EDITORIAL

Nature and Human Well-being: Theory, Policy and Practice

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Earlier this month, as we were finalizing this issue of *Ecology, Economy and Society*, we received the tragic news on January 7, 2026, that Madhav Gadgil was no more. My co-editor Jagdish Krishnaswamy, along with many others, worked with him on the Western Ghats Ecology Expert Panel (WGEEP), which he chaired in 2010–2011. It was the first time that an entire global biodiversity hotspot was being looked at through the lens of spatially explicit ecological sensitivity and policy recommendations. The report led to many pushbacks, rejections, and controversies, but it still remains relevant to this day. Many INSEE members have worked with Madhav Gadgil in various capacities, and we will all miss him and his insights and views on conservation and sustainability.

I have not had the fortune of being his student or colleague, but I had the privilege of having some conversations with him during his stay at our university as a D D Kosambi Visiting Professor Chair about two decades ago. He treated us, far junior and even less knowledgeable faculty, with respect and affection. Amit Bhaduri was also visiting our university at the same time, and they would have lengthy conversations on development and conservation and the role of natural capital (including biodiversity) in determining human well-being. Our last communication was regarding his playing a larger role in our journal, which he readily accepted, as he had done for so many small initiatives. Gopal Kadekodi, who had known him for many decades, has penned a poem in his memory and recounts his

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contributions to understanding the symbiotic human–nature relationship in India. The footprint that Madhav Gadgil leaves on academia and policy—and his enduring reminder of the importance of the Western Ghats to human well-being—is immense, and we will miss him as the challenges to the environment mount.

The theme of human–nature relations is echoed in the contribution of Partha Dasgupta, "On Natural Capital", who sees human ecology as nested within the biosphere. Ecosystems, which are a subset thereof, constitute a part of natural capital. In the economist's toolkit, the crux of sustainable development then lies in the effective management of planetary assets. However, going beyond the intertemporal maximization exercise, this paper introduces the idea of impact inequality, which measures the extent to which the global demand for provisioning goods exceeds nature's ability to produce them. And the extent of this inequality crucially depends on the efficiency with which nature's resources can be converted to provisioning goods. Closing this inequality is the "most urgent task facing humanity".

Economists and policymakers have grappled with the idea of incorporating alterations in natural capital into the conventional output accounting framework for national income. In 1993, following the Earth Summit in the previous year, the System of National Accounts (SNA) was proposed to be revised to incorporate various satellite accounts. This effort grew into the UN's System of Integrated Environmental and Economic Accounting (SEEA) that is currently under implementation across the globe. India's efforts at implementing the SEEA got a boost with the release of the Ministry of Statistics and Programme Implementation's (MoSPI's) expert committee report, "Green National Accounts in India: A Framework", chaired by Partha Dasgupta in 2014. With India's official adoption of the SEEA framework in 2018, the Central Statistical Organisation (CSO) released a new series, "EnviStats India", which compiles data on physical assets of four natural resources—minerals, land, water and forests. Notably, the Comptroller & Auditor General of India's Government Accounting Standards Advisory Board also released the "Concept Paper on Natural Resource Accounting in India" in 2020, bringing parity with the efforts of the other government agencies. MoSPI accordingly developed a five-year plan for SEEA implementation in 2021, as outlined in its document: "Strategy for Environmental Economic Accounts in India 2022–2026". Kavi Kumar, who is a member of the MOSPI expert committee, here provides insights on the development of an ocean accounts for India.

A policy problem in actualizing two related questions is addressed by Rahul Basu. He confronts a set of linked questions in natural resource policy: how does a country decide what is the social value of its mineral resources?

What mechanism should policymakers use to arrive at this price when the ore is handed over for extraction to private agents? How does one ensure that future generations do not feel that they have lost out on their fair share of the extracted resource—a situation Hartwick labelled as "zero net loss", effectively, actualizing sustainable development with intertemporal equity?

Another sub-soil resource that is partially renewable is groundwater. Soumya Balasubramanya argues that groundwater management issues are complex and involve tradeoffs between farmer welfare, resource utilization, and resource pricing. She identifies the knowledge gaps in this domain and provides a research agenda that future studies could explore.

