

Summary

Biodiversity loss is a development issue

Biodiversity isn't just iconic and charismatic wildlife, it is the diversity of life, from genes and micro-organisms to top predators and whole ecosystems. We depend on biodiversity for everything from clean air and water to medicines (modern and traditional) and secure food supplies in the face of changing climate.

Yet human activities are destroying biodiversity around 1000 times faster than natural 'background' rates. This global biodiversity crisis is hitting the poorest people first and hardest, because biodiversity underpins environmental goods and services that poor communities can ill-afford to 'buy in' – things like flood protection, drought resilient crops, and wild-caught protein. Biodiversity loss already poses risks to hard-won development gains and will impede further progress. So why does the development community often ignore biodiversity loss?

Misunderstanding and misinterpretation

The problem partly stems from confusion. Some people misinterpret biodiversity as meaning iconic species of wildlife which, while nice to have, appear largely irrelevant to mainstream poverty alleviation and development efforts (other than tourism). Indeed some species of wildlife and some approaches to conservation bring about significant costs to poor people and actually appear to undermine development efforts. Others understand biodiversity as the amount or extent of plants/animals/natural space and miss the significance of 'diversity', for example seeing a monoculture plantation as an equivalent replacement for natural plant assemblages.

Insidious damage

Another problem is that damage from biodiversity loss is far less obvious than damage from climate or weather-related disasters, making it seem less urgent. For example, a forest may appear healthy for decades after it loses the animals that disperse the seeds of its biggest and longest-lived trees.

Complexity is key

But thousands of studies tell us that a large and *diverse* mix of species, and crucially the interactions between these, are needed to ensure nature can deliver the goods and services people rely on. Biodiverse environments offer more fodder, more fisheries, better pest control, cleaner water, wider livelihood options... in other words, more and better development opportunities.

Risks to development gains

Biodiversity loss already challenges development gains in many ways. It can mean fewer wild foods, reduced nutritional security, poorer pollination, and less productive and resilient agricultural systems. It can bring higher exposure to agri-chemicals, reduced access to traditional medicines and lost opportunities for drug development, as well as translating into higher disease burdens. Lost ecosystem services can affect gender-specific labour burdens (for example where women walk further for fuel or clean water). Biodiversity loss can also make private sector investments more risky. And as for climate change, biodiversity loss compromises adaptive capacity, exacerbates natural disasters, and often reduces carbon storage.

Poor people are hit hardest

The world is losing biodiversity fastest from the tropics. The statistics are staggering. Over the past half a century, vertebrate abundance alone has fallen roughly 89 per cent in the Caribbean and Latin America, 64 percent in the Indo-Pacific region, and 56 percent in Sub-Saharan Africa [Living Planet report 2018]. Biodiversity hotspots in forests are being rapidly degraded, but we're losing biodiversity from drylands too, which are home to 20 percent of the centres of global plant diversity and support nearly a third of the global human population, including nearly half a billion people who are chronically poor. These people will bear the brunt of lost services and resources, partly because it is here that climate change hits hardest too. And, like climate change, biodiversity loss can be considered a social injustice, often driven by unsustainable use of natural resources underpinned by developed country consumption habits.

What are the solutions?

'Biodiversity-safe' development

When we allow biodiversity loss, we accept losing all biodiversity's potential benefits, for example the largely unexplored toolkit biodiversity offers for building resilience to climate change. Many development projects already try to 'climate proof' investments. Development projects and private sector investments need to be 'nature-proofed' to ensure they don't contribute to, or exacerbate, biodiversity loss. And where they do potentially impact on biodiversity, steps need to be taken to address that impact.

Investments in biodiversity for development and climate resilience dividends

And we should go further. Development projects should proactively invest in biodiversity for climate change resilience. However, 'nature-based solutions' to development challenges must actively protect *diversity*, not just nature, because intensive monoculture approaches, while potentially productive at first, don't offer the same wide-ranging and flexible services as natural systems and are vulnerable to climatic shocks, pests and diseases.

