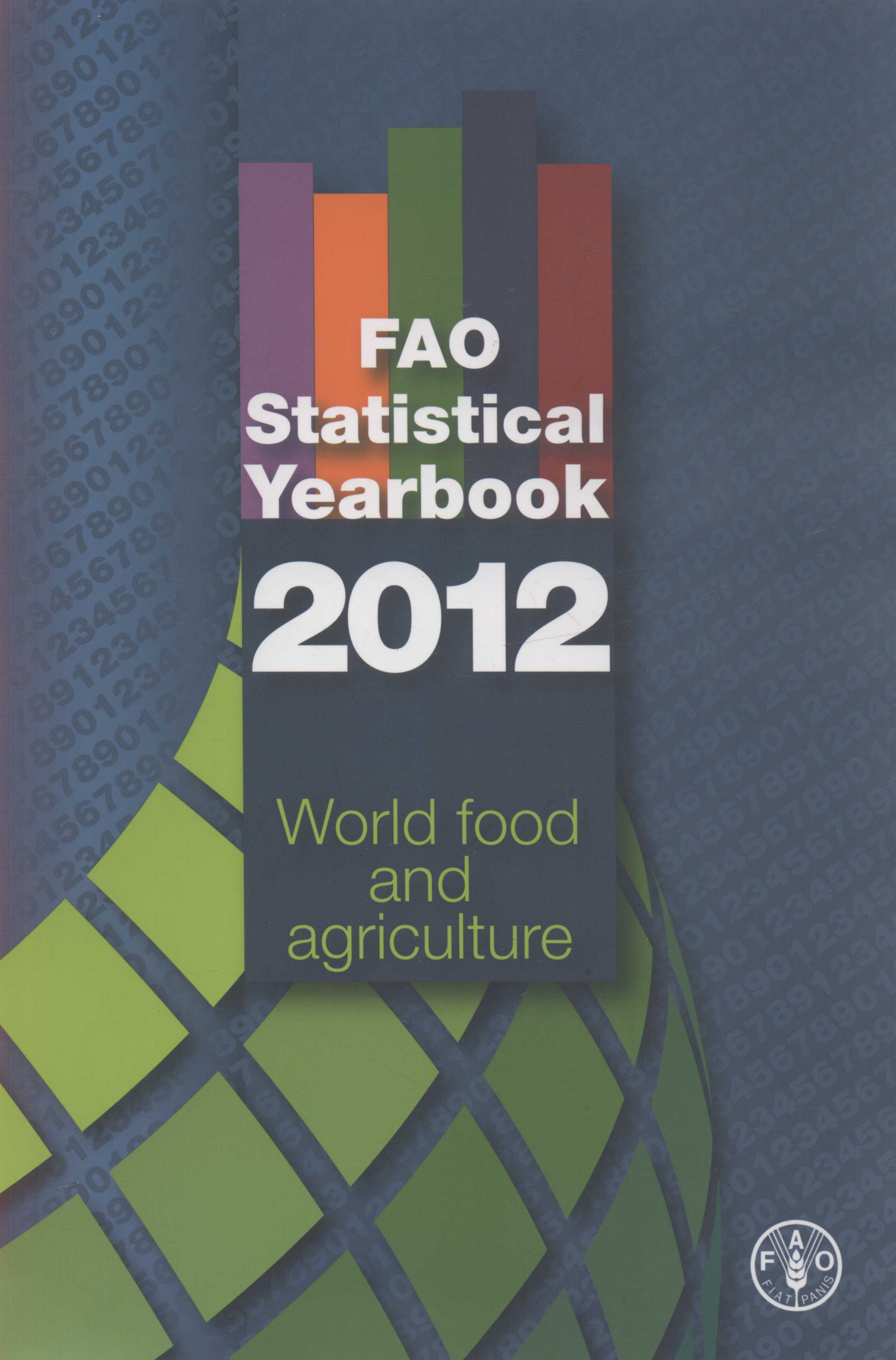


The background features a dark blue field with a repeating pattern of numbers (0-9) in a lighter blue, slightly tilted font. Overlaid on this is a stylized bar chart with five vertical bars of varying heights and colors: purple, orange, green, dark blue, and red. At the bottom, a portion of a globe is visible, rendered in shades of green and yellow with dark blue grid lines.