Energy use is often treated as a proxy for development with the growth of industrial and service sectors in any economy. However, it is also often seen as a driver for rising CO_2 emissions and climate change. Tobón Ospino *et al.* explore how income distribution and energy use impact CO_2 emissions (per capita) at the global scale and also separately for the northern and southern hemispheres for the period 1965–2022. Energy consumption is found to be a consistent predictor of CO_2 emissions, while inequality seems to be significant only in the southern sphere. Tobón Ospino *et al.* conclude that a reduced reliance on fossil fuels for energy should be the single-most important policy focus in mitigation efforts around climate change.

This adds nuance to the argument that Manish Kumar Shrivastava and Malancha Chakrabarty make, linking climate with development policy, where poverty eradication is placed at the centre of both. This also connects back to the argument that Dasgupta makes—about the urgency of addressing inequality—in his contribution to this volume.

One of the consequences of anthropogenic pressures and climate change is the loss of biodiversity. Banerjee and Kumar, using the context of losses in biodiversity hotspots, point out how our value systems impact environmental outcomes and how to deter biodiversity loss by all actors.

Rapid integration of information technology and artificial intelligence has helped in generating real-time data for environmental conservation. Naveen Kolloju probes the strengths and weaknesses of such technology integration from multiple perspectives. He raises concerns regarding the possibility of technological overreach—from the ecological sphere to the domain of human surveillance—and probes how such technology can be more inclusive of marginalized groups. Given that a large proportion of people's livelihoods in the Global South depend on nature, any conservation strategy needs to engage with such communities. Kartik Shanker *et al.* propose four pathways for environmental NGOs to engage

with communities—ethical, organic, pragmatic and ecological/ environmental—which would enhance their well-being.

The Intergovernmental Panel on Climate Change (IPCC) has played a stellar role in synthesizing the scientific evidence related to climate change and alerting all stakeholders, especially governments and policymakers, on the need for integrated strategies for adaptation and mitigation actions. Quite a few INSEE members and EES editors have been and are authors in previous and ongoing IPCC assessments. Two contributions in this issue address varied concerns—climate finance (Nilanjan Ghosh) and community stewardship (Pratiti Priyadarshini). Ghosh pleads for the *Seventh Assessment Report (*AR7) to integrate mitigation, adaption, loss and damage, and transition finance needs, providing a unitary finance framework across working groups. It should pave the way for decarbonizing the economy and connecting fiscal and climate policy. Priyadarshini, in contrast, points out the need to recognize community stewardship and a commons-based property rights approach. She argues that this would need a pluralistic approach and foregrounding people's knowledge alongside the scientific knowledge generated by the natural sciences.

Knowledge creation and dissemination require building social capital through knowledge networks. The Beijer Institute in Stockholm pioneered the creation of multiple networks under the leadership of the late Karl Goran Maler and Partha Dasgupta in the early nineties. The South Asian Network for Development and Environmental Economics (SANDEE), at the International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, celebrated 25 years of service to the region by hosting an international conference from December 12–14, 2025. Hussain *et al.* report on the highlights of the conference that drew participants from across the globe.

Climate impacts have been felt in multiple lived domains and outcomes. One consequence is the need to migrate for survival. Dung Le examines how food security and migration are integrated for Bihar's population, as recorded by Chetan Choithani's book, *Migration, Food Security and Development: Insights from Rural India.* What has made climate action even more daunting is the uncertainty about the trajectory of change. Sagar Dhara discusses the contributions in Mehta, Adam, and Srivastava's edited volume, *The Politics of Climate Change and Uncertainty in India.* When political economy engages with climate change, it does not naturally think of it as a crisis of capitalism. But in an extended way, the two are not delinked, as climate change is in many ways a consequence of unbridled accumulation of capital and individual centrism. Savyasaachi appraises Bromley's *Possessive Individualism: A Crisis of Capitalism*, which questions the basis of the dominance of efficiency as a determinant for welfare.