

The Dasgupta Review: Independent Review on the Economics of Biodiversity

Virtual Forum on SEEA EEA, 15 July 2020

INDEPENDENT REVIEW – NOT GOVERNMENT POLICY

Review context

- Review commissioned by HM Treasury - Spring 2019
- Lead Reviewer: Professor Sir Partha Dasgupta, Emeritus Professor of Economics at Cambridge
- Supported by
 - Advisory Panel of international experts, from public policy, science, economics, finance and business
 - Interdisciplinary team of civil servants
- Review Ambassador: Sir David Attenborough
- Call for Evidence: August–November 2019

April 2020	—	Interim report published
Autumn 2020	—	Final report published
2021	—	CBD COP15
2021	—	CBD COP26

The Review will set out a unified framework for the economics of biodiversity

The Review explores the sustainability of our engagements with Nature:

- what we take from it
- how we transform what we take from it and return to it
- why we have disrupted Nature's processes
- what we must do differently to enhance our collective wealth and well-being, and that of our descendants



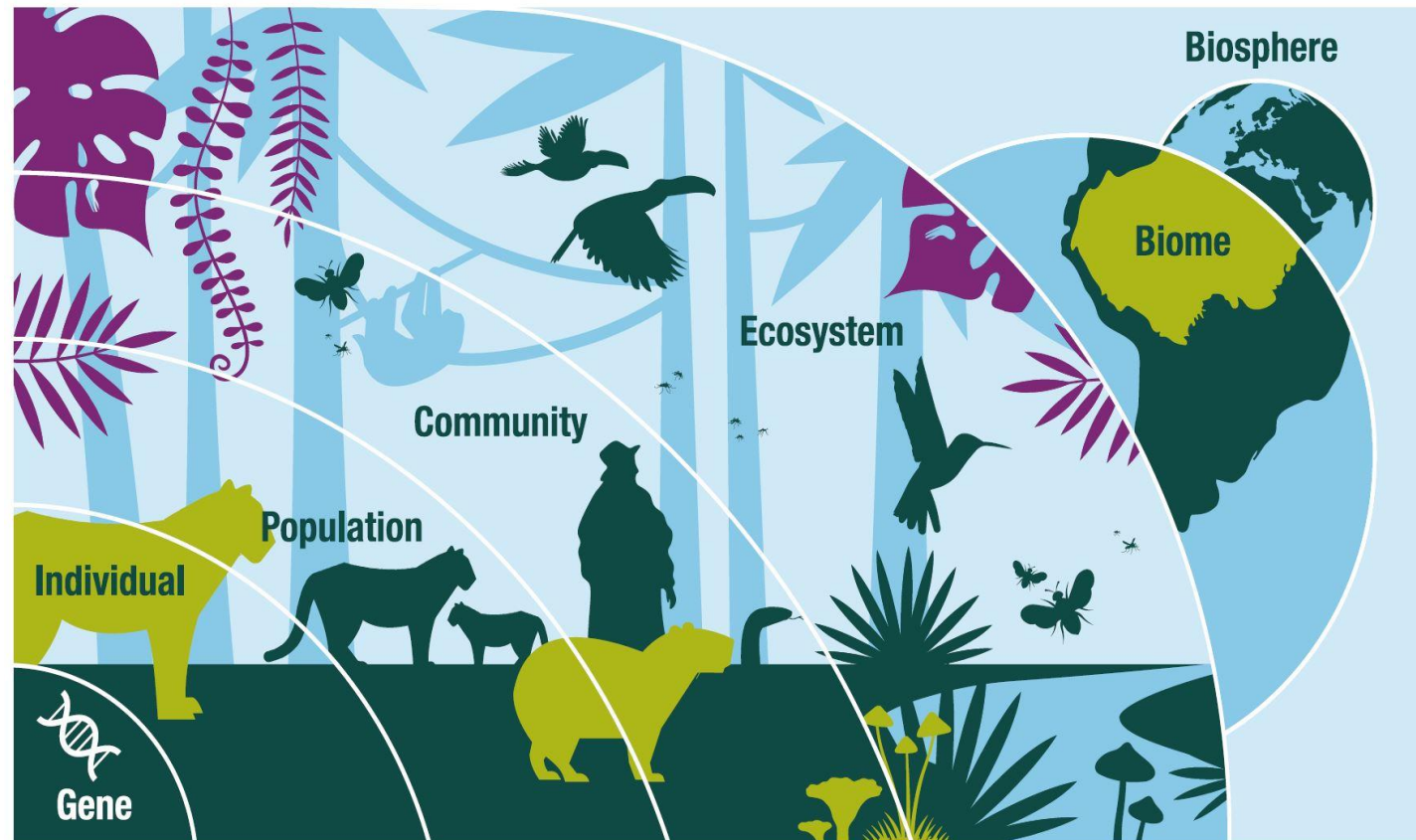
We need to accept that humanity and our economy are embedded within Nature

