

Indicators are computed in terms of:

- average transfer value: per capita amount received by the beneficiary households per year (in PPP, constant 2011 USD)
- coverage: share of population that receives any kind of transfer;
- Share: transfer amount received by a group as a share of total household income.

The list of indicators is as follows:

1. Average per capita transfer - International remittances (PPP constant 2011 int. USD), annual;
2. Average per capita transfer - Private domestic transfer (PPP constant 2011 int. USD), annual;
3. Average per capita transfer - Social assistance (PPP constant 2011 int. USD), annual;
4. Average per capita transfer - Social insurance per capita (PPP constant 2011 int. USD), annual;
5. Population receiving international remittances, share of total population (%);
6. Population receiving domestic private transfers, share of total population (%);
7. Population receiving social assistance, share of total population (%);
8. Population receiving social insurance, share of total population (%);
9. Share of international remittances in total income (%);
10. Share of domestic private transfers in total income (%);
11. Share of social assistance in total income (%);
12. Share of social insurance in total income (%).

## 5. Land

Land and other natural resources are fundamental components of livelihoods in rural areas. Access to adequate agricultural land, water for irrigation and forests for wood can be important prerequisites for achieving food security in rural areas. The average size of managed land, the distribution of ownership and the availability of irrigation systems are therefore all critical pieces of information to investigate rural livelihoods.

**Arable land**<sup>20</sup> is the sum of the land that is used for temporary crops, temporary meadows for mowing or pasture (i.e. land used temporarily to grow herbaceous forage crops, either cultivated or growing wild), land under market or kitchen gardens and land temporarily (less than five years) fallow. The abandoned land resulting from shifting cultivation is not included in this category. It is important to note that data on arable land are not meant to indicate the total amount of land that is potentially cultivable by the holding. The **cultivated area** is determined by subtracting the land temporarily left fallow from the arable land. The **cropland** is the sum of the arable land and the land under permanent crop cultivation.

The Gini coefficient measures inequality or concentration in a distribution, in this case of crop land. It is defined as a ratio with values between 0 and 1, where 0 corresponds to perfect equality and 1 to perfect inequality.

When data is collected and available at the parcel or plot level, intermediate variables are constructed by aggregating parcel-level data. These variables allow to obtain the size of different types of lands and give information on the ownership. The average size of the different type of land is computed at the household level and presented in hectares.

The full list of indicators covered within this cluster is reported below: The last indicator that is presented in *italics* in the list below is extracted from existing international data repositories:

1. Average cropland (ha);
2. Average arable land (ha);
3. Average size of household farm (ha);
4. Average cultivated land area (ha);
5. Average permanent meadows and pastures (ha);
6. Gini coefficient of cultivated land (real number);
7. Land area owned, share of total farm area (%);
8. Share of landowners in total population (%);
9. Household land area owned by men only, share of household owned land (%);
10. Household land area owned by women only, share of household owned land (%);
11. Household land area owned jointly by women and men, share of household owned land (%);
12. *(National, WDI data) - Adjusted savings: net forest depletion (% of GNI).*

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<sup>20</sup> The definitions used in this cluster are taken from FAOSTAT.

### *Gender-sensitive indicators for land*

Agricultural land<sup>21</sup> is one of the most critical assets for which gender-based disparities are to be considered as it provides rural households with the basic means of subsistence and market production. Much agricultural policy, however, fails to recognise the differences in resources available to men and women. Improvements in the quality and availability of gender-relevant information and analysis are therefore required to enable policy makers to make gender-aware decisions about the sector (FAO, 2011a).

RuLIS provides a set of gender-sensitive indicators<sup>22</sup> for land in two categories:

1. Distribution of landownership (agricultural land owned by female/male over total land owned by the household \* 100);
2. Incidence of landownership (female/male agricultural landowners over female/male adult population \* 100).

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<sup>21</sup> FAO is the custodian agency for the SDG indicator 5.a.1 that measures the extent of women's disadvantages in ownership of and rights to agricultural land (FAO, n.d.d). RuLIS is also being considered to feed into the SDG 5.a.1 in a near future.

<sup>22</sup> A complete set of gender and land indicators is disseminated through the FAO (n.d.e) Gender and Land Right Data Base.

## 6. Livestock

Owning livestock in developing countries has several important features. First, it is a primary source of income, regarding marketed and consumed food and other products and services (e.g. manure, animal power). Second, the livestock is seen as an investment and can, therefore, be an important symbol of social status.

To obtain herd/flock size, RuLIS provides the average Tropical Livestock Unit (TLUs) owned by livestock keeping farms at the time of the interview. One TLU is the metabolic weight equivalent of one cattle in North America; the conversion factors can be found in the FAO (2011b) Guidelines for the Preparation of Livestock Sector Reviews. RuLIS also computes indicators on the share of households owning the following species: large ruminants, small ruminants, poultry, pigs and equine.

To capture access to animal health services, RuLIS computes the share of livestock farms that have at least one animal vaccinated, and the share of households that used veterinary services in the last 12 months. Vaccination is more often asked directly in the livestock module of the questionnaires, in terms of either the number of animals vaccinated or whether at least one animal owned by the household was vaccinated. Households covered by veterinary services are identified from the medical expenditures reported in the livestock module of the survey.

Indicators within this cluster are as follows:

1. Average tropical livestock units owned by farm households (TLU);
2. Share of livestock farm households owning large ruminants (%);
3. Share of livestock farm households owning equine (%);
4. Share of livestock farm households owning small ruminants (%);
5. Share of livestock farm households owning poultry (%);
6. Share of livestock farm households owning pigs (%);
7. Share of livestock farm households with at least one animal vaccinated (%);
8. Share of livestock farm households covered by veterinarians or paraprofessionals (%);
9. Landless livestock households, share of total livestock households (%).

## 7. Inputs, technology and credit

Access to credit is a key input in household's livelihoods. The average amount of credit obtained by the household is included in RuLIS and expressed in constant 2011 USD.

Enhanced access to technology, inputs and markets help smallholders - and farmers in general – to increase their income and overall food security (Bitzer, 2012). In many developing countries, rural development is hampered by the use of inadequate/inappropriate technologies and poor access to input and product markets (Asenso-Okyere *et al.*, 2008). Indicators of knowledge assets help policy makers to better target rural development policies aiming at filling this gap. The indicators in this section aim at capturing the level of technology and the access to improved inputs.

Most of the indicators on inputs were derived from the agricultural questionnaire, particularly those concerning the use of improved seeds, inorganic fertilisers, chemicals, or the adoption of irrigation schemes. For chemicals, fertilisers, seeds and irrigation, shares were calculated by the total number of crop farms – i.e. excluding households who did not fill the agricultural questionnaire and those who are only involved in livestock rearing.

The indicators included in this cluster are listed below:

1. Households using improved seeds, share of crop farm households (%);
2. Households trained in use of improved inputs, share of crop farm households (%);
3. Households using chemicals, share of crop farm households (%);
4. Households using inorganic fertilizers, share of crop farm households (%);
5. Households using agricultural mechanical equipment (owned or rented), share of total farm households (%);
6. Households with access to agricultural production training or extension, share of total farm households (%);
7. Crop farm households with irrigation systems, share of total crop farm households (%);
8. Irrigated crop land, share of total crop land (%);
9. Average amount of credit obtained by household over the year, PPP (constant 2011 international USD).

## 8. Infrastructure and services

Household's access to basic services such as the health care system, educational institutions and electricity plays a crucial role in the reduction of income poverty. The role of these amenities becomes even more important in developing countries where the majority of the population lives in rural areas. Therefore, RuLIS provides indicators on the access to those services and the distance to a given type of facility.

The indicators that are calculated under this cluster look in detail to the accessibility of certain infrastructures at the household level that could be considered as a proxy for health as well as hygienic conditions of the household. Therefore, the shares of the population who have access to piped water, to the internet, and to a mobile phone are computed. The share of households with access to electricity and the share of the population with access to improved sanitation are extracted from existing international data repositories. Improved sanitation facilities are likely to ensure hygienic separation of human excreta from human contact. They include flush/pour flush (to piped sewer system, septic tank, pit latrine), ventilated improved pit (VIP) latrine, pit latrine with slab, and composting toilet (World Development Indicators, n.d). The average annual household expenditures on energy are calculated to estimate the cost of a basic service such as electricity. Moreover, the shares of the population who do not have any health facilities or any school within five kilometres of their household are calculated using the relevant questions from the household questionnaire. For the share of the population with access to improved sanitation facilities, the definition used is taken from the World Development Indicators. Finally, the percentage of the population who lives in their owned dwelling is computed as well as the construction type and characteristics of people's housing such as the number of rooms per person, non-dirt floor and a solid roof.

