

Habitat Bank – offsetting biodiversity loss

Biodiversity loss is a significant global problem. Here, Professor Markku Ollikainen explains how an offset market enabled by the Habitat bank can help



WE humans do not live alone on this planet; our very existence depends on the other inhabitants. As the many life forms on this planet interact with each other, these interaction networks, known as 'ecosystems', provide us with our basic needs: clean air, water, food and materials for our housing and clothing – in essence all the biologically based materials we use in everyday life. They also provide services such as nutrient recycling, pollination, climate regulation, and recreation, to mention just a few.

The human use of ecosystem services is growing rapidly; approximately 60% of the ecosystem services evaluated in the Millennium Ecosystem Assessment are being degraded or used unsustainably. What worries our research team – and should worry everyone else, too – is that, based on different scientific monitoring systems, global biodiversity is decreasing at an alarming rate. Current policies focus on the most valuable species and habitats but cannot stop the degradation occurring in less valuable habitats. We promote and examine biodiversity offsetting as a new instrument that shifts the responsibility to conserve biodiversity to economic actors.

What is biodiversity offsetting?

As current regulation alone cannot stop biodiversity loss, we need new approaches. Our proposal is to establish markets for biodiversity

	EQUILIBRIUM PRICES (€)		LAND AREAS TRADED (HA)	
	1	1,6	1	1,6
Trading ratio	1	1,6	1	1,6
Pine mires	3,315	3,486	30,321	46,729
Herb-rich forests	14,309	14,715	1,673	2,514
Rural biotopes	35,456	35,858	2,100	3,218
Total size of the market	199m	315m	32,882	52,461

Table 1 Biodiversity compensations: equilibrium prices and land areas

offsets, where the costs of biodiversity conservation are allocated to the party responsible for habitat degradation. According to our enquiries, many Finnish firms are ready and willing to try producing and buying biodiversity offsets voluntarily.

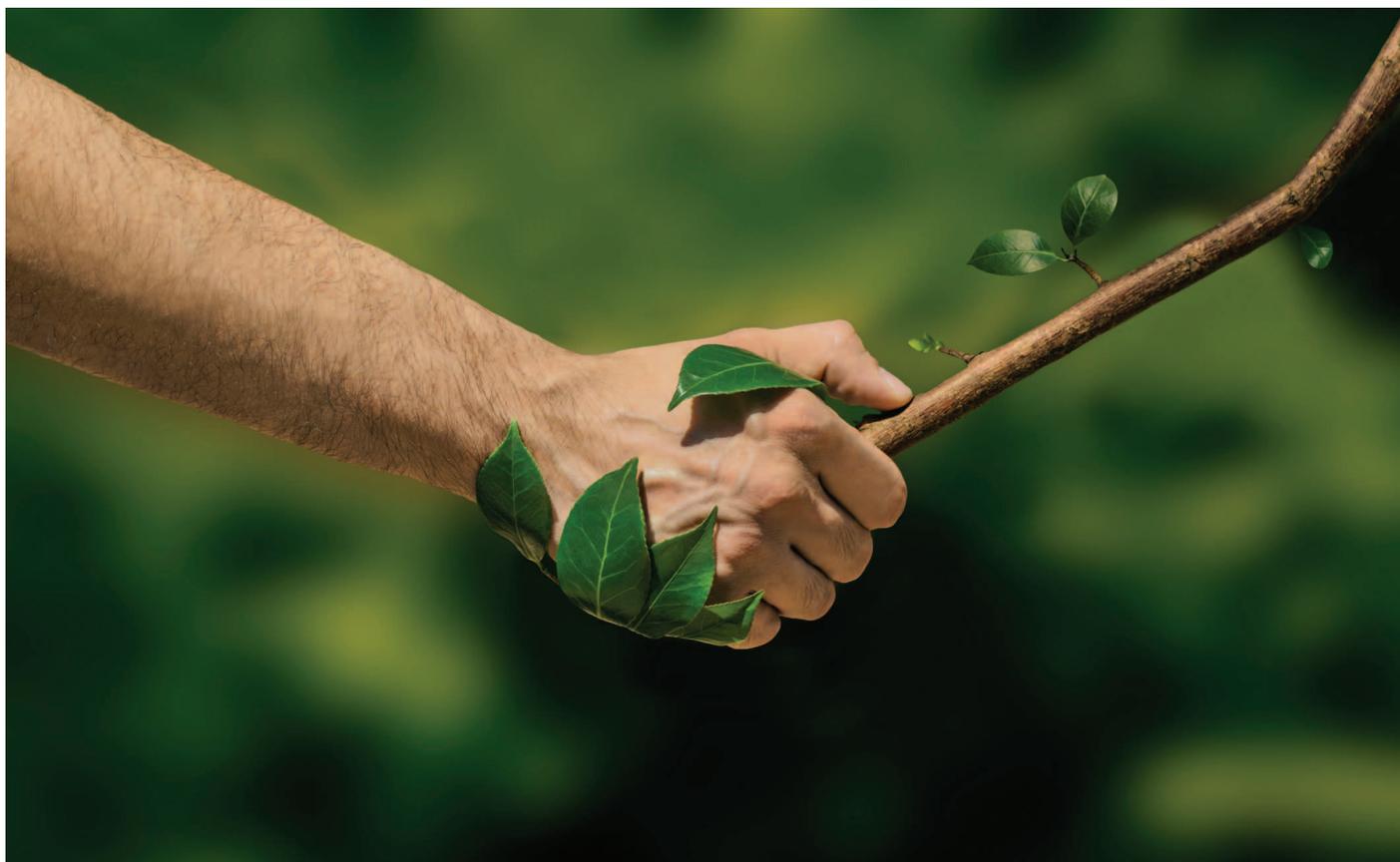
The basic idea of biodiversity offsetting is simple: whenever developers degrade biodiversity, an improvement in biodiversity must be provided elsewhere so that the lost ecological value is compensated. The aim is to achieve no net loss of biodiversity. Offsets are designed to compensate for unavoidable biodiversity loss only;

