Environment statistics for Evidence-based decision making

27-31 March 2017 – Workshop on Environment Statistics for EAC

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ENVIRONMENT Team FAO STATISTICS DIVISION





FAO STATISTICAL PROCESSES

FAOSTAT AND FDES: DESCRIPTIVE AND ANALYTICAL STATISTICS

FAO AND THE SDG PROCESS

CAPACITY DEVELOMENT



 Statistics are a core function and pillar of FAO work and represent a highly visible area of the Organization's work

 FAO informs decision-making through the provision of reliable and timely data

 Statistics enable Monitoring and Reporting progress towards national and international development goals and targets



FAO Statistics and National Data

I. Data collection from member countries and

data quality processes

FAO Constitution Art. I (1)

II. Data dissemination through public databases

FAO Constitution Art. I (1)



III. Capacity development to strengthen national statistical institutions responsible for agricultural data collection and in support of relevant international processes

FAO Constitution Art. I (3a)

Develop standards and methodologies for data and metadata collections: harmonization and data quality



FAOSTAT Data

FAOSTAT includes descriptive and analytical environment statistics:

Core Statistics:

Collected from Countries via Questionnaires

- Fertilizers
- Pesticides
- Land Use

Analytical Statistics:

Policy analysis and country reporting

- Emissions
- Agri-Environmental Indicators
- Climate Change Relevant Statistics



FAOSTAT Core Statistics: Collection, Analysis and Dissemination

		4	5						
		COUNTRY	•	FAO Statisti Division	ics	FAOS	TAT		
Purpose of the question This Fertilizer Question and to forecast future re	Food of th	Food and Agriculture Organization of the United Nations		e on Agricultural Resources	Reference Years: 2009-2014	FAOSTAT	POOD AND ADDREATING ONDARGATIS TATISTICS DWIDOW ND DATA COMPARE DATA SEARCH DAT	N OF THE UNITED NATIONS TA ANALYSIS METHODS & STANDARDS	ENCLUM FRANÇAS ESPAÑOL Q Search
Please complete or up	Reporter name:			l use and Irrigation			DRING FADSTAT DATA DOMAINS. CLICK ON THE		
	Title: Administration and Office Address:	Reporter name:	National Repo	orting Office and Contact name		Production	Browse > Download >	Food Balances	Food Security
Title Administration and O	Tel:	Title: Administration and Office:				Prices	Investment	Inputs	Population
Administration and O Address	 The Pesticides u Seed treatments 	Administration and Omce: Address:							
City	the risk of double • Data should rela	Tel: Fax:	E-mail:	http://	Date	Emissions - Agriculture	(Emissions - Land Use	Agri-Environmental Indicators	Forestry
Email	 Data should relation agriculture. Please note that 	The Land and Irrigation Questionnaire has three major se		mip.n	Date	ASTI R&D Indicators	Emergency Response		Registrons
Tel	 The questionnai 	 The Land and irrigation Questionnaire has three major se Land use and Irrigation, Land use - plantations and Metad 				Contraction of the second seco	anisidence unskouge		Renkings > Country / Region >
Fax	Section 1 - data	We have included detailed concepts and definitions of the	land use categories						Featured Links
Web site address	Section 2 - if the Section 3 - met	in the Explanatory Notes sheet.				Highlights Number of undernourished declinin	NG Millions of people		An Comina acon
Structure	Annex 1 - it inol	 Please include notes on any deviation from the concepts regarding the specific data requested. 	and definitions			1100			
This questionnaire is c Three introductory sect	.Convention on	 If your organization is not responsible for the data collection 	of one or more			1000 0000000			Download
Two data reporting sec	 If you have any c Mr Francesco Tubiel 	variables, we kindly ask you to indicate the contact detail of				900	no o o o o o o o o o o o o o o o o o o	an .	FADSTAT DATABASE WITH ONE CUIX (AFPROX 500M0) 2016-02-03
Two Supplementary Inf	tel: (+39) 06 5705 21 e-mail: Francesco. T	responsible in the section "Land use - contact details"				800		000000	
We kindly ask you to p	http://www.fao.org/sta	 If you have any query regarding the questionnaire please of 	contact:			700			COUNTRY PROFILES
FAO takes this opportu		Mr Francesco Tubiello tel: (+39) 06 5705 2169				1001 1002 1003 1004 1005 1005	5 1997 1998 1999 2000 2001 2002 2003 2004 2005 2008		COOWTRY PROFILES
Please send back your Representative Office r	F	tel: (+39) 06 5705 2169 e-mail: Francesco.Tubiello@fao.org					Number of undemounshed declining		
Contact person: Mr Fra									What's new in FAOSTAT? FEBRUARY 2016 Emissions - Land Use.
		http://www.fao.org/statistics/en/				Database Updates	510.0		Linearona - Lena Use.
		http://www.fao.org/statistics/en/	ovide a reply by 02	(Feb/2015		Database opdates	FAU Statist	ical Pocketbook 2015	Coming Up
() Com	 Cov 	We kindly ask you to pr				FEBRUARY 2016	(P) Large	This publication is part of the FAO Statistical Yearbook suite of products.	Coming Up FEBRUARY 2016 Production 2014 (Update).
 Cover 	 Cov 	We kindly ask you to pr					od Security Use	This publication is part of the FAO	Coming Up FEBRUARY 2016 Production 2014 (Update). OCTOBER 2015 Investment. OCTOBER 2015

