

# **Session 4: Agri-Environmental statistics and indicators within FAOSTAT**

*Workshop on Environment Statistics  
(Yaounde, Cameroon, 5-9 December 2011)*

## Characteristics of Agri-Environmental data

- ✓ **Problems of scale**: environmental phenomena are **site specific**; statistics at the country level may be not very significant in some cases (e.g. “big countries” like Brazil, with a variety of landscapes).
- ✓ **Different data sources**: questionnaires, surveys, remote sensing, modeling, field measurements.
- ✓ **Different data types**: tables, georeferenced maps.

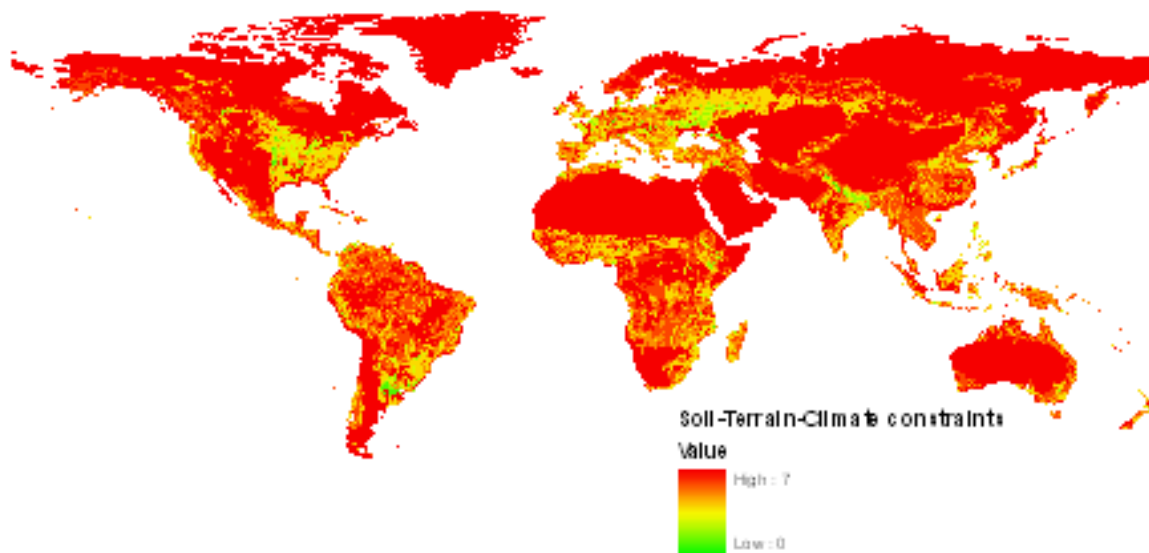
## Agri-Environmental data

<b>Data source</b>	<b>Pros</b>	<b>Cons</b>	<b>Issues</b>	<b>Examples</b>
Questionnaires	<ul style="list-style-type: none"> <li>✓ Official data</li> </ul>	<ul style="list-style-type: none"> <li>✓ Limited coverage</li> <li>✓ Different compilers,</li> </ul>	<ul style="list-style-type: none"> <li>✓ methodologies, reliability</li> </ul>	FAOSTAT
Surveys	<ul style="list-style-type: none"> <li>✓ Standard methodologies</li> </ul>	<ul style="list-style-type: none"> <li>✓ Different compilers</li> <li>✓ Big projects: updates quite rare</li> </ul>		GLASOD
Remote sensing	<ul style="list-style-type: none"> <li>✓ Continuous monitoring</li> <li>✓ Standard methodologies</li> <li>✓ Global coverage at the pixel scale.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Indirect measurements (inverse problem)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Methodologies, spatial resolution issues, quality assessment</li> </ul>	<ul style="list-style-type: none"> <li>✓ Vegetation monitoring</li> <li>✓ LC maps.</li> </ul>
Modelling	<ul style="list-style-type: none"> <li>✓ Standard methodologies</li> <li>✓ Global coverage at the pixel scale (if spatial modelling)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Dependance on model limitations</li> </ul>	<ul style="list-style-type: none"> <li>✓ Model reliability</li> <li>✓ Input data quality (“garbage in, garbage out”)</li> </ul>	<ul style="list-style-type: none"> <li>✓ GAEZ land suitability, GLADIS</li> </ul>
Measurements	<ul style="list-style-type: none"> <li>✓ Direct measurements</li> <li>✓ Input for geostatistical processing.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Quality assessment</li> <li>✓ Not uniform coverage, point measurements.</li> <li>✓ Varying reliability</li> </ul>		<ul style="list-style-type: none"> <li>✓ Meteo data from stations (CLIMPAG)</li> </ul>

# Agri-Environmental data

## Data types

Country/Area	Forest area (1 000 ha)				Annual change rate					
	1990	2000	2005	2010	1990-2000		2000-2005		2005-2010	
	1 000	1 000	1 000	1 000	hayr	%	1 000	%	1 000	%
Angola	61976	59726	59104	58460	-125	-0.21	-125	-0.21	-125	-0.21
Botswana	13710	13551	11943	11251	-110	-0.80	-110	-0.80	-110	-0.81
Comoros	12	6	6	3	n.s.	-3.97	-1	-8.97	n.s.	-8.71
Djibouti	6	6	6	6	0	0	0	0	0	0
Eritrea	1621	1576	1554	1522	-25	-0.20	-4	-0.28	-4	-0.28
Ethiopia	15114	13765	13000	12266	-141	-0.97	-141	-1.05	-141	-1.11
Kenya	3708	3582	3522	3457	-13	-0.35	-12	-0.34	-11	-0.31
Lesotho	40	42	43	44	n.s.	0.49	n.s.	0.47	n.s.	0.48
Madagascar	13692	13122	12838	12553	-57	-0.42	-57	-0.44	-57	-0.45
Malawi	3896	3667	3402	3237	-23	-0.59	-23	-0.64	-23	-0.69
Mauritius	39	39	39	39	n.s.	-0.03	-1	-2.05	n.s.	0.00
Mayotte	18	16	15	14	n.s.	-1.15	n.s.	-1.20	n.s.	-1.35
Mozambique	43378	41188	40079	39022	-219	-0.52	-222	-0.54	-211	-0.53
Namibia	8782	8032	7681	7290	-73	-0.87	-74	-0.94	-74	-0.99
Reunion	87	87	88	88	0	0	n.s.	-0.46	1	0.70
Seychelles	41	41	41	41	0	0	0	0	0	0
Somalia	8282	7515	7131	6747	-77	-0.97	-77	-1.04	-77	-1.10
South Africa	9241	9241	9241	9241	0	0	0	0	0	0
Swaziland	472	516	541	563	5	0.93	5	0.87	4	0.80
Uganda	4751	3989	3429	2958	-80	-2.03	-80	-2.39	-80	-2.72
United Republic of Tanzania	41485	37482	34445	31420	-403	-1.02	-403	-1.10	-403	-1.16
Zambia	52800	51134	50301	49488	-167	-0.32	-167	-0.33	-167	-0.33
Zimbabwe	22164	18864	17259	15624	-327	-1.50	-327	-1.79	-327	-1.97
<b>Eastern and Southern Africa</b>	<b>304312</b>	<b>285906</b>	<b>276679</b>	<b>267517</b>	<b>-1841</b>	<b>-0.62</b>	<b>-1845</b>	<b>-0.65</b>	<b>-1832</b>	<b>-0.67</b>
Algeria	1697	1579	1536	1483	-9	-0.54	-9	-0.53	-9	-0.53
Egypt	44	59	67	70	2	2.88	2	2.88	1	0.80
Libyan Arab Jamahiriya	217	217	217	217	0	0	0	0	0	0
Mauritania	415	317	287	242	-10	-2.66	-10	-3.37	-5	-1.95
Morocco	5049	5017	5051	5131	-3	-0.06	13	0.25	10	0.20
Sudan	10381	10481	10220	9949	-589	-5.69	-54	-0.50	-54	-0.50
Tunisia	643	837	924	1006	19	2.67	17	2.0	16	1.72
Western Sahara	707	707	707	707	0	0	0	0	0	0
<b>Northern Africa</b>	<b>85123</b>	<b>79224</b>	<b>79019</b>	<b>78814</b>	<b>-590</b>	<b>-0.72</b>	<b>-41</b>	<b>-0.05</b>	<b>-41</b>	<b>-0.05</b>
Benin	5761	5051	4811	4561	-70	-1.29	-50	-1.01	-50	-1.08
Burkina Faso	5847	5243	5049	5049	-60	-0.91	-60	-0.90	-60	-1.03
Burundi	289	198	181	172	-9	-3.71	-3	-1.78	-2	-1.01
Cameroon	24316	22116	21016	19916	-220	-0.94	-220	-1.02	-220	-1.07
Cape Verde	50	82	84	85	2	3.50	n.s.	0.36	n.s.	0.36



## Tables

- ✓ generally data at country level
- ✓ Usually from questionnaires

## Geo-referenced datasets

- ✓ varying spatial resolutions
- ✓ Vector or raster formats
- ✓ Possible extraction of statistics according to different subdivisions

## Agri-Environmental data

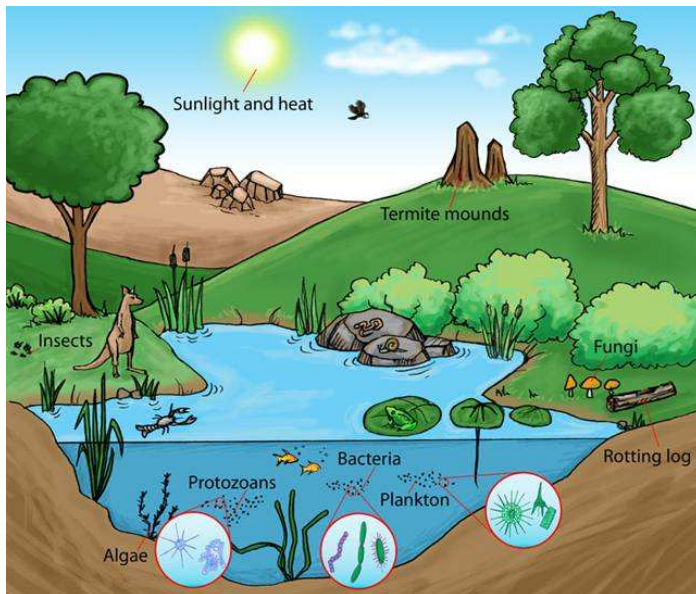
### Some databases available @ FAO

Thematic area	Database	Examples of data
Climate	<b>CLIMPAG/ FAOCLIM-Net</b>	Precipitation, ET, Temperature, Vap.Pressure, Wind speed
Water	<b>AQUASTAT</b>	Average precip., Tot.Renew.Water Res., Agr.withdrawals.
Land &Water	<b>Land and Water Digital Media Series</b>	Global map of Irrigated Areas, Soil and Terrain Database for Southern Africa, Digital Soil Map of the World and derived soil properties
Agriculture	<b>Agro-MAPS</b>	Production, harvested area, Yield for different crops (1981-2001). Large data gaps.
Environment, land productivity, population.	<b>FGGD (Food Insecurity, Poverty and Environment Global GIS Database)</b>	Length of growing period (LGP) zones of the world, Coefficient of variation (CV) of length of growing period (LGP), 1901-1996
Environment, population.	<b>GEONETWORK Catalogue</b>	Global Change In Net Primary Productivity (1981-2003); Global map of irrigated areas
Livestock	<b>GLW (Gridded Livestock of the World)</b>	Livestock density, Livestock production systems
Agricultural statistics	<b>FAOSTAT</b>	Statistics on: production, trade, prices, land, forestry, population, fertilizers, pesticides.
Forests	<b>FRA (Forest resource assessment)</b>	Forested areas, characteristics, policy, trends, management.