The list of indicators within this cluster is as follows:

1. Average ann. household expenditures on energy, share of total household expenditures (%);
2. Population that lives more than 5 km from health facilities, share of total population (%);
3. Population that lives more than 5 km from primary school, share of total population (%);
4. Population that lives more than 5 km from secondary school, share of total population (%);
5. Population with access to internet, share of total population (%);
6. Population with access to mobile telephone, share of total population (%);
7. Average number of rooms per person (real number);
8. Population living in owned dwelling, share of total population (%);
9. Population living in a dwelling with a non-dirt floor, share of total population (%);
10. Population living in a dwelling with a solid roof, share of total population (%);
11. Population with piped water access in the dwelling, share of total population (%);
12. *(National, WDI data) - Households with access to electricity, share of total households (%);*
13. *(National, WDI data) - Population with access to improved sanitation, share of total population (%).*

## 9. Shocks and migration

The frequency and severity of shocks and disasters have been significantly increasing over the past decades. Poor rural communities are particularly vulnerable to natural hazards and weather-related shocks (e.g. drought, floods hurricanes, tsunamis, earthquakes), as well as market volatility and food chain crises. Between 2003 and 2013, 22 percent of the total damage and loss caused by natural hazards in developing countries occurred in the agricultural sector (FAO, 2015).

Simultaneously, migration has recently emerged as one of the most debated issues in the development agenda. As a matter of fact, migration is a fundamental component of the development process. While economies undergo structural transformation and the agricultural sector becomes relatively smaller, the movement of people within and across countries is inevitable. Furthermore, migration represents a major livelihood strategy in rural areas. It is often conceived as a last resort option when there seems to be no other viable strategy to move out of poverty. Therefore, RuLIS includes indicators on shocks and migration.

In line with UNISDR terminology on disaster risk reduction, shocks are defined as serious disruptions of the functioning of a community or a society at any level, caused by hazardous events or disasters of various type, scale, duration and severity, leading to one or more of the following: human, material, economic and environmental losses and impacts.

Weather and geophysical shocks are predominantly associated with natural processes, weather and climate-related phenomena. These include:

*Hydro-meteorological shocks* of atmospheric, hydrological or oceanographic origin; examples are tropical cyclones (also known as typhoons and hurricanes), floods and flash floods, drought, heatwaves and cold spells, coastal storm surges, etc.

*Geophysical shocks* originate from internal earth processes; examples are earthquakes, volcanic activity and emissions, and related geophysical processes such as mass movements, landslides, rockslides, surface collapses and debris or mud flows.

*Environmental shocks* may include chemical, natural and biological hazards. They can be created by environmental degradation or physical or chemical pollution in the air, water and soil.

Market shocks are defined as events that produce unforeseen and significant changes within the local economy, impacting supply and/or demand throughout the markets; market shocks can take a variety of forms, including unforeseen increases or drops in the price of food items, as well as increases or drops in the price of agricultural inputs and outputs. Shocks can also take the form of sudden interrupted availability of inputs or outputs, which corresponds to prices becoming infinite. This type of shocks are arguably even more problematic than the others, but much harder to report and measure.

Crop and livestock disease-related shocks are shocks of organic origin or conveyed by biological vectors, which affect either livestock or crops causing significant losses to farmers and threatening



food security. Examples are bacteria, viruses or parasites, locusts, armyworms, fruit flies, various crop diseases (such as banana disease, cassava disease, wheat rust), etc.

Data needed to compute shocks-related variables can generally be found in the “Shocks” module of the household questionnaire.

Despite the increasing centrality of migration in the global economy, data on this topic is still limited. Efforts to measure and characterise internal and international migration have not been harmonised, limiting the scope and quality of policy research on the subject. The difficulty of measuring migration is reflected in the lack of a consistent definition of migration across countries. Household surveys would potentially be the optimal tool to assess the microeconomic linkages between migration and other characteristics of households’ livelihoods and outcomes that other data sources fail to capture. However, in practice, existing household surveys rarely include questions allowing to study migration and its determinants from the country of origin. To the extent possible, RuLIS includes information on the following topics:

- Incidence of internal and international migration;
- Economic condition disparity of households with and without migrants;
- The Incidence of households with people that were born in a different country compared to the one of current residence.

Taking into consideration the limitations discussed above, indicators on out-migration are included in RuLIS whenever data are available.

In particular, migrants are identified with all those household members that, at the moment of the interview, are living outside the household in an area located in a region or country different from the permanent residence of the household.

Other relevant concepts were defined as follows:

- Labour migration: migration of people for work-related reasons;
- Foreign born population: people born in a place different from the country of origin.

The complete list of shocks-related and migration-related indicators is as follows:

1. Share of total households that experienced market shocks (%);
2. Share of total households that experienced weather and geophysical shocks (%);
3. Share of total households that experienced crop or livestock disease-related shocks (%);
4. Households in which members' dietary patterns changed due to shocks, share of total households affected by shocks (%);
5. Households in which members migrated due to shocks, share of total households affected by shocks (%);
6. Households in which members took on more farm or non-farm (wage- or self-) employment due to shocks, share of total households affected by shocks (%);
7. Households with emigrants who moved abroad for work-related reasons, share of total households with international emigrants (%);
8. Households with emigrants who moved internally for work-related reasons, share of total households with internal emigrants (%);

9. Share of total households with at least one foreign born member (%);
10. Share of total households with emigrants who moved abroad (%);
11. Share of total households with emigrants who moved internally (%).

## 10. Sample characteristics

The objective of this cluster is to give details on the household characteristics as well as on the typology of households.

Therefore, it is important to define smallholder farms, crop farm households and livestock households. The crop farm households, as well as livestock households, are defined straightforwardly. If the household is involved in any crop or any livestock activity, then this household is defined as crop farm household or livestock farm household respectively. Small-scale agricultural producers, however, are identified on the basis of the definition proposed by FAO for measuring the Sustainable Development Goals Indicators 2.3.1 (Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size) and 2.3.2 (Average income of small-scale food producers, by sex and indigenous status). That definition entails the combined use of physical variables (operated land, livestock TLUs) and revenues from agricultural activity. Small-scale producers are those falling in the bottom 40 percent of the cumulated frequency distribution of all the three variables; or, in other words, those falling in the intersection of the three criteria, whereas the cumulative distribution of economic revenues from agricultural activities per production unit at national level (measured in PPP Dollars) should not exceed 34,387 PPP Dollars.

To measure the importance of agriculture for the household wealth, the income from agricultural activities (crop, livestock, forestry, fishery, and agricultural wage) is measured as a share of total income. An indicator is reported for those who have at least 30 percent of their income from agriculture and for those who have less than 30 percent of their income from this component. Moreover, RuLIS reports an indicator for the share of households who have no income from agriculture.

To describe the sex-composition of the households, the following three groups are identified: those including only female adults, those including only male adults, and those with both male and female adults<sup>23</sup>. The age of 18 is considered as a boundary for being considered “adult”.

Finally, it must be noted that the definition of households can vary significantly among countries, areas and surveys, and that different definitions have been proven to bear significant effects on the results of surveys, which can potentially undermine the comparability of results (Beaman and Dillon, 2010). The information pooled in RuLIS may inevitably suffer from this limitation.

Some of the surveys processed within RuLIS include a community questionnaire, which provides information on the availability of rural infrastructure, services and insights on the extent of social capital of the surveyed communities. The added value of community-level data – gathered by interviewing key informants – lies in the possibility of analysing formal and informal member-based organisations (MBOs<sup>24</sup>), rural institutions, infrastructure and services that can hardly be

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<sup>23</sup> Following the expert consultation held in November 2016, this approach was adopted as an alternative to the concept of “headship”: In the previous version of the data set households were divided into male-headed and female-headed. The notion of “head” was questioned by recent survey-based evidence, indicating that it can be used to designate quite different functions depending on the country and the context.