- Standard models of economic growth ask us to view humanity as *external* to Nature – i.e. humanity dips into the biosphere for its goods and services, returning waste back to Nature.
- This ignores how extracting resources and returning our waste affects the ability of the biosphere to provide us with services.



- Accepting that our economy is embedded *within* Nature forces us to acknowledge the limits that nature imposes on us.
- Doing so helps us to recognise the limits Nature places on the economy and, in so doing, reshape our understanding of sustainable economic growth.

The Economics of Biodiversity is the Economics of Nature



- Biodiversity is an essential characteristic of Nature – it affects the productivity, resilience and adaptability of Nature.
- It increases Nature's resilience to shocks and respond to change, acting as a form of insurance against risks to services we rely on, in the same way a diverse portfolio of financial assets spreads risk.
- It provides ecosystems with sources of complementary functions (e.g. different groups of organisms act to maintain soil health in different ways), and has positive effects on productivity.

Nature is an asset, just as produced and human capital are assets



Produced Capital

Roads, buildings,
machines & equipment



Human Capital

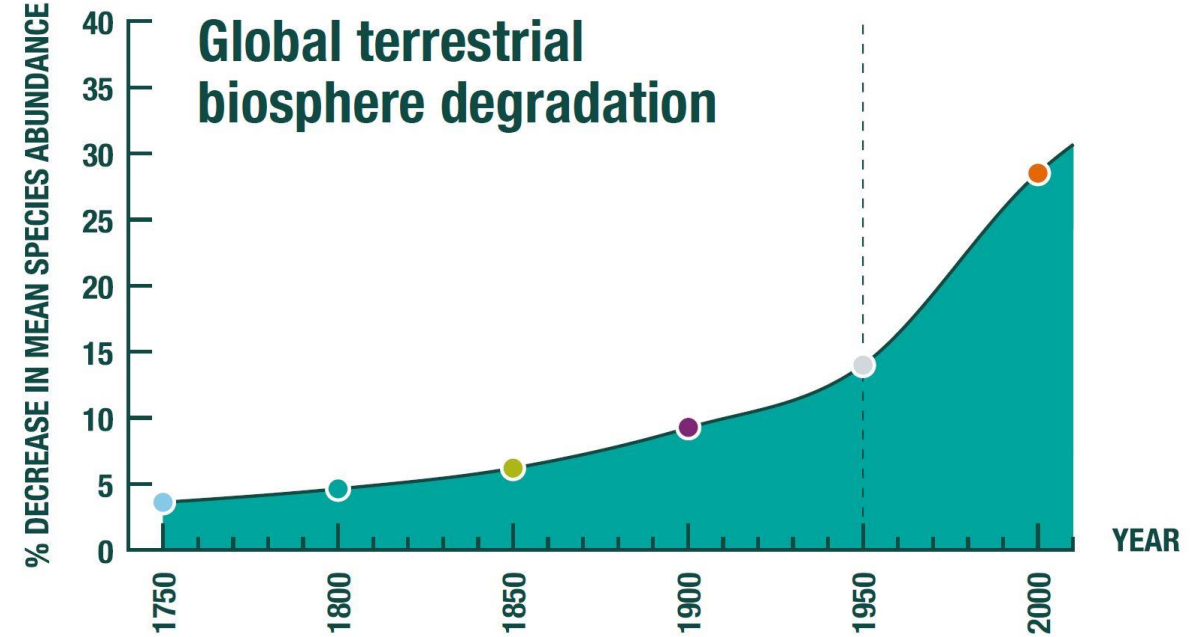
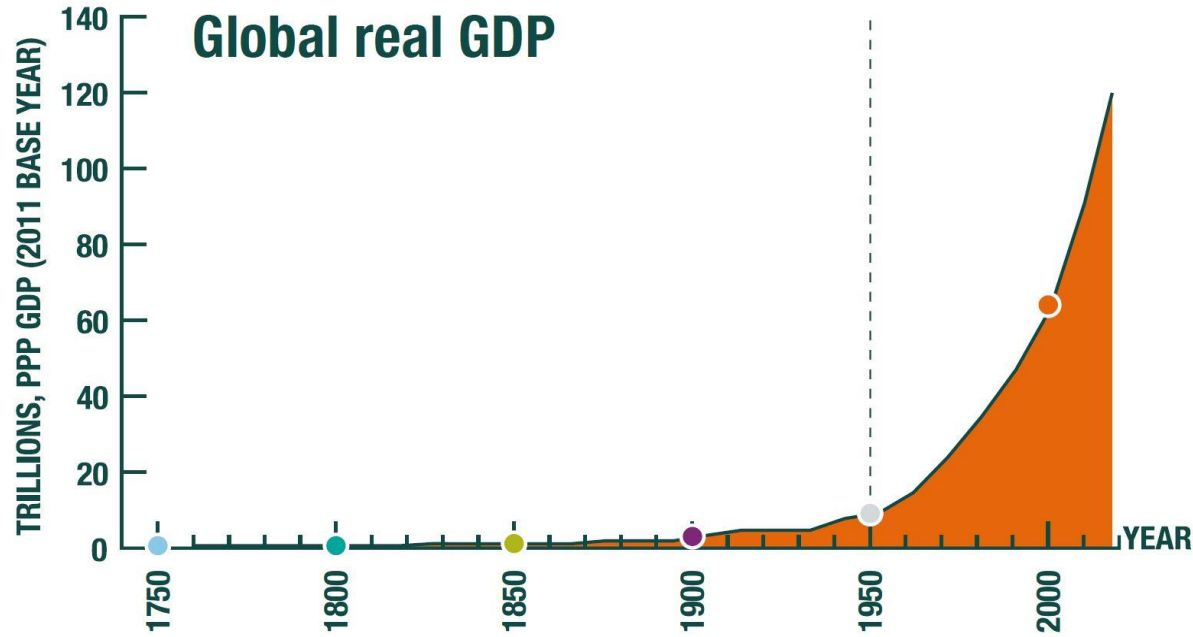
Knowledge, aptitude,
education, health
& skills



