Agri-environmental indicators - fact sheets

Statistics Explained

This article is part of an online publication providing the current state of play of agri-environmental indicators in the European Union (EU) . It presents the policy background and provides additional information on the setting-up of the agri-environmental indicators. It also contains an overview table showing the 28 agri-environmental indicators within the so-called 'DPSIR' (Driving force — Pressure — State — Impact — Response) framework and provides links to the fact sheets for each indicator.

Policy background

- Since the entry into force of the Treaty on European Union in 1993, there has been a legal obligation for the European Union to take account of environmental protection requirements when drawing up and implementing EU policies.

- In the early 2000s, the Commission issued a communication COM final 0020/2000 , which defined the objectives for monitoring the integration of environmental concerns in the agriculture policy and identified a set of 35 agri-environmental indicators. It was followed a year later by COM final 0144/2001 , which identified concepts and potential data sources and described further necessary work.

- Agriculture is a fully European policy area where the instruments of the common agricultural policy (CAP) are decided by the Council of the European Union and the European Parliament (EP) . Sustainable management of natural resources is one of the three priorities of the CAP 2014-2020.

Establishing agri-environmental indicators

The IRENA operation (Indicator Reporting on the Integration of Environmental Concerns into Agriculture Policy) was launched in 2002 to further develop agri-environmental indicators for monitoring the integration of environmental concerns into the common agricultural policy (CAP). It was a joint exercise between DG Agriculture and Rural Development, DG Environment, Eurostat and DG Joint Research Centre, and the European Environment Agency (EEA) . The purpose of the IRENA operation was to develop and compile for EU-15 the set of 35 indicators defined in COM final 0020/2000 and COM final 0144/2001 at the appropriate geographical levels and, as far as possible, on the basis of existing data sources.

The final report presented agri-environmental relationships using the Driving force — Pressure — State — Impact — Response (DPSIR) model. Interlinkages were shown in agri-environmental storylines in relation to major agri-environmental themes: water, land use and soil, climate change and air quality, and biodiversity and landscape. At the centre of the DPSIR framework is the current **state** of the agricultural environment and how this has changed over time. State indicators bring to the fore any undesirable changes which need to be combated, (for example, nitrate or pesticide concentrations in water) as well as particularly desirable states which should be preserved (for example, many agricultural landscapes or valuable habitats). The second step is to identify the **pressures** which have brought about undesirable change and environmental benefits resulting from farming which have helped to preserve or enhance the environment. These have, respectively, a negative and positive **impact** on

the environment.The third step is to link these pressures and processes to the **driving forces** in the economy (farmers' activities, which are themselves driven by market forces), as it is these driving forces that are directly influenced by agricultural policy, and it is here where the integration process is applied. Finally, it is necessary to monitor how society's **response** to these issues is working. Are agri-environmental measures having the desired effect, are they responding quickly enough, or are they producing unforeseen problems? This framework allows the relevant questions to be posed, and the information needed to answer these questions, i.e. the indicators, to be identified. The IRENA operation led to substantial progress in the development of agri-environmental indicators at EU-15 level, and particularly regarding concepts, identification of data sources and compilation of data sets.

Commission Communication COM final 0508/2006 addressed outstanding issues and identified 28 agri-environmental indicators (AEI) to monitor the integration of environmental concerns into the common agricultural policy. To aid the Commission in setting up a permanent and stable arrangement for the indicator system a project called "DireDate" was financed, followed by other projects both at Member State and EU-level.

Despite efforts over the last >10 years, several limitations remain in a number of indicators:

- deficiencies in the data sets related to certain indicators, in terms of harmonisation (e.g. farm management), or geographical coverage (e.g. water quality)
- data availability (e.g. genetic diversity or pesticide risk)
- some indicators still require further conceptual improvement (e.g. high nature value farmland areas).

These limitations do not invalidate the usefulness of the indicators for agri-environmental analysis. Rather, they suggest that further work is needed on these indicators to improve the concepts and methodological approaches, improve data collection methods, develop new data sets where necessary, and improve/validate existing modelling tools.

Fact sheets

The fact sheets for the 28 AEI as listed in COM final 0508/2006 . The table below shows the 28 AEI within the DPSIR framework and provides a link to a fact sheets for each of these indicators.

Domain	Sub-domain	Nr	Title
Responses	Public policy	1	Agri-environmental commitments
		2	Agricultural areas under Natura 2000
	Technology and skills	3	Farmers' training level and use of environmental farm advisory services
	Market signals and attitudes	4	Area under organic farming
Driving forces	Input use	5	Mineral fertiliser consumption
		6	Consumption of pesticides
		7	Irrigation
		8	Energy use
	Land use	9	Land use change
		10.1	Cropping patterns
		10.2	Livestock patterns
	Farm management	11.1	Soil cover
		11.2	Tillage practices
		11.3	Manure storage
	Trends	12	Intensification/extensification
		13	Specialisation
		14	Risk of land abandonment
Pressures and risks	Pollution	15	Gross nitrogen balance
		16	Risk of pollution by phosphorus
		17	Pesticide risk
		18	Ammonia emissions
		19	Greenhouse gas emissions
	Resource depletion	20	Water abstraction
		21	Soil erosion
		22	Genetic diversity
	Benefits	23	High Nature Value farmland
		24	Renewable energy production
State/Impact	Biodiversity and habitats	25	Population trends of farmland birds
	Natural resources	26	Soil quality
		27.1	Water quality - Nitrate pollution
		27.2	Water quality - Pesticide pollution
	Landscape	28	Landscape - state and diversity

See also

- Agri-environmental indicators dedicated section

Publications

- Agriculture, forestry and fishery statistics — 2016 edition
- Agriculture, fishery and forestry statistics - 2015 edition
- Environmental statistics and accounts