<sup>24</sup> Member-Based Organizations include Agricultural Cooperatives, Farmers and Women’s Groups, and Credit & Saving Groups.

captured by simply asking the household members and hence are not part of the household questionnaire. Community profiles can then be drawn, providing insightful details on the local context in which households live and operate.

However, the definition of community adopted in the different household surveys does not necessarily correspond to the sociological definition of a “community”. In many cases the community coincides with the enumeration areas of the census or with the village/city surrounding the enumeration area where most of the surveyed households declare they live in.

RuLIS focuses mainly on collective action; social capital indicators do not capture the purpose of the collective action, but they serve as a proxy of the civic/community engagement and the density of organisations/groups. More specifically, RuLIS measures the existence of farmer’s groups, as well as the extent of saving & credit groups operating in the community.

In many surveys community-level indicators only refer to the sample of surveyed communities and there are no community weights that can be used to expand the results to the population.

The list of all indicators is as follows:

1. Total number of households in the country (real number);
2. Total number of households in the sample (real number);
3. Households with male and female adults, share of total households (%);
4. Households with only female adults, share of total households (%);
5. Households with only male adults, share of total households (%);
6. Females to male ratio in member-based organizations/groups (real number);
7. Crop farm households, share of total farm households (%);
8. Livestock farm households, share of total farm households (%);
9. Small-scale food producers, share of total agricultural households (%);
10. Non-small-scale food producers, share of total agricultural households (%);
11. Households with no income from agriculture, share of total households (%);
12. Households with income from agriculture lower than 30% of their total income, share of total households (%);
13. Households with income from agriculture equal to or greater than 30% of their total income, share of total households (%);
14. Total number of individuals in the sample (real number);
15. Communities with farm producers organizations, share of total communities (%);
16. Communities with savings and credit groups, share of total communities (%);
17. *(National, FAOSTAT) - Population (share of total population).*

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## Annex 1. List of surveys processed (as of December 2018)

Country	Name of the survey	Year	Institution
Albania	Living Standard Measurement Survey	2005	Institute of Statistics of Albania (INSTAT)
Armenia	Integrated Living Conditions Survey	2010	National Statistical Service of the Republic of Armenia
Armenia	Integrated Living Conditions Survey	2013	National Statistical Service of the Republic of Armenia
Bangladesh	Household Income-Expenditure Survey	2010	Bangladesh Bureau of Statistics
Bolivia	Encuesta de los Hogares	2008	Instituto Nacional de Estadística - Ministerio de Planificación del Desarrollo - Bolivia
Bulgaria	Multitopic Household Survey 2007	2007	Gallup International
Burkina Faso	Enquête Multisectorielle Continue	2014/15	Institut National de la Statistique et de la Démographie - Ministère de l'Economie et des Finances
Cambodia	Cambodia Socio-Economic Survey	2009	National Institute of Statistics
Cameroon	Fourth Cameroon Household Survey	2014	Institut National de la Statistique - Ministère de l'Economie, de la Planification et de l'Aménagement du Territoire
Cote d'Ivoire	Enquête sur le Niveau de Vie des Ménages	2008	Institut National De La Statistique (INS) - Ministère d'Etat, Ministère du Plan et du Développement
Ecuador	Encuesta sobre Condiciones de Vida	2006	Instituto de Estadística y Censos
Ecuador	Encuesta sobre Condiciones de Vida	2014	Instituto de Estadística y Censos
Ethiopia	Ethiopia Socioeconomic Survey	2013/14	Central Statistics Agency of Ethiopia (CSA) - Ministry of Finance and Economic Development
Ethiopia	Ethiopia Socioeconomic Survey	2014/15	Central Statistics Agency of Ethiopia (CSA) - Ministry of Finance and Economic Development
Georgia	Integrated Household Survey	2013	The State Department for Statistics of Georgia - GEOSTAT
Georgia	Integrated Household Survey	2014	The State Department for Statistics of Georgia - GEOSTAT
Georgia	Integrated Household Survey	2015	The State Department for Statistics of Georgia - GEOSTAT
Ghana	Ghana Living Standards Survey	2012/13	Ghana Statistical Service (GSS)
Guatemala	Encuesta Nacional de Condiciones de Vida	2011	Instituto Nacional de Estadística - Gobierno de Guatemala
Guatemala	Encuesta Nacional de Condiciones de Vida	2014	Instituto Nacional de Estadística - Gobierno de Guatemala
India	India Human Development Survey	2005	National Council of Applied Economic Research, New Delhi
India	India Human Development Survey	2012	National Council of Applied Economic Research, New Delhi

Country	Name of the survey	Year	Institution
Iraq	The Iraq household socio-economic survey	2007	Organization for Statistics and Information Technology (COSIT) - Ministry of Planning, Government of Iraq
Iraq	The Iraq household socio-economic survey	2012	Organization for Statistics and Information Technology (COSIT) - Ministry of Planning, Government of Iraq
Kyrgyzstan	Integrated Sample Household Budget and Labor Survey	2013	National Statistical Committee of the Kyrgyz Republic - NSC
Kenya	Integrated Household Budget Survey	2005/2006	Kenya National Bureau of Statistics
Malawi	Second Integrated Household Survey	2004	National Statistical Office - Government of Malawi
Malawi	Fourth Integrated Household Survey	2013	National Statistical Office - Government of Malawi
Malawi	Third Integrated Household Survey	2011	National Statistical Office (NSO) - Ministry of Economic Planning and Development (MoEPD)
Mali	Enquête Agricole de conjoncture intégrée aux Conditions de Vie des Ménages	2014/15	Cellule de Planification et de Statistiques - Ministère du Développement Rural Institut National de la Statistique - Gouvernement du Mali - Direction Nationale de l'Agriculture
Mexico	Encuesta Nacional de Ingresos y Gastos de los Hogares	2014	Instituto Nacional de Estadística y Geografía (INEGI)
Mongolia	Socioeconomic Survey	2014	National Statistical Office of Mongolia - NSO
Mozambique	Inquérito sobre Orçamento Familiar	2008	Direcção de Censos e Inquéritos - Instituto Nacional de Estatística (INE) - Ministry of Planning and Development
Nepal	Nepal Living Standards Survey	2011	Instituto Nacional de Estadística y Geografía
Nicaragua	Encuesta Nacional de Hogares sobre Medición de Nivel de Vida	2014	National Bureau of Statistics
Niger	National Survey on Household Living Conditions and Agriculture	2011	Survey and Census Division - National Institute of Statistics
Niger	National Survey on Household Living Conditions and Agriculture	2014	Survey and Census Division - National Institute of Statistics
Nigeria	General Household Survey	2011/12	National Bureau of Statistics (NBS)
Nigeria	General Household Survey	2015/16	National Bureau of Statistics (NBS)
Pakistan	Pakistan Social and Living Standards Measurement Survey	2013-14	Federal Bureau of Statistics - Government of Pakistan
Panama	Encuesta de Niveles de Vida	2008	Instituto Nacional de Estadística y Censo (INEC)
Perù	Encuesta Nacional de Hogares	2014	Instituto Nacional de Estadística e Informática - República del Perú
Perù	Encuesta Nacional de Hogares	2010	Instituto Nacional de Estadística e Informática - República del Perú

<b>Country</b>	<b>Name of the survey</b>	<b>Year</b>	<b>Institution</b>
Perù	Encuesta Nacional de Hogares	2015	Instituto Nacional de Estadística e Informática - República del Perú
Rwanda	Integrated Household Living Conditions Survey	2013	National Institute of Statistics of Rwanda - Ministry of Finance and Economic Planning
Senegal	Enquête de Suivi de la Pauvreté au Sénégal	2011	Agence Nationale de la Statistique et de la Démographie
Serbia	Living Standards Measurement Survey	2007	Statistical Office of the Republic of Serbia
Sierra Leone	Integrated Household Survey	2011	Statistics Sierra Leone (SSL)
Tanzania	National Panel Survey	2012/13	National Bureau of Statistics
Tanzania	National Panel Survey	2010/11	National Bureau of Statistics
Tanzania	National Panel Survey	2008/09	National Bureau of Statistics
Timor Leste	Survey of Living Standards	2007/08	National Bureau of Statistics
Uganda	The Uganda National Panel Survey	2009/10	Uganda Bureau of Statistics (UBOS)
Uganda	The Uganda National Panel Survey	2010/11	Uganda Bureau of Statistics (UBOS)
Uganda	The Uganda National Panel Survey	2011/12	Uganda Bureau of Statistics (UBOS)
Uganda	The Uganda National Panel Survey	2013/14	Uganda Bureau of Statistics (UBOS)
Vietnam	Household Living Standards Survey	2010	General Statistics Office (GSO) - Ministry of Planning and Investment