## Agri-Environmental Indicators

### Natural ecosystems:

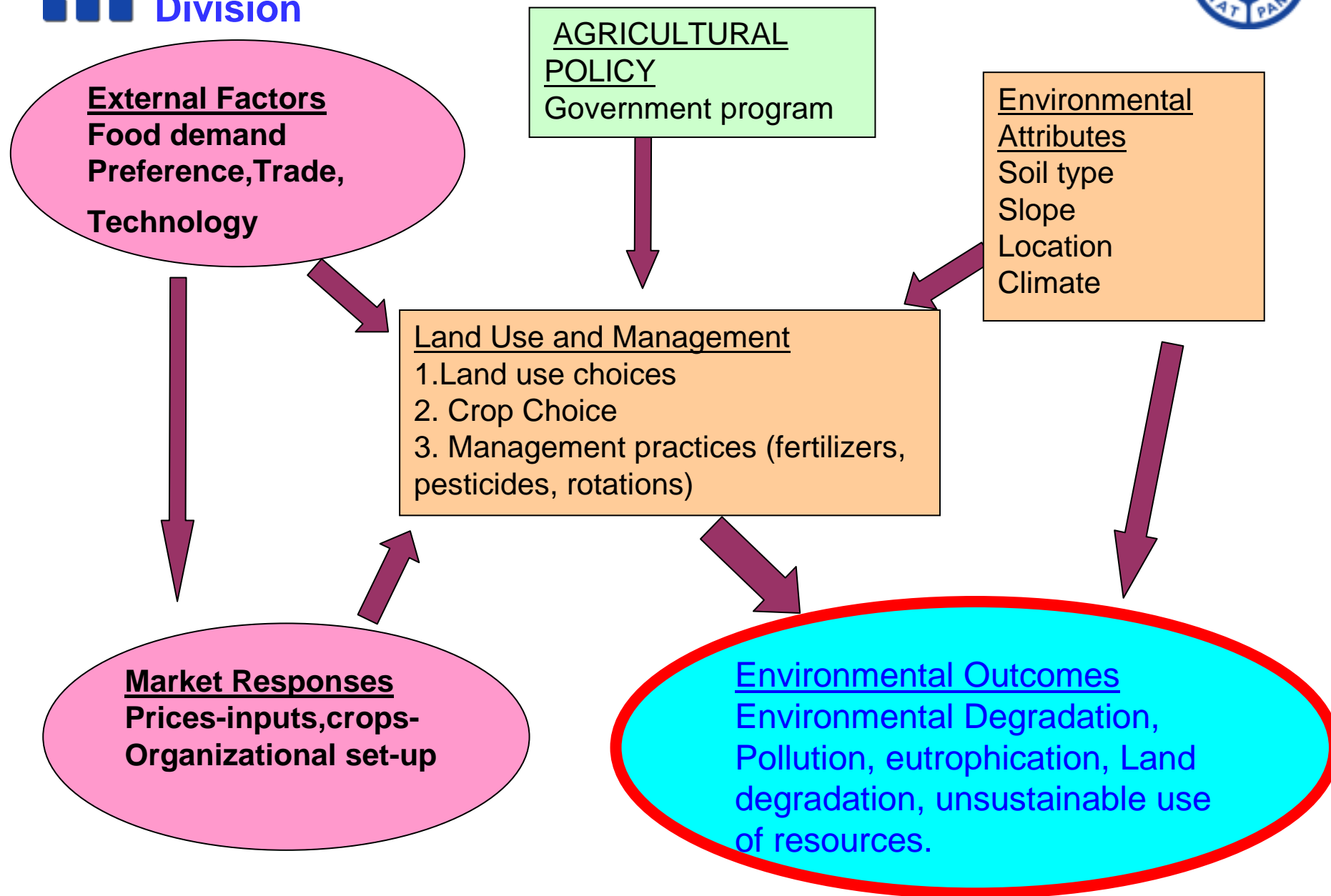
Natural fluxes, high biodiversity, highly differentiated productivity.



### Agroecosystems:

low biodiversity and high productivity (only for the selected species) maintained through massive artificial inputs (fertilizers, work, pesticides).





## Agri-environmental Indicators

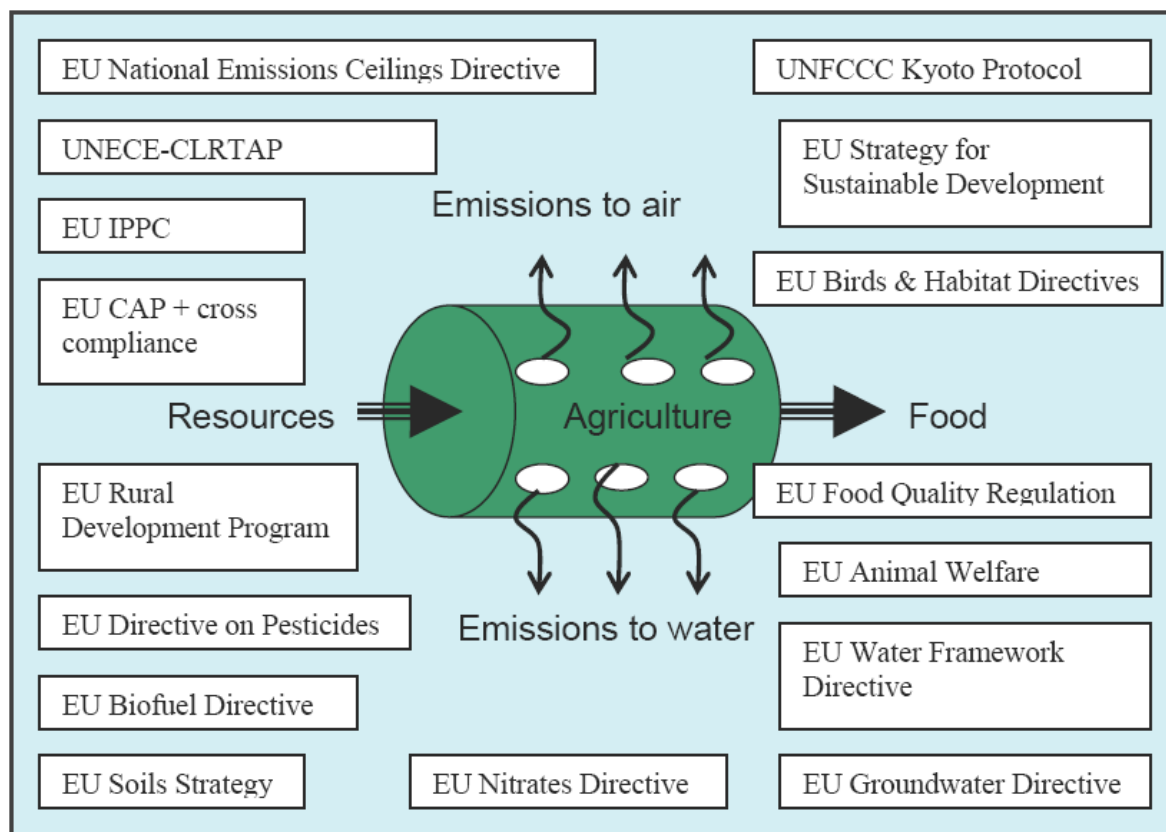
An agri-environmental indicator is a summary measure, combining raw data, used to describe the state of the environment, a risk to the environment, a change in the environment, or a driving force behind such a change, that can be attributed wholly or in part to an agricultural activity or activities.

*from OECD 2000*



Agri-environmental Indicators: Policy relevance

*Example: European directives requiring Agri-Environmental Indicators.*



*Eurostat 2011*

**Policy relevance**: need to monitor the impacts of agriculture on the environment and the environmental performance of the agricultural sector.

## Agri-environmental Indicators

International activities on Agri-environmental indicators  
in the last 10 years

Institution	Area	N. of indicators		References
		First set	Latest set	
OECD	34 OECD countries	37	13	Environmental Indicators for Agriculture (3 volumes)
Eurostat/EEA/JRC	EU-27	40	28	EEA. 1999. Environmental indicators: typology and overview. European Commission. 2006. Communication from the Commission.

## **FAOSTAT Agri-Env Indicators**

- Dataset developed following as much as possible the EUROSTAT and OECD frameworks.
- At the moment 52 data series are available, grouped into 17 indicators.
- Data are from FAO databases and from external sources (e.g. IEA, IFOAM, UNFCCC).