Natural Capital

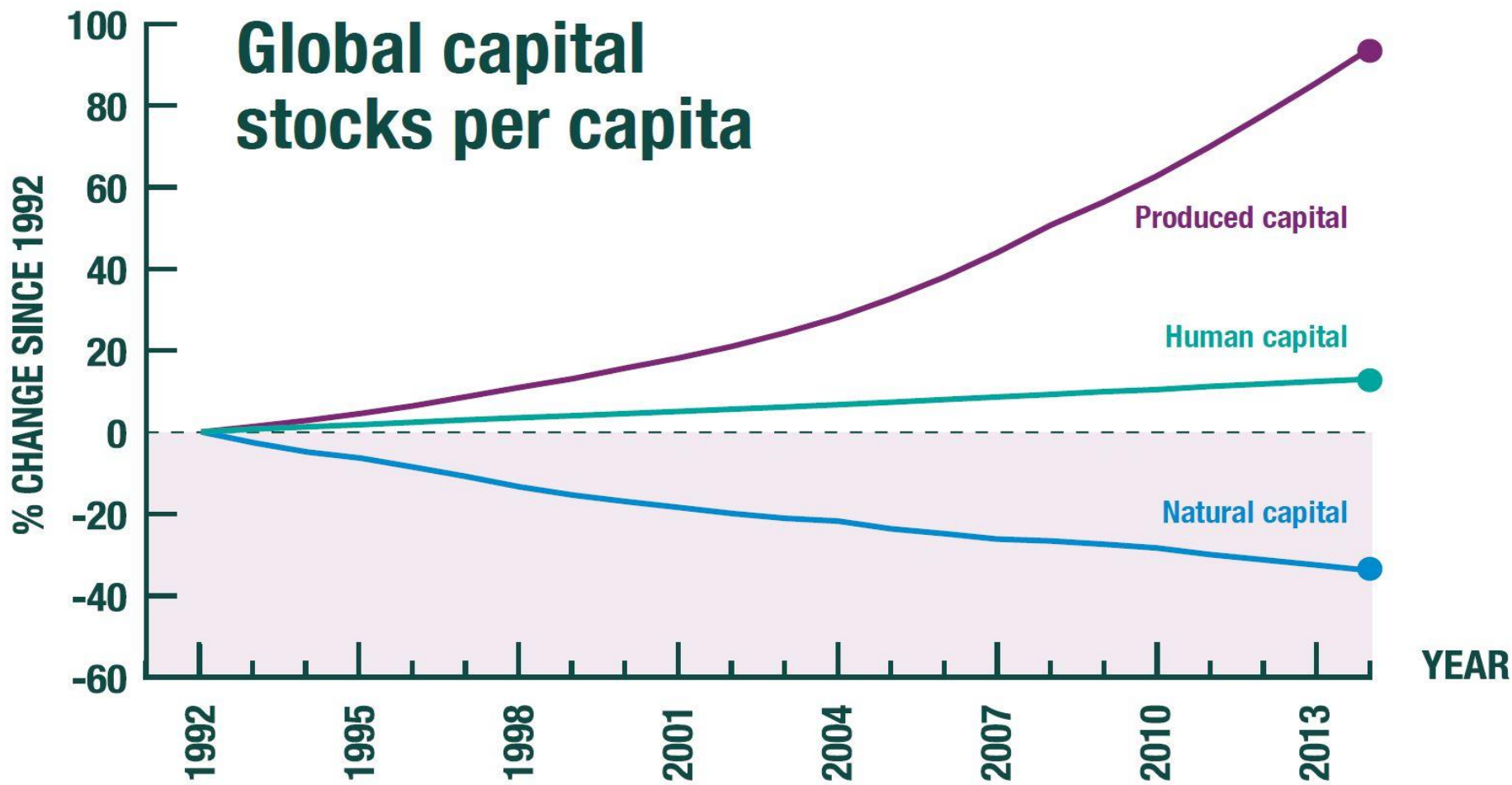
Forests, agricultural
land, rivers and
estuaries, ecosystems
& subsoil resources

