

Briefing note 1: What is biodiversity and why is it important?



The term biodiversity offsetting is echoing round environment ministries across the EU - and slipping off the tongues of money market speculators. In its most crude manifestation, biodiversity offsetting involves the pricing and swapping of one area of biodiversity for another in order to facilitate development. You want to build houses on a field rich with flora and fauna? Merely find another field of roughly equal size a distance away and replace or offset one lot of nature with another. To facilitate the process, you contact middlemen or brokers who organize the process for you: money is made, deals are done and biodiversity levels remain. What could be simpler?

In a series of short briefings FERN argues that this process is, at best, misguided and at worst, a license to reduce biodiversity.

This first briefing outlines what biodiversity is and why it is important. Future briefings will look at both biodiversity legislation and biodiversity offsetting case studies, and propose a way for the EU to protect biodiversity without resorting to offsetting.

What is biodiversity?

It's a word bandied about but at times it seems few stop to define what biodiversity exactly is. The Oxford English Dictionary defines it as "The variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable."¹

The term was first popularised during the 1980s: the biodiversity of a region, an ecosystem or a particular place is defined by the variety of living organisms present.

Around 8.5² million species have been identified and named globally though it's estimated that anywhere between 10 million and 100 million species still await discovery.³

The sad fact is that many of these as yet unknown species are likely to be destroyed before they are identified. And as we don't know how many species there are, it's impossible to gauge today's rate of loss.

Experts refer to the present time as an age of mass extinction:⁴ they say that the rate of loss is anywhere between 1,000 and 10,000 times higher than the natural or background extinction rate. And, unlike mass extinctions in the past – caused by ice ages, volcanic eruptions, earthquakes or asteroids hitting Earth – the present one is due almost entirely to human activity.⁵

Clearly the world's species – which go to make up its biodiversity – are in trouble. Yet biodiversity is just not about animal or plant species: it embraces other issues and is linked into, and deeply interconnected with, a far wider world.

Forest ecosystems are particularly rich in biodiversity. For example, tropical forests cover only about six per cent of the Earth's land area yet are estimated to be home to more than half the world's species.

Biodiversity is not an 'item' that can be seen in isolation – it is part of an ecosystem, a whole, that is a fun-

damental part of human existence. The right to food, health and security are human rights that cannot be provided without it.

If an area of forest is destroyed and replaced with a palm oil plantation or housing development the result is not only a loss of biodiversity: the lives of people who either live or gain their livelihoods from the forest are severely affected. Such people often have a long and deep seated attachment to the land, encompassing cultural and spiritual values fundamental to their lives. If biodiversity offsetting comes into play, wildlife might be unwilling to establish itself on a new site. Equally, communities cannot move elsewhere and may be unwilling to accept assurances that their lands will be restored after development takes place.

Biodiversity involves other issues linked to health and human well being: sites of biodiversity are often areas where people enjoy leisure activities such as walking or bird watching. Such sites might form an integral part of a cherished landscape and local identity. Their importance is recognised in EU legislation through the European Landscape Convention.

All these factors – environmental, social and matters of landscape – have to be taken into consideration and treated as a whole when assessing how to protect biodiversity.

Biodiversity: the state of play in the EU

"The serious and continuing loss of Europe's biodiversity reflects the continuing decline in the ability of ecosystems to sustain their natural production capacity and perform regulating functions."⁶

Over the years the EU has introduced a number of environmental directives aimed at not only protecting animal and plant species and habitats but also safeguarding green spaces where communities live. The existing EU nature directives are viewed as among the strongest and most comprehensive sets of environmental legislation in the world.



The most important of these directives relate to water, habitats and birds: they have now been adopted into national law in every EU Member State and have had a positive impact in many areas.⁷

Air and freshwater quality in many parts of the EU has been improved. More land has been given protected status. There's been some progress on improving land quality and conserving the marine environment.

Yet according to the EU's latest detailed assessment of the state of biodiversity in Europe - contained in its EU 2010 Biodiversity baseline report⁸ – the picture overall is far from favourable, with the EU's environment steadily degrading and fragmenting, leading to growing biodiversity loss.

