Environment Statistics for evidence-based decision making

Final Workshop on Environment Statistics for the East African Community Region
Arusha, Tanzania 23 – 27 October 2017

ENVIRONMENT Team
FAO STATISTICS DIVISION
Outline

- FAOSTAT Core Agri-Environmental Statistics and Processes;
- FAOSTAT Analytical Agri-Environmental Statistics;
- FAOSTAT Agri-Environmental data in support of FDES statistics - Focus on EAC indicators;
Regulated by FAO Constitution – Statistics a core pillar of FAO; Member countries provide data relevant to agriculture and food security *via national focal points* (NSOs; Min Ag);

FAO collects, analyses and disseminates national statistics in coordination with its member countries in support of *evidence-based decision making*;
## FAOSTAT Core Statistics: Collection, Analysis and Dissemination

**COUNTRY QA/QC**

**FAO Statistics Division**

**FAOSTAT**

### FERTILIZERS

<table>
<thead>
<tr>
<th>Food and Agriculture Organization of the United Nations</th>
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<tbody>
<tr>
<td><strong>Questionnaire on Agricultural Resources</strong></td>
</tr>
<tr>
<td><strong>Land use and Irrigation</strong></td>
</tr>
</tbody>
</table>

**National Reporting Office and Contact name**

- **Supposed user**
  - **Title:** Administrator and officer
  - **Address:**

**FAO Statistics**

- **PESTICIDES**
- **LAND**

**QA/QC Users**

**Food and agriculture data**

**Production**

- **Inputs**
  - **Agriculture**
    - **Agricultural Trade**
      - **Cereal**
  - **Forestry**
- **Emissions - Agriculture**
- **Investment**
- **Food Balance**
  - **Food Balance Sheet**
    - **Commodity Balance**
      - **Crop Primary Equivalent**
  - **Food Security**
    - **Foods and Agri-Sector**
      - **Agriculture**
- **Macro-Statistics**
  - **Capital Stocks**
  - **Macroeconomic Indicators**
- **Prices**
  - **Consumer Price Index**
  - **Air and Climate Change**
  - **Emergency Response**

We kindly ask you to provide a reply by 12Feb2015
Ongoing revision of data collection processes

- Reduce burden on countries;
- Fertilizers questionnaire revised in 2016 – Land use under revision (aligned with the SEEA and WCA 2020) – approx. 40% less questions;
- Foster national coordination;
- Reconciled list of focal points;
- Enhancing coherence in national statistics - joint mailing out;
## Focal Points – National Institutions and Departments

<table>
<thead>
<tr>
<th>Country</th>
<th>FERTILIZERS</th>
<th>LAND</th>
<th>PESTICIDES</th>
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<tbody>
<tr>
<td>Burundi</td>
<td>Ministère de la Planification - Institut de Statistiques et d'Études Économiques (ISTEEBU)</td>
<td>Institut géographique du Burundi (IGEBU)</td>
<td>Ministère de l'Agriculture et de l'Élevage - Département de la Protection des Végétaux</td>
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### RESPONSE STATISTICS: FERTILIZERS

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*Year of data collection  1 = Response received  0 = Questionnaire sent, no response*
## RESPONSE STATISTICS: PESTICIDES

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**Year of data collection**

1 = Response received  
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*Food and Agriculture Organization of the United Nations*
## RESPONSE STATISTICS: LAND USE

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</tbody>
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**Year of data collection**

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Agri-environmental analytical statistics

- Based on Core Statistics;
- Aligned to International Standards;
- Reference data products for National and International Analyses and Reporting processes;

UN SEEA and SEEA AFF; UN FDES; SDGs and 2030 Development Agenda; Climate Convention
FAOSTAT Analytical Data and Indicators

- **GHG Emissions** from Agriculture, Forestry and Other Land Use: Carbon Stock Change; Deforestation, Degradation; Peatland; Fire Statistics;

- **Agri-Environmental Indicators** (aligned with Eurostat and OECD);

