NBSI NEWSLETTER

November 2019, Issue 3

Momentum for Nature-based Solutions is building. Since our last newsletter, we have seen the publication of the IPCC Climate Change and Land Report highlighting the urgent need to invest in our lands to achieve net zero by 2050, and the IPCC Oceans and Cryosphere Report emphasising that ecosystem-based adaptation can only be effective if warming levels remain low. Meanwhile, there have been several high profile endorsements of NbS in the corporate sector as well as by the United Nations, including the announcement of the Nature-based Solutions for Climate Manifesto at the UN Climate Summit. Climate Action Week was the largest it's ever been thanks to Nature's Climate Hub and raised ambition for NbS to climate change with the announcement of several major commitments and new funding streams on NbS. In this newsletter, we briefly discuss these developments, outline new NbS science and initiatives, and highlight how the NbSI is helping to guide this momentum for nature.

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NBS SCIENCE

Here we highlight three recent studies: one on the importance of mangroves for climate change adaptation, one on the impacts of different greenhouse gas removal options on ecosystem services, and one on NbS principles.

Mangroves shelter coastal economic activity from cyclones | Hochard et al (2019) *Proc Natl Acad Sciences USA*

This study is the first to provide global evidence on the capacity of mangroves to buffer the economic activity of coastal communities during tropical storms. Drawing on data on night-time luminosity across 2,000 tropical and sub-tropical communities from 23 countries, the study found that areas with average-sized mangrove forests (6.3 m per metre of coastline)

suffer a permanent loss of 5.4–6.7 months of economic activity while those with extensive mangrove forests (25.6 m) suffer only 2.6–5.5 months of loss. The findings strengthen the economic case for restoring and protecting mangroves, especially given the increasing intensity of tropical storms under climate change. For more, read here.

Impacts of Land-Based Greenhouse Gas Removal Options on Ecosystem Services and the United Nations Sustainable Development Goals | Smith et al (2019) *Ann Revs Ecol System*

This study compares the impacts of five different options for land-based Greenhouse Gas Removal (GGR) on ecosystem services and their contribution to the Sustainable Development Goals (SDGs). It suggests universally positive effects of soil carbon sequestration and wetland restoration, whereas options such as bioenergy with carbon capture and storage and afforestation have more negative impacts mainly due to competition for land. On this basis the authors suggest that the low-risk options could be implemented more rapidly, while the rest must proceed with caution and only after more rigorous research on the risks and trade-offs has been conducted. For more read here.

Core principles for successfully implementing and upscaling Nature-based Solutions | Cohen-Shacham et al (2019) *Environmental Science and Policy*

As NbS gain traction in environment and climate policy it is vital that the term is used and applied consistently. With the goal of improving the operational framework for NbS, this paper compares IUCN's preliminary "NbS Principles" to those of five other ecosystem-based concepts (the Ecosystem Approach, Forest Landscape Restoration, Ecosystem-based Adaptation, Ecological Restoration and Protected Areas). The authors highlight that a key advantage of NbS over other approaches is that they can be implemented alone or together with other solutions. They also emphasise how NbS can be an integral part of the overall design of policies addressing societal challenges in general. However, the authors conclude that the NbS Principles should be revised so that they better address issues around scale, uncertainty, multi-stakeholder participation and adaptive co-management. For more, read here.

For more recent papers on Nature-based Solutions, visit our interactive NbS bibliography

NBS IN POLICY

Climate Change and Land: An IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems

This IPCC report highlights the importance of our lands as both a source and a sink for GHGs. It estimates that around 23% of total GHG emissions are derived from the way we currently use land (agriculture, forestry, and other uses), while natural land processes absorb 29% of total CO_2 emissions. The report assesses how various aspects of land use contribute to climate change and describes how rising global temperatures are increasing the vulnerability of socio-ecological systems through increased water scarcity and soil erosion and by undermining food security.
The report outlines response options and highlights the vital importance of Nature-based Solutions, in particular curbing deforestation and forest degradation as well as implementing reforestation and afforestation. However, it warns that such climate solutions around land use must not compromise food security, biodiversity and compromise the delivery of vital ecosystem services. To maximise climate buffering from land use, the report argues for large scale changes in the way we produce and consume food. See the Summary for Policymakers.

IPCC Special Report on the Ocean and Cryosphere in a Changing Climate

This latest IPCC report describes observed and projected impacts of climate change on our oceans, coastal zones, and cryosphere (polar and mountain ecosystems), and the human communities that rely on them. It reports widespread shrinking of ice sheets, glaciers, and

reduction in snow cover, and the associated rise of global mean sea level. Such changes are now heavily impacting terrestrial ecosystems in high mountain and polar regions, as well as in freshwater ecosystems in coastal regions, leading to changes in the seasonal activities in culturally, ecologically, and economically important plant and animal species. Meanwhile, we are seeing major shifts in species composition and biomass production of marine ecosystems where most of the excess heat in the climate system has been taken up. These observed changes are expected to intensify.