It has been the best of times; and the worst of times



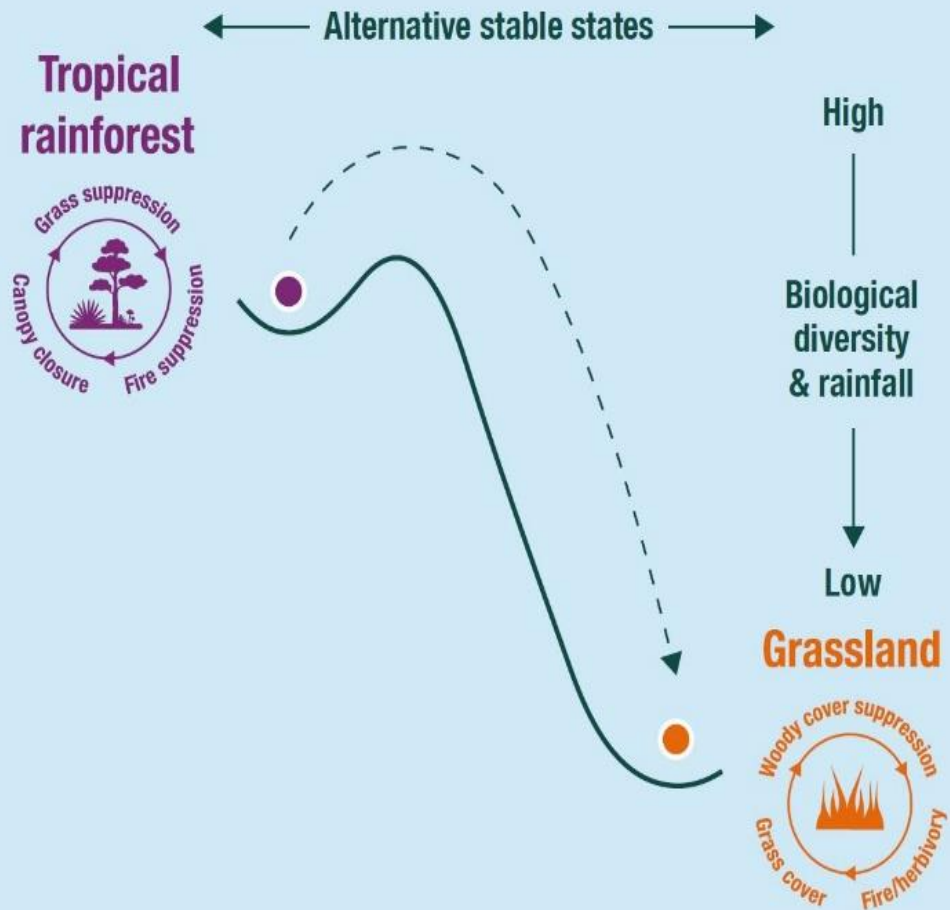
- Material prosperity has risen significantly, but this has been coupled with profound impacts on Nature
- In the past four decades, there has on average been a 60% decline in the populations of mammals, birds, fish, reptiles, and amphibians, mostly in the tropics.
- Current extinction rates are around 100 to 1,000 times higher than average over the past several million years – and they are accelerating.
- The majority of ecosystem services are also in decline, many of which are irreplaceable.