- **Climate Change Relevant Statistics** (*Emissions Intensity and by Sector; Temperature Change; Land Cover*);
FAOSTAT Analytical Environment Statistics - Global default estimates

& geo-spatial data

SDG Methods + IPCC 2006 Guidelines

Level 1

Level 2

Level 3

# FAOSTAT Agri-Environmental Indicators

**Agri-Environmental Indicators**

- Air and climate change
- Energy
- Fertilizers
- Land Use
- Land Cover
- Livestock Patterns
- Pesticides
- Soil
- Water
- Emissions by sector
- Emissions intensities
- Temperature change

## Indicators

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Start Year</th>
<th>End Year</th>
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</thead>
<tbody>
<tr>
<td><strong>Air and Climate</strong></td>
<td>% Ag. NH3</td>
<td>1980-2009</td>
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<tr>
<td><strong>Energy</strong></td>
<td>Bioenergy, Ag. Use</td>
<td>1971-2009</td>
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<td><strong>Soil</strong></td>
<td>% C, degrad., erosion</td>
<td>1991 &amp; 2008</td>
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<td><strong>Water</strong></td>
<td>% ag. withdrawals</td>
<td>1961-2010</td>
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<td><strong>Fertilizers</strong></td>
<td>Kg/ha on cropland</td>
<td>2002-2014</td>
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<td><strong>Pesticides</strong></td>
<td>Kg/ha on cropland</td>
<td>1990-2014</td>
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<tr>
<td><strong>Livestock Patterns</strong></td>
<td>% LTU</td>
<td>1961-2014</td>
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<tr>
<td><strong>Land Use</strong></td>
<td>Share over land area</td>
<td>1961-2014</td>
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<td><strong>Land Cover</strong></td>
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<td>1990-2015</td>
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<td><strong>Climate Change</strong></td>
<td>GHG, Temp Change</td>
<td>1961-2015</td>
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EUROSTAT/OECD/FAO AEI, 2011
FAOSTAT Environment Statistics in support of FDES components – EAC Environment Indicators

6 components:

i. Environmental conditions and quality

ii. Environmental resources and their use

iii. Residuals

iv. Extreme events and disasters

v. Human settlements and environmental health

vi. Environmental protection, management and engagement
Residuals – Release of chemical substances

- Priority area: **Use of pesticides**
- Indicator: Use of agricultural pesticides per unit of agricultural land
- FDES Statistics: **3.4.1.b Total amount of pesticides used** (FAOSTAT RP – pesticides by type);
- Corresponding: derived from FAOSTAT RP – pesticides by type) and in FAOSTAT domain EP “Average (pesticides) use per area of cropland” ;
- **Relevant to SDG 2.4.1**: Proportion of agricultural area under productive and sustainable agriculture.
Pesticides

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)

Bulk Downloads
- All Data: 14.4 KB
- All Data Normalized: 312 KB
- Africa: 24 KB
- Americas: 32 KB
- Asia: 35 KB
- Europe: 53 KB
- Oceania: 6 KB

Last Update: September 5, 2017

Related Documents
- Country Notes
- README Domain Information
- Definitions and Standards
- Metadata

Timeseries on selected data


Just updated to 2015
Residuals – Release of chemical substances

- Priority area: **Use of fertilizers**
- Indicator: Use of (inorganic) fertilizers per unit of agricultural land
- FDES Statistics: **3.4.1.a.2 & 2.5.3.b.2 Amount used of chemical fertilizers**
- Corresponding: derived from FAOSTAT RF – fertilizers by type) and in FAOSTAT domain EF “Average (fertilizers) use per area of cropland”;
- **Relevant to SDG 2.4.1**: Proportion of agricultural area under productive and sustainable agriculture.
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: 451 KB
- Americas: 84 KB
- Asia: 110 KB
- Europe: 123 KB
- Oceania: 21 KB

Last Update: November 10, 2016
Related Documents
- README_Methodological_Note

AEIndicators

Fertilizers

The data describe the average use of chemical and mineral fertilizers per area of cropland (arable land and... Show More

Food and Agriculture Organization of the United Nations (FAO)

Bulk Downloads
- All Data: 20 KB
- All Data Normalized: 66 KB
- All Area Groups: 5 KB
- Africa: 6 KB
- Americas: 5 KB
- Asia: 7 KB
- Europe: 7 KB
- Oceania: 2 KB

Last Update: July 6, 2017

Related Documents
- README_Methodological_Note

Definitions and standards...

