IMPROVING AGRICULTURAL & RURAL STATISTICS
Global Strategy

Improving rural statistics

Defining rural territories and key indicators of rural development

Improving Rural Statistics

In 2016, the **Global Strategy to improve Agricultural and Rural Statistics** (GSARS) initiated the Improving Rural Statistics research topic, which aims to establish:

- An **internationally agreed definition** of rural territories
- A set of **key rural indicators**

The output of the research is:

- A set of guidelines on implementing the definition of "rural" and on constructing and interpreting the key rural indicators

Importance of an international definition of rural territories:

- Rural statistics go beyond agricultural statistics to include data collected from farm and non-farm households, as well as data on natural resource use and quality
- Currently, there is no internationally accepted definition of "rurality" and no international consensus on what territories are considered rural
- National determinations of what constitutes rurality are subjective and multidimensional

An international definition:

- Allows for **international comparison** while acknowledging the diversity and complexity of rural and urban dimensions across and within countries
- Supports **international statistical processes**, especially with respect to **Sustainable Development Goal** (SDG) indicators
- **Supplements**, without replacing, existing **national schemas and definitions**

Basis for valid international comparison of statistical indicators reflecting rural household well-being. Supports the design of national data collection mechanisms.

The dimensions of rurality

National practices to define rural territories are highly heterogeneous. They consider:

- "Rural" often as a residual of "urban"
- Land use patterns and the density of settlements
- Predominance of agricultural activities
- Availability of infrastructure
- Remoteness from urban centres

GSARS proposes an international definition of "rural territories" that is:

- Based on a population grid
- Consistent and harmonized with the definition of "urban"
- A continuum, rather than a dichotomy
- Independent of the size of administrative units
- Stable over time, and easy to update and integrate with other spatial data
- Easy to aggregate into hierarchical systems of different cell size
- Easy to analyse based on country-specific area delineations
- Useful for gap-filling and calculation of proxies

A population-based definition

The Joint Research Centre of the European Commission (JRC) uses global geospatial data from the remote sensing of built-up areas and spatially georeferenced census data as inputs in the Global Human Settlement Layer (GHSL) project, to build human population grids for the epochs 2015, 2000, 1990 and 1975.

The GHSL is a new tool for assessing human presence on the planet. It operates with open and free-of-charge data and spatial modelling methods to derive sound reproducible, synoptic and cost-effective information.

The GSARS definition relies on the global 1-square kilometre (km^2) grids of the GHSL.

The proposed international definition is based solely on:

- Population size
- Population density

Other dimensions, for analytical purposes only:

- Land use characterizing human activities that take place on the land
- Remoteness affecting opportunities for people to gain access to markets and services

A rural-urban continuum

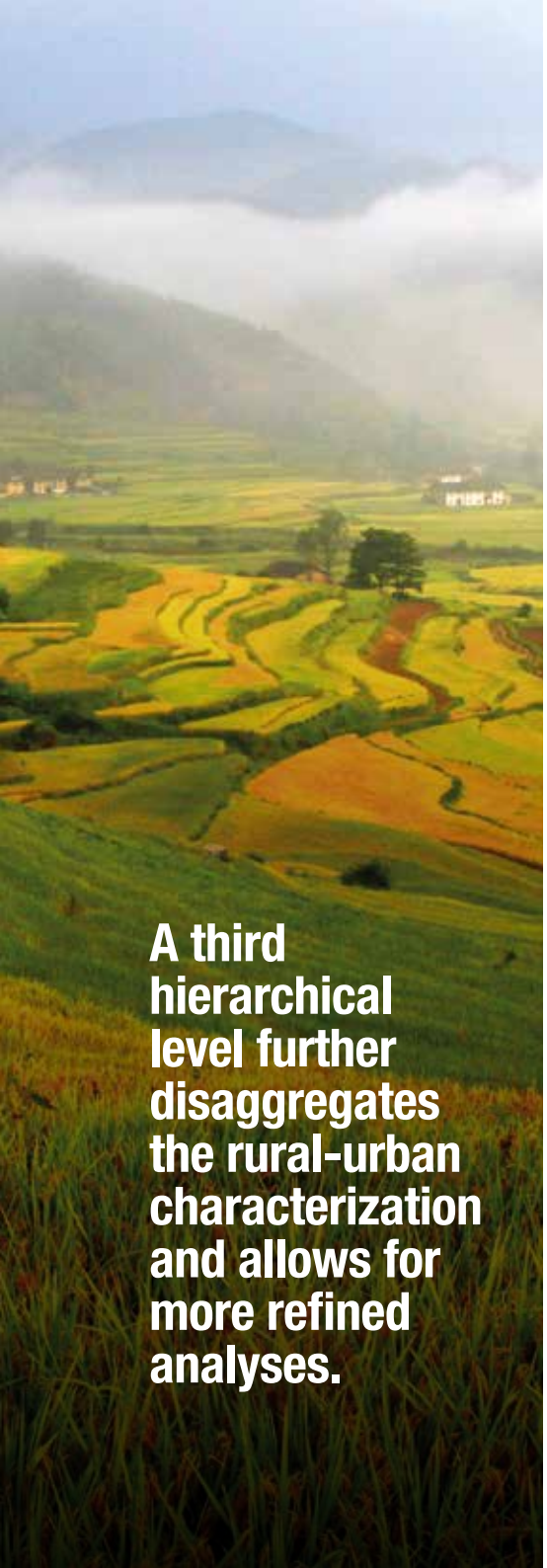
The GSARS, the Food and Agriculture Organization of the United Nations (FAO), the European Commission (EC), the Organisation for Economic Co-operation and Development (OECD), the World Bank (WB), the United Nations Human Settlements Programme (UNHABITAT) and the Statistical Office of the European Union (EUROSTAT) have joined efforts to develop a conceptual schema of the rural-urban categorization applied to the GHSL i.e. 1-km^2 global population grids.