# **FAO** **Statistical** **Yearbook** **2012**

World food  
and  
agriculture



# World Food and Agriculture

2012

常州大学图书馆  
藏书章

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# Introduction

## Preface

There is currently a wealth of statistics on food and agriculture being provided both by FAO and other global data suppliers. Not only are the volume and coverage of data vast, but so is the diversity. This is a reflection of the fact that agriculture is now increasingly intertwined with many other sectors, the environment, the wider economy and with society.

However, we noticed a clear gap in the knowledge arena in terms of a missing platform that brings together all of the data in a coherent and systematic way, so that readers can easily access and absorb the depth and breadth of agriculture's role in the world today. We hope this FAO statistical year book fills such gap.

In presenting this publication, the FAO Statistics Division would like to acknowledge the combined efforts of statisticians around the world, in particular staff in ministries of agriculture and statistical offices, in international institutions and in non-governmental organizations, whose efforts have made this publication possible.

This book has been prepared by a team from the FAO Statistics Division led by Adam Prakash and Matthieu Stigler, with substantial technical assistance from Filippo Gheri.

We acknowledge the comments and suggestions from within FAO's Economic and Social Department, including Denis Drechsler, Concepción Calpe, Piero Conforti, Jelle Bruinsma, Josef Schmidhuber, Seth Meyer, Amy Heyman, Carlo Cafiero, Nathalie Troubat, Chiara Brunelli, Eve Crowley and Elisenda Estruch. Valuable comments from colleagues in other FAO departments are also acknowledged, especially Tsuji Sachiko, Karen Frenken, Eugenia Serova, Lorraine Williams, John Ruane, Andrea Sonnino and Modibo Traore.

We would also like to thank Natalia Ermolaev for editorial assistance. The contribution of Boris Veytsman in designing and producing book via a dedicated  $\LaTeX$  package is acknowledged and that of Giancarlo de Pol for the graphical concept. Finally, Emmanuel Blondel and Professor Roger Bivand provided precious assistance on the presentation of geo-referenced data, and Guido Barbaglia for the data download API.

We would also like to take this opportunity to say a few words about how the FAO Statistical Yearbook was produced. This book has been created with innovative open-source tools, employing a combination of R and  $\LaTeX$  to generate the entire publication: from data retrieval to data processing to indicator construction to a blueprint-ready PDF file for distribution. Our innovation circumvented the traditional route of manual production, involving costly software licenses, significant labour costs and inefficiencies associated with a lack of cycle integration. The R- $\LaTeX$  solution also empowered FAO statisticians in managing how their data were to be presented.

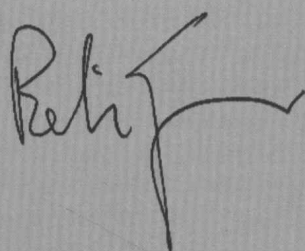
Adam Prakash, Matthieu Stigler

## Foreword

Achieving food security for all is at the heart of FAO's mission, by making sure people have regular access to enough high-quality food to lead active, healthy lives. Our mission is premised on the need to raise levels of nutrition, improve agricultural productivity, better the lives of rural populations and ensure that agriculture can be a sustainable platform for economic growth. Beyond its essential role in food security, sustainable agricultural development is now regarded as pivotal in strategies towards poverty alleviation. In addition, policy makers agree that agriculture will be key to effectively address challenging issues of our time, including climate change, water scarcity, environmental pollution and land degradation. Agriculture has a clear role in providing ecosystem services to protect the environment and preserve our planet's natural resource base. With the sector now intertwined with almost every topic in the development agenda, a major challenge is to capture and monitor the multiple roles of agriculture.

Providing reliable and timely information on the status of food and agricultural sectors in multiple contexts is an important part of the FAO mandate and in particular of the FAO Statistics Division. In response to the demands for a more comprehensive set of statistics and indicators that are amenable to an ever-widening audience, we have attempted to meet the challenge through radically overhauling the usual FAO Statistical Yearbook format. The revised publication will continue the long tradition of the FAO Statistical Yearbook series as the foremost collection and reference point of statistical data on food and agriculture, but the new publication marks a transition. In rising to the call for a broader and more in-depth examination of the many roles of agriculture, this edition leans towards a thematically-driven, statistical snapshot of the major trends and issues related to world food and agriculture. Divided into four parts and encompassing 34 dimensions of food and agriculture, the new FAO Statistical Yearbook employs over 350 indicators drawn from data sources within FAO, sister UN agencies, the World Bank and other international organizations.

