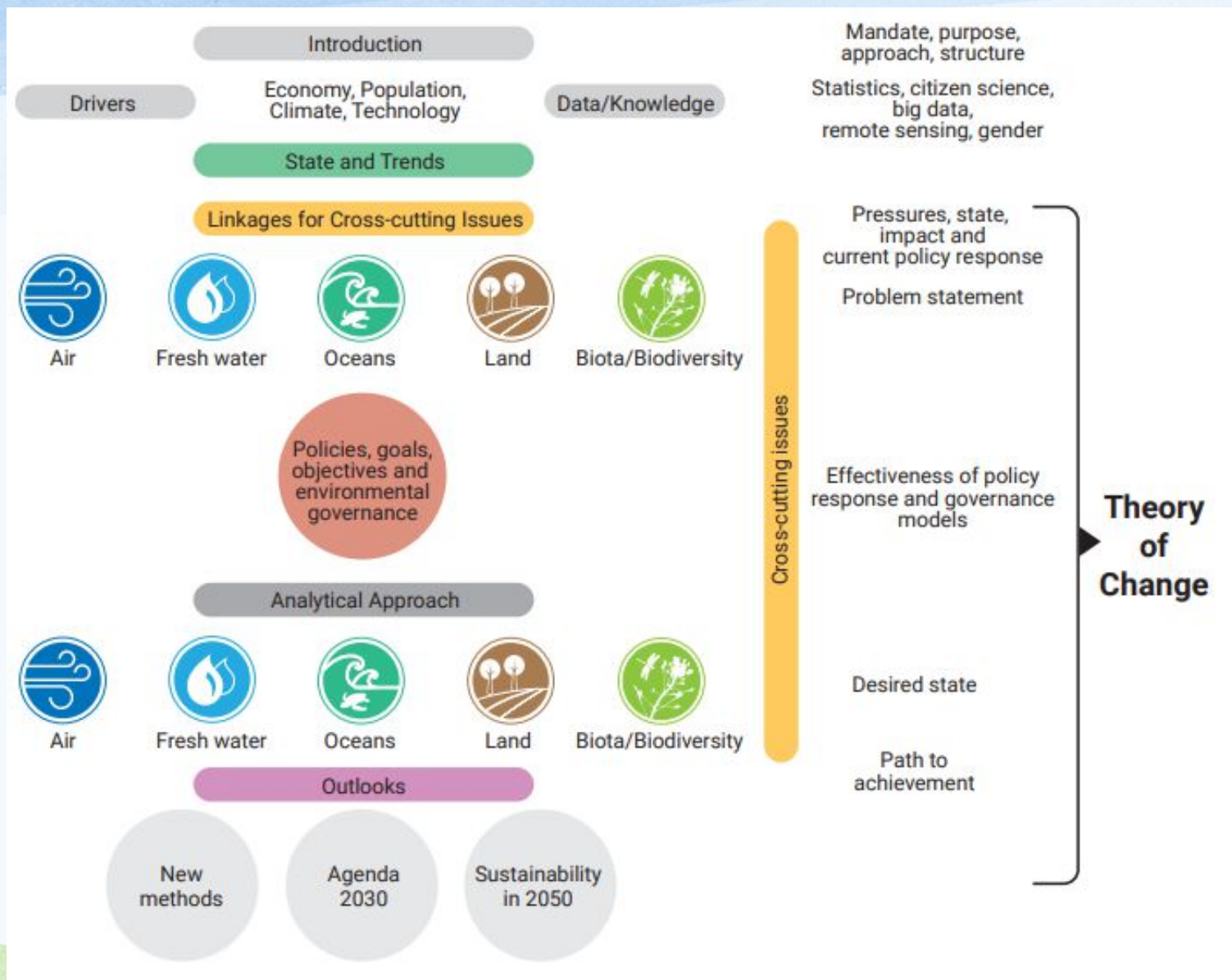




# GEO-6: Process and Key Findings

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A stylized, colorful illustration of a landscape. The foreground features rolling green hills with varying shades of green and brown patches. On the left, there is a green tree with a brown trunk, a purple flower, and some orange rocks. A small red bird is flying in the sky above the tree. The background consists of light blue and white wavy lines representing the sky.