FAOSTAT Analytical Statistics: Estimates and Indicators based on core statistics and aligned with International Standards

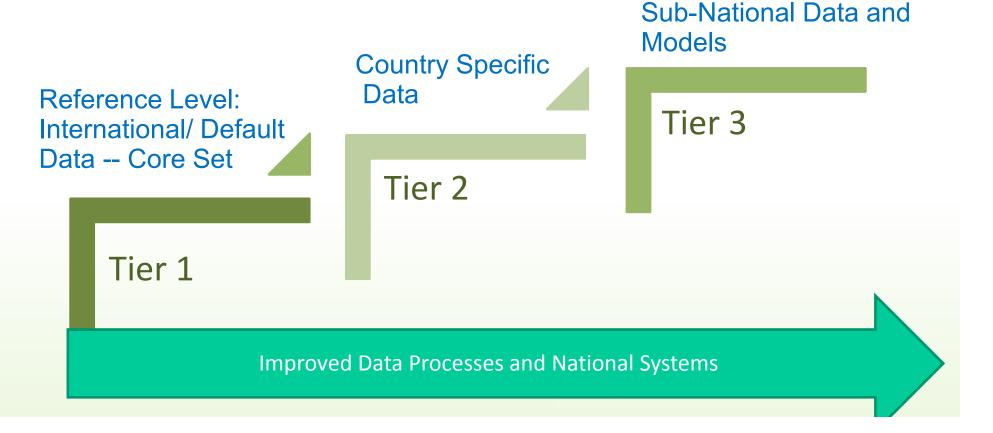
 Reference data products in support of National analysis and International Reporting (Climate Convention, SDGs, FDES)

	Distrigovernmental Panel on Climate Change () 2006 IPCC Guidelines for National Greenhouse Gas Inventories	System of Environmental-Economic Accounting 2012	Food and Agriculture Organization of the United Nations
DEPARTMENT OF ECONOMIC AND SOCIAL AFFAILS STATES DURING UNITED MATCHING Framework for the Development of Environment Statistics (FDES 2013)	Volume 4 Agriculture, Forestry and Other Land Use Kieldo by Simo Egelowa. Lendre Bunnik, Kyele Mise, Teid Ngara and Kyeler Tanake	Central Framework	SEEA AFF Agriculture Forestry
Final official edited version Prepared by the United Nations Statistics Division 27 June 2016			Fisheries
	IPCC National Greenhouse Gas Inventories Programme	Without Stream Without Strea	System of Environmental Economic Accounting
1		E A Food and Age	culture Organization

of the United Nations

FAOSTAT Analytical Statistics: Estimates and Indicators based on core statistics and aligned with International Standards

 Adoption of a <u>Phased Approach</u> to allow countries produce and report statistics at different levels of complexity, as desired



FDES and FAOSTAT Environment Statistics

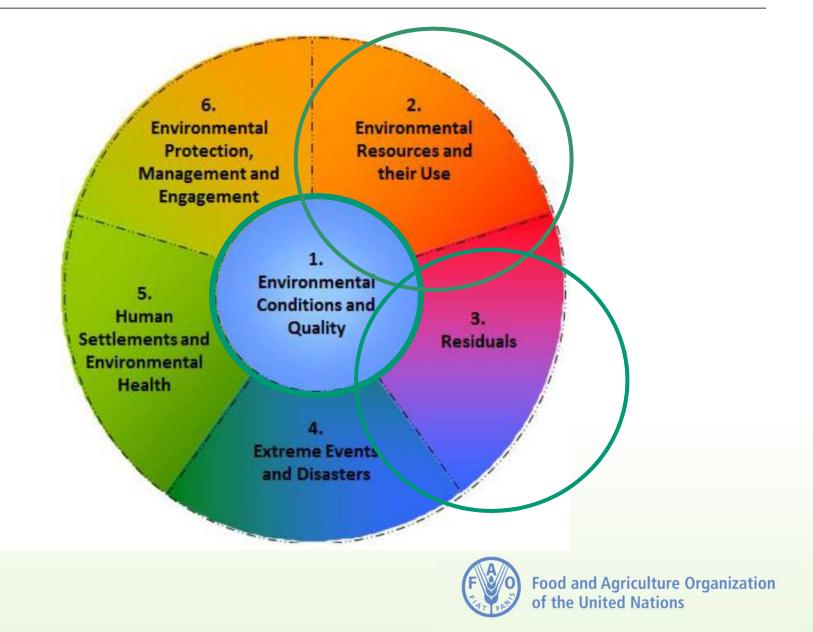
FDES includes 6 components:

- Environmental conditions and quality
- Land Cover, ecosystems and biodiversity
- Environmental quality
- Environmental resources and their use
- Residuals
- Extreme events and disasters
- Human settlements and environmental health
- Environmental protection, management and engagement

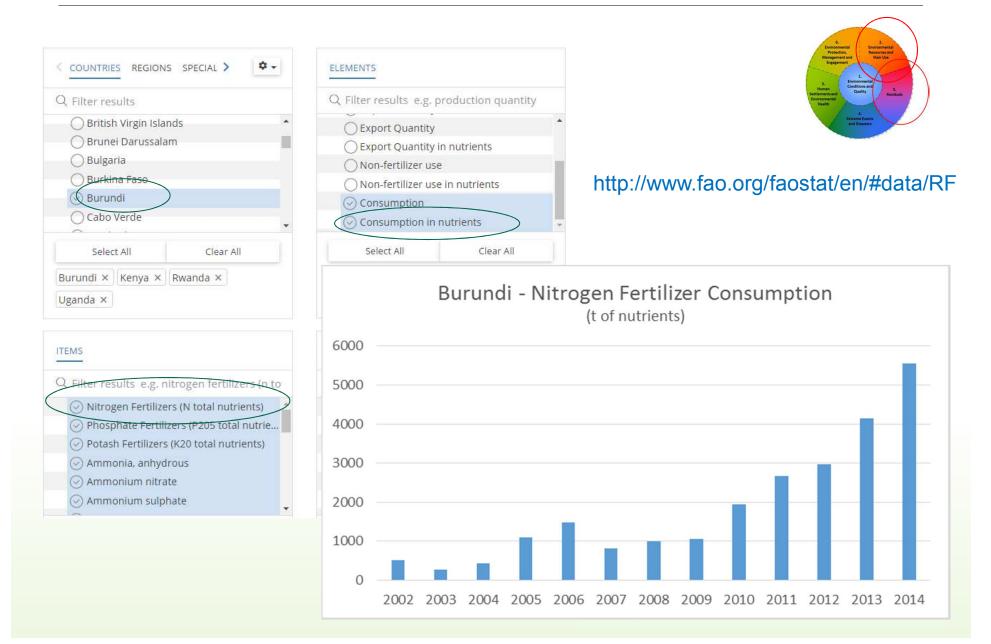
FAOSTAT environment statistics support FDES components, including the *Basic Set and Core Set of Environment Statistics*



FDES and FAOSTAT Environment Statistics (cont.)



Fertilizers (I)



Fertilizers (ii)

Fertilizers

The Fertilizers dataset contains information on the Production, Trade, Agriculture Use and Other Uses of chemical and mineral fertilizers products... Show More

Food and Agriculture Organization of the United Nations (FAO)

Bulk Downloads ■	
All Data	451 KB
All Data Normalized	1.44 MB
All Area Groups	22 KB
Africa	90 KB
Americas	84 KB
Asia	110 KB
Europe	123 KB
Oceania	21 KB

Last Update November 10, 2016 Related Documents Fertilizers

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Definitions and...

