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## COMMENTARY

# Conserving Economics for Biodiversity: Reflections on “The Dasgupta Review”

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**Abstract:** *The Economics of Biodiversity: The Dasgupta Review* (Dasgupta 2021), henceforth the Review, tells us that we are embedded *in* Nature and our economies are bounded *within* Nature. It helps us estimate the value of natural capital and include it in estimations of economic output. The Review’s key messages concern (i) keeping our demands well within Nature’s supply, (ii) moving away from gross domestic product (GDP) towards inclusive wealth as a measure of economic success, and (iii) acknowledging the institutional failure in addressing global environmental problems and resolving them through institutional reforms in the financial and education systems. However, this commentary suggests that the Review is about conserving economics for biodiversity. It offers little opportunity for transformative change in our thinking and acting, to change our relationship with Nature so that we can conserve its diversity and dynamism. This commentary suggests possible ways forward, drawing upon lessons on non-linear behaviour, emergent properties, and complexity in Nature. These include looking to niche communities that live within the limits set by Nature, learning from various environmental social sciences on how to maintain and promote the aggregate stocks and funds of Nature; and finding ways to include economic activity and output *in* value frameworks of sustainability, justice, and diversity.

**Keywords:** Biodiversity; Conserving Economics; Institutions; Complexity; Environmental Social Science.

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## 1. THE REVIEW

The Review is rich with powerful and critical findings. But it seems to conserve economics; it offers little opportunity to transform our economies and societies by changing our relationship with Nature.

The Review tells us repeatedly that we are part of Nature and are embedded *in* it. Nature, or the biosphere, has limits; but our lifestyles and production and consumption behaviours treat Nature as a perpetual and inexhaustible supplier of goods and services. As one news article proclaimed, quoting Professor Dasgupta, “Nature is a blind spot in economics that we ignore at our peril” (HM Treasury 2021). Indefinite growth of global economic output is not possible. Gross domestic product (GDP), which is understood as the market value of the flow of final goods and services in a country in a given year, is an inadequate measure of wealth and wellbeing. It encourages governments to pursue unsustainable economic growth at an immense and irreversible cost to Nature.

In the first part, Chapters 1–13, Prof. Dasgupta makes it clear that our economic activity has crossed known planetary limits (see subsection 4.1.2., p. 127 and p. 338). The second and third parts of the Review take us through extensions (including chapters on the conservation and restoration of Nature) and the road ahead (options for action), maintaining that “the fault is not in economics” but in the way we have chosen to practise it (p. 498). The prevalent macroeconomics of economic growth and development does not recognize humanity’s dependence on Nature (p. 38).

Our commitment to economic growth and using GDP as a measure of it are evident in both the Intergovernmental Panel on Climate Change and the Sustainable Development Goals (see Box 4.5). Governments and their statisticians and planners are obsessed with efficiency parameters. Further, our current predicament, the sixth mass extinction of species, is not just due to market failure. It is due to persistent and pervasive institutional failure in addressing global environmental problems like climate change, loss of biodiversity, and unsustainable development. These institutional failures can be resolved when the “social evaluator” or “citizen investor” (who replaces the utility-maximizing individual consumer or investor) evaluates options on behalf of society using the criterion of “inclusive wealth” (Chapter 13). Inclusive wealth and inter-generational well-being are not the same entity but move in step with each other (see p. 327). This inclusive wealth/well-being equivalence theorem leads us to the sustainable development theorem, which states that intergenerational well-being increases over a period *if and only if* inclusive wealth increases over the same period. Armed with this knowledge, the citizen investor can make positive investments and

include stocks (not just flows of capital) in her estimation of returns on investment suitably discounted over time to arrive at national inclusive wealth. The empowered citizens can demand and enable public policy choices that respect social cost–benefit (social-NPV (net present value)) estimates.

The Review tells us that transformative change in our mode of thinking and acting is necessary and possible. We need to (i) ensure that our demands on Nature do not exceed its supply and (ii) find ways to increase Nature’s supply compared to its current level. We have to discard GDP and measure “inclusive wealth”, which is the weighted sum of the stocks of all capital goods (produced capital, human capital, and natural capital) in the economy. It suggests that we change our institutions, especially those protecting public goods and governing financial and educational systems. Supra-national institutional arrangements and public and private financial investments in economic activities that stand to enhance our stock of natural assets and incentivize sustainable production and consumption activities are needed. Governments and international actors like multilateral development banks can enable these investments in Nature. Action is needed across scales by multiple actors—from the introduction of supra-national governance of ecosystems located within national boundaries (biomes like tropical rainforests) and outside of them (the oceans) to inculcating discipline in individuals and educating them so that they can make informed choices and invest wisely.

## **2. ECONOMICS IN THE REVIEW: SOME REFLECTIONS**

Let us begin with the model of “The Bounded Global Economy” that shapes the Review, which is presented in Chapter 4. This model does not show how the economy exists *within* Nature and how it behaves as embedded *in* it. The presentation of produced capital, human capital, and natural capital, and the flows between them (Fig. 1.1), and the dematerialized anthropocentric innovations and reforms meant to balance humanity’s demands and Nature’s supply (Fig. 21.2), are not mere corrections in the practice of economics. These are the core of economics and the Review. In Part I, the Review fundamentally seeks to reinforce economics and its formalism to ensure that Nature is included *in* the global economy. This denies Nature its agency, its self-organizing and non-linear behaviour, emergent properties, and complexity. It does make it possible to include natural capital (the flow of provisioning services) (*R*), and the stock supplying regulating and maintenance services (*J*) in the economy, as long as it stays within a safe limit (*L*). In economics, this is an unorthodox

introduction indeed. In a linear Cobb-Douglas production function, with its assumptions of substitution and returns to scale, Nature is a silent participant, a source and sink in the model of inclusive wealth. In the real world, Nature has agency and is a dynamic shaper of the economy. “The survival of the natural world depends on maintaining its complexity, its biodiversity. Putting things right requires a universal understanding of how these complex systems work. That applies to economics too” (HM Treasury 2021, quoting David Attenborough).