the developer must always avoid and minimise harm and restore biodiversity on the development site first. Some impacts are impossible to compensate and, thus, offsetting cannot be applied to extremely vulnerable habitats and endangered species.

The developers needing offsets can carry out compensatory measures themselves or purchase them from a third party. In a banking mechanism for offsetting, landowners invest in improving biodiversity in their lands and provide offsets for developers to purchase – resulting in an offset market emerging. Landowners can produce offsets by restoring degraded habitats, creating new habitats, and, in some cases, preserving existing valuable ecosystems.

To make the offset market work, we need a sufficient number of developers and landowners.





In addition, an intermediary can have an important role facilitating trading between market participants with minimal transaction costs. It can act as a broker in the market, guaranteeing the quality of offset credits, and safeguard against risks.

Large potential for biodiversity offset markets in Finland

The analysis of biodiversity offset markets in Finland reveals large potential. We have focused on three habitats – abundant pine mires, diverse herb-rich forests, and threatened traditional rural biotopes – and analysed prices, sold and bought offset and the size of the market. We have used ecological indexes based on important structural characteristics for each habitat to calculate the degradation and improvement in the habitats.

Table 1 shows that the size of the offset markets could potentially be quite considerable and that providing offsets could be a profitable business for landowners. The market equilibrium is reported under two alternative trading ratios. Trading ratios are used to match the biodiversity improvement to the degradation, for instance, in case of time delay. In habitats where investments in improving the ecological state are expensive, offsetting can be very costly. Offset prices are especially high in habitats where

continuous management is required (such as rural biotopes).

We see a huge potential here for jobs and new innovations. There are over 2,200 threatened species in Finland. Over 60% of our ecosystems are degraded. Potential for biodiversity improvement definitely exists. There are also 600,000 landowners and hundreds of firms potentially needing compensation. An offset market provides the necessary incentive to develop creative solutions to improve biodiversity. Finland has promised to halt biodiversity loss by 2020 – we need innovative approaches to overcome this challenge. Biodiversity offsets and the banking mechanism are an important and accelerating part of that solution.

Habitat Bank consortium works for biodiversity

The Habitat Bank consortium promotes biodiversity compensations by research and co-operation with stakeholders. We examine how to develop an ecologically adequate and economically feasible calculation model for compensations. We examine how to develop a well-functioning and ecologically sustainable compensation market, as well as how to adjust biodiversity compensations in the institutional and administrative setting in Finland. We will also pilot restoration investment and matching buyers and sellers. The core of our team comes from the University of Helsinki and the

Finnish Environment Research Institute, and we collaborate with the University of Eastern Finland, the company Akordi, and FIBS. We have received funding from multiple sources, in particular the University of Helsinki, Sitra, the Finnish Innovation Fund, and the Kone Foundation.

Our mission: science to help save biodiversity

By working together, we can save biodiversity and secure the living conditions for us and future generations. Without biodiversity, none of us could exist.



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