# FAOSTAT Agri-Env Indicators

Domain	Subdomain	Environmental Component	Indicator	Correspondences	
				EUROSTAT	OECD
<u>Responses</u>	Policy		AgriEnv. Commitments	1	
	Attitudes	Land	Area under Organic Farming	4	12
<u>Driving forces</u>	Input use	Fertilizers	Mineral fertilizer consumption	5	
		Pesticides	Pesticide consumption	6	8
		Water	Irrigation (share of irrigable areas)	7	
	Land Use	Energy	Energy use	8	9
		Land	Land Use Change	9	
			% Agr.area/ total area		10

Domain	Subdomain	Environmental Component	Indicator	Correspondences	
				EUROSTAT	OECD
			Cropping patterns	10.1	11
			Livestock patterns	10.2	
	Farm management	Land	Conservation agriculture	11.2	
		Air & Climate Change	Ammonia emissions from Agriculture	18	2
<u>Pressures</u>	Pollution	Nutrients	Gross Nitrogen Balance	15	6
			Gross Phosphate balance	16	7
			Greenhouse Gases from Agriculture	19	4
	Resource Depletion	Water	Water abstraction (Quantity and share of water used for irrigation)	20	1
		Soil	Soil erosion	21	
		Energy	Biofuels production	24	
<u>State</u>		Soil	Soil quality	26	

## FAOSTAT Agri-Env Indicators

### Available data series

N.	Indicator	Series
1	Agri-Environmental Commitments	Protected area
1	Agri-Environmental Commitments	Protected area as % on total area
2	Organic Agriculture	Organic Agriculture area
2	Organic Agriculture	Organic Agriculture (share on total agricultural area)
3	Min.Fertilizers Consumption	K Fertilizers consumption/agric.area
3	Min.Fertilizers Consumption	N Fertilizers consumption/agric.area
3	Min.Fertilizers Consumption	P Fertilizers consumption/agric.area
3	Min.Fertilizers Consumption	Nitrogen Fertilizers (N total nutrients)
3	Min.Fertilizers Consumption	Nitrogen Fertilizers (P2O5 total nutrients)
3	Min.Fertilizers Consumption	Nitrogen Fertilizers (K2O total nutrients)
3	Min.Fertilizers Consumption	N+P Fertilizers (total nutrients)
3	Min.Fertilizers Consumption	N+P+K Fertilizers (total nutrients)
3	Min.Fertilizers Consumption	N+P+K (total nutrients) Cons. per hectare
3	Min.Fertilizers Consumption	N+P (total nutrients) Cons. per hectare
4	Pesticide Consumption	Pesticide use by Ha of agricultural land
4	Pesticide Consumption	Pesticide Consumption (total)
5	Area equipped for irrigation	Total area equipped for irrigation
5	Area equipped for irrigation	Share of Irrigated Agricultural Area
6	Energy use	Energy used in agriculture/forestry
6	Energy use	Share of agr. En. Cons. on the total energy consumption
7	Agricultural land use change	Agricultural land use change compared to the previous year

# FAOSTAT Agri-Env Indicators

## Available data series

<b>N.</b>	<b>Indicator</b>	<b>Series</b>
8	Cropping patterns	Arable land
8	Cropping patterns	Permanent crops
8	Cropping patterns	Permanent meadows and pastures
8	Cropping patterns	Share Perm.Crops on AgrLand
8	Cropping patterns	Share Perm.Pasture on AgrLand
8	Cropping patterns	Share arable land on AgrLand
9	Livestock patterns	Cattle, Pigs, Sheep total density
9	Livestock patterns	Cattle density
9	Livestock patterns	Pigs density
9	Livestock patterns	Sheep and Goats density
9	Livestock patterns	Poultry density
9	Livestock patterns	Cattle and Buffaloes (Total)
9	Livestock patterns	Sheep and Goats (Total)
9	Livestock patterns	Poultry Birds (Total)
9	Livestock patterns	Pigs (Total)
9	Livestock patterns	Pigs share on total livestock
9	Livestock patterns	Cattle share on total livestock
9	Livestock patterns	Poultry share on total livestock
9	Livestock patterns	Sheep share on total livestock
9	Livestock patterns	Pigs share on total livestock (excl.Poultry)
9	Livestock patterns	Cattle share on total livestock (excl.Poultry)
9	Livestock patterns	Sheep share on total livestock (excl.Poultry)
9	Livestock patterns	Total Livestock number

# FAOSTAT Agri-Env Indicators

## Available data series

<b>N.</b>	<b>Indicator</b>	<b>Series</b>
10	Conservation agriculture	Conservation agriculture area: >30% ground cover
10	Conservation agriculture	Conservation agriculture area as % of cultivated area
11	Ammonia emissions	Ammonia emissions from Agriculture
11	Ammonia emissions	Share of agricultural ammonia emissions on total ammonia emissions
12	GHG emissions from Agriculture	Share GHG from agriculture/total GHG emissions
12	GHG emissions from Agriculture	Total GHG emissions from agriculture
13	Water use in Agriculture	Agricultural water withdrawal
13	Water use in Agriculture	Agricultural water withdrawal as % of total water withdrawal
14	Soil Erosion	Average Soil Erosion
14	Soil Erosion	Average Soil Degradation
15	Biofuels	Total biofuels production
15	Biofuels	Share of biofuels on total renewable energy production
16	Soil Quality	Average carbon content in the Topsoil
17	Share agricultural land	Agricultural Area/Land Area



## Test website

<b>country</b>	<b>year</b>	<b>nested by:</b>
Afghanistan Albania Algeria American Samoa Andorra Angola Anguilla Antigua and Barbuda	2009 2008 2007 2006 2005 2004 2003 2002	element
<b>item</b>	<b>element</b>	<b>Y1-axis:</b>
Carbon content in the topsoil, average Conservation agriculture area: >30% ground cover Erosion degree, average Soil degradation, average	% of Agricultural Land Area GLASOD degree (0-4) Percentage in Weight	country
		<b>Y2-axis:</b>
		item
		<b>X-axis:</b>
		year

[show data](#)

units |  codes |  download |  settings |  print

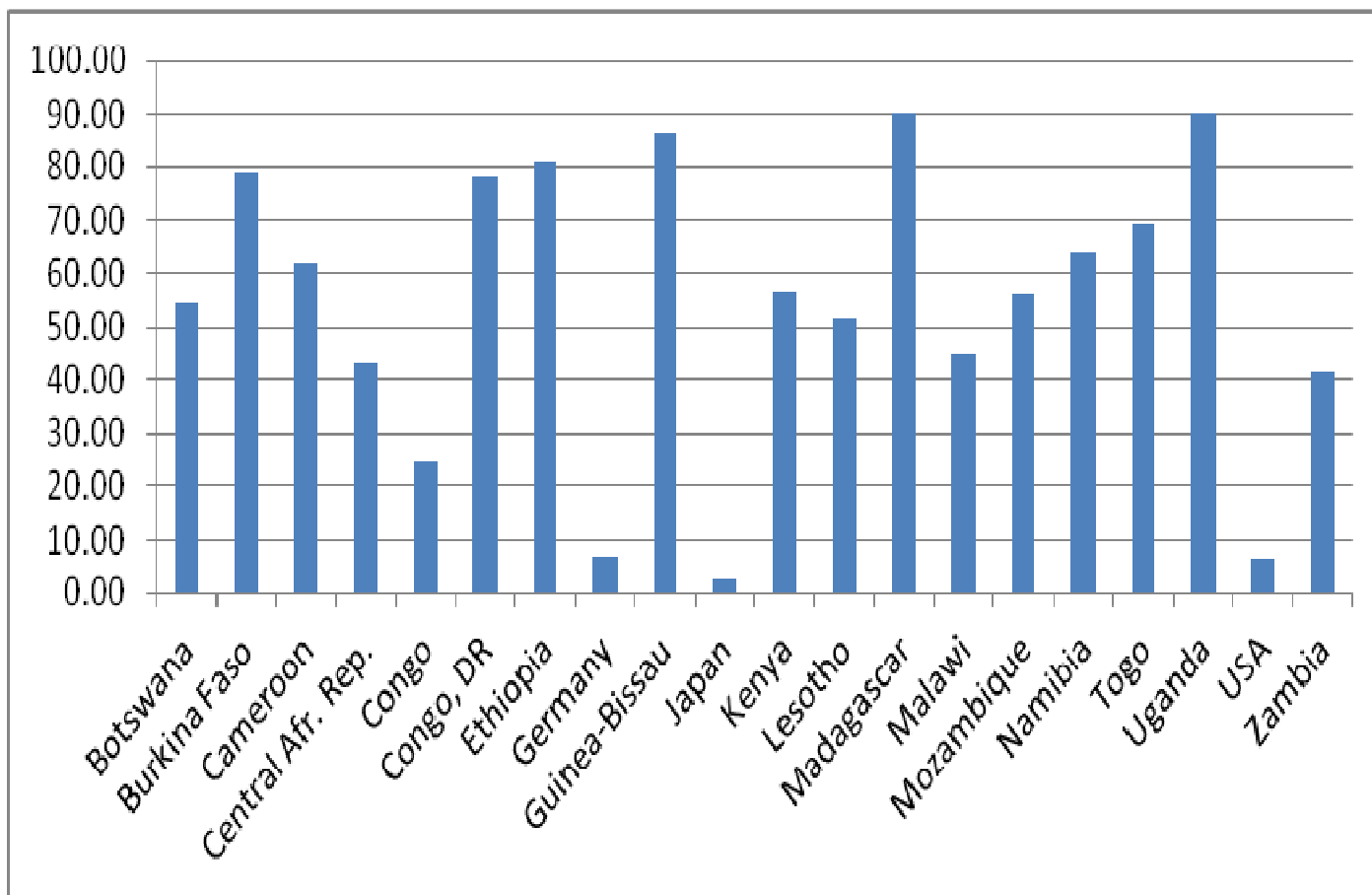
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**FAOSTAT Agri-Env Indicators**

