ECOSYSTEM SERVICES

ENV Focus 1

Ecosystems provide society with a range of services that have considerable economic and social value. Various international, European and Walloon initiatives have been launched to measure their benefits and assess the costs of their degradation or disappearance, in order to guide decisions (policy makers, managers, companies, etc.) and encourage their preservation.

The concept of ecosystem services

Goods and ecosystem services (ES) represent the contribution that ecosystems make to human well-being. In Wallonia, they include production services (provision of food, fuel and materials), regulation services (air and water purification, flood protection, pollination, etc.) and cultural services (patrimony, outdoor leisure activities, etc.). The loss of ecosystems results in the loss of the services they provide and entails significant economic and social costs. The inventory and evaluation of ESs provides the figures needed for analysis and decision making.

A favourable international context

Since 2005, the Millennium Ecosystem Assessment[1] has made it possible to widely disseminate the ES concept. In 2011, the European Union adopted the Biodiversity Strategy to 2020, one of the objectives of which is to preserve and improve ecosystems and their services[2]. The MAES Working Group[3] was set up to assist and coordinate Member States in their mapping and evaluation of ESs. Since 2012, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)[4] has been working to assess the state of biodiversity and ESs worldwide.

Progress in Wallonia

The only legal text in Belgium that specifically uses the concept of ES is a Walloon Government Decree regulating hedge planting[5]. The Wal-ES platform, which brings together the Public Service of Wallonia and Walloon universities, aims to develop tools for public decision making using the concept of ES and to support initiatives around this concept. During its pilot phase from mid-2014 to mid-2016[6], Wal-ES defined a conceptual framework clarifying the concept of ES and a framework guiding their assessment. A typology of ESs adapted to the Walloon context has been set out and a database of available information and a website have been developed[7]. In line with the Biodiversity Strategy to 2020, a mapping and assessment of ESs at the regional level are in progress. An environmental and socio-economic impact assessment tool for rural land development projects[8] based on the concept of ES has been developed. It allows local actors to be taken into account while ensuring the multifunctionality of the agricultural territory. The work of Wal-ES should make it possible to accompany projects for the evaluation of ESs in Wallonia and the development of decision-making support tools that can be used by local and regional stakeholders (e.g. analysing the costs/benefits of infrastructure for regulating runoff, mud flows and erosion, analysing the contributions of green infrastructure to socio-economic development in land-use planning, carrying out a comparative analysis of brownfield site development scenarios, etc.).

[1] Millennium Ecosystem Assessment (http://www.millenniumassessment.org/en) | [2] By restoring at least 15% of degraded ecosystems by 2020 | [3] Mapping and Assessement of Ecosystems and their Services. See http://biodiversity.europa.eu/maes | [4] See http://www.ipbes.net | [5] Walloon Government Decree of 08/09/2016 providing for the increase of subsidies granted for the planting of hedges where these specifically strengthen ESs. | [6] Subsidy granted to ULg and UNamur | [7] http://webserver.wal-es.be | [8] Rural land development project at Forville (Éghezée, Fernelmont and Wasseiges) (Biotope *et al.*, 2016; Brahic *et al.*, 2016)

Tab. ENV Focus 1-1 Walloon classification of ecosystem services

PROVISIONING SERVICES*	NUTRITION	Food resources from agriculture, fishing, hunting and gathering
	MATERIALS	Wood, animal and vegetable fibres (wool, flax, hemp, etc.), organic matter, genetic, medicinal and pharmaceutical resources.
	WATER	Surface water and groundwater for domestic, agricultural or industrial use
	ENERGY	Biofuels and firewood
REGULATING SERVICES	VARIOUS KINDS OF POLLUTION	Soil self-purification, water purification and oxygenation, air pollution capture, noise reduction and visual impact mitigation
	EXTREME EVENTS	Protection against floods, storms and erosion, maintenance of hydrological cycle and water flows, fire control
	BIOLOGICAL PROCESSES	Pollination, seed dispersal, habitat maintenance, biological control, infection control, soil degradation, decomposition, mineralisation and fixation processes.
	CLIMATE	Regulation of local, regional and global climate by sequestration of greenhouse gases
CULTURAL SERVICES	EVERYDAY ENVIRONMENT	Spaces for living, work, study, daily outdoor activities
	RECREATIONAL ENVIRONMENT	Outdoor leisure activities (hiking, fishing, mushroom collecting, etc.)
	SOURCES OF EXPERIENCE AND KNOWLEDGE	Nature observation, education and scientific research
	SOURCES OF INSPIRATION AND VALUES	Heritage, sentimental, symbolic, cultural, sacred, religious or existential values

** Does not include mineral resources (rocks, sand, etc.) or fossil fuels (coal, hydrocarbons, etc.), wind or solar energy because they do not depend on biological processes, at least on a human time scale.*

SOERW 2017 – Sources: SPW - SG - DD; ULg-GxABT; UNamur