

Abstract

The exponential increase in the scale of human influence on Earth, especially in the past century, has now led to a crisis of biodiversity. Most direct drivers of the biodiversity crisis are present at local scales – local ecosystems are destroyed by a land use change, local populations are annihilated by overhunting. Nevertheless, in the globalized world, our actions do not only affect the ecosystems directly around us but also those located on the other side of the globe. Next to the direct impacts we pose on the ecosystems we live in, we are also partly responsible for the indirect, tele-coupled impacts we pose on distant ecosystems. The goal of this study is to map the impacts consumers in the Czech Republic cause to ecosystems in other countries. Environmental footprints, and specifically biodiversity footprint, are the tools commonly used to measure such distant environmental impacts and to allocate responsibility for them to the final consumers. There are currently multiple methodologies to quantify biodiversity footprint which are, nevertheless, burdened by some methodological problems or do not properly fit the goal of this study. Therefore, a novel method was developed here employing the Biodiversity Intactness Index as the measure of the state of ecosystems. This biodiversity footprint, or more precisely “biodiversity-intactness extended land footprint,” indicates the state of an ecosystem as a result of production of goods and allocates the responsibility for this state to the final consumers. Data on international trade of the Czech Republic between the years 1995-2015 were analyzed using this novel method. The largest biodiversity footprints were coupled with products imported from the neighboring European countries, but also from tropical countries like Côte d'Ivoire or Indonesia. The largest imported biodiversity footprint flows were coupled with products of forestry, vegetables, fruits, nuts, and other crops. The flux of imported biodiversity footprint increased nearly six-fold over the assessed period. Nevertheless, the biodiversity footprint of products exported from the Czech Republic grew even faster, the Czech Republic became a net exporter of biodiversity footprint by the end of the period. A pattern of exploitation of “developing” countries by the “developed” is apparent for the Czech Republic as well, but it is significantly weaker than what was identified in other studies. A major inter-annual variability in the countries of origin of the imported goods and in the sizes of the biodiversity footprint coupled with each product category indicates that conclusions derived only from single-year data – which was so far a common practice - might be misleading.