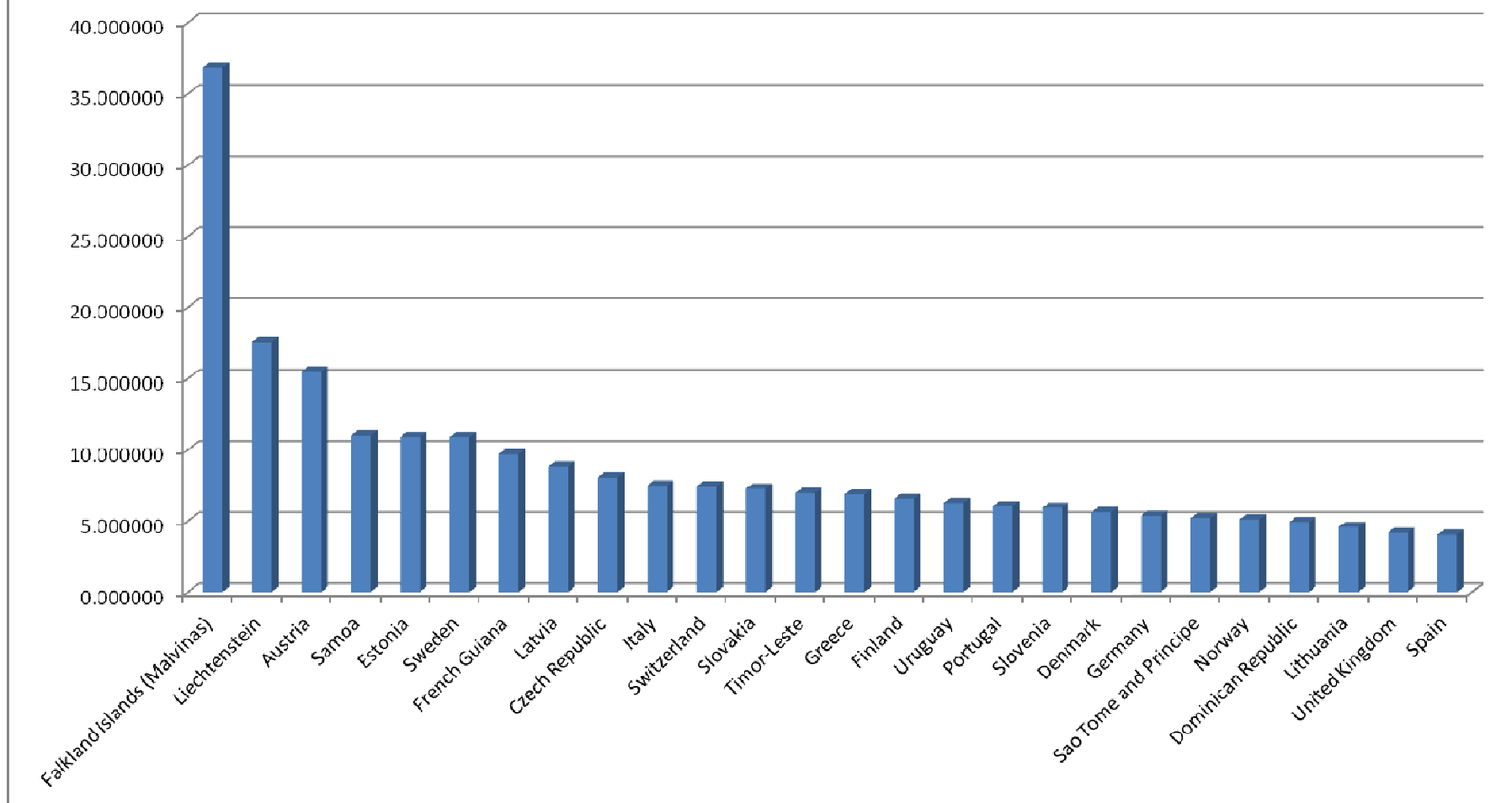
**Share of Agricultural Greenhouse Gases (GHG) emissions on the total GHG emissions**



- Agriculture accounts for roughly 14% of global Greenhouse Gases (GHGs)
- About 74% of total agricultural emissions originate in developing countries.

## FAOSTAT Agri-Env Indicators

Organic agriculture - Percentage of agricultural land (%) (2008)




# Fertilizers

The new fertilizer datasets have been prepared using a revised methodology and new dissemination formats. Detailed methodology notes on the new fertilizer dataset can be found in FAOSTAT. The previous fertilizer data collection series in FAOSTAT is continued with this data release.

<http://faostat.fao.org/site/575/default.aspx#ancor>

# FAOSTAT: Fertilizers page

<b>country</b>		<b>year</b>			
----- Individual Countries -----		2009		nested by: <input type="text" value="element"/>	
Afghanistan		2008		Y1-axis: <input type="text" value="country"/>	
Albania		2007		Y2-axis: <input type="text" value="item"/>	
Algeria		2006		X-axis: <input type="text" value="year"/>	
American Samoa		2005			
Andorra		2004			
Angola		2003			
Anguilla		2002			
<b>item</b>		<b>element</b>			
Nitrogen Fertilizers (N total nutrients)		Production Quantity			
Phosphate Fertilizers (P2O5 total nutrients)		Production Quantity in nutrients			
Potash Fertilizers (K2O total nutrients)		Import Quantity			
-----		Import Quantity in nutrients			
Ammonia, anhydrous		Export Quantity			
Ammonium nitrate		Export Quantity in nutrients			
Ammonium sulphate		Non-fertilizer use			
Calcium ammonium nitrate		Non-fertilizer use in nutrients			
				<a href="#">show data</a>	
<input type="checkbox"/> units   <input checked="" type="checkbox"/> flags   <input type="checkbox"/> codes   <input type="checkbox"/> download   <input checked="" type="checkbox"/> settings   <input type="checkbox"/> print   <input type="checkbox"/> Data Quality					
Download format <input type="button" value="Excel"/>   <input type="button" value="CSV"/>   <input type="button" value="XML"/>    <input type="button" value="Flags: yes"/>   <input type="button" value="Flags: no"/>			Thousands separator <input type="button" value="Comma"/>   <input type="button" value="Period"/>   <input type="button" value="Space"/>   <input type="button" value="None"/>		
metadata 					

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## Country notes for the Fertilizers module

### Aggregates

Continental and regional aggregates only include data for reporting countries. Estimates for non-reporting countries are not included in the continental and regional aggregates.

[Show more / Hide](#)

## About the Fertilizer module

The Fertilizer dataset contains summary data from 2002 onwards. This dataset has been prepared using a revised methodology and new dissemination formats starting in 2006. The previous fertilizer data series in FAOSTAT (data from 1961 to 2002) can be found in the Fertilizer Archive. The two sets should be used separately and not combined in order to create longer time series. This is due to the following changes from 2002 including: a change in the underlying fertilizer data methodology; the move to the use of calendar rather than a mixture of calendar and fertilizer year; revised classification of the fertilizer items; the addition of the non-fertilizer use parameter in the fertilizer balance and the use of new data sources for some data (e.g. UN COMTRADE).

# Fertilizers use - benefits

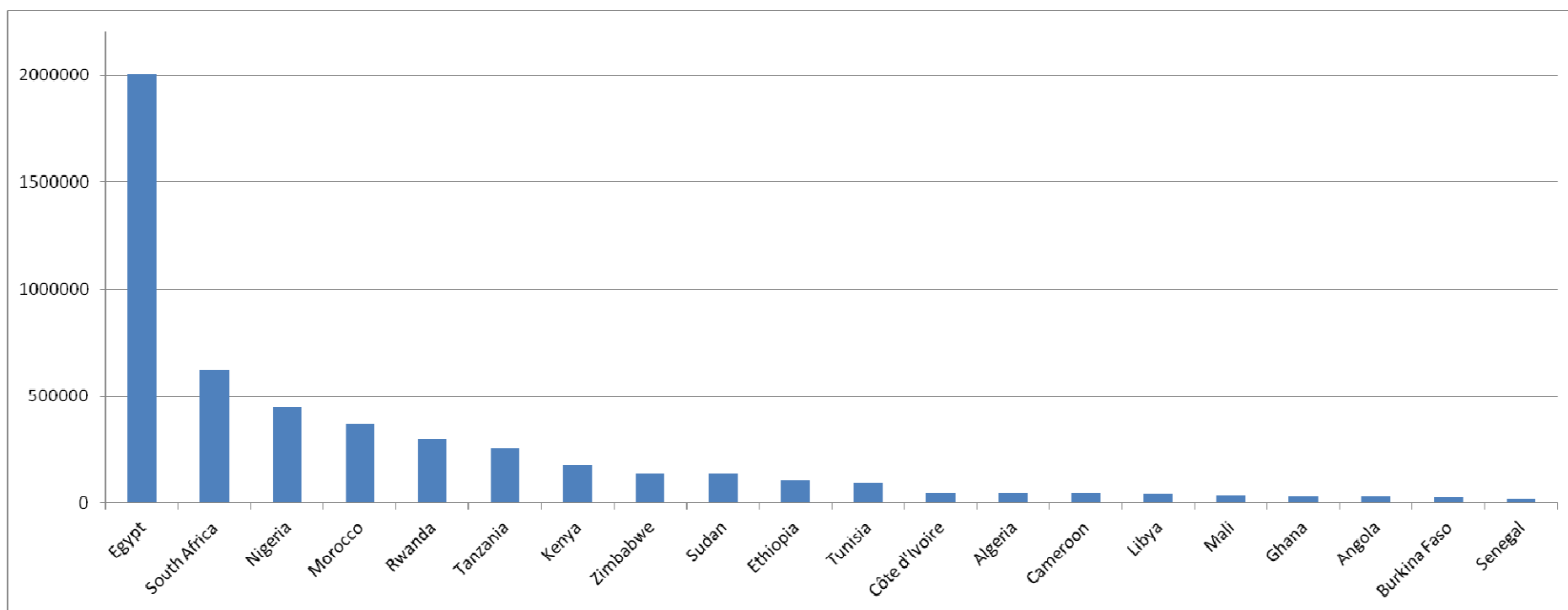


- Fertilizer use contributes significantly to the world agriculture output and food supply.
- Plants require nutrients (nitrogen, phosphates and potash) in order to grow, and develop fully to a productive capacity, and complete their life.
- Improved agricultural productivity and food security