## Annex 2. List of indicators

The indicators in *italics* are extracted from external sources

Indicator	Cluster	Source of the indicators
Agricultural income (livestock, crop, fishery, forestry, ag wage), share of total income (%)	Income and Productivity	Household survey: household, agricultural and fishery questionnaires
Non-agricultural income, share of total income (%)	Income and Productivity	Household survey: household, agricultural and fishery questionnaires
On-farm income (livestock, crop, fishery, forestry), share of total income (%)	Income and Productivity	Household survey: household, agricultural and fishery questionnaires
Median income from farm activities, PPP (constant 2011 international USD)	Income and Productivity	Household survey: household, agricultural and fishery questionnaires
Agricultural wage, share of total income (%)	Income and Productivity	Household survey: household, agricultural and fishery questionnaires
Average daily income per capita, PPP (constant 2011 international USD)	Income and Productivity	Household survey: individual questionnaire
Transfers (public and private) as a share of total income (%)	Income and Productivity	Household survey: household, agricultural and fishery questionnaires
Concentration index (Herfindahl) of total income (real number)	Income and Productivity	Household survey: household, agricultural and fishery questionnaires
Agricultural output per labour day, PPP (constant 2011 international USD)	Income and Productivity	Household survey: household, agricultural and fishery questionnaires
Value of agricultural production sold at the market, share of total value of agricultural production (%)	Income and Productivity	
Value of production per hectare/year, PPP (constant 2011 international USD)	Income and Productivity	Household survey: household, agricultural and fishery questionnaires
Value of crop used for own consumption, share of total value of crop production (%)	Income and Productivity	Household survey: household, agricultural and fishery questionnaires

<b>Indicator</b>	<b>Cluster</b>	<b>Source of the indicators</b>
Average annual income from agriculture, PPP (constant 2011 international USD)	Income and Productivity	Household survey: household, agricultural and fishery questionnaires
Average daily wage in agriculture, PPP (constant 2011 international USD)	Income and Productivity	Household survey: individual questionnaire
Low pay rate in agriculture (%)	Income and Productivity	Household survey: individual questionnaire
<i>(National, WDI data) - Agriculture, forestry, and fishing, value added (annual % growth)</i>	Income and Productivity	World Bank-WDI
<i>(National, WDI data) - Agriculture, value added (percent of GDP)</i>	Income and Productivity	World Bank-WDI
<i>(National, WDI data) - Agriculture, value added per worker (constant 2000 USD)</i>	Income and Productivity	World Bank-WDI
Engel's ratio (annual food expenditures over annual total expenditures) (%)	Poverty and Inequality	Household survey: household questionnaire
Gini coefficient for per capita expenditure (real number)	Poverty and Inequality	Household survey: household questionnaire
Working poor, share of total employment, ages 15 and above (%)	Poverty and Inequality	Household survey: household questionnaire
Mean log deviation of income (real number)	Poverty and Inequality	Household survey: household questionnaire
Per capita expenditure disparity between urban and rural areas, urban to rural ratio (real number)	Poverty and Inequality	Household survey: household questionnaire
Per capita income disparity between urban and rural areas, urban to rural ratio (real number)	Poverty and Inequality	Household survey: household questionnaire
Per capita expenditure disparity between households with and without emigrants, ratio of average total expenditure in the two groups (real number)	Poverty and Inequality	Household survey: household questionnaire
<i>(National, WDI data) - Poverty gap at national poverty lines (%)</i>	Poverty and Inequality	World Bank-WDI
<i>(National, WDI data) - Poverty headcount ratio at national poverty lines (% of population)</i>	Poverty and Inequality	World Bank-WDI

<b>Indicator</b>	<b>Cluster</b>	<b>Source of the indicators</b>
<i>(National, WDI data) - Poverty headcount ratio at USD 1.90 a day (2011 PPP) (% of population)</i>	Poverty and Inequality	World Bank-WDI
<i>(National, WDI data) - Poverty gap at USD 1.90 a day (2011 PPP) (%)</i>	Poverty and Inequality	World Bank-WDI
<i>(National, PovcalNet data) - Poverty headcount ratio at USD 3.20 a day (2011 PPP) (% of population)</i>	Poverty and Inequality	World Bank-PovcalNet
<i>(National, PovcalNet data) - Poverty gap at USD 3.20 a day (2011 PPP) (%)</i>	Poverty and Inequality	World Bank-PovcalNet
Employment-to-population ratio, ages 15+ (%)	Employment and Education	Household survey: individual questionnaire
Employment in agriculture, ages 15+ (% of total employment)	Employment and Education	Household survey: individual questionnaire
Employment in agriculture, ages 15-24 (% of total employment)	Employment and Education	Household survey: individual questionnaire
Self-employed in agriculture, share of total employment in agriculture (%)	Employment and Education	Household survey: individual questionnaire
Employees in agriculture, share of total employment in agriculture (%)	Employment and Education	Household survey: individual questionnaire
Own-account and contributing family workers (% of total employment in agriculture)	Employment and Education	Household survey: individual questionnaire
Children employed in agriculture, 5-11 years old (% of total children in employment, aged 5-11)	Employment and Education	Household survey: individual questionnaire
Children employed in agriculture, 12-14 years old (% of total children in employment, aged 12-14)	Employment and Education	Household survey: individual questionnaire
Children employed in agriculture, 15-17 years old (% of total children in employment, aged 15-17)	Employment and Education	Household survey: individual questionnaire
NEET, youth neither in employment nor in education or vocational training, share of total youth ages 15-24 (%)	Employment and Education	Household survey: individual questionnaire
Share of family labour input in total labour input for cropping activities (%)	Employment and Education	Household survey: individual questionnaire

<b>Indicator</b>	<b>Cluster</b>	<b>Source of the indicators</b>
Share of female family labour input in total family labour input for cropping activities, ages above 15 (%)	Employment and Education	Household survey: individual questionnaire
Share of hired non-family labour input in total labour input for cropping activities (%)	Employment and Education	Household survey: individual questionnaire
Share of children input in total family labour input for cropping activities, ages lower than 15 (%)	Employment and Education	Household survey: individual questionnaire
Adult literacy rate, ages 15+ (%)	Employment and Education	Household survey: individual questionnaire
<i>(National, WDI data) - Employment in agriculture (% of total employment)</i>	Employment and Education	World Bank-WDI
<i>(National, UNDP data) - Mean years of schooling of adults (years)</i>	Employment and Education	UNDP
Average per capita transfer - Private domestic transfer (PPP constant 2011 USD), annual	Social Protection	Household survey: household questionnaire
Average per capita transfer - International remittances (PPP constant 2011 USD), annual	Social Protection	Household survey: household questionnaire
Average per capita transfer - Social assistance (PPP constant 2011 USD), annual	Social Protection	Household survey: household questionnaire
Average per capita transfer - Social insurance (PPP constant 2011 USD), annual	Social Protection	Household survey: household questionnaire
Population receiving international remittances, share of total population (%)	Social Protection	Household survey: household questionnaire
Population receiving domestic private transfer, share of total population (%)	Social Protection	Household survey: household questionnaire
Population receiving social assistance, share of total population (%)	Social Protection	Household survey: household questionnaire
Population receiving social insurance, share of total population (%)	Social Protection	Household survey: household questionnaire
Share of international remittances in total income (%)	Social Protection	Household survey: household questionnaire