The report suggests that governance arrangements (e.g. marine protected areas, spatial plans, water management systems) need to be better integrated temporally and spatially, while increasing cooperation and coordination among governing authorities will enable communities to respond effectively. NbS are recognised as a key approach to lower climate risk but face institutional, financial, ecological, and governance constraints. Terrestrial and marine habitat restoration may enhance adaptation locally, but only if such actions are community-supported and implemented using a diversity of knowledge systems, including scientific and local/traditional forms of knowledge. See the Summary for Policymakers.

NBS IN PRACTICE

Experimenting with Nature-based Solutions in Cities to Combat Climate Change Effects

Several European cities are earmarked as sites for multiple pilot projects that will test whether NbS can improve cities' resilience to climate change impacts. To address issues such as heatwaves, drought and flooding, these cities will trial innovative projects and monitor their effects. The projects include artificial ponds to store water during storms, an algae-based water treatment system, green cycling routes and vertical mobile gardens. Two EU projects, URBAN GreenUP and Urban Nature Lab (UNALAB), are coordinating the projects. UNALAB plans to use innovative techniques to monitor the effects of the pilots, including special sensors, weather monitoring, and having citizens submit useful information through apps on their mobile phones.

NBS NEWS

UN Climate Action Summit and Climate Action Week 23-29 September 2019

Billed as the most important event for international climate action since Paris 2015, the UN Climate Summit on the 23 September aimed to boost ambition and accelerate action towards implementing the 2015 Paris Agreement on Climate Change. Nature-based Solutions were the focus of the Climate Summit's Action Plan 6. This action area called for a more systematic understanding of the interconnection between humans and nature and the integration of the natural system into governance and economic planning. The plan focused on land based ecosystems, oceans, and agriculture. See the box below for examples of how countries, corporations, and environmental groups plan to use NbS for climate action.

What happened in New York?

During Climate Week in New York, countries, corporations, and environmental groups announced numerous pledges that indicated a strong pivot towards nature-based climate solutions. States made significant commitments towards preventing deforestation. In particular, Norway intends to pay Central African country Gabon US$150 million to prevent deforestation and a new alliance spearheaded by France, Colombia and Chile will work to protect the Amazon and other tropical forests. Germany has teamed up with the World Bank to launch PROGREEN, an initiative to tackle declining biodiversity and deforestation across the globe, while Costa Rica, Mozambique and other countries have committed to protecting 30% of the planet's natural systems by 2030. Over a dozen countries also pledged to plant more trees or restore degraded ecosystems.

The corporate sector also made pledges to invest in nature to tackle climate change. Agricultural companies joined with the World Business Council for Sustainable Development (WBCSD) to launch a new initiative to protect and restore biodiversity within their supply chains and product portfolios. A group of international investors launched the Net-Zero Asset Owner Alliance, committing to making their portfolios carbon-neutral by 2050. Environmental organisations teamed up to launch their own initiative, the Forests for Life Partnership, which aims to safeguard the world's most intact forests. Meanwhile, the NBS Coalition has expanded to 32 countries plus the EU Commission, eight private sector groups and coalitions, and 21 civil society organizations and coalitions. These outcomes signify a major shift towards sustainability. A key challenge remains to ensure these commitments and investments are followed through and support the best sort of NbS, i.e. those that have people and biodiversity at their core.

A rallying cry for nature's role in tackling climate change

China and New Zealand called on leaders in government and business to endorse Nature-based Solutions. The Nature-based Solutions for Climate Manifesto aims to attract political momentum, highlight the need for funding, and encourage the *integration of nature in all aspects of planning and decision making for sustainable development*.

WE CAN STILL FIX THIS #NatureNow

The message is clear in this stunning YouTube video featuring Greta Thunberg and George Monbiot: we are in the midst of global climate breakdown, but we can go a long way towards repairing the damage done by protecting, restoring, and funding nature and natural climate solutions. *Decarbonization, however, must remain the number one priority.*

New York Declaration on Forests - Progress Report

Five years since the signing of the New York Declaration on Forests, progress in meeting targets is limited. Signatories committed to halving tropical deforestation and restoring 150 million hectares of degraded landscapes and forestlands by 2020. However, only *18% of the restoration goal has been achieved* and in many parts of the world *rates of deforestation have increased*. The report stresses that in order to meet the 2030 targets, primary forests need to be preserved and restoration efforts in tropical countries need to be massively scaled up.