# Fertilizers use - Issues

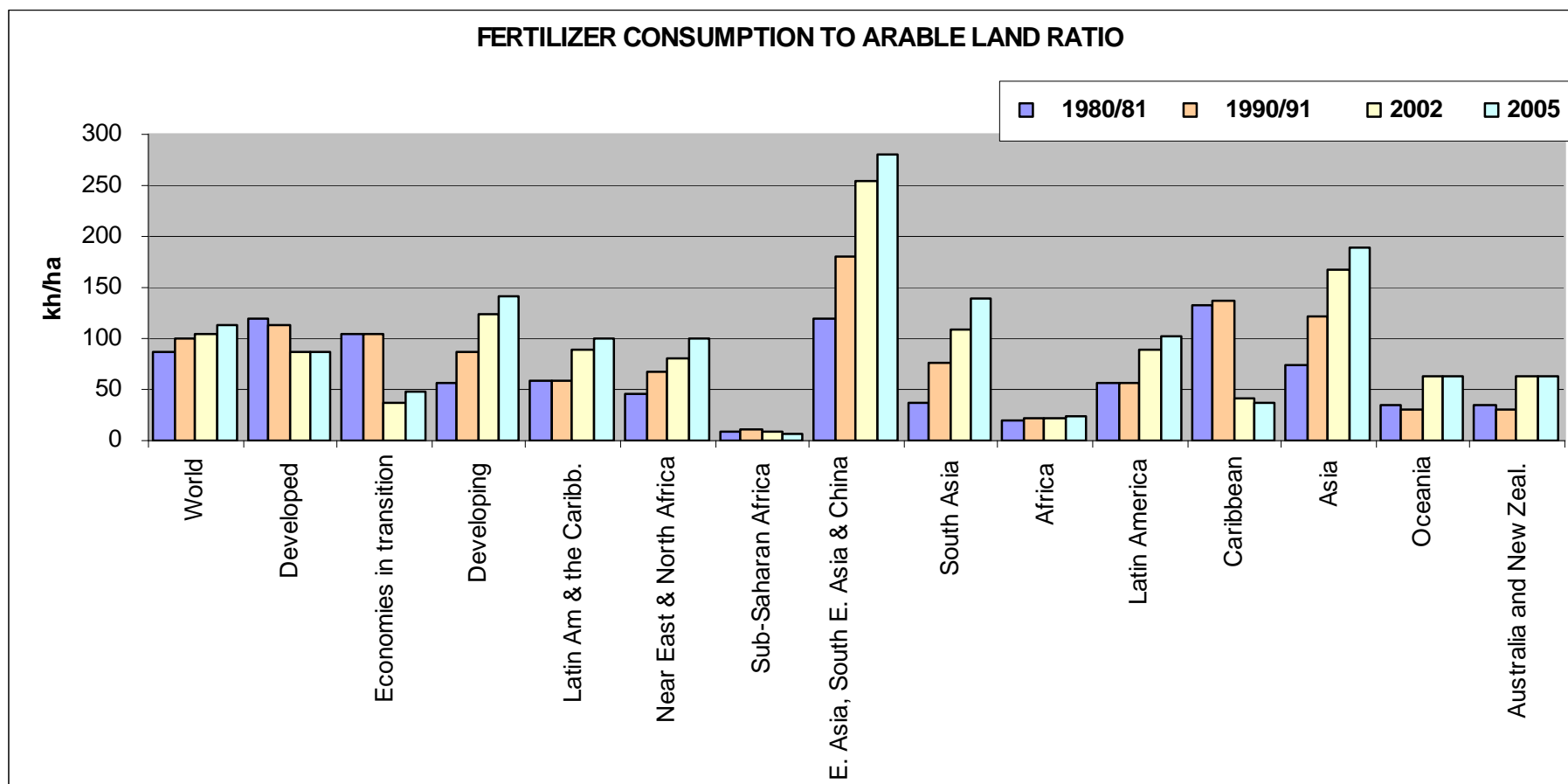
- Run off the land due to heavy rainfall/erosion.
- Leaching into groundwater.
- Escape in the form of gas into atmosphere.

## Fertilizers consumption in Africa (N+K+P, tonnes of nutrients, 2008)



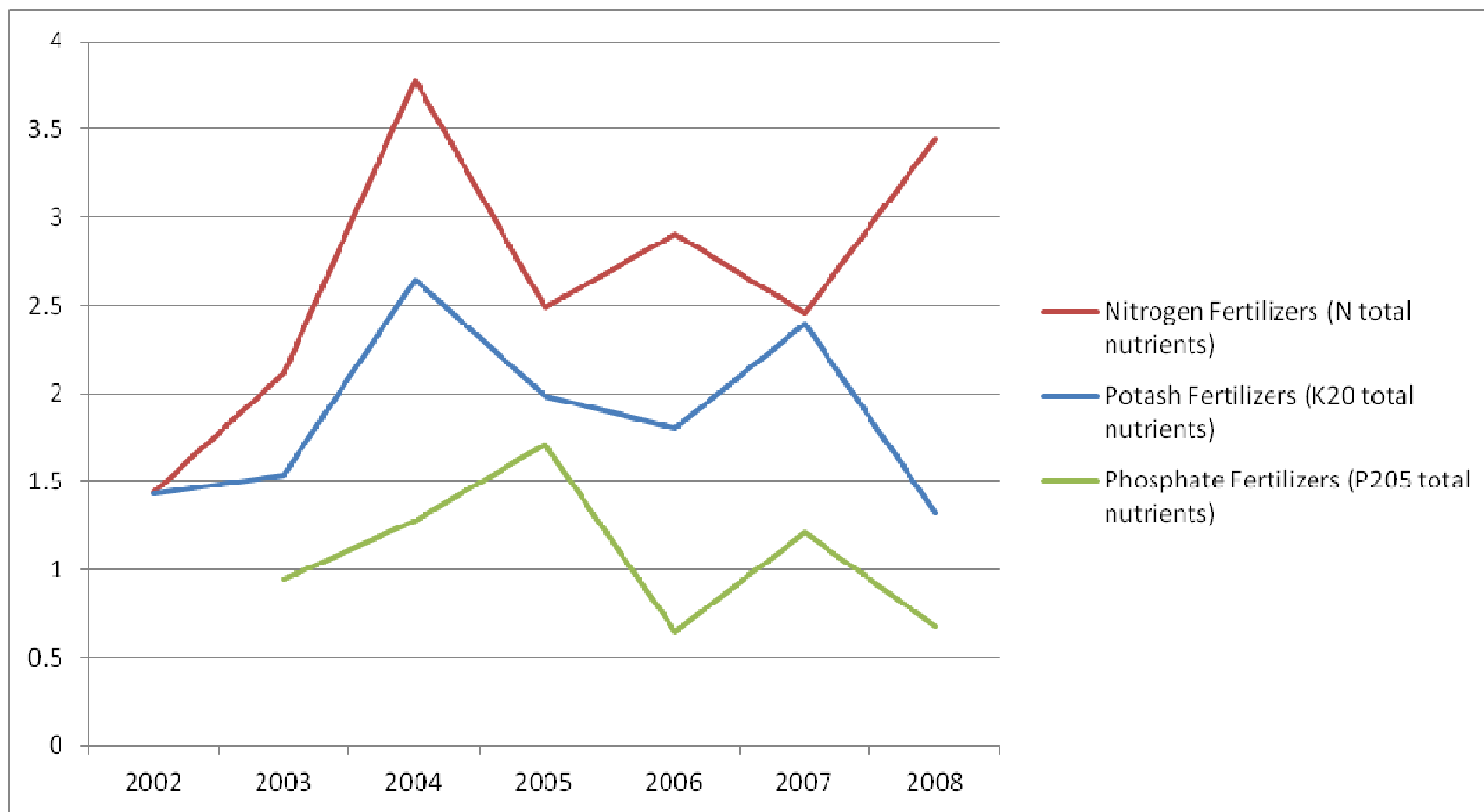


# Fertilizers consumption: patterns per region



## Fertilizers consumption (Tonnes per Ha of Agricultural Land)

### Cameroon 2002-2008



# Pesticides

The present FAOSTAT database refers to the quantity of pesticides used in or sold to the agricultural sector for crops and seeds; data are expressed in metric tons of active ingredients.

Consumption (tonnes of active ingredients) refers to quantities of pesticides applied to crops and seeds in the agriculture sector. Figures are expressed in metric tons of active ingredients.

<http://faostat.fao.org/site/424/default.aspx#ancor>

<b>country</b>	<b>year</b>	nested by: <input type="text" value="element"/> Y1-axis: <input type="text" value="country"/> Y2-axis: <input type="text" value="item"/> X-axis: <input type="text" value="year"/>
----- Individual Countries ----- Albania Algeria Angola Argentina Armenia Australia Austria	2009 2008 2007 2006 2005 2004 2003 2002	
<b>item</b>	<b>element</b>	
Insecticides + (Total) Insecticides > (List) Chlorinated Hydrocarbons Organo-Phosphates Carbamates Insecticides Pyrethroids Botanic.Produc&Biologic. Other Insecticides	Consumption	

[show data](#)

units |  flags |  codes |  show empty rows |  download |  settings |  print |  Data Quality

<b>Download format</b> <input type="button" value="Excel"/>   <input checked="" type="button" value="CSV"/>   <input type="button" value="XML"/>    <input type="button" value="Flags: yes"/>   <input checked="" type="button" value="Flags: no"/>	<b>Thousands separator</b> <input type="button" value="Comma"/>   <input type="button" value="Period"/>   <input type="button" value="Space"/>   <input checked="" type="button" value="None"/>	<b>Decimal separator</b> <input type="button" value="Comma"/>   <input checked="" type="button" value="Period"/>
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**Country Notes for the Pesticides Consumption module**

**ALGERIA**  
 Data refer to sales for use in the agricultural sector expressed in Formulated Products.  
**BURKINA FASO**  
 Starting in 1998, data are expressed in Formulated Products.  
[Show more / Hide](#)