<b>Indicator</b>	<b>Cluster</b>	<b>Source of the indicators</b>
Share of domestic private transfer in total income (%)	Social Protection	Household survey: household questionnaire
Share of social assistance in total income (%)	Social Protection	Household survey: household questionnaire
Share of social insurance in total income (%)	Social Protection	Household survey: household questionnaire
Average cropland (ha)	Land	Household survey: agriculture questionnaire
Average arable land (ha)	Land	Household survey: agriculture questionnaire
Average size of household farm (ha)	Land	Household survey: agriculture questionnaire
Average cultivated land area (ha)	Land	Household survey: agriculture questionnaire
Average permanent meadows and pastures (ha)	Land	Household survey: agriculture questionnaire
Gini coefficient of cultivated land (real number)	Land	Household survey: agriculture questionnaire
Land area owned, share of total farm area (%)	Land	Household survey: agriculture questionnaire
Share of landowners in total population (%)	Land	Household survey: agriculture questionnaire
Household land area owned by men only, share of household owned land (%)	Land	Household survey: agriculture questionnaire
Household land area owned by women only, share of household owned land (%)	Land	Household survey: agriculture questionnaire
Household land area owned jointly by women and men, share of household owned land (%)	Land	Household survey: agriculture questionnaire
<i>(National, WDI data) - Adjusted savings: net forest depletion (% of GNI)</i>	Land	World Bank-WDI



<b>Indicator</b>	<b>Cluster</b>	<b>Source of the indicators</b>
Average tropical livestock units owned by farm households (TLU)	Livestock	Household survey: agriculture questionnaire
Share of livestock farm households owning large ruminants (%)	Livestock	Household survey: agriculture questionnaire
Share of livestock farm households owning equine (%)	Livestock	Household survey: agriculture questionnaire
Share of livestock farm households owning small ruminants (%)	Livestock	Household survey: agriculture questionnaire
Share of livestock farm households owning poultry (%)	Livestock	Household survey: agriculture questionnaire
Share of livestock farm households owning pigs (%)	Livestock	Household survey: agriculture questionnaire
Share of livestock farm households with at least one animal vaccinated (%)	Livestock	Household survey: agriculture questionnaire
Share of livestock farm households covered by veterinarians or paraprofessionals (%)	Livestock	Household survey: agriculture questionnaire
Landless livestock households, share of total livestock households (%)	Livestock	Household survey: agriculture questionnaire
Households using improved seeds, share of crop farm households (%)	Inputs, Technology and Credit	Household survey: agriculture questionnaire
Households trained in use of improved inputs, share of crop farm households (%)	Inputs, Technology and Credit	Household survey: agriculture questionnaire
Households using chemicals, share of crop farm households (%)	Inputs, Technology and Credit	Household survey: agriculture questionnaire
Households using inorganic fertilizers, share of crop farm households (%)	Inputs, Technology and Credit	Household survey: agriculture questionnaire
Households using agricultural mechanical equipment (owned or rented), share of total farm households (%)	Inputs, Technology and Credit	Household survey: agriculture questionnaire

<b>Indicator</b>	<b>Cluster</b>	<b>Source of the indicators</b>
Households with access to agricultural production training or extension, share of total farm households (%)	Inputs, Technology and Credit	Household survey: agriculture questionnaire
Crop farm households with irrigation systems, share of total crop farm households (%)	Inputs, Technology and Credit	Household survey: agriculture questionnaire
Irrigated crop land, share of total crop land (%)	Inputs, Technology and Credit	Household survey: agriculture questionnaire
Average amount of credit obtained by household over the year, PPP (constant 2011 international USD)	Inputs, Technology and Credit	Household survey: agriculture questionnaire
Average annual household expenditures on energy, share of total household expenditures (%)	Infrastructure and Services	Household survey: household questionnaire
Population that lives more than 5 km from health facilities, share of total population (%)	Infrastructure and Services	Household survey: household questionnaire
Population that lives more than 5 km from primary school, share of total population (%)	Infrastructure and Services	Household survey: household questionnaire
Population that lives more than 5 km from secondary school, share of total population (%)	Infrastructure and Services	Household survey: household questionnaire
Population with access to internet, share of total population (%)	Infrastructure and Services	Household survey: household questionnaire
Population with access to mobile telephone, share of total population (%)	Infrastructure and Services	Household survey: household questionnaire
Average number of rooms per person (real number)	Infrastructure and Services	Household survey: household questionnaire
Population living in owned dwelling, share of total population (%)	Infrastructure and Services	Household survey: household questionnaire
Population living in a dwelling with a non-dirt floor, share of total population (%)	Infrastructure and Services	Household survey: household questionnaire
Population living in a dwelling with a solid roof, share of total population (%)	Infrastructure and Services	Household survey: household questionnaire
Population with piped water access in the dwelling, share of total population (%)	Infrastructure and Services	Household survey: household questionnaire

<b>Indicator</b>	<b>Cluster</b>	<b>Source of the indicators</b>
<i>(National, WDI data)</i> - Households with access to electricity, share of total households (%)	Infrastructure and Services	World Bank-WDI
<i>(National, WDI data)</i> - Population with access to improved sanitation, share of total population (%)	Infrastructure and Services	World Bank-WDI
Share of total households that experienced market shocks (%)	Shocks and Migration	Household survey: household questionnaire
Share of total households that experienced weather and geophysical shocks (%)	Shocks and Migration	Household survey: household questionnaire
Share of total households that experienced crop or livestock disease-related shocks (%)	Shocks and Migration	Household survey: household questionnaire
Households in which members' dietary patterns changed due to shocks, share of total households affected by shocks (%)	Shocks and Migration	Household survey: household questionnaire
Households in which members migrated due to shocks, share of total households affected by shocks (%)	Shocks and Migration	Household survey: household questionnaire
Households in which members took on more farm or non-farm (wage- or self-) employment due to shocks, share of total households affected by shocks (%)	Shocks and Migration	Household survey: household questionnaire
Households with emigrants who moved abroad for work-related reasons, share of total households with international emigrants (%)	Shocks and Migration	Household survey: household questionnaire
Households with emigrants who moved internally for work-related reasons, share of total households with internal emigrants (%)	Shocks and Migration	Household survey: household questionnaire
Share of total households with at least one foreign born member (%)	Shocks and Migration	Household survey: household questionnaire
Share of total households with emigrants who moved abroad (%)	Shocks and Migration	Household survey: household questionnaire
Share of total households with emigrants who moved internally (%)	Shocks and Migration	Household survey: household questionnaire

<b>Indicator</b>	<b>Cluster</b>	<b>Source of the indicators</b>
Communities with farm producers organizations, share of total communities (%)	Sample Characteristics	Household survey: community questionnaire
Communities with savings and credit groups, share of total communities (%)	Sample Characteristics	Household survey: community questionnaire
Crop farm households, share of total farm households (%)	Sample Characteristics	Household survey: household questionnaire
Females to male ratio in member-based organizations/groups (real number)	Sample Characteristics	Household survey: household questionnaire
Households with income from agriculture equal to or greater than 30% of their total income, share of total households (%)	Sample Characteristics	Household survey: household questionnaire
Households with income from agriculture lower than 30% of their total income, share of total households (%)	Sample Characteristics	Household survey: household questionnaire
Households with male and female adults, share of total households (%)	Sample Characteristics	Household survey: household questionnaire
Households with no income from agriculture, share of total households (%)	Sample Characteristics	Household survey: household questionnaire
Households with only female adults, share of total households (%)	Sample Characteristics	Household survey: household questionnaire
Households with only male adults, share of total households (%)	Sample Characteristics	Household survey: household questionnaire
Livestock farm households, share of total farm households (%)	Sample Characteristics	Household survey: household questionnaire
Non-small-scale food producers, share of total agricultural households (%)	Sample Characteristics	Household survey: household questionnaire
Small-scale food producers, share of total agricultural households (%)	Sample Characteristics	Household survey: household questionnaire
Total number of households in the country (real number)	Sample Characteristics	Household survey: household questionnaire
Total number of households in the sample (real number)	Sample Characteristics	Household survey: household questionnaire

Indicator	Cluster	Source of the indicators
Total number of individuals in the sample (real number)	Sample Characteristics	Household survey: household questionnaire
<i>(National, WDI data) - Population (share of total population)</i>	Sample Characteristics	World Bank-WDI

