

OPINION

Time to act across crises: Lessons from the Nexus Assessment for UNFCCC COP 30

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The climate crisis cannot be addressed in isolation. It is inseparable from biodiversity loss, water scarcity, food insecurity, pollution, and other global problems. This was the central message from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Nexus Assessment, approved by Member Governments in December 2024, which we co-chaired over three years [1]. The assessment highlights that the world is facing interlinked crises that amplify one another, and that tackling them in separate silos has been ineffective and even counterproductive. Yet the Nexus Assessment also provides clear evidence and tools for a wide range of integrated response options that are available now for tackling these crises together. As we approach COP30 in Brazil, many of these findings are especially urgent (Fig 1).

One of the most important messages of the Nexus Assessment is the clear interlinkage between biodiversity and climate [2]. Biodiversity is essential to our very existence, supporting not only climate stability, but also water and food supplies and human health and well-being. Despite this importance, biodiversity is declining in all regions of the world and at all spatial scales, reducing ecosystem resilience to climate change, water availability and quality, food security and nutrition, and negatively impacting human, plant and animal health [3]. Climate change is a major driver of this decline, alongside land use change, unsustainable exploitation, pollution and invasive alien species. If current trends continue, pressures from climate change will lead to irreversible losses of marine biodiversity—notably coral reefs—and declines in coastal fisheries vital for nutrition [4]. On land, failure to mitigate climate change will reduce food production through heat stress and declining water availability and quality, with profound consequences for human health and well-being [5].

Biodiversity loss and degradation of water, food and health systems in turn amplify climate change. Land-use change associated with food production accounted for an estimated 21% of global carbon dioxide equivalent emissions in 2018 [6]. Healthy ecosystems make critical contributions to climate change mitigation and adaptation, such as by buffering extreme weather events and acting as carbon sinks, but degradation and loss of these systems accelerates greenhouse gas emissions [7].

If current trends continue, climate change risks will escalate sharply. Exposure to climate change impacts is projected to double between 1.5°C and 2°C, and to double

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again between 2°C and 3°C [8]. Intensifying climate change will degrade ecosystems, stress water resources, undermine agricultural productivity, exacerbate droughts and flooding, increase mortality from heatwaves, and expand vector-borne diseases toward higher latitudes [4].

However, addressing climate change risks in isolation could create additional negative outcomes for biodiversity and food security. Climate change mitigation actions, such as large-scale bioenergy expansion, can result in adverse impacts on terrestrial biodiversity, water resources and food supplies due to increased competition for land if not planned in an integrated way and accompanied by ambitious emissions reduction strategies [9]. By contrast, integrated approaches to climate change mitigation can be more effective by minimizing trade-offs and creating synergies between actions. For example, conserving coastal and marine systems supports carbon storage, climate change adaptation, and food security simultaneously [10].

Actions taken now can help achieve more just and sustainable futures. The Nexus Assessment evaluated 71 response options in depth, representing 10 broad categories of action: 1) conserve or halt conversion of ecosystems of high ecological integrity; 2) restore natural and semi-natural ecosystems; 3) manage ecosystems in human-exploited lands and waters; 4) consume sustainably; 5) reduce pollution and waste; 6) integrate planning and governance; 7) manage risk; 8) ensure rights and equity; 9) align financing; and 10) an “others” category for options that could not be categorized [11]. Response options in each of these categories varied widely in their nexus-wide impacts: many offered potential benefits across biodiversity, water, food, health and climate change while others showed trade-offs. The latter includes some options for climate mitigation, such as offshore wind if biodiversity safeguards are absent [12]. Examples of response options with nexus-wide benefits include forest-based management practices to address climate change and urban nature-based solutions, which enhance climate regulation, water availability, and mental and physical health. Options originating from other sectors but with strong climate benefits include rewilding (from biodiversity), restoring soil health (from food), sustainable inland fisheries (from water), and net-zero sustainable health care (from health) [1]. Many of these options will help meet the Paris Agreement’s long-term goals for mitigation and adaptation. Importantly, however, many will be less effective or impossible to implement if greenhouse gas emissions are not urgently reduced.

Integrated governance is essential for addressing climate change as it is inseparable from other crises. Climate policy is already recognized as polycentric, involving actors across scales and connected through both formal and informal mechanisms, [13] but the assessment highlights the need for broader engagement— from health and medical sectors to local conservation groups. Decision-support tools can help meet this governance challenge, with more than 200 available to support integrated nexus approaches [14]. One example is the SERVIR platform, which for twenty years has provided Earth observation and geospatial data to strengthen climate change adaptation decision-making in the Global South, though it now faces threats from funding cuts following the dismantling of the U.S. Agency for International Development.

