

Science for Environment Policy

Ecological Footprint highlights human pressures on biodiversity

The concept of the Ecological Footprint can be used to illustrate the balance between the use of a natural resource or an ecological service and its availability. According to a new study, the Ecological Footprint could be valuable as an indicator to help track progress towards the goals of the Convention on Biological Diversity.

Human activities are causing [biodiversity](#) to decline rapidly and on a global scale. International efforts to prevent biodiversity loss centre on the Convention of Biological Diversity (CBD); however, the 2010 target to halt biodiversity loss which had been adopted by all Parties under the CBD was not met.

In 2010, five strategic goals and 20 targets – known as the Aichi Biodiversity Targets¹– were agreed for the period 2011-2020. They include commitments to reduce pressures on biodiversity and address the underlying causes of its decline. Many indicators have been suggested for monitoring progress towards these goals and a global set of biodiversity indicators has been developed under the Biodiversity Indicator Partnership (BIP)², partly funded by the EU.

This study focuses on the Ecological Footprint, one of the indicators adopted to monitor progress towards Aichi Target 4, regarding the use of natural resources. The Ecological Footprint method compares the natural resources and ecological services that humans require to those available. It is based on two indicators: 1) the land and sea area needed to produce resources and services, including a country's imports but not its exports (Ecological Footprint), and 2) the capacity for production of such resources and services (biocapacity). For example, the space required for [fishing](#) grounds, if current catch quantities were to be achieved sustainably, would be compared to the space actually available. Such indicators are measured in hectares of productive land or sea, known as global hectares (gha).

Data from 2009 published in the National Footprint Accounts, produced by the Global Footprint Network, show that at 18 billion gha, the world's Ecological Footprint vastly exceeds its biocapacity of 12 billion gha and humanity's overall footprint increased by a factor of 2.5 between 1961-2008. In 2010, the EU alone had a Footprint of 4.7 gha per person, twice the size of its biocapacity.

Ecological Footprints can also be calculated at the national level, revealing which countries are driving global displacement of human-induced pressures as well as where such displacement is taking place. Based on consumption levels in the EU, most Member States have Ecological Footprints that are greater than their biocapacities, with some exceeding their biocapacity by 150% or more. Through imported commodities, many European countries use resources or biocapacity from other (often lower income) nations in order to meet their demands. Italy and the UK are among the top European importers, while Canada, Argentina and Brazil are the top three biocapacity exporters.

The study's authors argue that the main pressures on biodiversity, including habitat loss and overexploitation of species, stem from human consumption demands, such as for food and [energy](#). They say that, combined with other indicators, the concept of the Ecological Footprint can be used to help track the drivers of biodiversity loss and create a comprehensive monitoring system.

Although it was decided by the CBD Conference of the Parties at its 11th meeting that the Ecological Footprint method is not ready to be used at a global scale, it is available for Parties to the CBD to use at a national level, depending on their own priorities and circumstances³.



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1. <http://www.cbd.int/sp/elements#IV>

2. <http://www.bipindicators.net/>

3. <http://www.cbd.int/doc/decisions/cop-11/cop-11-dec-03-en.doc>