### Annex 3. List of variables

Level	Variable name	Dummy	Label
community	agrcoop	YES	Agricultural cooperatives in the community
community	bank	YES	Bank
community	bus	YES	Community with a bus stop
community	com_id		Community identifier
community	com_pop		Population of the community (real number)
community	ext_serv	YES	Extension service agent/centre
community	farm	YES	Farming community
community	farmgroup	YES	Farmers' groups in the community
community	farmprod	YES	Community with farm producers' organizations (including farmers' groups and coops)
community	fememb		Total number of female members in member-based organizations/groups, by community
community	health	YES	Health clinic in the community
community	irrigation	YES	Irrigation schemes in the community
community	malmemb		Total number of male members in member-based organizations/groups, by community
community	market	YES	Generic daily/weekly market in the community
community	members		Total number of members in member-based organizations/groups, by community
community	micfin	YES	Presence of microfinance institution in the community
community	postoff	YES	Presence of post office in the community
community	prschool	YES	Presence of primary government school in the community
community	road	YES	Presence of tar/asphalted road in the community
community	savcredgroup	YES	Presence of savings & Credit groups in the community

<b>Level</b>	<b>Variable name</b>	<b>Dummy</b>	<b>Label</b>
community	secschool	YES	Presence of secondary government school in the community
community	urban	YES	Urban dummy
community	warehouse	YES	Warehouse
Household	ag_part		Participation in agriculture (categorical)
household	agehead		Age of household head
household	agr_wge		Household wage from employment in farm activities
household	agricultural_land		Agricultural land (crop land + pasture)
household	agrincome		Income from agriculture
household	arable_land		Arable land, hectares
household	arable_land_own		Arable land owned, hectares
household	brickwalls	YES	The outer wall of the main dwelling is made out of bricks
household	cellphone	YES	Household owning a mobile phone
household	chemexp		Total expenditure for chemicals (LCU)
household	chemidummy	YES	Household farms using chemicals
household	chfamdays		Days of family labour for crop activities, children under 15 years old
household	com_id		Community identifier
household	covintrem	YES	International remittances coverage
household	covprivtrans	YES	Private transfers coverage
household	covsocass	YES	Social assistance coverage
household	covsocins	YES	Social insurance coverage
household	credit		Amount of credit obtained by the household
household	creditdummy	YES	Households received a credit in the last 12 months
household	crop		Annual income from crop production
household	crop_land		Crop area (temporary + permanent)
household	cropbyprod		Value of crop used for byproducts
household	cropfeed		Value of crop used for feed
household	cropgift		Value of crop given out as gift

<b>Level</b>	<b>Variable name</b>	<b>Dummy</b>	<b>Label</b>
household	croplost		Value of crop lost
household	cropown		Total value of crop used for own consumption.
household	croppay		Value of crop used for payments
household	cropseed		Value of Crop used for seed
household	cropsold		Value of crop sold in the last 12 months
household	cropstore		Value of crop stored
household	croppv		Total Value of Production (LCU) from crop activities
household	cultivated		Cultivated area, hectares
household	dagr_quest	YES	Agricultural household
Household	datev1		Date of first interview
Household	datev2		Date of second interview
household	dcrop_prod	YES	Households with crop production
household	dem_dep_ratio	YES	HH ratio of non-working age (less than 15 and more than 64) to working-age people (age between 15 and 64)
household	dfish_prod	YES	Households with fish production
household	dforestry_prod	YES	Households with forestry production
household	dietchange	YES	Household changed dietary pattern due to shock
household	disease	YES	Household experienced crop and livestock pests or disease
household	distbank		Distance to the nearest bank, in Km
household	distbus		Distance to the nearest bus stop, in Km
household	disthealthfac		Distance to the nearest health facility, in Km
household	distmarket		Distance to the nearest market, in Km
household	distpost		Distance to the nearest post office, in Km
household	distprschool		Distance to the nearest primary school, in Km
household	distroad		Distance to the nearest major road, in Km
household	distsecschool		Distance to the nearest secondary school, in Km
household	dland_cul	YES	Land under temporary crop
household	dliv_prod	YES	Households with livestock



<b>Level</b>	<b>Variable name</b>	<b>Dummy</b>	<b>Label</b>
household	dmechown	YES	Household owning mechanized equipment for farm activities
household	dmechuse	YES	Household using mechanized equipment in farming activities
household	dsmall	YES	Small-scale/Non-small-scale
household	dtrain_ext_agr	YES	Household with access to trainings or extensions
household	dtrain_ext_crop	YES	Household farms with access to crop production trainings or extensions
household	dtrain_ext_fish	YES	Household farms with access to fishery production trainings or extensions
household	dtrain_ext_fore	YES	Household farms with access to forestry production trainings or extensions
household	dtrain_ext_lvst	YES	Household farms with access to livestock production trainings or extensions
household	dvaccine	YES	Household with at least one animal vaccinated
household	dvet	YES	Households covered by veterinarians or paraprofessionals
household	ec_dep_ratio	YES	HH ratio of non-employed to employed people
household	educadult		Average number of years of education of the adults in the household
household	educave		Average number of years of education
household	educave15_64		Average number of years of education of the household members aged 15 to 64
household	educhead		Number of years of education of the household head
household	educhigh		Highest number of years of education in the household
household	electricity	YES	Household with access to electricity
household	equine		Number of equine owned by the household
household	ExpFact		Expansion factor
household	famdays		Days of family labour for crop activities
household	farm_area		Total farm area (operated land), hectares

<b>Level</b>	<b>Variable name</b>	<b>Dummy</b>	<b>Label</b>
household	farmrntexp		Agricultural land rental expenditures
household	farmrntinc		Income from renting out agricultural land
household	fem_arable_land_own		Arable farm land owned by female, hectares
household	fem_landown		All land area owned by the women in the household, hectares
household	femhead	YES	Female headed household
household	fininc		Annual income generated from financial assets
household	flabor		Number of females in the household between 15 and 60 years old
household	flaborshare		Share of household female members in working age (age $\geq$ 15 & age $<$ 60), share of total number of members in working age (age $\geq$ 15 & age $<$ 60)
household	foodexp		Total food expenditure
household	for_land		Land under forests, hectares
household	foreignborn	YES	Household with at least one foreign born member
household	forestry		Annual gross income from forestry production
household	forestvp		Total Value of Production (LCU) from forestry activities
household	freelab		Total days of free labour for crop activities
household	fsize		Number of females in the household
household	hhcomp		Household composition qualifier
household	hhexp		Total household expenditures
household	HHI_income		Herfindahl index of income components: crop, livestock agr & non-agr wage, non-agr self-employment, transfer & other income
household	hhid		Household unique identifier
household	hhlabor		Number of household members between 15 and 60 years old
household	hhsiz		Household size
household	hiredlab		Total days of hired labour for crop activities
household	impseedexp		Total expenditure for improved seeds (LCU)

<b>Level</b>	<b>Variable name</b>	<b>Dummy</b>	<b>Label</b>
household	impseedsdummy	YES	Household using improved seeds
household	infertdummy	YES	Household using inorganic fertilizer
household	infertexp		Total expenditure for inorganic fertilizer, (LCU)
household	int_rem		International remittances
household	int_rem_pc		International remittances per capita
household	internal	YES	Household with at least one internal migrant
household	international	YES	Household with at least one international migrant
household	internet	YES	Household with a internet connection
household	irrigation	YES	Household using irrigation
household	itotlandcul		Total irrigated land cultivated, hectares
household	joint_arable_land_own		Arable farm land owned by women and men, hectares
household	joint_landown		All land area owned jointly by women and men in the household, hectares
household	laborex		Total expenditure for labour (LCU)-
household	labtot		Total days of labour worked (family, hired, exchanged labour) for cropping activities
household	landless	YES	Landless household raising livestock
household	landown		Owned land, hectares
household	landowntitle		Land owned with title, hectares
household	largerum		Number of large ruminants owned by the HH
household	livbyprod		Total value of by-products produced
household	livbysold		Total value of by-products sold
household	livestock		Annual gross income from livestock production
household	livstvp		Total value of production from livestock activities
household	m_fem_temp_crops		Land under temporary crops managed by female, hectares
household	m_male_temp_crops		Land under temporary crops managed by male, hectares
household	male_arable_land_own		Arable farm land owned by male, hectares
household	male_landown		All land area owned by the men in the household, hectares