Metadata

Dataset Infor	mation:					
Title	Fertilizers					
Abstract	The FAOSTAT Fertilizers domain contains information, over the time series 2002- 2014, on Production, Trade, Agriculture Use and Other Uses of chemical and mineral fertilizers, both in total nutrients for the three main plant nutrients: nitrogen (N), phosphate (P_2O_5), potash (K_2O), and in amounts of product.					
Supplemental	The Fertilizers statistics are validated in terms of summary totals of Production, Imports, Exports, Agricultural Use and Other Uses, for the three main plant nutrients. Both straight and compound fertilizers are included.					
International Standards	The FAOSTAT Fertilizers domain is compliant with the System of Environmental-Economic Accounting for Agriculture Forestry and Fisheries (SEEA AFF) in terms of:					
	 i) <u>Definitions:</u> fertilizers definitions in the SEEA AFF are based on FAO; ii) <u>Classifications:</u> it follows the Central Product Classification (CPC); and iii) <u>Applicability:</u> data can be used to compile the SEEA AFF Table 4.6, "Physical flow account for fertilizers". 					
	The FAOSTAT Fertilizer domain is compliant with the Framework for the Development of Environmental Statistics (FDES 2013) as natural and chemical fertilizers are included in FDES Component 1, Environmental Conditions and Quality; Component 2, Environmental Resources and their use; and in Component 3, Residuals. Furthermore amount of fertilizers used for crops is defined by FDES as Core set/ Tier 1 statistics. (FDES, Table 4.2, "The Core Set of Environmental Statistics").					
Creation Date	2002					
Last Update	2016					
Data Type	Agricultural Input- Fertilizer					
Category	Environment					
Time Period	2002-2014					
Periodicity	Annual					
Geographical Coverage	World					
Spatial Unit	Country					
Language	Multilingual (EN, FR, ES)					

http://fenixservices.fao.org/faostat/static/do cuments/RF/RF_e.pdf



Pesticides (i)



Pesticides (ii)

Pesticides Use

The Pesticides (use) database includes data on the use of major pesticide groups (Insecticides, Herbicides, Fungicides, Plant growth regulators and... Show More

Food and Agriculture Organization of the United Nations (FAO)

+	Bul	k D	lown	load	s

All Data	129 KB
All Data Normalized	285 KB
Africa	22 KB
Americas	29 KB
Asia	31 KB
Europe	48 KB
Oceania	5 KB



Definitions and...

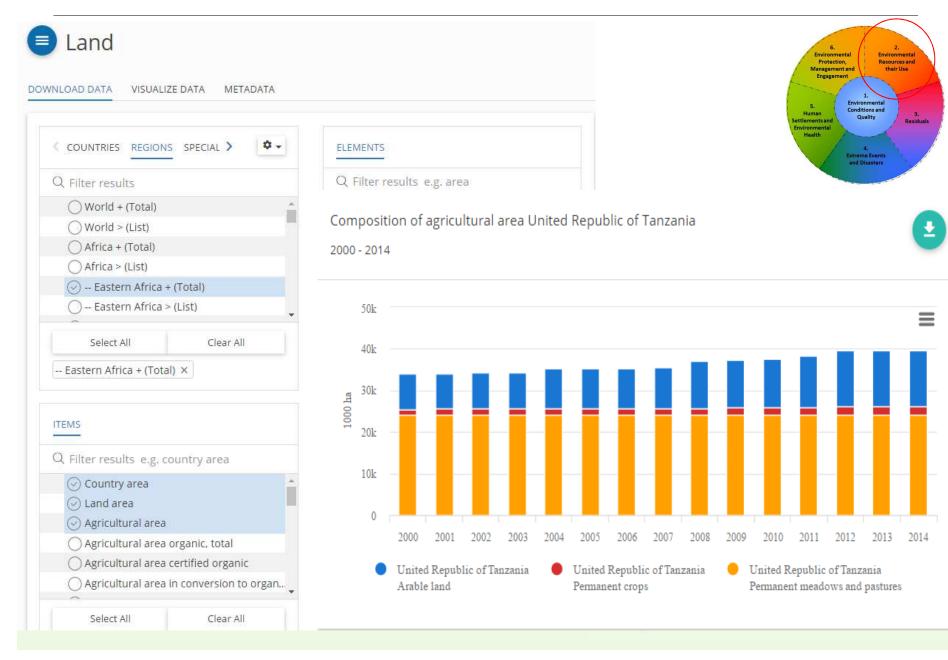
Metadata

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Title	Pesticides Use
Abstract	The FAOSTAT Pesticides Use domain contains data on the use of major pesticide groups and of relevant chemical families. Data report the quantities (in tonnes of active ingredients) or pesticides used in the agricultural sector for crops, seeds and forestry. Data are available by country and year, with global coverage and annual updates. The domain covers the period 1990–2014.
Supplemental	The FAOSTAT Pesticides Use domain contains information on the use of major pesticide groups: Insecticides, Herbicides, Fungicides, Plant growth regulators and Rodenticides Agricultural statistics are especially useful for market management/monitoring, production forecasts and policy-making in agricultural and food sectors.
International Standards	 The FAOSTAT Pesticides Use domain is compliant with the System of Environmental-Economic Accounting for Agriculture Forestry and Fisheries (SEEA AFF) in terms of: <u>Definitions</u>: the Pesticides definitions in the SEEA AFF are based on FAO; <u>Classifications</u>: the SEEA AFF classification for pesticides statistics is based on FAO; <u>Applicability</u>: FAOSTAT Pesticides Use domain data can be directly used to compile the SEEA AFF Table 4.7 "Physical flow account for pesticides". The FAOSTAT Pesticides Use domain is compliant with the Framework for the Development of Environmental Statistics (FDES 2013) as pesticides data are included in FDES Component 1, Environmental Conditions and Quality; Component 2, Environmental Resources and their use and in Component 3, Residuals. Furthermore amount of pesticides used for crops is defined by FDES as Core set/ Tier 1 statistics. (FDES, Table 4.2 "The Core Set of Environmental Statistics").