If we are indeed embedded *in* and are dominant actors *in* Nature, the question is not about bringing our aggregate demand in line with aggregate supply ( $G(S)$ ), but about maintaining and promoting (in every way and wherever possible) the aggregate stocks and funds of Nature (Georgescu-Roegen 1975). The global economy should then be treated as a part of the “flows” of goods and services from both “stocks” (historical build-up of limited biogeochemical reservoirs of matter) and “funds” (regularly renewed biotic resources built and maintained with solar radiation); a user of these stocks and funds would then be keen to maintain them within Nature’s limits (*ibid*). In the real world, produced capital and human capital exist within diverse, non-linear, and highly heterogeneous complex adaptive systems (Levin *et al.* 2013). A model of wealth will then consider how the extraction of both stocks and funds, and the (inequitable) accumulation of produced capital and human capital, result in a cumulative causation of environmental and social costs (Kapp 1968) with lasting impacts on nations and Nature. The Review presents impact inequality as a reductionist macro model (see Fig 4.9) of how our demand ( $Ny/a$ ) exceeds the biosphere’s supply stock ( $G(S)$ ) and ignores lessons from ecology, history, political science, and several schools of economics. Again, the Review’s treatment of natural capital does not take into account our understanding of both  $N$  (human population) and  $y$  (human economic activity per capita), and substantive accounts of the social metabolism (material and energy transformations) and material intensity of different countries and their respective production and consumption systems. The Review’s treatment of natural capital *in* the economy reinforces mainstream (neoclassical) environmental economics.

The absence of “society” embedded in the biosphere (Fig 4.11) and the economy embedded in society, is more than an epistemic erasure in the Review.<sup>2</sup> Social capital is seen as necessary only for consumers and investors to participate in and comply with the goal of inclusive wealth and

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<sup>2</sup> Economics does attempt to retain society as a key system shaping the economy within the biosphere (Figure 1.5 in The CORE Team, 2017).

investment decisions. Institutions, likewise, are necessary to manage unidirectional externalities arising from economic activity and common pool resources (see Chapters 7 and 8). Institutions as norms and rules “which have become axiomatic and indispensable by habituation and general acceptance” (the economist Thorstein Veblen as quoted in Kapp 2011, p. 56) are not necessary for the Review because the processes of institutional emergence and enculturation are not considered important. Institutions as bio-cultural protocols devised by communities through social-ecological system changes (BPUMS 2010), and norms and analyses that are cognizant of Nature, justice, and time (Faber 2008) which acknowledge the incomparability and incommensurability of values in ecology and economics (Martinez-Alier *et al* 1998), are central to our understanding of biodiversity in a resilient and sustainable planet.

There are examples of societies taking institutions into account. In India, tribal populations like the Baigas (in Madhya Pradesh) and Soligas (in Karnataka) in forests and pastoralists like the Maldharis and Raika (in Gujarat) covering tracts along the Western and Northern Indian grasslands, acknowledge the complexity and variability of Nature. Just as the Aymara and Quechua in the Andes or the Sami in Sweden, they do not acknowledge waste (to be dumped in the sink) but account for joint production and time. They set non-negotiables and social targets, design institutions, and explore economic policies that accomplish these targets. The institutions governing their societies and economies help them thrive within the rhythms of Nature, with its complexity and biodiversity. The Review, as it picks from the discerning evidence sought (see p. 603), ignores these institutions governing populations and their socio-metabolic regimes; it presents a rather ahistorical and dematerialized treatment of the population problem in general. Conspicuously absent are past attempts in Mapping the Interplay between Nature and the Economy<sup>3</sup> (MINE), estimating green GDP and environmental accounting, and scholarship on biodiversity conservation and global change. There is no space in the Review for including analytical frameworks of justice, diversity, and sustainability in environmental research and policymaking, lessons from the environmental social sciences, and questions about incentivizing economists to work on the challenges of the environment and sustainable development.

Historically, economic changes following the first and second industrial revolutions, and the recession and recovery of the early twentieth century, led to macroeconomic models of economic growth being theorized and institutionalized. Today, there are already alternatives promoting the

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<sup>3</sup> See the MINE website, <http://nature-economy.de/>, for details.

economics of care, industrial ecology, clean production and consumption, environmental justice, and post-growth society. Economists are studying these along with transdisciplinary research groups analysing social-ecological systems, social metabolism, resilience, and the economy *within* Nature’s limits. They analyse the social systems and features of millions of actors, the Political Economic Persons (PEPs) who are not the ‘Economic Man’ or the utility-maximizing consumer of neoclassical economics (Soderbaum 2000). These citizens and organizations, guided by their values and institutions that are responsive to social and environmental stress, can live within Nature’s limits with minimal throughput. They will refuse to participate in supra-national governance and financial mechanisms that seek more investments in under-invested natural capital. For them, Nature is not ‘natural capital’ (an economic entity). Given the pluralism of these citizens and organizations marked by value frameworks (diversity, equality, justice, or sustainability) and governance models that can coexist and coevolve with these frameworks, they will help us live as a part of Nature, within Nature’s limits. If the Review had taken due cognizance of these conceptual and theoretical shifts and inter and transdisciplinary analyses of human–Nature interactions, it would have extended its reach and enriched a more insightful analysis of how we can conserve and promote biodiversity.

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