Globally, we are significantly failing to manage our assets efficiently



Our failure to do so has put ecosystems at risk of reaching tipping points

- High stability, good ecosystem condition
- High stability, poor ecosystem condition
- > Loss of canopy cover leading to increased fire frequency and disruption of the water cycle



- For example, a number of models suggest that if deforestation reached 20-25% of the Amazon's original forest area, large parts of the Amazon would become savannah.
- Around 17% of the Amazon has already been deforested.
- Such a large-scale shift would have enormous consequences for the water cycle on a global scale causing major climatic disruption.

Our demands on Nature are outstripping its supply

Supply: $G(S)$

G Rate at which the biosphere regenerates

S Stock of the biosphere

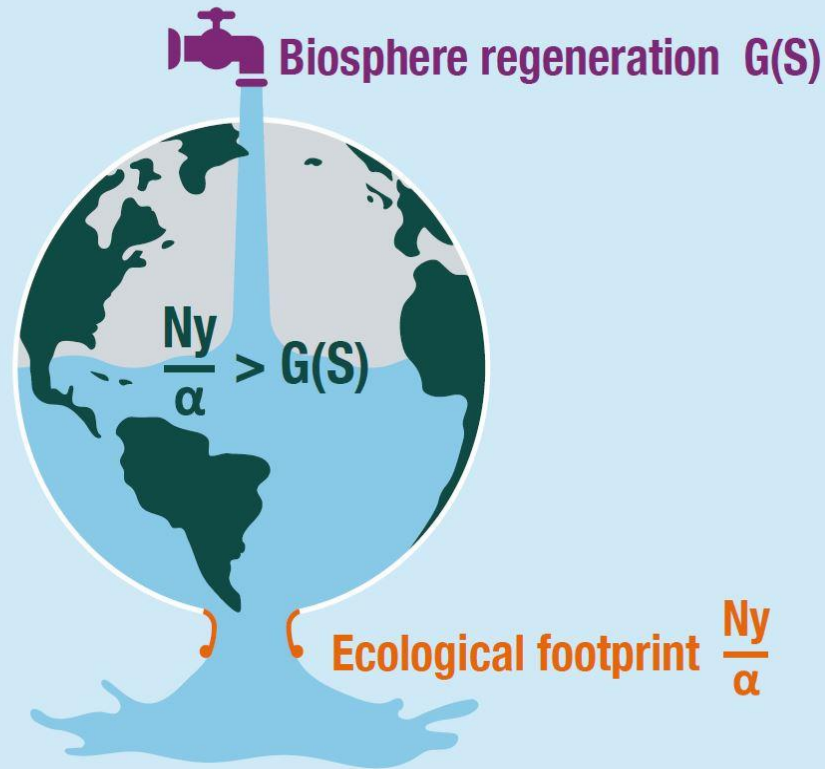
Demand: $\frac{Ny}{\alpha}$

N Human population

y Human economic activity per capita

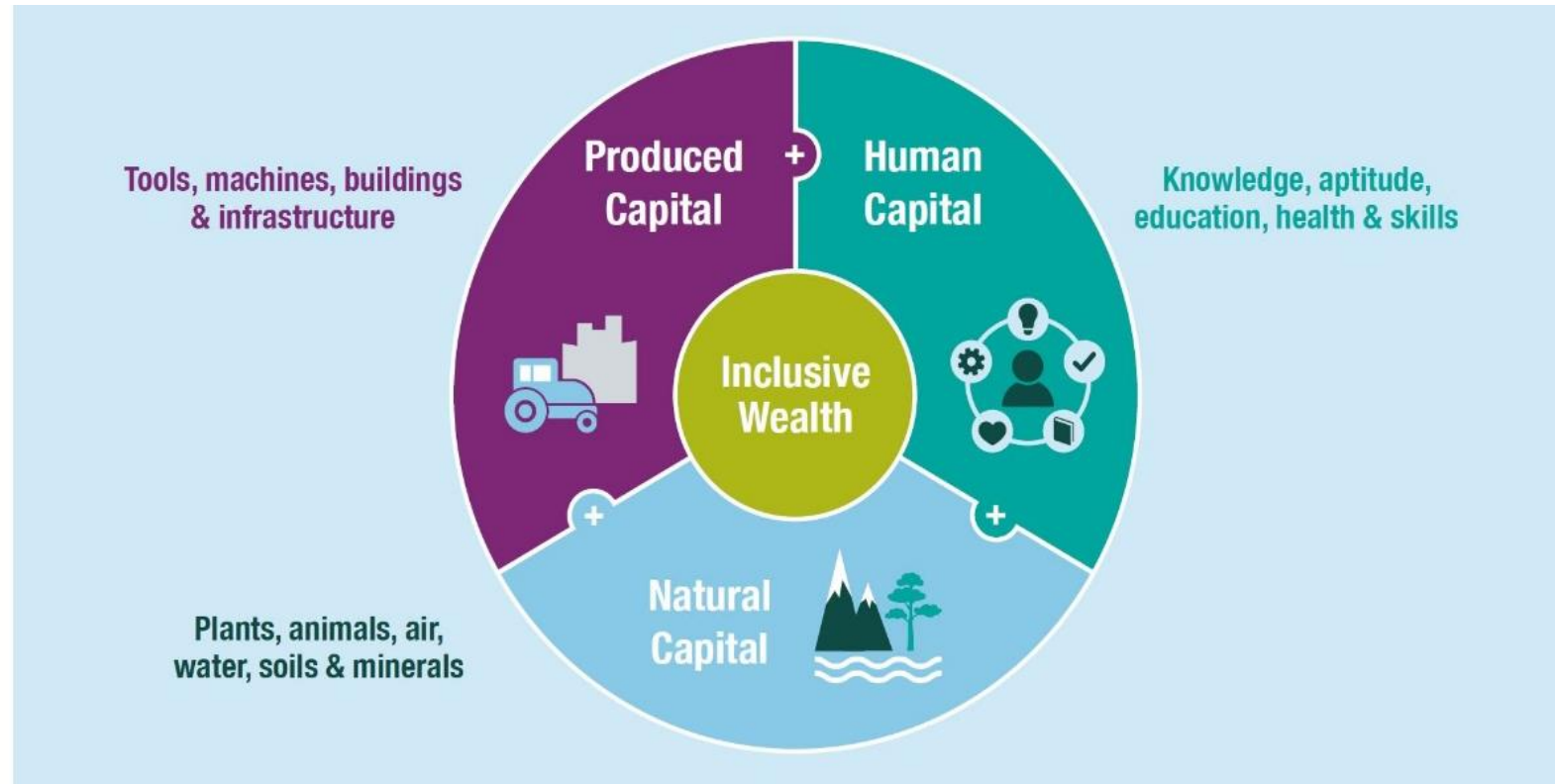
α Efficiency with which the biosphere's goods and services are converted into GDP and the extent to which the biosphere is transformed by our waste products

Unsustainable use of the biosphere



- Crude estimates of our total impact on Nature suggest that maintaining the world's current living standards with our current economic systems, fuelled by unsustainable production and consumption, would require 1.7 Earths.
- To sustain our natural assets, our demands must be equal to, or less than, its ability to supply the goods and services we rely on.