http://fenixservices.fao.org/faostat/ static/documents/RP/RP_e.pdf

Land Use (i)



Land Use (ii)

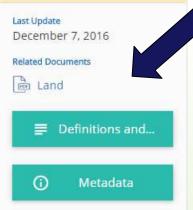


Land

Land use data include information for: Country area (including area under inland water bodies), Land area (excluding area under inland water bodies... Show More

Food and Agriculture Organization of the United Nations (FAO)

👲 Bulk Downloads	
All Data	355 KB
All Data Normalized	1.07 MB
All Area Groups	61 KB
Africa	66 KB
Americas	59 KB
Asia	66 KB
Europe	73 KB
Oceania	17 KB



http://fenixservices.fao.org/faostat/static/do cuments/RL/RL_e.pdf

Dataset Informati	on:
Title	Land Use
Abstract	The FAOSTAT Land domain contains data on thirty-three land use categories. It also contains data on forest carbon stock in living biomass, derived from the FAO Global Forest Resource Assessments (FAO FRA). Data are available by country and year, with global coverage and annual updates. The domain covers the period 1961–2014 for agricultural land and 1990- 2014 for forest.
Supplemental	The FAOSTAT Land domain includes categories of land use for agricultural and forestry activities. Agricultural statistics are especially useful for market management/monitoring, production forecasts and policy-making in agricultural and food sectors.
International Standards	 The FAOSTAT Land domain is compliant with the System of Environmental-Economic Accounting Central Framework (SEEA CF), as well as with the System of Environmental-Economic Accounting for Agriculture Forestry and Fisheries (SEEA AFF), in terms of: <u>Definitions</u>: consistent with those included in the SEEA CF and the SEEA AFF, based on FAO definitions; <u>Classifications</u>: it follows the SEEA CF and the SEEA AFF Land Use Classification based on FAO; <u>Applicability</u>: data can be directly used to compile the SEEA CF Tab. 5.15
	"Physical asset account for forest and other wooded land" and the SEEA AFF Table 4.8, "Physical asset account for land use." The FAOSTAT Land domain is compliant with the Framework for the Development of
	Environmental Statistics (FDES 2013) as FAO and SEEA CF land use categories are reported as methodological guidance in FDES Component 2, Environmental Resources and their use, Sub-Component 2.3: Land, Topic 2.3.1: Land Use. Furthermore Area under Land Use categories is defined by FDES as Core set/ Tier 1 statistics. (FDES, Table 4.2, "The Core Set of Environmental Statistics").



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Emissions (i)