**About the Pesticides Consumption module**

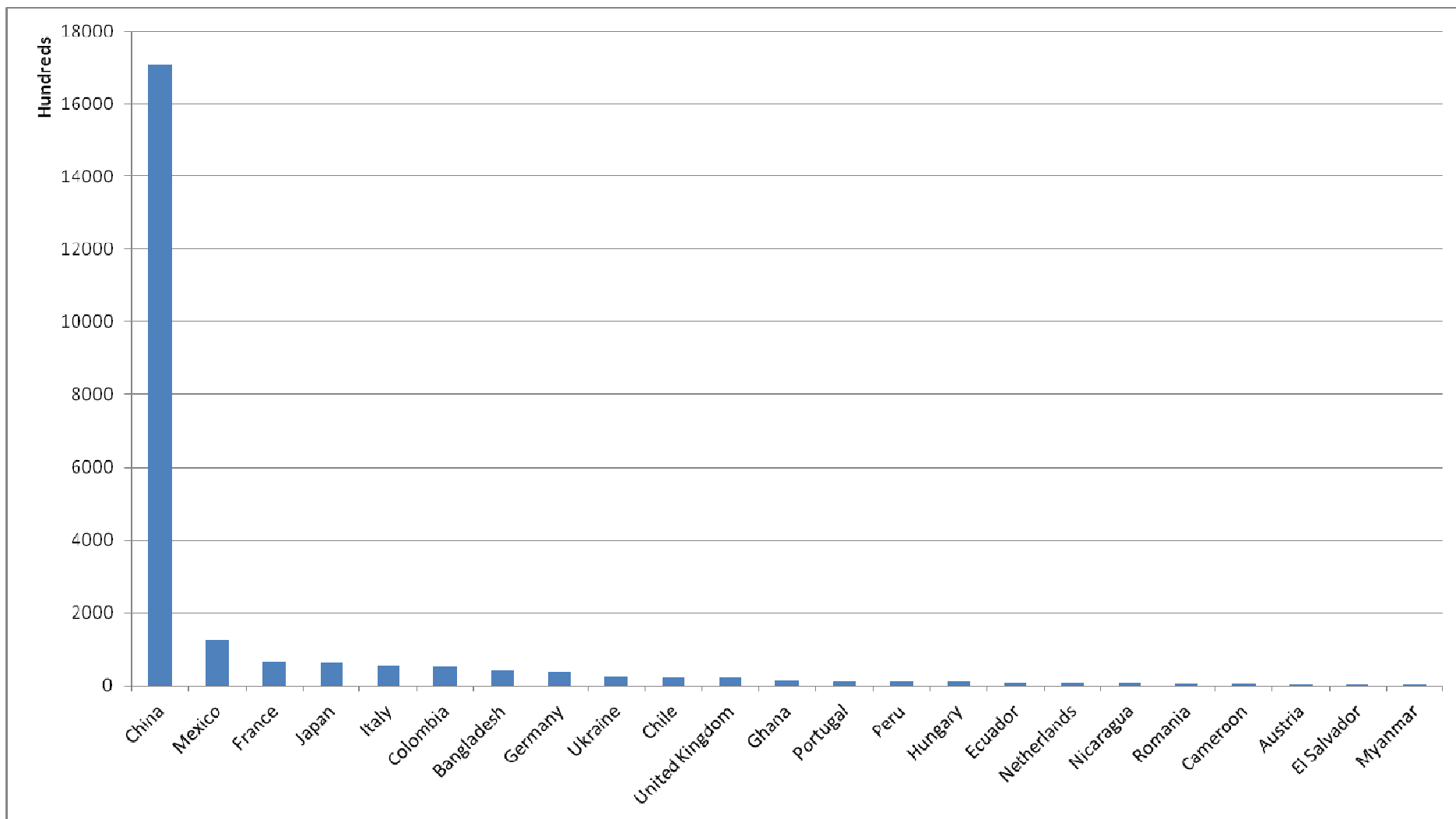
**Database on Pesticides Consumption**

The Statistics Division of the Food and Agriculture Organization of the United Nations started the collection of data on consumption of major individual pesticides products about three decades ago. However, the response to the related Pesticides Consumption Annual Questionnaire sent to all member countries was not very encouraging.

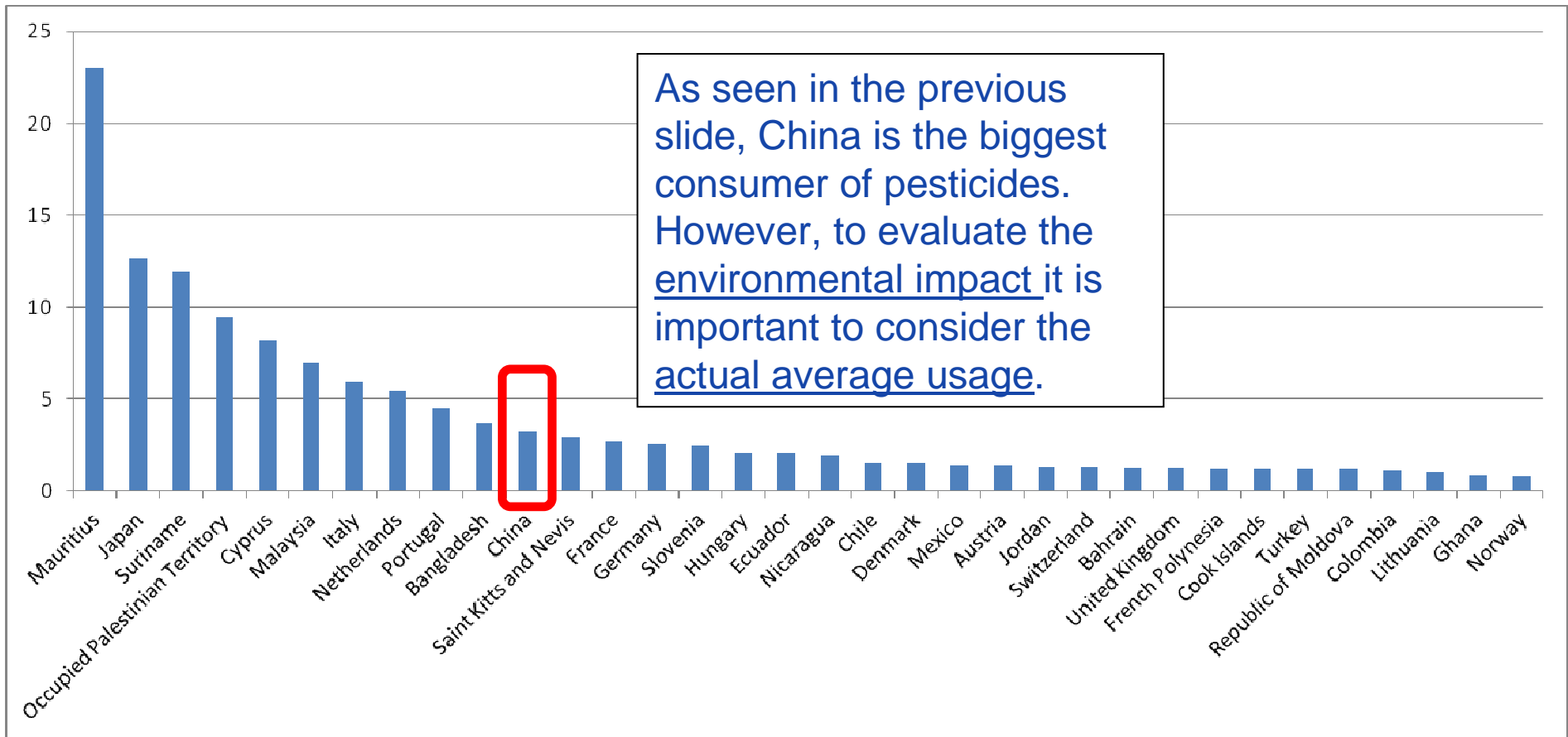
## Pesticides: issues

- Overuse and abuse of pesticides at many places  
E.g.: cotton, vegetables, rice
- Highly toxic products: Some countries are lagging behind in phasing out high incidence of accidental poisoning  
+ an estimated 300.000 self-poisoning cases in Asia p.a.
- Food safety and other public health risks (residues)
- Environmental risks
- Market access Pesticide residue requirements are increasingly important in trade
- Pesticide quality (Illegal trade in pesticides; counterfeit products; some countries lack sufficient quality control)
- Obligations under international instruments

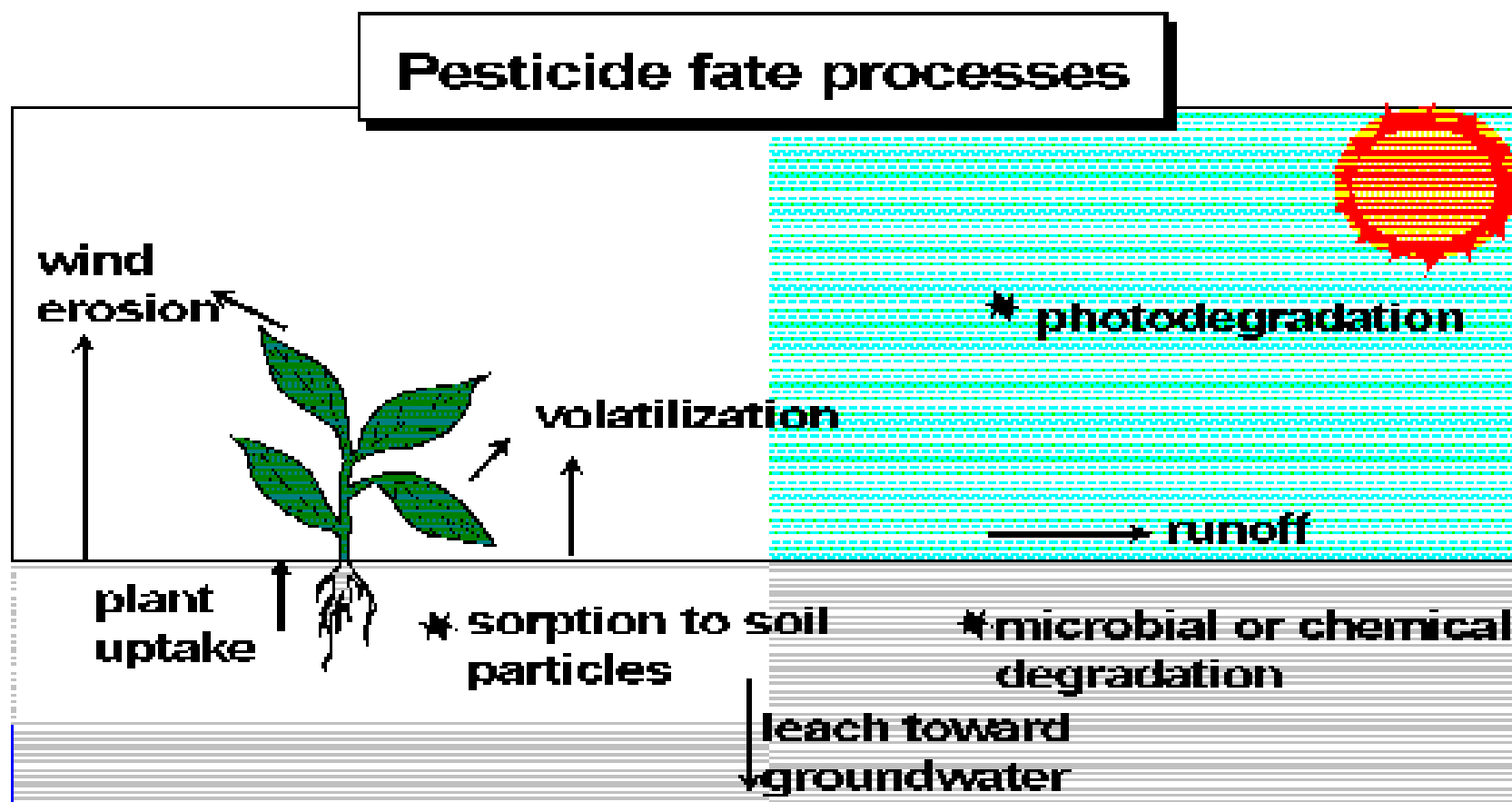
## Pesticides consumption (hundreds of tonnes, 2008)