Nutrient nitrogen N (total) - Average use per area of cropland (kg/ha)

Results

Time series on selected data


Forthcoming update to 2015
Residuals – Release of chemical substances

- Indicator: Use of (organic) fertilizers per unit of agricultural land
- FDES Statistics: 3.4.1.a.1 & 2.5.3.b.1 Amount used of natural fertilizers (e.g. manure, compost, lime);
  - Report soon to be released (FAO AGP and AGAL);
  - Capacity development (Dec 2015);
  - Manure (N content);
  - Data from FAOSTAT domains.

FAOSTAT Domains: **N content in manure** : Emissions – Agriculture: Manure applied to Soils; Manure Management; Manure left on Pasture

Compiled for EAC countries: Burundi, Kenya, Rwanda, Uganda, United Republic of Tanzania
Component: biological resources

- Indicator: Livestock density (number of livestock per unit of pasture land);
- FDES Statistics: 2.5.4.a.1. Livestock number & 2.3.1.a Area under land use categories;
- Relevant to SDG 2.4.1;
- FAOSTAT Agri-Environmental Indicators: Livestock Patterns (EK) (also Eurostat) (all in Livestock units):
  - Density of livestock in the agricultural area;
  - Share in total livestock;
  - Stocks.
Density of livestock in the agricultural area (LSU/ha)

Sub-component 2.3 Land

- Priority area: Land use change
- Indicator: Land use change
- FDES Statistics: 2.3.1.a Area under land use categories (directly informs also indicators Total agricultural area; Indicators on use fertilizers/pesticides; Livestock density; Forest area);
- Also part of indicators: Proportion of land area by ownership categories; Proportion of land area affected by contamination;
- Relevant to SDGs: Goal 15 Sustainable use of terrestrial ecosystems
Land Use and irrigation Questionnaire

230 Countries and Territories – Time series 1961-present:

- Country area (denominator)
- Land area (denominator)
- Agricultural area
- Total area equipped for irrigation
- Forest area
- Carbon Stock (from FAO Global Forest Resources Assessment – FRA)
- Fertilizers, Pesticides Use

Aligned with SEEA and FDES; Mapped unto to WCA2020 and IPCC
Land Use

Share of Agricultural area in Land area (%)
FAOSTAT Agri-Environmental Indicators: Land use

SDG 15.1.1: Share of forest area over total area

In FAOSTAT: FRA data and interpolated between assessments:
Webpage for SDGs under FAO custodianship:


https://unstats.un.org/sdgs/indicators/database/?indicator=15.2.1
Conclusions

- FAO collects, analyzes and disseminates environment statistics from its member countries;

- FAOSTAT core and analytical data support FDES core statistics at Tier 1 and can thus contribute to country analyses;

- FAO maintains a direct dialogue with national statistical agencies that can inform on specific data reporting gaps and associated capacity development needs.
The ENV Team

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Giorgia de Santis, Statistical Clerk, Land use and Pesticides
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Fabio Mozzillo, Statistical Clerk, Fertilizers
Andrea Alcibiade, Statistical Clerk, Pesticides
Francy Lisboa, Agronomist – Environmental Analyst
Heather Jacobs, Environmental Analyst
Sylvaine Thomas, Team Assistant

Web page:

under
Inputs;
Agri-environmental indicators;
Emissions – Agriculture
Emissions – Land use