



ECOSYSTEM SERVICES

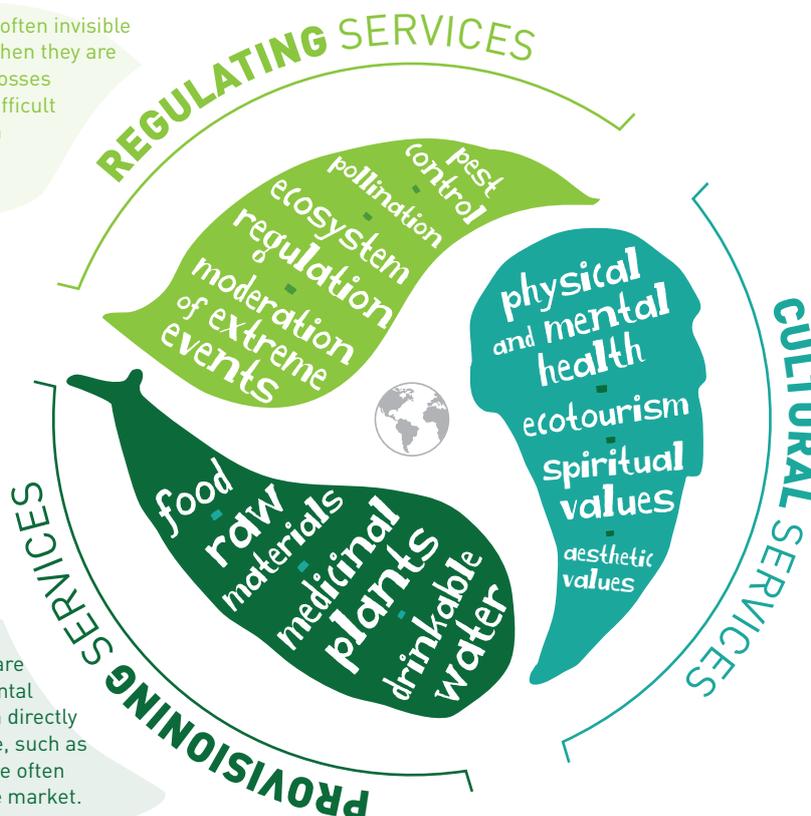
Fact Sheet

F. Villa, A. Marquez-Torres, S. Balbi (BC3)
 @BC3Research

Like the term ecosystem itself, the concept of Ecosystem Services (ES) is relatively recent - it was first used in the late 1960s. Research on ecosystem services grew exponentially in the following decades, but it became mainstream in the early 2000s, after the Millennium Ecosystem Assessment. ES are understood as *the many and varied benefits that humans receive from the natural environment and its ecosystems.*

Ecosystems, such as agricultural land, forests, grasslands and aquatic environments, are responsible for the supply of diverse ES, which have been classified in various ways over the decades, using categories such as **REGULATING**, **PROVISIONING**, and **CULTURAL** services.

Regulating services are often invisible and taken for granted. When they are damaged, the resulting losses can be substantial and difficult to restore. They maintain ecosystems and protect humans.



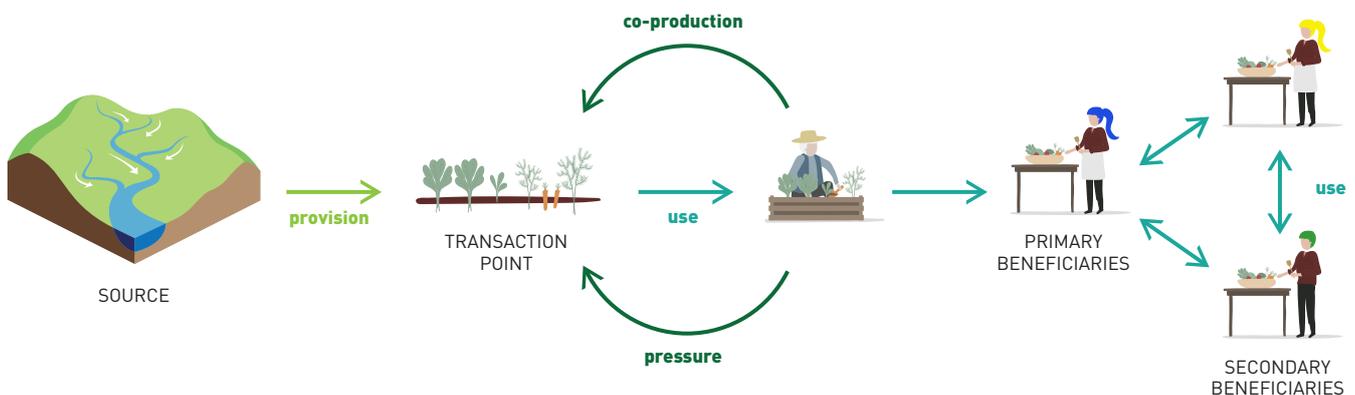
Cultural services are those services of Nature which can make humans fulfilled and give meaning to their life, including the sense of beauty, leisure, lifestyle and wellness.

Provisioning services are the flows of environmental goods that humans can directly use and need to survive, such as food and water. They are often traded for money in the market.

A growing need to quantify and communicate ES values has led to the common practice of matching land cover data to ES (and their standardized value). As a consequence, ES are too often presented as a mapped stock with a given value per unit of area. However, this portrayal is disrespectful of the complexity behind ES and of the **system view** at the core of the original conceptualization.