Overall only 17 per cent of species and habitats and 11 per cent of key ecosystems protected under EU legislation are in what the report calls “a favourable state.”¹²

While the rate of species extinction in the EU is occurring less rapidly than in other regions and continents, 25 per cent of marine mammals, 15 per cent of terrestrial mammals, 22 per cent of amphibians and 21 per cent of reptiles are threatened with extinction at EU level. Twelve per cent of birds, 16 per cent of dragonflies and seven per cent of butterflies face the same fate.¹³

Much of this decline is caused by habitat loss:¹⁴ separate EU wide data assessing rates of change in the 2001 to 2010 period indicates a growing ‘concretisation’ of lands, with a near eight per cent growth in what are termed artificial surfaces – from paved over gardens in urban areas to roads in rural environments - while there have been significant declines in marsh and bog land, agricultural lands and natural grassland areas.¹⁵

The overuse of fertilizers and pollution by waste of agricultural lands is also destroying habitats. Meanwhile, a marked growth in invasive or alien species has caused a great deal of harm to native flora and fauna within the EU.¹⁶

BOX 1 : State of biodiversity in EU forests

EU forests are among the most heavily exploited ecosystems in Europe. Twenty-seven per cent of mammals, 10 per cent of forest-dwelling reptiles and eight per cent of amphibians are threatened with extinction in the EU region.⁹ Moreover more than 60 per cent of forest habitats in the EU are defined as unfavourable.¹⁰

Over exploited forests often have little deadwood and a lower percentage of older trees meaning they are less able to support large numbers of insects and other species. Only five per cent of the European forest area is currently considered to be undisturbed by humans.¹¹



Plantations have less biodiversity than natural forests.
Image: Hannah Mowat

Not only are a wide variety of natural habitats being lost – others are also becoming heavily degraded. Forests are critical for safeguarding overall biodiversity: the scale of the decline and degradation of forests within the EU is therefore particularly serious.

Data from the European Environment Agency (EEA) on the conservation status of forests habitats shows that only 21 per cent are classed as being in a favourable state while 63 per cent are in an unfavourable condition.¹⁷

The loss of biodiversity within the EU cannot be blamed entirely on factors within its territory. For example, declines in bird species might be influenced by environmental factors – or hunting activities – outside EU borders, particularly in the case of migratory birdlife. The same goes for many species of marine life.

And then there is the big question of just what impact climate change is having – or will have in future - on the EU's ecosystems. Already there is evidence that, as temperatures rise, trees are coming into bud and birds are building nests and hatching eggs earlier. Many species are moving slowly northwards. Climate

change - in particular overall warmer temperatures - is also believed to be ushering in new diseases which threaten flora and fauna.²²

There are also sensitive political factors. Having the EU nature directives - which serve as the main tool for halting biodiversity loss – adopted in all Member States has been, no doubt, a considerable achievement. Unfortunately some EU Member States have been less conscientious than others in implementing environmental legislation. Also, even when directives are in place, supervision and monitoring has often been far from satisfactory.

Too often, despite the right laws being in place, powerful financial and corporate interests in the EU take precedence over local community interests, with consequent negative impacts on levels of biodiversity. Economic growth, particularly in the present recessionary or post recessionary climate, too often takes precedence over the interests of nature in decisions making. A developer can use corporate financial resources to argue and lobby a case while local communities are often not in a position to put up strong resistance to activities or developments which will lead to biodiversity loss.

Box 2: Overconsumption of bioenergy - putting pressure on EU forests

Forest biomass plays a key role in helping Member States achieve their Renewable Energy Targets. For the period 2004-2007, woody biomass accounted for slightly more than 50 per cent of gross inland consumption of renewable energy.¹⁸ According to the National Renewable Action Plans which Member States submitted to the Commission, bioenergy will account for almost 54.5 per cent (135,7 Mtoe approx.) of the 2020 renewable energy target (electricity, heat and transport fuels) with forest biomass occupying a prominent role.¹⁹ Wood consumption for energy generation is therefore likely to grow from 346 million m³ in 2010 to 573 million m³ in 2020, and 752 million m³ in 2030.²⁰

There is simply not enough wood in EU forests to meet such a demand considering also other forest uses (i.e: wood for materials, forest for biodiversity, etc.) EU forest production, around 700 million m³ per year, is already lower than EU wood consumption (800 million m³ or more).²¹ Future demand of wood for energy will further increase this gap.



