Climate Emergency and Biodiversity Crisis: Nature's Solutions

Post-event briefing from a virtual roundtable held on 27 November, 14:00

What are Nature-based Solutions?

The International Union for the Conservation of Nature (IUCN) defines Nature-based Solutions (NbS) as "*actions to protect, sustainably manage and restore natural or modified ecosystems, that address societal challenges (e.g. climate change, food and water security or natural disasters) effectively and adaptively, simultaneously providing human well-being and biodiversity benefits*".

Examples of NbS include restoring habitats such as peatlands, woodlands and kelp beds to absorb carbon dioxide. Creating and restoring wetlands also works to protect against flooding; and creating green and blue spaces in urban areas can also combat urban heating and enhance human health. Soils and fungal networks also play a significant role in carbon sequestration and storage due to the burial of organic matter and storage of carbon in root systems.

A Global Standard for Nature-based Solutions

NbS possess significant potential to address our societal challenges, for example, they could deliver 37% of climate change mitigation, but they currently receive minimal funding in comparison. They are often seen as a no-regret option but are also not a silver bullet. They are complementary to grey infrastructure and a hybrid approach is needed.

The Global Standard for NbS[1], developed by the IUCN in consultation with over 100 countries, seeks to deliver a framework for ensuring high quality delivery of NbS and allows practitioners to understand and scale up projects. It is not designed to frame legislation, but to deliver it.

The Global Standard is framed around eight criteria: societal challenges, scale and integration, governance, economic feasibility, gains to biodiversity, understanding trade-offs, adaptive management and sustainability.

Discussions with Defra are ongoing about how the standard can be applied in UK and the IUCN is working with the COP26 finance team to identify the necessary balance between public and private funding. Links with other areas, such as the Global Biodiversity Summit (COP15) should be recognised.

[1] https://www.iucn.org/theme/nature-based-solutions/resources/iucn-global-standard-nbs

The Potential for Delivery of Nature-based Solutions

The British Ecological Society will soon publish a report on the Potential for Delivery of NbS. This talk presented the report's high-level findings.

A robust regulatory baseline for NbS is needed, along with environmental assessments to ensure the right habitat is created in the right place.

Salt marsh presents great potential for carbon sequestration, having the highest carbon absorption rates of all coastal and marine habitats, and presents a great return on investments as they also reduce wave energy. It is recommended these are a priority for NbS.

Peatlands are the most carbon dense ecosystem on Earth and cover around 10% of the UK land area. They have the potential to be one of our biggest climate assets but are currently our biggest climate liability due to mismanagement. Restoration and the banning of burning must be a priority.

Tree planting should be targeted towards low biodiversity mineral soils (which have lower carbon content) to deliver climate benefits, but this tends to be the most expensive and productive land so important policy decisions must be made. Natural regeneration reduces disease risk and is better for biodiversity.

There is a need to integrate NbS into the landscape through arable land. Silvopasture (the integration of trees, forage, and grazing animals) may also potentially store more carbon than traditional pasture.

Mapping the Potential Contribution of Nature-based Solutions to Climate Change Mitigation in the UK

This talk highlighted new research from the RSPB which maps the potential for NbS across the UK.

NbS must follow a hierarchy which seeks to first protect what we have got, then restore habitats, and finally, create new NbS. It is important to focus on restoring the UK's peatlands first as they are currently emitting carbon.

Currently only 53% of the carbon stored in high conservation value habitats is currently protected and even less is in good condition. Bringing these habitats into good condition would increase their carbon absorption by 60%.

The land requirements for woodland planting to reach climate ambitions vary from 1-9% of the UK's land area. The RSPB has mapped the opportunities for this planting which recommends avoiding higher quality agricultural land, designated sites, peatlands, archaeological sites and existing infrastructure. Two million hectares of lower risk land is available, however, it is important to assess risks on a site-by site basis to identify biodiversity impacts or missing data.

Current work suggests native woodland (unharvested) will outperform commercial woodland from a climate perspective, however, there is of course a need for timber products, so a balance is required.

There is 30,000 hectares of land that could be returned to saltmarsh, for example, through managed realignment.

The summed potential of restoring peatlands, planting 1,500,000 hectares of new woodland and creating 15,000 hectares of new saltmarsh equates to around 10 years' worth of agricultural

emissions sequestered. Therefore, all sectors must continue to reduce emissions in addition to using NbS which are an important part of the toolbox.

Key messages

It was recognised that the discussion around NbS is highly technical and a simple message is needed: reduce carbon, halt habitat destruction and restore degraded ecosystems to maintain carbon sinks.

One of the keys to implementing NbS successfully is ensuring buy-in from all stakeholders, particularly landowners and the local community. Ideas that are initiated at the local level should also be supported.

A suite of financing mechanisms will be needed to implement NbS as there is not one pot of money. There is a need to break down silos in funding streams to incorporate environmental management.

Local Authorities must have the capacity and ecological skills to implement NbS through the 25-Year Environment Plan, Biodiversity Net Gain, Nature Recovery Networks and the Environmental Land Management Scheme

The UK Government has already identified NbS as one of five key themes for COP26 and Point 9 of the Ten Point Plan for a Green Industrial Revolution. However, there is still a need for more ambition and evidence-based targets for the use of NbS in Nationally Determined Contributions[2]. A joined-up approach is also needed to prevent trade-offs with protecting biodiversity, for example, by linking biodiversity targets with action on climate change through COP15.

CIEEM has produced a more in-depth briefing on NbS available here.

[2] https://portals.iucn.org/library/sites/library/files/documents/2019-030-En.pdf