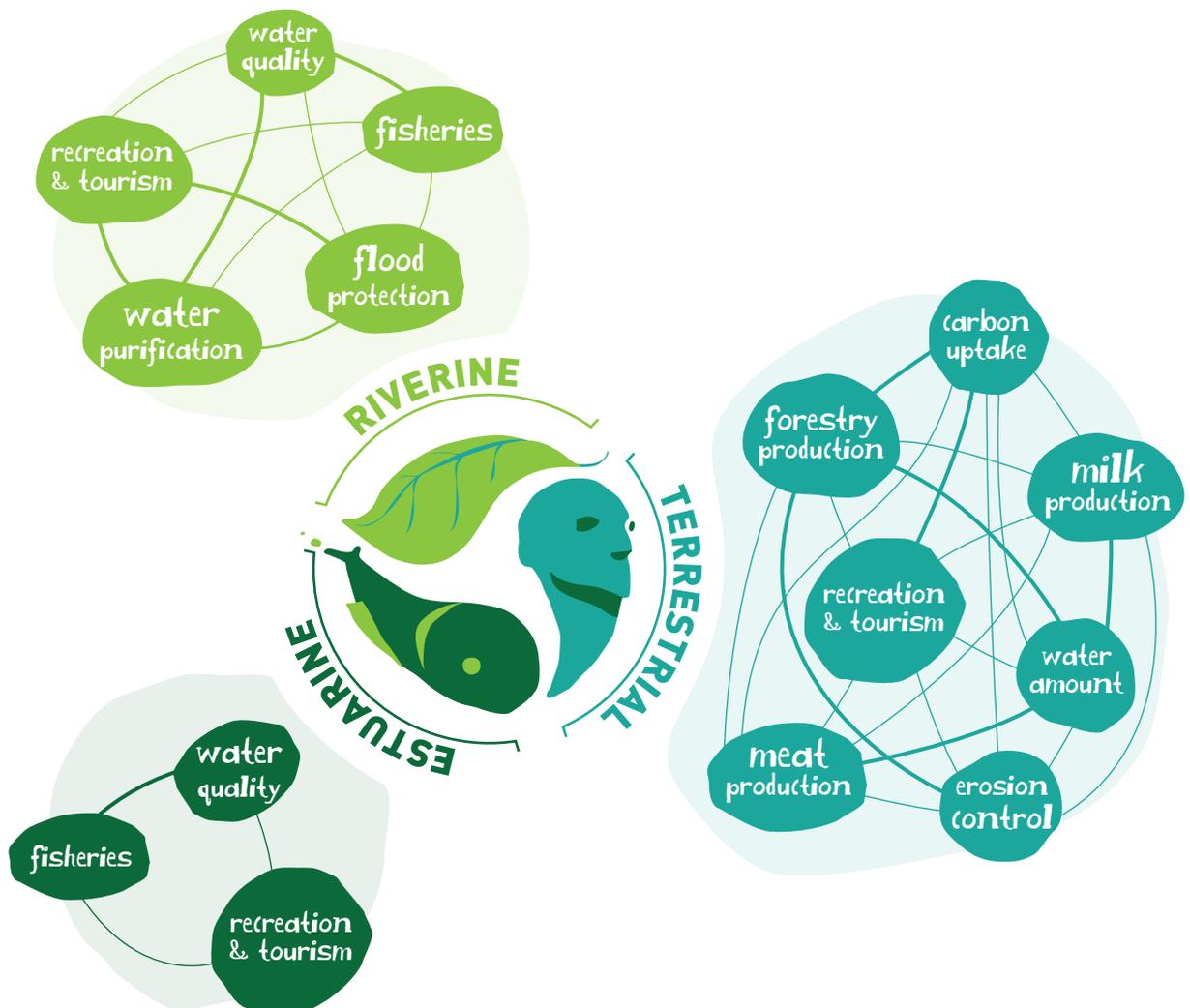
Indeed, any region of Earth produces a set of ES which result from the dynamic interplay of *multiple environmental and human components of a system*, e.g. a forest or a river, and a farmer or a town. We define the combination of these individual components and the processes happening between them as a **social-ecological system**. Under such perspective *ES are the throughput of the values exchanged within a network of ecological and anthropogenic agents*.

The granularity at which such agents interact is important in order to capture key ES flow and throughput, and depends on the spatial and temporal scales at which the social-ecological system is assessed. ES and their associated values are influenced by human activity, and in turn influence human well-being in different ways. Any valuation exercise must take into consideration that value is dependent on demand and on the existence of social groups on the receiving end - *the beneficiaries*.



Through the analysis of different social-ecological systems located in the Atlantic regions of **Portugal, Spain, France** and **Northern Ireland**, the **ALICE Interreg Project** aims to analyse ES dynamics considering all the relevant biophysical and socioeconomic components that ultimately affect their existence. Particular attention is placed on understanding what happens within the terrestrial-aquatic and land-sea interfaces (e.g. rivers and estuaries) in the Atlantic Region.

Moreover, the project will shed light on how *Green and Blue Infrastructures* can enhance ES delivery, including synergies and trade-offs among ES, in the context set by the preferences of various stakeholders' groups in each region, and among them, those of the most affected beneficiaries.





Improving the management
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www.project-alice.com
contact@project-alice.com

f : @aliceinterreg

t : @alice_interreg