## Pesticides average usage (tonnes /Ha agricultural area, 2008 )



# Movement of Pesticides in the Environment





# Land Use

**Land use**: the sequence of operations carried out with the purpose to obtain goods and services from the land, characterized by the actual goods and services obtained as well as by the particular management interventions undertaken by the land users

Land use is generally determined by **socio-economic market forces and the biophysical constraints and potentials imposed by the land resource**

**FAOSTAT Land-use statistics** contain a wide range of information on variables that are significant for: understanding the structure of a country's agricultural sector; making economic plans and policies for food security; deriving environmental indicators, including those related to investment in agriculture and data on gross crop area and net crop area which are useful for policy formulation and monitoring.

**Land use is the single most important driver of land degradation** as it focuses on interventions on the land which directly affect its status and impacts on goods and services.

**<http://faostat.fao.org/site/377/default.aspx#anchor>**

# FAOSTAT: Land Use page

<b>country</b>		<b>year</b>		<b>nested by:</b>	
----- Individual Countries -----		2009		element	
Afghanistan		2008		Y1-axis: country	
Albania		2007		Y2-axis: item	
Algeria		2006		X-axis: year	
American Samoa		2005			
Andorra		2004			
Angola		2003			
Anguilla		2002			
<b>item</b>		<b>element</b>			
Country area		Area			
Land area					
Agricultural area					
Agricultural area organic, total					
Agricultural area certified organic					
Agricultural area in conversion to organic					
Agricultural area irrigated					
Arable land and Permanent crops					
<b>item classification</b>				<a href="#">show data</a>	
FAO Codes					
<input type="checkbox"/> units   <input checked="" type="checkbox"/> flags   <input type="checkbox"/> codes   <input checked="" type="checkbox"/> show empty rows   <input type="checkbox"/> download   <input checked="" type="checkbox"/> settings   <input type="checkbox"/> print   <input type="checkbox"/> Data Quality					
<b>Download format</b>		<b>Thousands separator</b>		<b>Decimal separator</b>	
Excel   <b>CSV</b>   XML		Comma   Period   Space   <b>None</b>		Comma   Period	
Flags: yes   <b>Flags: no</b>		metadata ?			

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Updated: 21 July 2011

[selected parameters](#) [show/hide]

## Country notes for the Land Use module

### LAND USE DATABASE - Country Notes

#### American Samoa:

Due to the use of different data sources and overlaps in definitions and classifications, the sum of individual land use category data may exceed "total land area". Examples of such instances include forest and agriculture land with tree cover - such as rubber plantations, permanent tree crops, range land and agro-forestry and shifting cultivation areas.

#### Australia:

"Agricultural area" refers to total area of all agricultural establishments (farms); "Temporary crops" refers to all crops both temporary and permanent; "Temporary crops irrigated" refers to all crops both temporary and permanent that are irrigated.

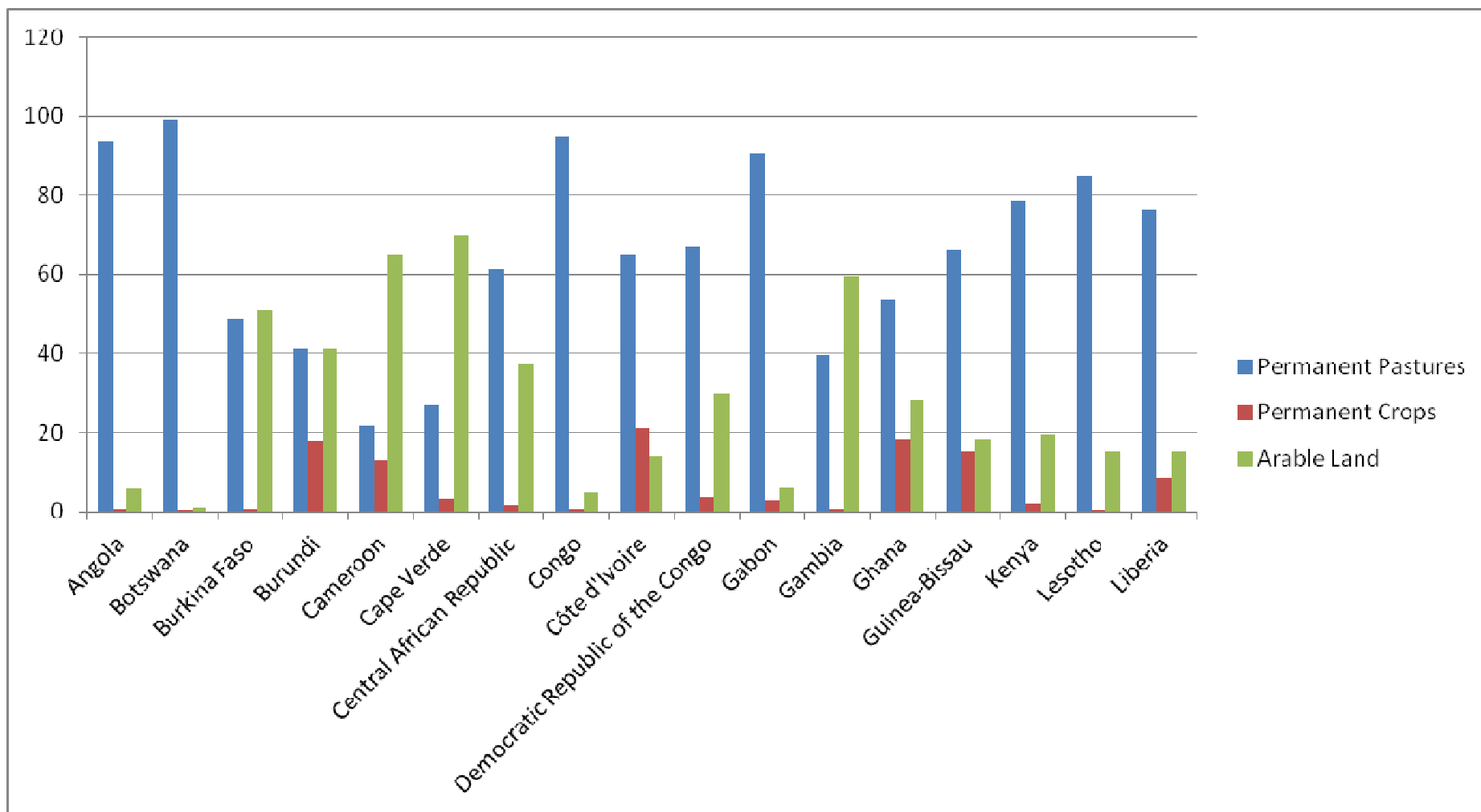
[Show more / Hide](#)

## **FAO land use data**

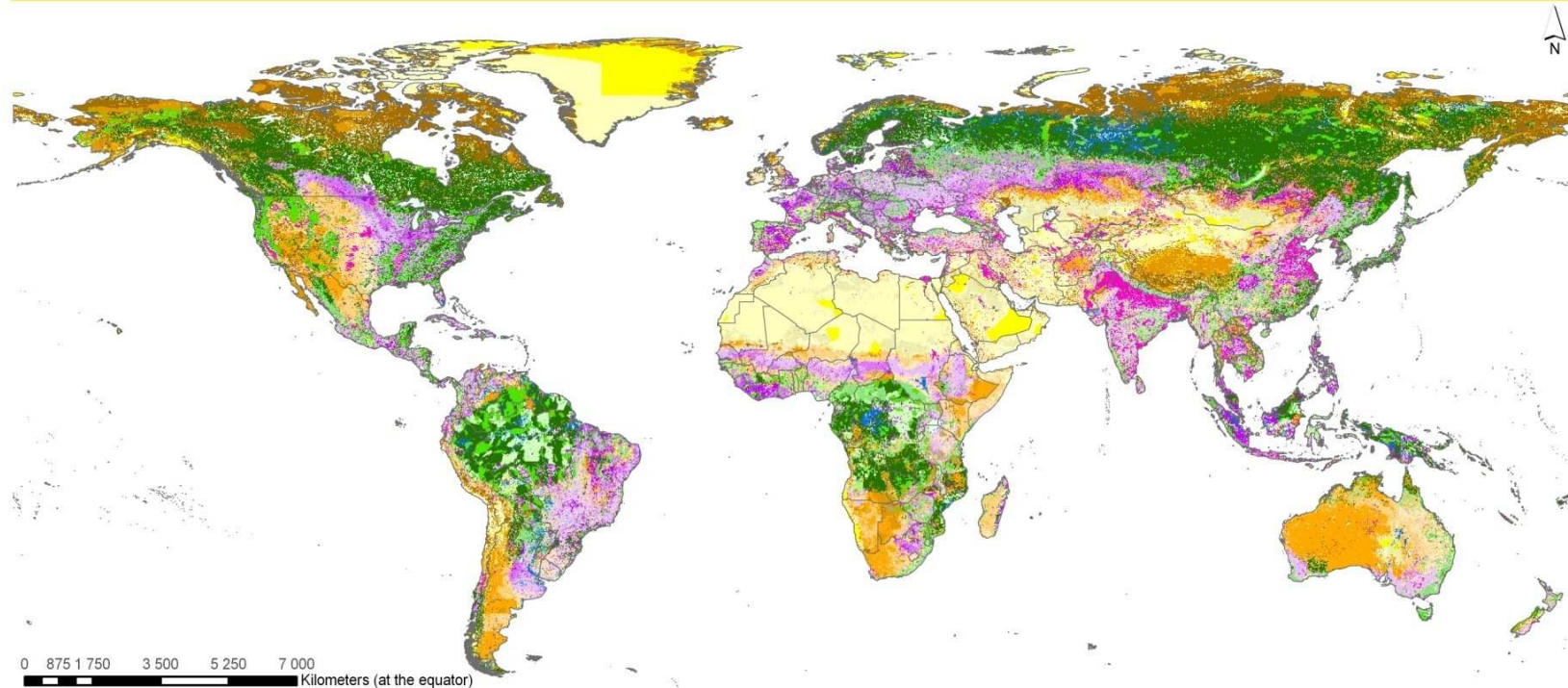
**Significant for conducting studies from various perspectives on**

- agricultural production,
- food security;
- deriving cropping intensity and feasibility for sustainable agricultural development
- deriving land use indicators for measuring countries agricultural practices in view of sustainability and environmental conditions.