# Environment and health: Healthy Planet, Healthy People

# A healthy planet supports healthy people

- Nature's contributions to humans:
  - Biodiversity, supporting, regulating, provisioning and cultural contributions;
  - 'Value': USD 125 Trillion (2011; using 2007 \$);
  - Directly supports 70% of the world's poor to live, eat and work; and
  - Enables all economic activity and global GDP generation

# An unhealthy planet damages human health

- Causes 25% of death and morbidity;
  - Air pollution (indoor/outdoor/heat) causes 7million deaths annually; could be underestimate;
  - Water pollution could become the number 1 cause of death in 2050;
  - Loss of biodiversity can lead to rise of zoonotic disease (60% of infectious disease)
  - Loss of ocean fisheries can affect protein security for 1 billion people, and jobs for millions
  - Land degradation affects 3.2 billion people's lives, livelihoods;
- Sudden-onset disasters in 2016 displaced 24.2 million people in 118 countries; three times more than conflict did.
- Between 1995 and 2015, 1.7 billion people affected by extreme weather events; killing 0.7 million people at a cost of USD 1.4 Trillion.



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# Drivers, Pressures, States, Impacts and Responses: Part A

# Drivers of an Unhealthy Planet

Driver	Policy
Population: More (10 billion in 2050) and greying	Education, gender equality, health care; Changing consumption patterns
Urbanization: 66% in 2050; increases consumption but can be more efficient; world's infrastructure will more than double in the next 20 years, informal settlements growing with people without access to services (e.g. water/sanitation)	Better design for urban settlements; more compact; spatial planning; circular economy USD 1 investment in water & sanitation could lead to USD 4.5 return
Growth: enhances welfare but is inequitable; rich pollute more; poor face more existential threats	Redefine development; de-linking growth from pollution; address inequality
Technology: enhances welfare but can be risky	Dematerialization, decarbonization, detoxification, precautionary principle
Climate change: may cross 1.5°C in 2030; cascading impacts on all sectors	Within 20 years, the energy related C budget is exhausted for a 2°C target Decarbonization; Mitigation; Adaptation

# Cross-cutting Issues

People and livelihoods: health, environmental disasters, gender, education and urbanization

Changing environments: climate change, polar and mountain regions, chemicals, and waste and wastewater

Resources and materials: resource use, energy and food systems

Cross-cutting issues	Elements
Chemicals	100,000 chemicals in use; less than half researched for impacts
Wastes	Growing wastes; 2/5 people don't have access to waste facilities; wastes can be recycled (market USD 410 billion)
Resource use	Extraction challenging; wastes generated 90 billion tons
Energy consumption	13.5 Billion tons Oil equivalent being used; 1.2 billion people without energy access; 2.7 billion using traditional fuels
Food waste	36% globally; 55% in rich countries; loss of USD 750 billion – 1 trillion; emits 9% of GHGs