Level	Variable name	Dummy	Label
household	maritalshead		1= single, 2=currenty married, 3= other(widowed, separated etc.)
household	market	YES	Household experienced market price related shocks
household	men_vp_ha		Value of production per hectare when the land is managed by male, average between seasons
household	mfamdays		Days of family labour for crop activities, males 15 years and more
household	migrants	YES	Household with at least one migrant
household	migrants_15_34	YES	Household with at least one migrant between 15-34 years old
household	migrants_work	YES	Household with at least one migrant who moved for work-related reasons
household	mlabor		Number of males in the household between 15 and 60 years old
household	mlaborshare		Share of household male members between 15 to 60 years old
household	moreemp	YES	Household members took on more employment due to shock
household	msize		Number of males in the household
household	nofarmrnt		Annual income received from non-farm real estate assets
household	nonagr_wge		Household wage from employment in non-farm activities
household	nonagrincome		Household wage from employment in non-farm activities
household	nondirtfloor	YES	Household with non-dirt floor
household	nonfarmincome		Non-farm income, including non-agricultural wages
household	not_agricultural	YES	No livestock, no land
household	offarmincome		Off farm income
household	onfarmincome		On farm income
household	oth_land		Land other uses, hectares
household	otherinc		Annual income other sources such as income received from non-farm real estate assets and income received from savings and interest. This excludes the farm rental income
household	otherinc_tot		Income from other sources, including farm rental (otherinc+farmrntinc)

<b>Level</b>	<b>Variable name</b>	<b>Dummy</b>	<b>Label</b>
household	ownhome	YES	The dwelling is owned by the household (1/0)
household	p_agrwge	YES	Households participating in wage employment agricultural activities
household	pcexp		Per capita expenditures
household	pcinc		Per capita daily income (totincome/365/hhsize)
household	perm_crops		Land under permanent crop, ha
household	perm_meadows		Land under permanent meadows, hectares
household	pigs		Number ofpigs owned by the HH
household	poor	YES	absolute poverty status
household	poor_dev	YES	Household under the societal povery line
household	poultry		Number ofpoultry owned by the HH
household	priv_trans		Private domestic transfers
household	priv_trans_pc		Private domestic transfers per capita
household	psu		Primary Sampling Unit
household	quinttot		Income quintiles (based on hhexp)
Household	region		Region
household	regXurb		Region and Urban grouping
household	roomsno	YES	Number of separate rooms the household members occupy
household	rtotlandcul		Total rainfed land cultivated, hectares
household	runwater	YES	Household with water piped into the dwelling
household	safewater	YES	Household with access to safe drinking water
household	seedexp		Total expenditure for seeds (LCU)-
household	self1		Annual income from non-farm family enterprise engaged in agriculture
household	self2		Annual income from non-farm family enterprise engaged in manufacturing and mining and construction
household	self3		Annual income from non-farm family enterprise engaged in services
household	self4		Annual income from non-farm family enterprise engaged in other industries

<b>Level</b>	<b>Variable name</b>	<b>Dummy</b>	<b>Label</b>
household	selfemp		Annual gross nonfarm self employment income
household	shockmigration	YES	Household with members (including children) migrating due to shock
household	shocks	YES	Household experienced weather, market or disease related shock
household	small		Type of household (categorical)
household	smallrum		Number of small ruminants owned by the HH
household	soc_ass		Annual Social assistance
household	soc_ass_pc		Annual Social assistance per capita
household	soc_ins		Annual Social Insurance
household	soc_ins_pc		Annual Social insurance per capita
household	solidroof	YES	Household with a solid roof
household	telephone	YES	Household with fixed telephone line
household	temp_crops		Land under temporary crops, hectares
household	temp_fallow		Land temporary left fallow, hectares
household	TLU_total	YES	Total tropical livestock unit owned by the household
household	toilet	YES	Household has access to improved sanitation facilities
household	totenexp		Total household annual expenditures on energies
household	totincome		Annual Gross Household Income
household	transfer		Annual transfer received by HH
household	urban	YES	Urban dummy
household	vp_ha		Per hectare production value, average between seasons
household	vp_lab		Value of production per labour day (cropvp/labtot)
household	weather	YES	Household experienced weather related shocks
household	weight_hh		Household weight
household	wfamdays		Days of family labour for crop activities, females 15 years and more
household	wge1		real annual wage in agriculture forestry and fishery
household	wge2		real annual wage in mining, quarrying and manufacturing and construction
household	wge3		real annual wage in services
household	wge4		real annual wage in other sector

<b>Level</b>	<b>Variable name</b>	<b>Dummy</b>	<b>Label</b>
household	women_vp_ha		Per hectare production value in female managed land, average between seasons
household	fishery		Annual gross income from fisheries production
household	fishvp		Total Value of Production (LCU) from fishery activities
Individual	ag_part		Participation in agriculture (categorical)
individual	age		Individual age
individual	age_group_12_14		Age group of children 12-14
individual	age_group_15_17		Age group of children 15-17
individual	age_group_5_11		Age group of children 5-11
individual	casual	YES	Casual workers
individual	com_id		Community identifier
individual	contr_family_workers	YES	Employment by status in employment: unpaid and contributing family workers
individual	daily_wage1		Average daily earnings in agriculture, forestry, fishery
individual	daily_wage2		Average daily earnings in manufacturing , mining and construction
individual	daily_wage3		Average daily earnings in services
individual	daily_wage4		Average daily earnings in other sectors
individual	dem_dep_ratio	YES	HH ratio of non-working age (less than 15 and more than 64) to working-age people (age between 15 and 64)
individual	dsmall	YES	Small-scale/Non-small-scale
individual	ec_dep_ratio	YES	HH ratio of non-employed to employed people
individual	employees	YES	Employment by status in employment: employees
individual	employer	YES	Employment by status in employment: employers
individual	femdumy	YES	Individual is female
individual	hhid		Household unique identifier
individual	id_code		Hhh member id
individual	industry		Economic activity (based on the last 7 days prior to the interview)

<b>Level</b>	<b>Variable name</b>	<b>Dummy</b>	<b>Label</b>
individual	industry1		Type of economic activity (agricultural or non-agricultural- based on the last 7 days prior to the interview)
individual	industry10		Economic activity classified into 10 groups (RIGA classification)
individual	landowner	YES	Land ownership
individual	lit_pop	YES	Literate population
individual	low_paid_1	YES	Low paid in agriculture, forestry and fishing
individual	low_paid_2	YES	Low paid in mining, quarrying and manufacturing and construction
individual	low_paid_3	YES	Low paid in services
individual	low_paid_4	YES	Low paid in other not specified sectors
individual	NEET	YES	NEET
individual	NEET_15_24	YES	NEET, 15-24
individual	NEET_25_34	YES	NEET, 25-34
individual	other_emp_status	YES	Employment by status in employment: workers not classifiable by status
individual	own_account_workers	YES	Employment by status in employment: own_account workers
individual	poor	YES	absolute poverty status
individual	precarious	YES	Seasonal and casual workers
individual	quinttot		Income quintiles (based on hhexp)
individual	rtot_labour_force	YES	Labour force, relaxed defintion
individual	rtot_unemployment	YES	Unemployed, using relaxed definition
individual	seasonal	YES	Seasonal workers
individual	self_employment	YES	Employment by status in employment: sel-employed
individual	sex		Sex
individual	small		Type of household (categorical)
individual	tot_days_per_week1		Total number of days worked per week, agriculture, forestry, fishery



<b>Level</b>	<b>Variable name</b>	<b>Dummy</b>	<b>Label</b>
individual	tot_days_per_week2		Total number of days worked per week, manufacturing and mining and construction
individual	tot_days_per_week3		Total number of days worked per week, services
individual	tot_days_per_week4		Total number of days worked per week, other industries
individual	tot_employment	YES	Employed
individual	tot_work_poor	YES	Total employed persons living in a poor household
individual	urban	YES	Urban dummy
individual	weight_ind		Individual weight
individual	wge1		real annual wage in agriculture forestry and fishery
individual	wge2		real annual wage in mining, quarrying and manufacturing and construction
individual	wge3		real annual wage in services
individual	wge4		real annual wage in other sector

## Annex 4. Outlier detection and imputation

### Data processing

Household survey data are prone to various data entry mistakes, which result in having a considerable amount of outliers in the elementary data. In RuLIS, outlier detection and imputation are implemented on all continuous variables (i.e. quantities and monetary values), only once, at the lowest level of aggregation.