💬 Emissions - Land Use

Land Use Total

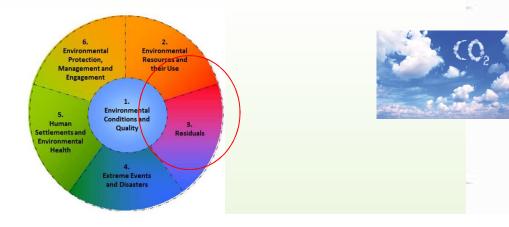
Forest Land

Cropland

Grassland

Burning - Biomass

http://www.fao.org/faostat/en/#data



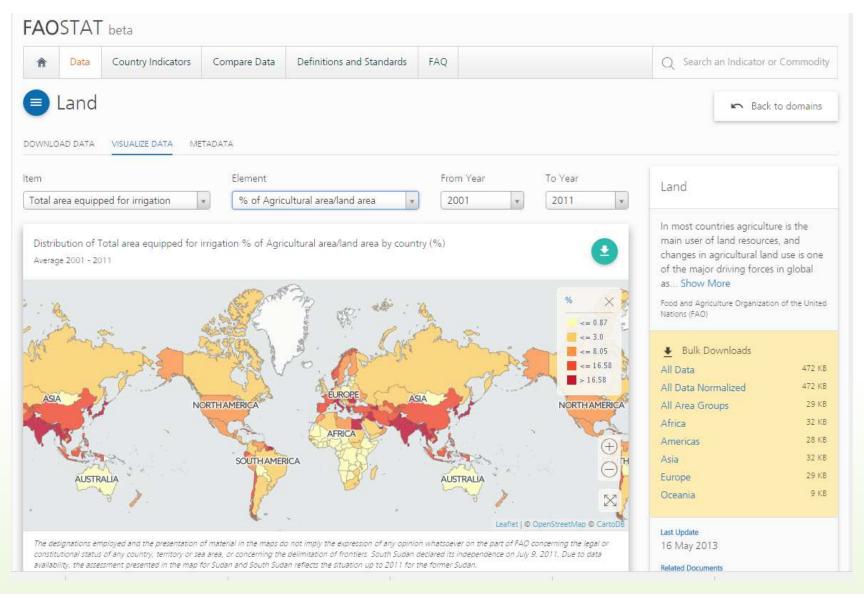
💮 Emissions - Agriculture

Agriculture Total Enteric Fermentation Manure Management Rice Cultivation Synthetic Fertilizers Manure applied to Soils Manure left on Pasture **Crop Residues** Cultivation of Organic Soils Burning - Savanna Burning - Crop Residues

Energy Use

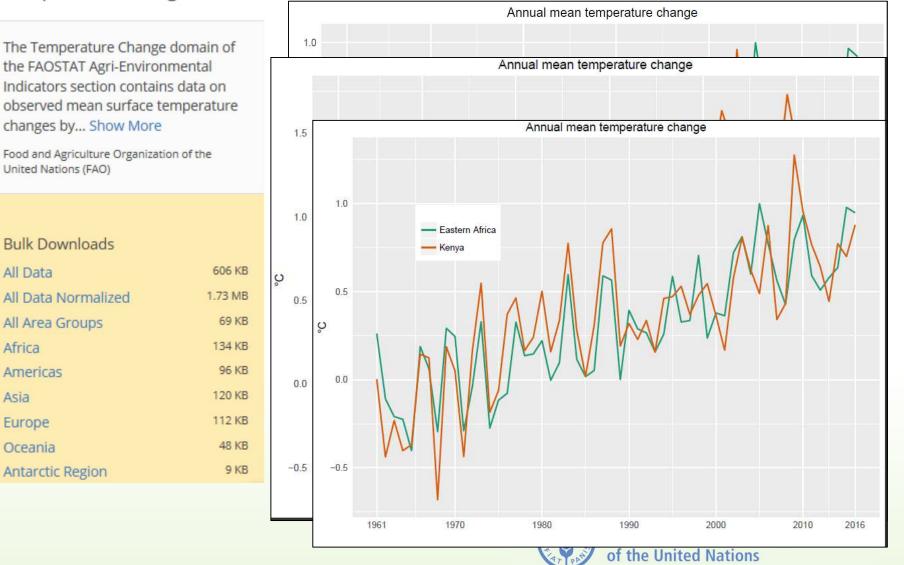
Agri-Environmental Indicators

e.g. Data series: Percent of total area equipped for irrigation



Climate Change Relevant Statistics

Temperature change



FAO and SDGs Indicators

FAO is the UN Custodian Agency for **21 indicators**, for **SDGs 2, 5, 6, 12, 14** and **15**, and as a contributing agency for four more. As a custodian agency, FAO will be responsible for:

A) Collecting data from national sources, validating and harmonizing them, estimating regional and global aggregates and making them available for international reporting.

B) Contributing to annual SDG progress reports, feeding into the High-Level Political Forum's follow-up and review processes. Flagship publications are set to broaden their scope to include both a storyline and statistical annexes on relevant SDG indicators under FAO custodianship.

C) Establishing partnerships with other international agencies to monitor the increased number of indicators, crucial to achieving interrelated goals.

http://www.fao.org/sustainable-development-goals/tracking-progress/en/

FAO AND THE SDGs

Food and Agriculture Organization of the United Nations SUSTAINABLE

Indicators: Measuring up to the 2030 Agenda for Sustainable Development

GAL	<u> </u>	,
	AO Focal points	Tier
2.1.1 Prevalence of undernourishment	Carlo Cafiero	I
2.1.2 Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)	Carlo Cafiero	I
2.3.1 Volume of production per labour unit by classes of arming/pastoral/forestry enterprise size	<u>Viero Conforti</u>	III
2.3.2 Average income of small-scale food producers, by sex and indigenous status	<u>Piero Conforti</u>	III
2.4.1 Proportion of agricultural area under productive and sustainable agriculture	ean-Marc Faures	111
2.5.1 Number of plant and animal genetic resources for food and agriculture secured in medium or long term conservation facilities	itefano Diulgheroff	II
2.5.2 Proportion of local breeds, classified as being at risk, not-at-risk or unknown level of risk of extinction	Roswitha Baumung	II
2.a.1 The agriculture orientation index for government expenditures	angita Dubey	II
2.c.1 Indicator of (food) price anomalies	elix Baquedano	III