Conservation that empowers rather than disenfranchises

Action is needed within the conservation sector too. Since the 1970s, formal protected area coverage has increased 660 percent. But the global populations of most major animal groups have declined by roughly 60 percent. Simply declaring 'parks' isn't enough to halt biodiversity decline. Indigenous people and local communities own around 25 percent of the world's land area, and they need support, in terms of tenure rights, resources and economic opportunities, that help them steward biodiversity. Beyond protected areas other mechanisms include paying for conservation services, with jobs as well as direct payments and supporting biodiversity friendly small-holder production such as agroforestry.

Conservation that recognises poor peoples' priorities

While the world's attention is focussed on charismatic megafauna – particularly those targeted by illegal wildlife trade – it is also important to prioritise the uncharismatic species that matter most to poor people, for example pollinators, soil microbes, traditional crop varieties and species that are important for food or fibre or medicines.

A new deal for nature and people

In 2020 the international community will agree a new 10-year framework for biodiversity management. Developing this new framework into one that works for both biodiversity *and* for people requires much more coordinated thinking and action than has happened to date. Many drivers of biodiversity loss also drive development gains, so there exists a trade-off. But in the long term, biodiversity loss threatens to undermine these gains because biodiversity underpins ecosystem productivity and resilience. The biodiversity crisis is thus a development crisis and demands an engaged response from the development community.

Introduction

Biodiversity is a scientific term describing the variability of life on Earth (wild and cultivated). So, it is about sheer numbers of different species, genetic variation between and within species, and the extent and variety of natural habitats and ecosystems. We are losing this diversity and abundance at increasing and alarming rates (now around 1000 times higher than natural background rates).

Why does it matter? Because humanity depends on the goods and services nature generates, and biodiversity underpins nature's ability to deliver these goods and services over the long term. What's more, poor people are disproportionately dependent on biodiversity, both to meet their day to day livelihood needs, and to be resilient to climate change and other external stressors. So they are hardest hit by its loss, especially when coupled with climate change (which in turn affects and is potentially affected by biodiversity).

To date, biodiversity loss has been treated only as an environmental problem. Yet continued biodiversity loss threatens to undermine development gains made in health, resilience, food security and GDP earnings. In this report we briefly review the evidence on how biodiversity loss affects development, and highlight why, if we're serious about development, we need to invest in conserving biodiversity now. This report is not intended to be a thorough systematic mapping, review and synthesis of evidence. Rather, it highlights recent important findings that have advanced our scientific knowledge of the impacts of biodiversity loss and brings increased clarity to the development risks that biodiversity loss will present, if left unattended. The paper focuses on raising awareness that biodiversity loss is a development challenge, hence we devote more space to setting out the evidence for this than on suggesting solutions (which will be discussed in a follow up paper).

“Biodiversity crisis” or development challenge?

Scientific and popular media warns us that we are facing a “biodiversity crisis”¹ and that we are heading into – if not already in the midst of – the sixth great extinction.² Globally, there could be up to 690 species extinctions per week.³ The Living Planet Report 2018 finds that global populations of fish, birds, mammals, amphibians and reptiles declined by an average of 60 percent between 1970 and 2014 and projects that this could become 66 percent by 2020.⁴ The Food and Agriculture Organisation (FAO) estimates that nearly one third of global fish stocks are over-fished and one-third of freshwater fish are considered threatened.⁵ While we usually hear about biodiversity loss in the form of extinctions of wild animals – particularly those

that we can see, have four legs, fur or feathers – biodiversity loss also means loss of genetic resources, crop varieties, fungi and invertebrates as well as loss of entire ecosystems such as coral reefs. For example: the biomass of flying insects has declined 75 percent in Germany (and so probably also elsewhere) over the past 27 years;⁶ 30-50 percent of mangroves have died or been removed in the past 50 years; and nearly 50 percent of coral reefs have been destroyed.⁴

The biodiversity crisis is attracting some media attention – although much less than climate change,⁷ but it is not a new discovery. The UN agreed the Convention on Biological Diversity (CBD) in 1992 in response to an already recognised crisis, and 25 years ago a