The new Yearbook approach makes us all keenly aware of the need to improve the quality, quantity and scope of agricultural and development statistics. Concerted efforts are, however, being made by FAO and our partners to enhance country capacities in providing better and more statistical information. Though presenting an accessible statistical synthesis of the key issues affecting world food and agriculture, it is our desire that the book raises awareness about the multiple challenges confronting the sector, thereby strengthening FAO's resolve towards fighting hunger and improving the livelihoods of the rural poor.



Pietro Gennari  
Director, FAO Statistics Division

## How to use this book

The 2012 edition of the FAO Statistical Yearbook represents a break away from FAO tradition. Through employing data from global statistical providers, including FAO, the publication presents a visual synthesis of the major trends and factors shaping the global food and agricultural landscape and their interplay with broader environmental, social and economic dimensions. In doing so, it strives to serve as a unique reference point on the state of world food and agriculture for policy-makers, donor agencies, researchers and analysts as well as the general public.

The book is subdivided into four thematic parts, where an attempt is made to exhaustively present the spectrum of issues relevant to the subject matter:

**Part 1 The setting** measures the state of the agricultural resource base, by assessing the supply of land, labour, capital, inputs and the adequacy of infrastructure, and also examines the pressure on the world food system stemming from demographic and macroeconomic change

**Part 2 Hunger dimensions** gauges the state of food insecurity and malnutrition, measuring the multitude of dimensions that give rise to hunger and those that shape undernourishment

**Part 3 Feeding the world** evaluates the past and present productive capacity of world agriculture together with the role of trade in meeting changing food, feed and other demands

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Multiple page spreads are used to present each thematic issue. Each spread contains a visualization of the data by way of maps and charts and is accompanied by text that provides a background to the salient issues as well as an assessment of current trends.

Data are made available for virtually all countries in the world, excluding principalities and minor territories.

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### *How to retrieve Yearbook data*

The data used in this book are presented via charts and maps that form the basis of key indicators. A more detailed overview of the data is provided by way of tables located at the end of each thematic part. Documentation about the data, their methodology and sources can be found through the *MetaLink* key below each indicator. For the web version, the user can simply click on the MetaLink key, and will be directed to information about the data. Furthermore, a small icon allows the user to directly download the data presented in each indicator.

## The Webservice API

Underlying the direct download is a new Webservice system that gives direct access to the datasets employed by the Yearbook. While most users will simply use the icon-based direct link, those users who regularly use the data will undoubtedly benefit from the Webservice facility. The Webservice relies on REST API technology, which offers different ways to access the data, as well as alternative formats for retrieving them.

**Base link:** The base link is `http://ldvapp07.fao.org:8030/wds/api?db=faosyb`

**Output format:** Users can either visualise the data in the web browser with `out=html` or download data in csv, Excel xls or xml by specifying the argument: `out=csv` (or excel, or xml).

**The content:** The Webservice offers different ways to specify the data to download:

- By object key as provided in the book: download all the data used in the given chart/map/table, and is executed by using the argument: `object=chart5`. For example:  
`http://ldvapp07.fao.org:8030/wds/api?db=faosyb&out=html&object=chart5`
- By dataset name: download all the data contained in a given dataset (often more than what is provided by the indicator). Executed by using the argument: `dataset=x`. For example:  
`http://ldvapp07.fao.org:8030/wds/api?db=faosyb&out=html&dataset=P1.DEM.UN.WPP.FER.TOT`

Finally, a few specific requests are provided that allow users to retrieve:

- The list of dataset keys used and their label. Use:  
`http://ldvapp07.fao.org:8030/wds/api?db=faosyb&out=html&dataset=list`
- The list of country codes, with their equivalent in ISO2, ISO3, UN and GAUL code. Use:  
`http://ldvapp07.fao.org:8030/wds/api?db=faosyb&out=html&findcode=list`

## Yearbook data directly accessible from within the statistical software R

To further facilitate the download and use of the data contained in the Yearbook, the Webservice API will be callable from within R – a free and open-source software platform popular worldwide. To keep abreast of updates, readers and users are encouraged to visit the Yearbook's website:

[www.fao.org/economic/ess/syb](http://www.fao.org/economic/ess/syb)





## Key Resources

### The State of Food and Agriculture

The State of Food and Agriculture, FAO's major annual flagship publication, aims at bringing to a wider audience balanced science-based assessments of important issues in the field of food and agriculture. Each edition of the report contains a comprehensive, yet easily accessible, overview of a selected topic of major relevance for rural and agricultural development and for global food security. This is supplemented by a synthetic overview of the current global agricultural situation.