The refined rural-urban categorization discriminates the population grid cells into three main classes:

i. **Rural grid cells**: cells with a population density of less than 300 residents per 1-km^2 and other cells that are outside an urban cluster.

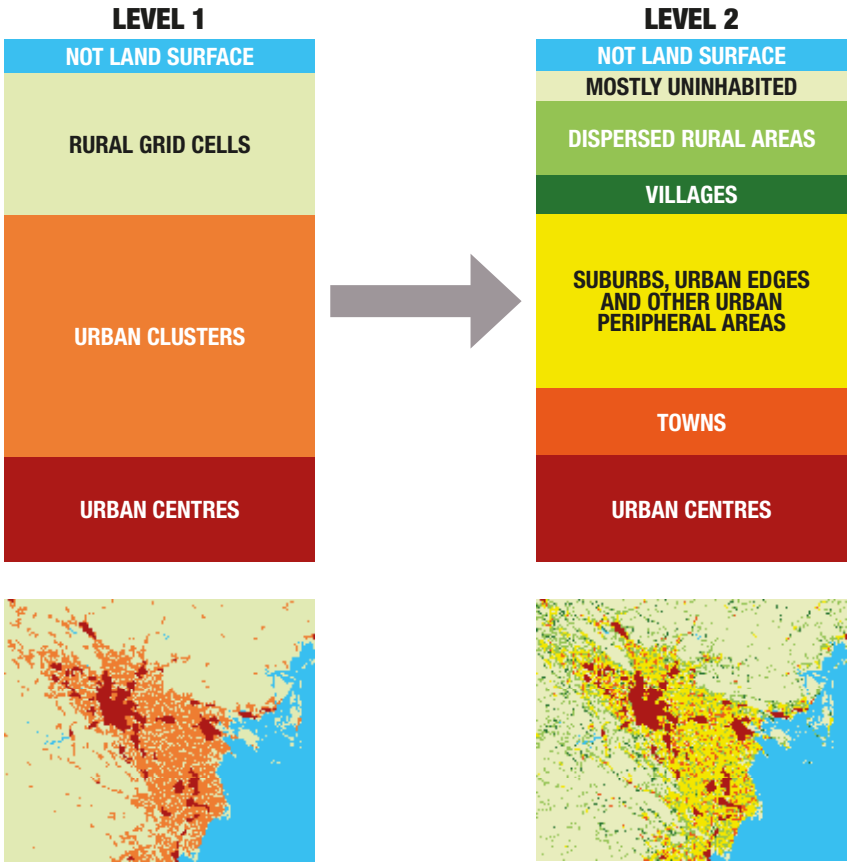
ii. **Urban clusters**: (also named towns and suburbs): contiguous cells with a density of at least 300 residents per 1-km^2 and a minimum population in the cluster of 5 000.

iii. **Urban centres**: (also named cities): contiguous cells with a density of at least 1 500 residents per 1-km^2 and a minimum population in the cluster of 50 000.