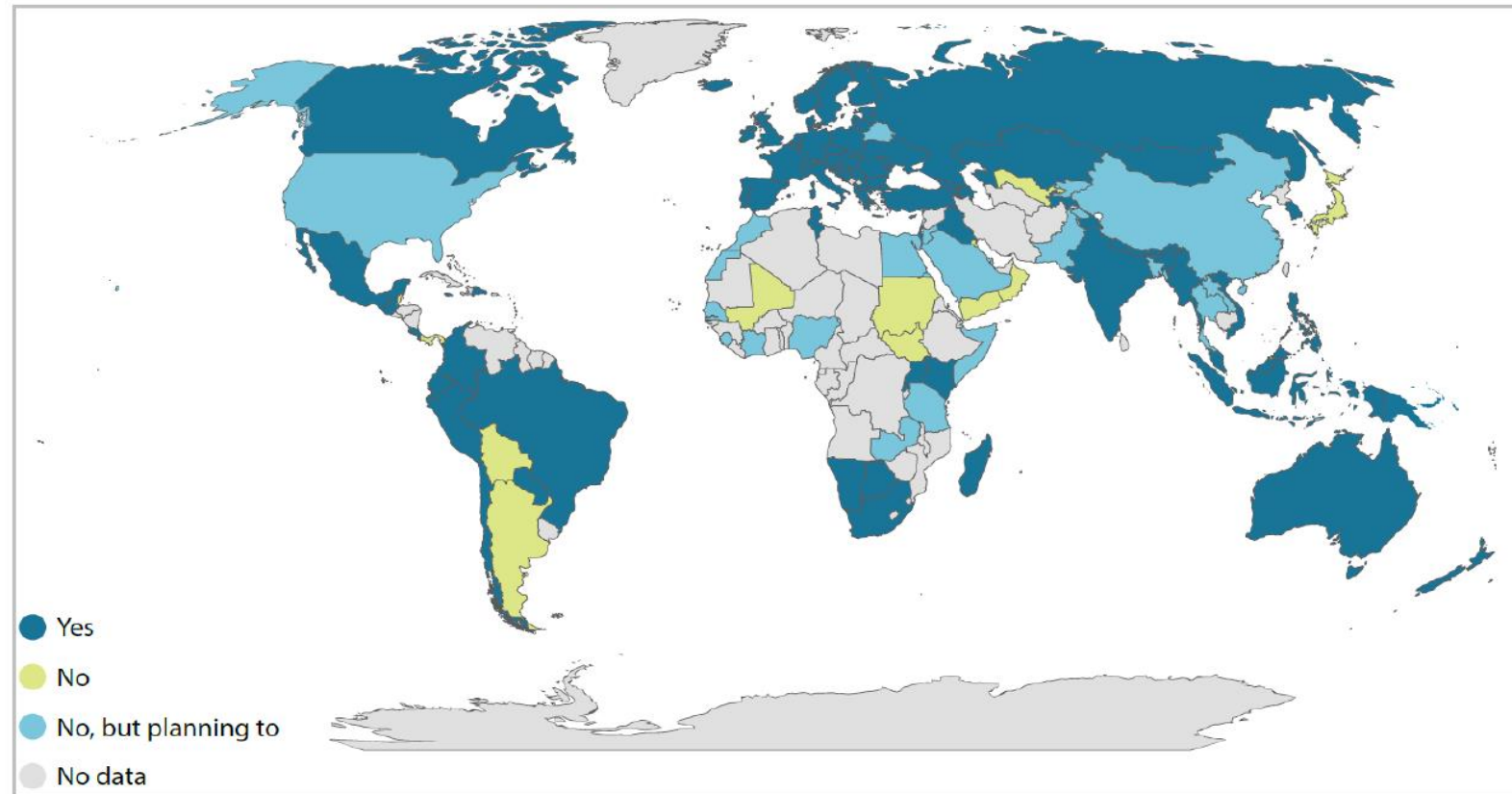
We need to adopt a different set of ambitions and measures to reflect nature's benefits



- If human wellbeing, and the wellbeing of future generations, are the 'ends' of social and economic progress.....
- ...then 'Inclusive Wealth' – the social value of the economy's total stock of natural, produced, and human capital – is the means to those ends.

Natural capital accounting

- Important for understanding and measuring our stocks of natural assets and their biodiversity.
- Needed for both sustainability assessment and policy analysis
- But there is still limited uptake.



Source: United Nations Committee of Experts on Environmental-Economic Accounting, 2019

The final Review will apply the economic and scientific concepts set out in the interim report to present options for the change we need

In identifying options for change, the Review will:

Use the Impact Equality to identify **what needs to change** for humanity's engagement with the biosphere to be sustainable

Consider what **institutional structures** are effective

Set out how **economic models, evaluation processes and metrics** can recognise that our economies are embedded in the biosphere

Identify **nature-based solutions** as an essential part of the package of measures to mitigate and adapt to climate change

Identify actions needed across all spheres, based on an understanding of **how people's preferences are affected by the choices of others**

Recognise that **citizens** have the power to insist on action.