END NOTES

1. <http://www.oxforddictionaries.com/definition/english/biodiversity>
2. Mora et al. (2011): How Many Species Are There on Earth and in the Ocean? *PLoS Biology* 9(8): e1001127
3. Lovejoy, T. (1997) 'Biodiversity: What Is It?' in Reaka-Kudla, M et al (1997) *Biodiversity II*. Washington D.C: Joseph Henry Press.
4. http://www.alternet.org/story/151886/we%27ve_entered_the_age_of_mass_extinction%3A_goodbye_fish_and_a_whole_lot_more
5. <http://www.eea.europa.eu/publications/eu-2010-biodiversity-baseline> pages 46&59
6. <http://www.eea.europa.eu/publications/eu-2010-biodiversity-baseline>
7. http://ec.europa.eu/environment/nature/pdf/20yrs_brochure.pdf
8. <http://www.eea.europa.eu/publications/eu-2010-biodiversity-baseline>
9. EEA, 2010. 10 Message for 2010 Forest Ecosystems. EEA, Copenhagen 2010.
10. EEA, 2010. The European environment — state and outlook 2010: synthesis. European Environment Agency, Copenhagen.
11. EEA, 2010. The European environment — state and outlook 2010: synthesis. European Environment Agency, Copenhagen.
12. EU Member States are required to report every six years on the conservation status of habitats and species listed on the annexes of the Habitats Directive. Each assessment needs to conclude whether the habitat is in one of the following states: Favourable; Unfavourable-Inadequate; Unfavourable-Bad or Unknown.
13. <http://www.eea.europa.eu/publications/eu-2010-biodiversity-baseline>
14. Habitat loss can be outright loss (when a natural habitat type is removed and replaced by another habitat type), habitat fragmentation (the breaking-up of habitats into discontinuous, isolated patches) and habitat degradation (the diminishment of habitat quality which results in a reduced ability to support biological communities). See <http://www.cbd.int/kb/Results?q=glossary#1011>
15. CORINE data, the EU's land inventory <http://www.eea.europa.eu/publications/CORO-landcover>
16. CBD, 2010 Examination of the outcome-oriented goals and targets (and associated indicators) and considerations of their possible adjustment for the period beyond 2010 www.cbd.int/doc/meetings/sbstta/sbstta-14/official/sbstta-14-10-en.pdf.
17. <http://www.eea.europa.eu/publications/eu-2010-biodiversity-baseline>
18. Mantau, U., et al. 2010. Final Report — Real Potential for Changes in Growth and Use of EU Forests. EUwood Project: Call for Tenders. No. TREN/D2/491-2008. http://ec.europa.eu/energy/renewables/studies/doc/bioenergy/euwood_final_report.
19. Uslu A, Van Stralen J., Beurskens, L., Dalla Longa, F. 2012. Use of sustainable biomass to produce electricity, heat and transport fuels in EU27. A model-based analysis of biomass use for 2020 and 2030. Deliverable D5.3. Biomass Futures. Energy Research Centre of the Netherlands and Intelligent Energy Europe.
20. Mantau, U., et al. 2010. Final Report — Real Potential for Changes in Growth and Use of EU Forests. EUwood Project: Call for Tenders. No. TREN/D2/491-2008.
21. UNECE and FAO. 2011. The European Forest Sector Outlook Study II.
22. http://nora.nerc.ac.uk/3301/1/WC02018_3361_FRP.pdf

Published by FERN, the campaigning NGO for greater environmental and social justice, with a focus on forests and forest peoples' rights in the policies and practices of the EU.

1C Fosseyway Business Centre
Stratford Road
Moreton-in-Marsh, Gloucestershire
GL56 9NQ UK
t +44 (0)1608 652 895
f +44 (0)1608 652 878

26 rue d'Edimbourg
B-1050 Brussels
Belgium
t +32-2-8944690
f + 32-2-8944610
e info@fern.org

For more briefing notes from the biodiversity offsets campaign: visit www.fern.org/campaign/biodiversity-offsetting

Editor: Keiran Cooke

This is the first in a series of briefing notes that assesses EU policy to achieve 'No Net Loss' of biodiversity. The briefings show that biodiversity is inherently site specific and fundamental to human existence. In most cases, damage to biodiversity cannot, in the lives of a community, be compensated for. Nature is a common good that we all share rights to and have responsibility over. To be effective, any policy to protect biodiversity must also take these considerations into account.

For more information please contact Hannah Mowat: hannah@fern.org