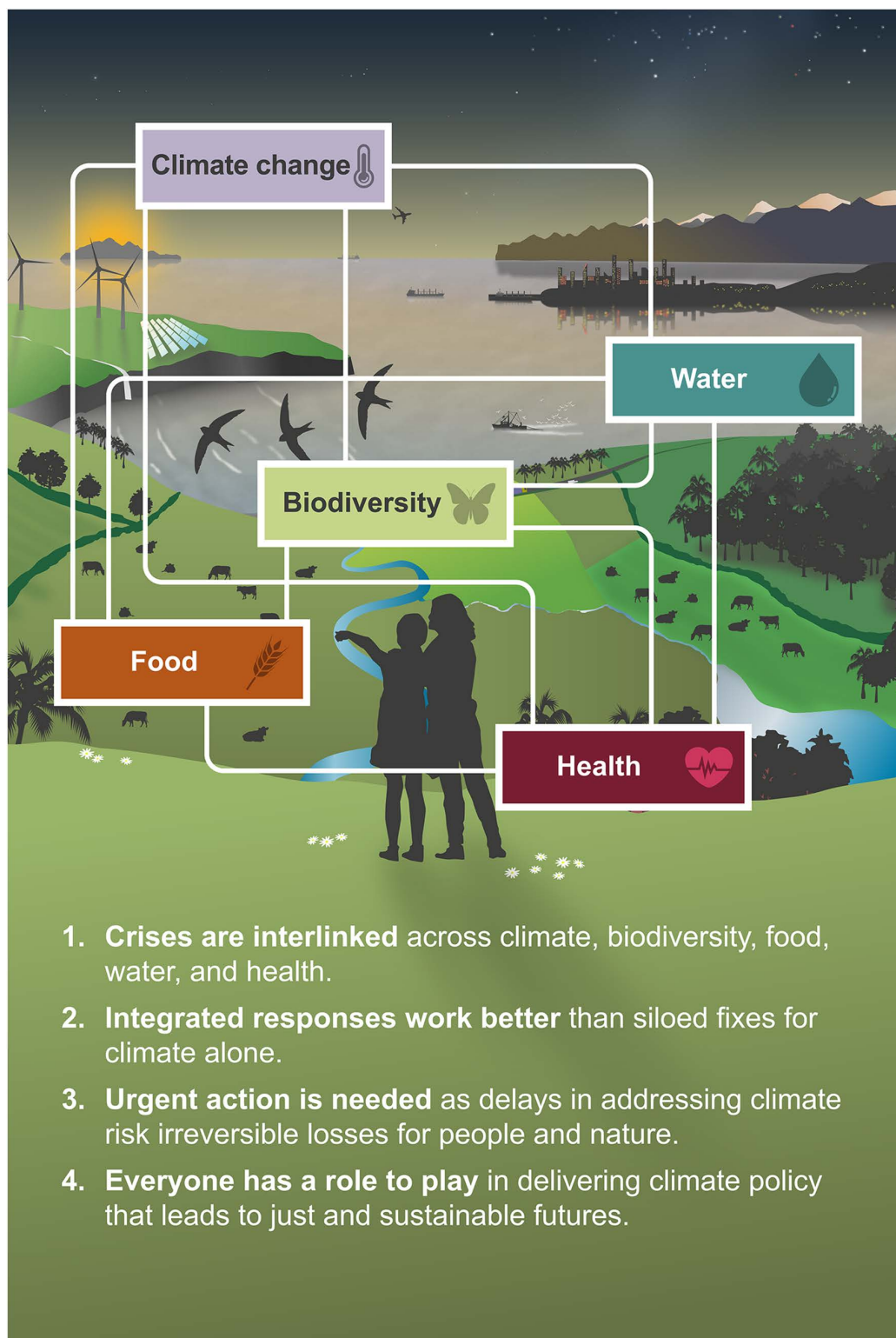


Fig 1. Main findings of the IPBES Nexus Assessment. Adapted from Figure 1 of the Nexus Assessment Summary for Policymakers. Figure by Andy Sier.

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Finance remains a critical barrier to addressing the climate crisis and other interlinked crises. Nature-related risks to economic and financial systems are estimated in the trillions of dollars and are mutually reinforcing with risks from climate change. Yet integrated finance for biodiversity and other nexus elements remain far below climate finance, which is dominated by energy infrastructure funding. Of the limited biodiversity funding, only 1% has explicit links to climate change—for example, through investments in nature on voluntary carbon markets—underscoring the urgent need for realignment [15].

As parties gather in Belém in November 2025, the Nexus Assessment offers three clear messages: 1) global crises are interlinked but our solutions have not been; 2) many integrated response options are already available to address crises together; and 3) all actors have vital roles in ensuring integrated nexus approaches lead to just and sustainable futures. The time to act across these nexus challenges is now.

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