A third hierarchical level further disaggregates the rural-urban characterization and allows for more refined analyses.

A nested hierarchical system for the rural-urban categorization



The conceptual framework for the rural-urban categorization

Advanced geospatial data processing methods and operators were applied to the population grids to develop a global categorization of the rural-urban continuum.

Cut-off values of population have been defined through an iterative process and have been tested globally.

Levels 1 and 2 – Conceptual schema of the rural-urban categorization

Cell level criteria residents per km²			Areas outside settlements	Settlements by population size		
				Small	Medium	Large
				500–5 000	5 000–50 000	>50 000
	High-density	>1 500	Not applicable	Small cluster	Dense, medium-sized cluster	Large cluster
	Moderate-density	300–1 500			Moderately dense, medium-sized clusters	
	Low-density	50–300	Low-density grid cells			
	Very-low-density	<50	Very-low-density grid cells			

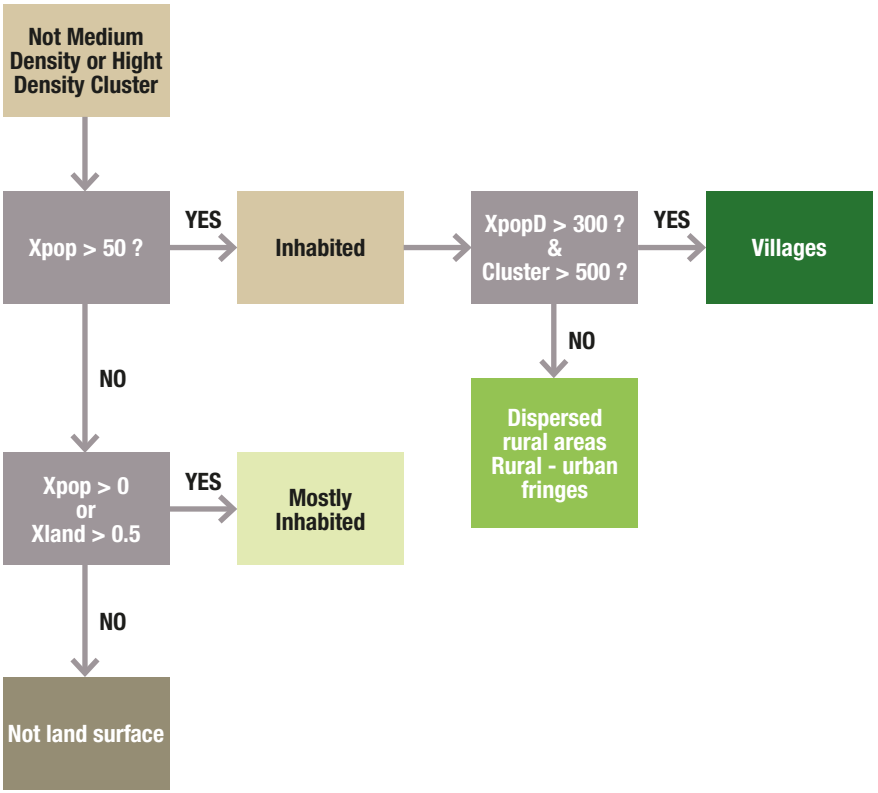
LEVEL 1

LEVEL 2

Low-density grid cells and other (medium- and high-density) cells outside the medium-density clusters	Moderate-density cluster	High-density cluster
Rural grid cells	Urban clusters	Urban centres

Source: Directorate-General REGIO and JRC of the European Commission

Workflow of the rural component in the conceptual schema



Source: adapted from JRC

Xpop = Population resident in the cell of 1-km^2
Xland = Share of the 1-km^2 cell not covered by water more than 80 percent of the time (in the past 20 years)
XpopD = Density of resident population over the land area in the cell of 1-km^2. XpopD = xpop / xland

Selecting indicators of rural development and well-being to support policies

Balanced growth between rural and urban territories:

- Within rural areas, complementing improvements in agricultural productivity with growth in non-agricultural employment
- Consideration of entire rural economy in territorial policies
- Enhancement of non-farm employment opportunities
- Provision of basic social services and of social insurance
- Improvement in physical and telecommunications infrastructure
- Promotion of access to financial services beyond agricultural credit