2009: Livestock in the balance

2010-11: Women in Agriculture: Closing the gender gap for development

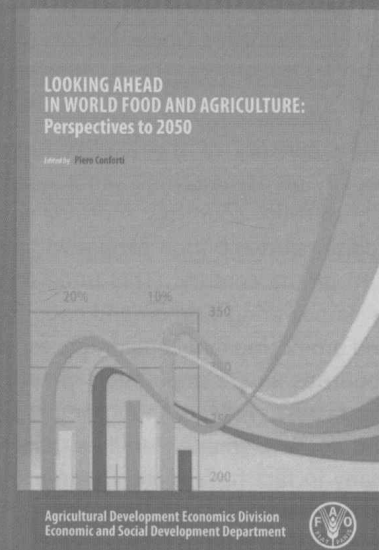
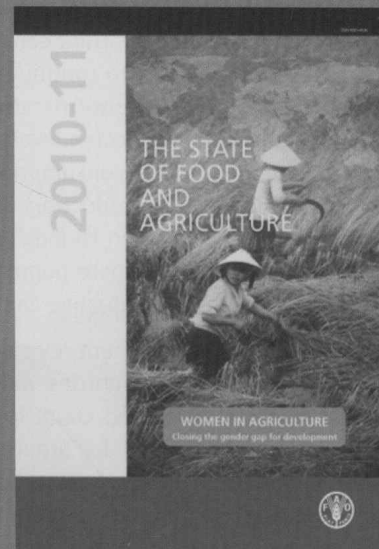
Publication cycle: Annual

Webpage: [www.fao.org/publications/sofa](http://www.fao.org/publications/sofa)

### Looking Ahead in World Food and Agriculture

How will the world feed itself in 2050? This volume, which is a compilation of papers authored by world-class experts, addresses this very question. Agricultural and food demand is expected to slow over the next decades, following slowing population growth and rising incomes. However, population will still grow considerably in the coming decades, and require world agricultural production to increase substantially by 2050. Other areas explored in the volume are natural resources – notably land and water – as well as capital, investment and technology.

Webpage: <http://www.fao.org/economic/esa/esag/en/>



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# 1

## The setting

### Introduction

Well over half of the developing world's population – 3.1 billion people, or 45 percent of all humanity – live in rural areas. Of them, roughly 2.5 billion derive their livelihoods from agriculture. For many economies, especially those of developing countries, agriculture can be an engine of economic growth. Approximately two-thirds of the world's agricultural value added is generated in developing countries, and in many of them the agricultural sector contributes as much as 30 percent to the Gross Domestic Product (GDP) and is a source of employment for two-thirds of the labour force. According to the World Bank, growth in the agricultural sector can be up to 3.2 times more effective at reducing US\$1/day poverty than growth in other sectors. Importantly, agriculture can provide a haven of resilience against global economic and financial turmoil, often more effectively than other sectors.

A look back through history reveals that growth in agriculture has tended to be the antecedent of wider economic development. From the Industrial Revolution that began in England in the 18th century and spread to other now-developed countries, through to more recent examples of China or Viet Nam, agriculture has always been the precursor to the rise of industry and services. In many poor developing countries, primary activities such as agriculture still constitute the backbone of the economy. Inadequate infrastructure, incomplete markets and a large presence of subsistence producers are

frequent characteristics of these economies. Strategies to promote economic growth must be firmly anchored in agriculture. Increasing productivity in the sector is a necessary condition for resources to migrate towards non-agricultural activities, thus gradually diversifying the economy.

Yet, a profound and prolonged lack of investment in agriculture is evident in many countries. Notably, infrastructure is missing or weak in rural areas, agricultural productivity is stagnant and the lack of opportunities for income diversification combines with poor functioning markets to undermine economic growth.

These conditions, however, can be changed. There is now a growing recognition among governments and donor agencies that agriculture must be the mainstay of any development agenda and of policies towards economic growth. The reaffirmation of the sector's role in this context provides fresh impetus for fostering investment and raising productivity in agriculture.