The RuLIS data processing adopts the median as a measure of the central tendency, and the Median Absolute Deviation (MAD) is used as a measure of variability. Since most variables have an asymmetric probability distribution function, RuLIS uses the so-called “double Median Absolute Deviation” method. This method takes the distances from the median of the total distribution and determines the median distance separately from the left and right side of the central median. In the case of a rightly skewed distribution function, the median distance from the centre will be smaller on the left-hand side of the median than on the right-hand side. Observations are considered outliers when their value is lower than  $3 \times 1.4826 \times \text{MAD}_{\text{left}}$  or higher than  $3 \times 1.4826 \times \text{MAD}_{\text{right}}$  away from the median. This choice is equivalent to 3 standard deviations for normally distributed variables, which means that the probability of classifying as outlier a true observation is only 0.27 percent.

If appropriate, this procedure can be done separately for different subgroups of the observations, based on logical variable(s) e.g. regions, industries, income levels etc. The outlier detection can be performed at multiple levels; these however have to contain at least 100 observations. For example, when imputing wages, one can detect outliers by industry and region. If there is a region-industry combination where there are less than 100 observations, these observations will be imputed “on the next level”, in this case only by industry. If necessary (e.g. very small sample size), the analyst may modify the threshold from 100.

Observations detected as outliers are then replaced with the median value of their subgroup (in the example above, this will be the median wage by industry and region). The share of replaced data should not exceed 5 percent of the total observations. When the percentage is higher, the distance criteria is widened by one  $1.4836 \times \text{MAD}$ , until the number of outliers is less than 5% of the data.

### Post-data processing

Once the data process has been completed, a second homogeneous layer of outlier detection and imputation is applied to the final microdata sets. As for the data processing case, outlier detection and imputation are implemented on all continuous variables (i.e. quantities and monetary values). The post-processing layer is homogenous in the sense that the same methodology, described in details below, is applied to all variables/surveys.

As far as the outlier detection is concerned, outlying observations are identified using a method based on robust statistics. In particular, following the suggestion in Davies and Gather (1993), we extend the Hampel identifier by replacing median absolute deviation (MAD) by a scale estimator

with the same breakdown point but with a greater efficiency at the Gaussian model.<sup>25</sup> More formally, the Hampel identifier can be represented by

$$|x - \text{med}(X_N)| \geq c * b * \text{MAD}(X_N) * g(N) \quad (1)$$

where  $\text{med}(X_N)$  denotes the median of the sample  $X_N$ ,  $\text{MAD}(X_N) = \text{med}(|x_1 - \text{med}(X_N)|, \dots, |x_N - \text{med}(X_N)|)$ ,  $c$  is the small sample adjustment,  $b = 1,4826$  is the Fisher consistency factor and  $g(N)$  is the threshold used to identify the outlier region. The MAD is commonly used as a robust measure of scale for the purpose of outlier detection since: i) it has a simple explicit formula and it has a low computation requirement; ii) it is very robust as shown by its bounded influence function and its 50% breakdown point. However, it is aimed at symmetric distributions and has a low (37%) Gaussian efficiency. Following Rousseeuw and Croux (1993), we propose to substitute the MAD in equation (1) with a different 50% breakdown scale estimator that is more efficient (58% at the Gaussian model) and can be also used in presence of heavy-tailed and asymmetric distributions. In particular, we use the S estimator which can be represented as

$$S = c * b * \text{med}_i\{\text{med}_j|x_i - x_j|\} \quad (2)$$

where  $b = 1,1926$  at the Gaussian model.<sup>26</sup> Results from Monte Carlo simulations, which we plan to publish elsewhere, show that, in general, the proposed procedure outperforms the Hampel identifier.

Once the outliers have been identified, the imputation has been implemented using a conditional median approach. This implies that, for each variable, outlying observations have been replaced by the median value observed for each of the subgroups identified by the qualifiers' variables.

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<sup>25</sup> Rousseeuw and Croux (1993) show that both the S and Q estimators are more efficient than MAD at non-Gaussian models, e.g. for heavy-tailed and asymmetric distributions.

<sup>26</sup> In this first release of Rulis we assumed the Gaussian model for all variables. For the next release, we plan to relax this assumption using a different Fisher consistency factor depending on the best parametric model for each variable. We are also planning to study the performance of the Q estimator, a 50% breakdown scale estimator with a Gaussian efficiency of 82%. As small sample adjustments, we used the values proposed in Croux and Rousseeuw (1992).  
As for

## Annex 5. Deflation of monetary values

In most household surveys, interviews take place during a survey period of variable length, ranging from few months to an entire year. As monetary values for both consumption and income figures are measured in nominal local currencies, changes in price levels over time may distort the reported figures. In order to track the real value of income and consumption, it is necessary to net out prices from inflation and/or deflation phenomena. Once any change attributable to the general price movements is removed, inflation-adjusted indicators allow comparing expenditure and income levels of households interviewed at different points in time.

To deflate a nominal series what it is needed – besides the nominal values – is 1) the “reference period”, i.e. the time of occurrence of the expenditure/income component under observation, and 2) an appropriate price index. The RuLIS project uses four indexes: Consumer Price Index (CPI) and Food Price Index (FPI), both from the ILO; Agricultural Producer Price Index (APPI), from FAOSTAT, and GDP deflator (from the IMF). The first two indexes are used to deflate monetary values of food and non-food consumption, respectively; the CPI is also used to deflate wages, transfers and other types of income and expenditures. For agricultural production, the agricultural PPI – from FAOSTAT – is used whenever available. For non-agricultural production, or whenever the agricultural PPI is not available in FAOSTAT, the GDP deflator (as calculated by IMF) is used instead. It is important to note that, while for consumption-related indices monthly values are available, for agricultural PPI and GDP deflator only annual figures are provided, making the adjustment of monetary values unfeasible. In order to overcome this problem, the RuLIS assumes linear price fluctuations within a year, attributing to each month of a given year 1/12 of the total annual inflation or deflation.

From an operational point of view, the first step consists in identifying the point in time in which every single item or payment has been purchased or received. In order to do so, two elements are needed: the date of the interview and the recall period. While the first one is immediately identifiable for each household, the second one depends on the variable under observation (and on the country/survey processed). For food consumption, for example, the recall period is generally 7 days, while for other consumption goods can be either 1 month, 3 months, 6 months or 1 year. For wages and other income variables, on the other hand, the recall period is generally one month. However, information on the exact day when an item was bought or an amount of money received is not available. Therefore, we assumed that each item was either acquired or received at the mid-point of the recall period. In the following step, the appropriate value of the deflator is associated to that particular item, depending on the nature of the item and on the month during which the monetary value is referred to.

The final step consists in deflating all the monetary values, using the above mentioned indexes, to the base period, which is conventionally set at the central month of the survey period.

## Annex 6. List of surveys with the do files (as of December 2018)

Country	Name of the survey	Year
Burkina Faso	Enquête Multisectorielle Continue	2014/15
Cameroon	Fourth Cameroon Household Survey	2014
Ecuador	Encuesta sobre Condiciones de Vida	2014
Ethiopia	Ethiopia Socioeconomic Survey	2013/14
Ethiopia	Ethiopia Socioeconomic Survey	2014/15
Georgia	Integrated Household Survey	2014
Georgia	Integrated Household Survey	2015
Guatemala	Encuesta Nacional de Condiciones de Vida	2014
Malawi	Second Integrated Household Survey	2013
Mali	Enquête Agricole de conjoncture integree aux Conditions de Vie des Menages	2014/15
Mexico	Encuesta Nacional de Ingresos y Gastos de los Hogares	2014
Mongolia	Socioeconomic Survey	2014
Nicaragua	Encuesta Nacional de Hogares sobre Medición de Nivel de Vida	2014
Niger	National Survey on Household Living Conditions and Agriculture	2014
Nigeria	General Household Survey	2015/16
Pakistan	Pakistan Social and Living Standards Measurement Survey	2013-14
Peru	Encuesta Nacional de Hogares	2014
Peru	Encuesta Nacional de Hogares	2015





**Food and Agriculture Organization of the United Nations (FAO)**

Viale delle Terme di Caracalla

00153 Rome, Italy

Tel: (+39) 06 57051

E-mail: [FAO-HQ@fao.org](mailto:FAO-HQ@fao.org)

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