7500



Indicator	Focal Point	Tier
5.a.1 (a) Percentage of people with ownership or secure rights over agricultural land (out of total agricultural population), by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure	<u>Chiara Brunelli</u>	III
5.a.2 Percentage of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control	<u>Marta Osorio</u>	III
6.4.1 Change in water use efficiency over time	Jippe Hoogeveen	III
6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	Jippe Hoogeveen	II
12.3.1 Global food loss index	<u>Carola Fabi</u>	III
14.4.1 Proportion of fish stocks within biologically sustainable levels	<u>Yimin Ye</u>	I
14.6.1 Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing	<u>Rebecca Metzner</u>	III
14.7.1 Sustainable fisheries as a percentage of GDP in small island developing States, least developed countries and all countries	<u>Kim Friedman</u>	III
14.b.1 Progress by countries in adopting and implementing a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries	Nicole Franz	III
15.1.1 Forest area as a percentage of total land area	Thais Juvenal	II
15.2.1 Progress towards sustainable forest management	Thais Juvenal	II
15.4.2 Mountain Green Cover Index	Rosa Laura Romeo	II

ENVIRONMENT STATISTICS:

CAPACITY DEVELOPMENT



Capacity development activities

- Interaction with country focal points for the different domains (Min. Agriculture, NSOs, Other Agencies)
- Support to improve core and analytical environmental statistics and strengthen capacities of national statistical institutions, adopting a <u>Phased approach</u>
- Development of standards and ongoing refinement of associated metadata and methodological notes
- IICA, AFCAS, APCAS: Regional Statistical Commissions (Latin and Central America, Africa and Asia-Pacific) are an essential part of the country-driven process towards improved statistics in cooperation with FAO



Questionnaires response rate

FAO Official Name	Appears in	Question	aires Receive	d = 1, not re	ceived = 0; er	nter questio	nnaire total f	or World		
Fertilizers	r 🗸	FAOSTAT	2008	2009	2010 🚽	2011	2012	2013	2014 🚽	2015 🚽
Kenya	Eastern Africa	TRUE	0	0	0	0	0	0	0	1
Rwanda	Eastern Africa	TRUE	0	0	0	0	0	0	notsent	notsent
United Republic of Tanzania	Eastern Africa	TRUE	0	0	0	0	0	1	0	0
Uganda	Eastern Africa	TRUE	0	0	0	0	0	0	0	1
LandNeeulan	Fastern Africa	TRUE	notsent	notsent	notsent	0	٥	٥	1	0
FAOCode M49Code Name	Count "Not Count "1" & "0" dataset"	Quest sent 20 (Y/N)	005 200	6 2007	2008	2009	2010 2	2011 20	12 2013	2014
29 108 Burundi	0 6	Y	1 0	0	0	0	0	0 () 0	0
Pesticides use 404 Kenya	0 6	Y	1 1	0	0	1	0	0 (0 0	0
FAOCode M49Code Na	Count ame "Not dataset"	Count "1" & "0"	Quest sent (Y/N)	2008	2009	2010	2011	2012	2013	2014
29 108 Bur	undi 0	6	Y		1	0	0	1	0	0
114 404 Ken	iya O	6	Y		0	0	0	0	0	0
184 646 Rwa		6	Y		0	1	1	1	1	1
215 834 Uni		6	Y		0	0	0	0	0	0
226 800 Uga	inda O	6	Y		0	0	0	0	0	0



Focal Points

Fao Official Name	Institution/ Office	Department	Fertilizer	Land	Pesti cide	Grand Total
Burundi	Institut géographique du Burundi (IGEBU)			1		1
Kenya	Kenya National Bureau of Statistics	Kenya National Bureau of Statistics	1	1		2
Rwanda	Ministère des					
Uganda	Statistics House	Uganda Bureau of Statistics	1			1
United Republics of Tazania	Ministry of Agriculture & Food Security	Plant Health Services			1	1



African Commission on Agricultural Statistics

Organization of the **United Nations**

Statistics home

Economic

Environment

Food security

World census of

Classifications and standards

Capacity development

Meetings and events

agriculture

APCAS

AFCAS

Statistics

Food balance sheets

FAO Home Economic and Social Development Department



African Commission on Agricultural Statistics - 24

1 - 4 December 2015, Kigali, Rwanda

AFCAS brings together senior statistics officials from FAO member countries of the African continent, who are responsible for the development of agricultural statistics in their respective countries. They review and exchange ideas on the state of food and agricultural statistics in the continent and advise member countries on the e of Work and Budget for Africa.