## Land Use in Africa: cropping patterns (subdivision of agricultural land)

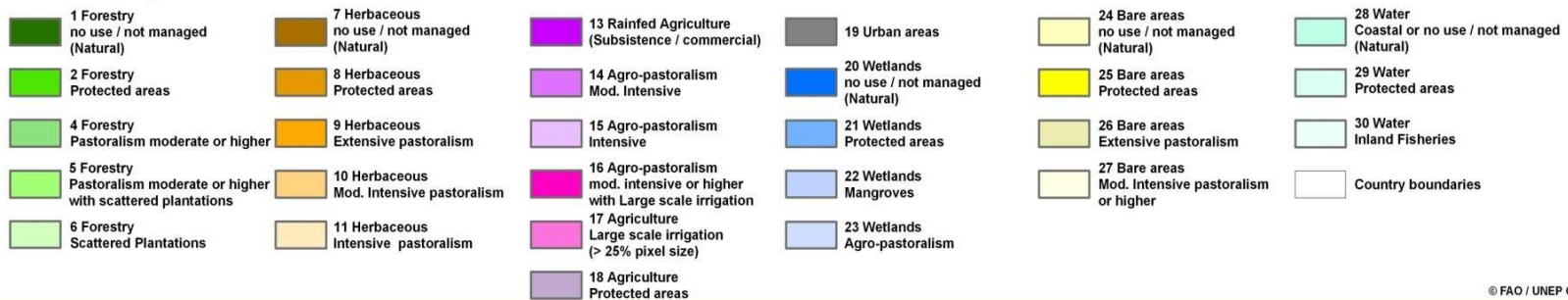


# Land use systems of the world



## Land use systems

Geographic Projection



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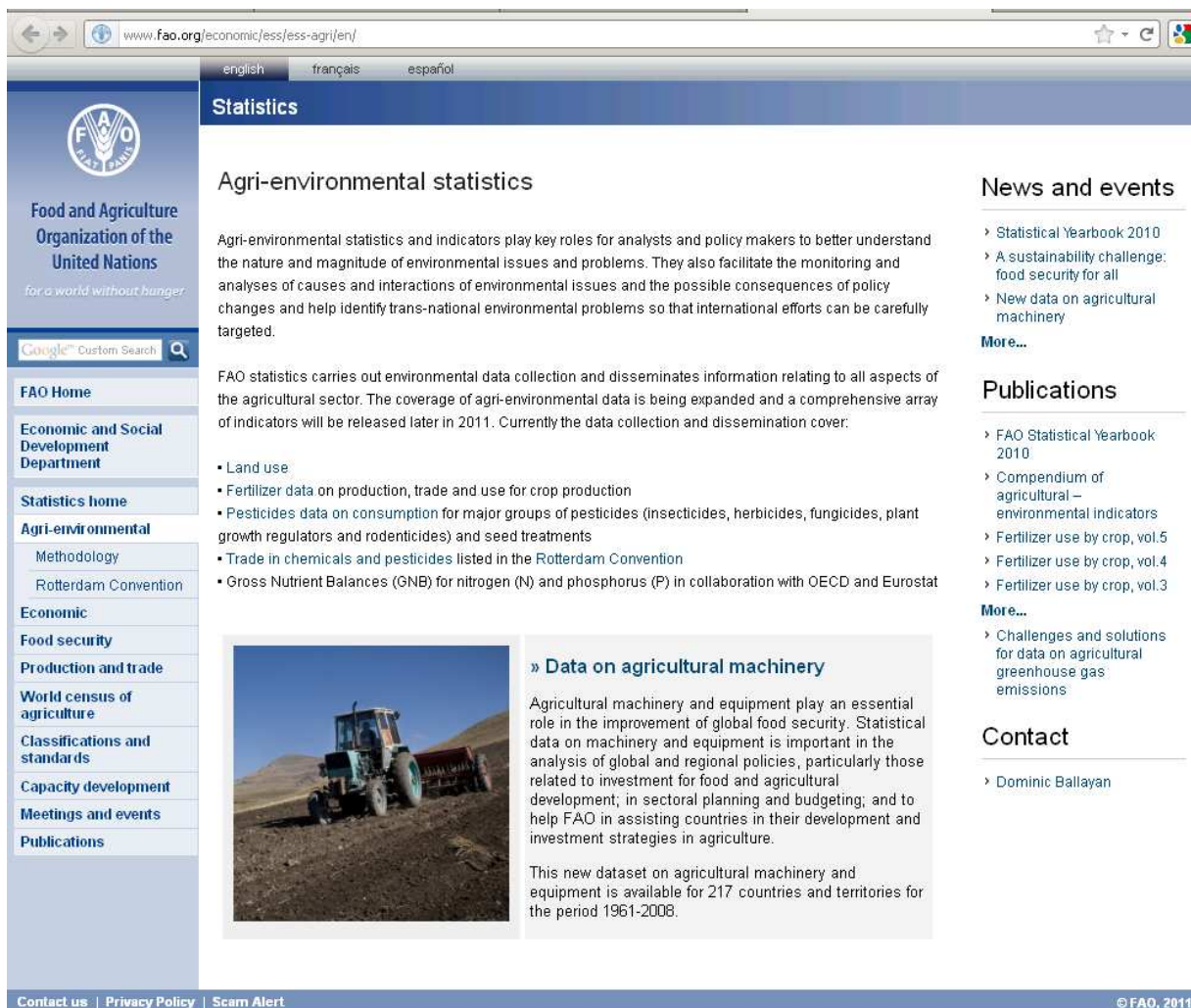
Reference: LADA, 2008. "Mapping Land Use Systems at global and regional scales for Land Degradation Assessment Analysis". Nachtergaele F. & Petri M. (under publication).

The Land Use Database of the world was developed as part of the project Land Degradation Assessment in Drylands (LADA), a four-year project funded by the Global Environment Facility (GEF). The project is implemented by the United Nations Environment Programme (UNEP) and executed by the Food and Agriculture Organization of the United Nations (FAO).

The geographic representation employed on this map do not imply of any opinion whatsoever concerning the legal status of any county, territory, or concerning the delineation of its boundaries.

# Agri-Environmental statistics at FAO: the ESS website

<http://www.fao.org/economic/ess/ess-agri/en/>



The screenshot shows the FAO ESS website interface. The browser address bar displays [www.fao.org/economic/ess/ess-agri/en/](http://www.fao.org/economic/ess/ess-agri/en/). The page features a navigation menu on the left with categories such as 'FAO Home', 'Economic and Social Development Department', 'Statistics home', 'Agri-environmental', 'Methodology', 'Rotterdam Convention', 'Economic', 'Food security', 'Production and trade', 'World census of agriculture', 'Classifications and standards', 'Capacity development', 'Meetings and events', and 'Publications'. The main content area is titled 'Agri-environmental statistics' and includes a paragraph explaining the role of these statistics for analysts and policy makers. Below this, a list of data collection areas is provided, including Land use, Fertilizer data, Pesticides data, Trade in chemicals, and Gross Nutrient Balances. A featured section titled 'Data on agricultural machinery' includes an image of a tractor and text describing the dataset's importance for global food security. The right sidebar contains sections for 'News and events', 'Publications', and 'Contact'.

**Statistics**

## Agri-environmental statistics

Agri-environmental statistics and indicators play key roles for analysts and policy makers to better understand the nature and magnitude of environmental issues and problems. They also facilitate the monitoring and analyses of causes and interactions of environmental issues and the possible consequences of policy changes and help identify trans-national environmental problems so that international efforts can be carefully targeted.

FAO statistics carries out environmental data collection and disseminates information relating to all aspects of the agricultural sector. The coverage of agri-environmental data is being expanded and a comprehensive array of indicators will be released later in 2011. Currently the data collection and dissemination cover:

- Land use
- Fertilizer data on production, trade and use for crop production
- Pesticides data on consumption for major groups of pesticides (insecticides, herbicides, fungicides, plant growth regulators and rodenticides) and seed treatments
- Trade in chemicals and pesticides listed in the Rotterdam Convention
- Gross Nutrient Balances (GNB) for nitrogen (N) and phosphorus (P) in collaboration with OECD and Eurostat

**» Data on agricultural machinery**

Agricultural machinery and equipment play an essential role in the improvement of global food security. Statistical data on machinery and equipment is important in the analysis of global and regional policies, particularly those related to investment for food and agricultural development; in sectoral planning and budgeting; and to help FAO in assisting countries in their development and investment strategies in agriculture.

This new dataset on agricultural machinery and equipment is available for 217 countries and territories for the period 1961-2008.

**News and events**

- › Statistical Yearbook 2010
- › A sustainability challenge: food security for all
- › New data on agricultural machinery

**More...**

**Publications**

- › FAO Statistical Yearbook 2010
- › Compendium of agricultural – environmental indicators
- › Fertilizer use by crop, vol.5
- › Fertilizer use by crop, vol.4
- › Fertilizer use by crop, vol.3

**More...**

- › Challenges and solutions for data on agricultural greenhouse gas emissions

**Contact**

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**Thank you for your attention.**

***For more information on agri-environmental  
data and statistics available at FAO:***

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