Alignment with emerging data demands:

- **Relevant** to rural policies beyond agriculture to include the entire rural economy
- Encompassing **all dimensions of rural household well-being**: economic, social, environmental
- Consistent with **international standards and best practices** with respect to concept, variable definition, and data collection
- **Cost-effective** in a developing-country setting: aligned with ongoing international and regional initiatives, especially the SDGs
- Attentive to requirements for **capacity building**

Pilot-testing the proposed definition and its relevance to SDGs

Pilot countries vary by:

- **POPULATION DISTRIBUTION** - Highly concentrated versus highly dispersed
- **LAND COVER** - Heterogeneity of land cover
- **TOPOGRAPHY** - To account for areas that may have pockets of settlements or may be entirely uninhabited (such as mountains or glaciers)
- **LEVEL OF DEVELOPMENT** - High- and low-income countries, which may have distinctive patterns of settlement density
- **REGIONS** - Heterogeneity of climate and geography
- **AVAILABILITY OF GEO-REFERENCED DATA** - Countries where socio-economic and environmental data are only available by administrative unit, as well as (and ideally) countries where these data are available in a georeferenced format compatible with grid cells

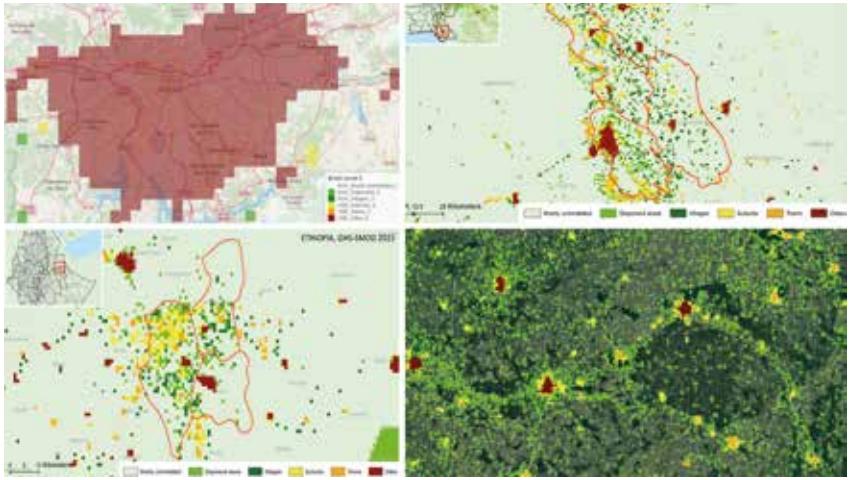
MILESTONES

- Updates on this activity shared with the Inter-Agency and Expert Group on Food Security, Agricultural and Rural Statistics (IAEG-AG) in 2016, 2017 and 2018
- Side event at the Seventh International Conference on Agricultural Statistics (ICAS-VII), October 2016
- Desktop assessment of the rural-urban categorization in 2017
- Expert meeting at FAO HQ, January 2018
- Pilot tests in July–August 2018 (Brazil, Colombia, Ethiopia, France, Malaysia, Pakistan and United States of America)
- A set of guidelines for implementing the definition of “rural” and the construction and interpretation of the key rural indicators by the end of 2018

Pilot objectives

1. Assessing the international definition in country-specific contexts to compare its characterization of population settlements with the national practices currently in place

2. Assessing countries' opportunities, capacities and constraints on reporting a subset of core SDG indicators on livelihoods and well-being, using the proposed definition and existing data and sources such as censuses, administrative sources, household surveys and multipurpose surveys



- **Comparing with national practices through correspondence tables**
- **Identifying mismatches: errors of over- and underclassification**
- **Exploring the availability of geospatial data in existing data collection mechanisms**
- **Identifying opportunities and constraints to apply the Level 2 characterization to existing data collection processes**

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The Social Dimension of Rural Statistics

A Minimum Set of Environmental Indicators for Improving Rural Statistics

Methodology for definition and spatial delimitation of rural areas

Conceptual Framework and Territorial Definitions for Improving Rural Statistics

Consolidated report of the field tests (forthcoming)

- **JRC – GHSL http://ghsl.jrc.ec.europa.eu/**
- **Degree of Urbanization (DEGURBA): http://ec.europa.eu/eurostat/web/degree-of-urbanisation/background**

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