> Provisional agenda

> Provisional programme

Related links

> CountrySTAT > FAO Regional Office for Africa

Contact

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Tel.: (+233-302) 675000 Ext 2605 Fax: (+233-302) 668497

#afcas24

Hiroshi K @hkame2015 #afcas24



Food and Agriculture Organization of the **United Nations**

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AO Home

conomic and Social **Development** Department

statistics home conomic Invironment ood security ood balance sheets Production and trade Vorld census of ariculture lassifications and tandards





International workshop on statistics on N input from livestock manure: Estimating availability and use

30 November 2015, Kigali, Rwanda

The Statistics Division (ESS), the Agricultural Production and Plant Production and Protection Division (AGP) and the Animal Production and Health Division (AGA) of FAO organize a regional workshop on the estimation of statistics on N inputs from livestock manure, as part of its canacity development efforts towards improved

Organization of the United Nations FAO Home Economic and Social Developmen Department Statistics home Economic Environmen Food security Food balance sheets Production and trade World census of agriculture

300

Classifications and standards Capacity development

Publications

Meetings and events APCAS AFCAS ICAS IICA



FAO and World Bank join forces for capacity development in Uganda

Training on Environmental Economic Accounting and Greenhouse Gas Emissions

15 - 17 April 2016, Kampala, Uganda

A workshop jointly organized by FAO and the World Bank took place in Kampala, Uganda on Apr 15-17 2016, for a training on Environmental and Economic Accounting and GHG emissions. The workshop gathered 23 participants from the Ministries and National Agencies primarily involved in the development of Uganda agricultural and environmental statistics and national environmental and economic accounts.

Related links

- System of Environmental-Economic Accounting
- > SEEA Central Framework Current version of the SEEA
- **A**ariculture
- Estimating Greenhouse Gas Emissions in Agriculture

Documents

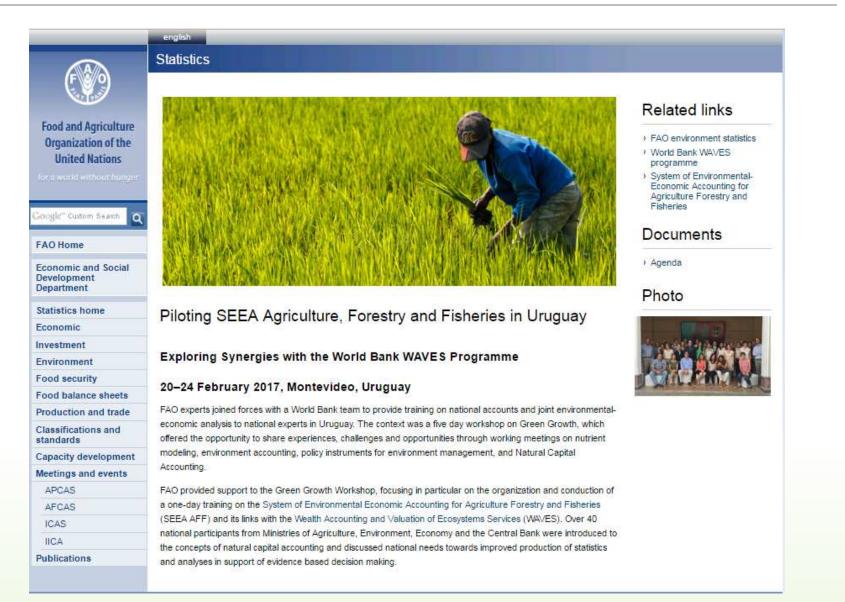
> Agenda > Participants

Acknowledgements

World Bank

Ademola Braimoh Senior Natural Resources Management Specialist Joseph Oryokot Senior Agricultural Specialist Grace Obuya Agricultural Specialis Christine Heumesser Economist Jane Nalunga Agricultural Economist Damalie Nyanja Program Assistant FAO Francesco N Tubiello Senior Statistician Carl Obst Environmental Economic

Capacity development updates:



http://www.fao.org/economic/ess/environment/capacitydevelopment/en/

- FAO collects, analyzes and disseminates environment statistics from its member countries
- FAOSTAT data support FDES core statistics at Tier 1 and can thus be used to support country analysis
- FAO maintains a direct dialogue with national statistical agencies that can inform on specific data reporting gaps and associated capacity development needs



THANK YOU!

Contacts:

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Francesco N. Tubiello, Team Leader & Senior Statistician email: <u>francesco.tubiello@fao.org</u>

Web page: http://www.fao.org/economic/ess/environment/en/