Investments Now Will Save us in the Future - New Report from the Global Commission on Adaptation

A new report by the Global Commission on Adaptation launched in September, reveals that investing $1.8 trillion globally in five thematic areas from 2020 to 2030 could generate at least four times the return on investment (i.e. $7.1 trillion in total net benefits). The areas considered are early warning systems, climate-resilient infrastructure, improved dryland agriculture, investments in resilient water supply and mangrove protection. The report states that the *benefits of mangrove protection and restoration (i.e. fisheries, forestry, recreation and disaster risk reduction) are up to 10 times the costs.* Download the report here.

NBS INITIATIVE

NbSI team members (Alex Chausson, Nat Seddon, Cecile Girardin and Beth Turner) celebrating in front of Cecile's #netzeroposter at Nature's Climate Hub in Central Park during Climate Action Week.

NbSI at UN Climate Week | Nature's Climate Hub

Launch of NbS Evidence and Policy Platforms: We launched our online platform on the effectiveness of NbS to climate change impacts (based on a systematic review of the scientific literature); shared our NbS Policy Platform which showcases current levels of ambition for nature in climate change policy and links this to evidence on NbS effectiveness; explored how to increase climate ambition through NbS based on our report with IUCN on the Nationally Determined Contributions; and discussed the critical importance of getting the message right about NbS.

"Big Ideas" event on NbS: We also hosted a well-attended event in Central Park to highlight the transformational power of NbS to address climate change impacts. NbSI Director Nathalie Seddon was joined by Saleem Huq (ICCCAD), Xiaoting Hou-Jones (IIED), Guan Li (Chinese National Academy of Sciences) and Val Kapos (UNEP-WCMC) to explore evidence from science and practice and to discuss challenges to scaling-up NbS for adaptation. A major take-home message was that we have much to learn from local communities across the world who have been working with nature for millenia.

Nature-based Solutions for Public Servants

We created a video with the peer-to-peer platform for public servants, Apolitical, as part of their field guide Policy Solutions from Nature. The key message of our video is that biodiversity and climate change are interwoven issues and that nature cannot help us adapt to climate change or slow further warming if biodiversity is lost.

NbS at the Oxford Achieving Net Zero Conference

In her talk, NbSI Director Nathalie Seddon described how nature's capacity to store carbon can be compromised by reduced ecosystem resilience under climate change and emphasised the critical importance of supporting biodiversity in a rapidly warming world. In an interview with *Carbon Brief*, she also discussed the need to balance green (NbS) and grey (engineered) approaches to achieving net zero and stressed that one is not a substitute for the other.

NbS Communities of Practice

We have received funding to work with partners in Peru, Ghana and Bangladesh to establish communities of practice for NbS. These will help to build capacity for increasing evidence-based ambition for nature in climate change and development policy and practice. More on this in the next newsletter.

NbS Team

We warmly welcome Nicole Chabaneix, Isabel Key and Rosy Cousins as a new core team members, and we welcome Cameron Hepburn, the Metcalfe Foundation, Surge Africa, Nature & People as new Allies and Advisors.

To learn more about how you can work with us, visit: www.naturebasedsolutionsinitiative.org

NBS EVENTS

UNFCCC COP25 Climate Change Conference
Dec 2-13
This years UN Climate Change Conference was due to take place in Santiago de Chile. This event was cancelled on 30/10/2019 by the Chilean President due to civil and political unrest. The meeting will be relocated, possibly to Spain.

Location: to be confirmed
Read more

Adaptation Futures 2020
April 23-30
Adaptation Futures is the flagship event of the World Adaptation Science Program, which is one of the four components of World Climate Programme (WCP) based on the World Meteorological Organisation Congress XVI Resolution 18.

New Delhi, India
Read more

IUCN World Conservation Congress
June 11-19 2020
Held every four years, the IUCN Congress is the world's largest conservation event. It brings together leaders from government, civil society, indigenous peoples' organisations, business and academia to determine the world's most pressing environmental and development challenges, and actions to address them.

Marseille, France
Read more

NbS in a Changing Climate
July 7-9 2020
This international meeting will bring together leading academics from the social and natural sciences, engineering and economics, as well as policymakers, civil society actors and business leaders to discuss the evidence for and potential of working with nature to address major societal challenges.

Oxford, UK
Read more

2020 UN Biodiversity Conference
Oct 5-10 2020
The 15th meeting of the Conference of the Parties (COP 15) to the Convention on Biological Diversity (CBD), the tenth Meeting of the Parties to the Cartagena Protocol on Biosafety (Cartagena Protocol COP/MOP 10)

Kunming, China
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