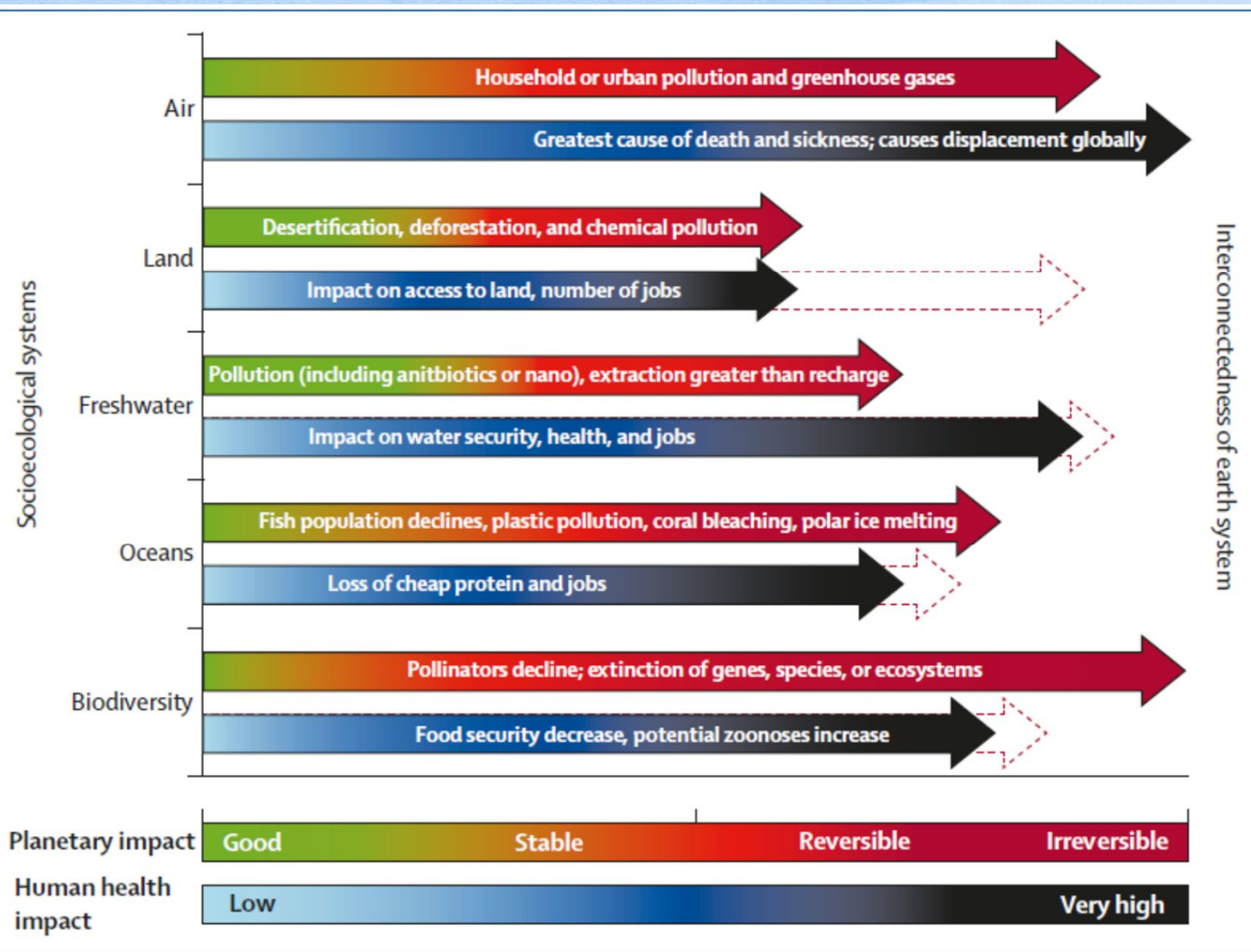


# State of an Unhealthy Planet

Ecosystem	State
Air	Rising urban air pollution; indoor rural pollution; increasing temperatures, climate change
Biodiversity	6 <sup>th</sup> mass extinction event; 10/14 ecosystems in trouble; 22% of the population look after 80% of the biodiversity
Oceans	Coral bleaching, declining fisheries, ocean acidification, plastics, marine pollution
Land	Degradation, deforestation, land use change, chemicals and wastes
Water	Droughts, floods, extraction of groundwater beyond recharge, chemical and biological pollution

# Impacts of an Unhealthy Planet

Ecosystem	Impact
Air	7 million deaths p.a.; USD 5 trillion in welfare losses
Biodiversity	Pollinator services estimated at USD 200 billion p.a.; decline affects food security; invasive species costs damage of 300 billion in US, India, Brazil, South Africa, Australia; zoonotic disease – 60% of infectious disease
Oceans	Food security; livelihoods of 58-120 million people
Land	Affects 2.3 billion people including through displacement; affects food security; losses could be USD 20 trillion p.a.
Water	Kills 1.7 million p.a.; antibiotic and anti-microbial resistance could be a major killer in 2050.



## The GEO-6 'Burning Embers'

Source: Gupta et al. 2019, Lancet Planetary Health

Figure: Global impacts on health of the planet and human health, 2018-50



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# Policy effectiveness: Part B

# Environmental policy innovation and effectiveness

- Policy innovation is a mix of invention (new or novel approaches), diffusion (transfer and adoption) and monitoring of effects (outcomes, impacts and possibly disruption).
- Evaluation of policy effectiveness often comes down to expert judgement.
- Environmental objectives cannot be realized by environmental policies alone, but need to be incorporated in non-environmental policy sectors too – this gives scope for recognition of co-benefits.
- The importance of good policy design cannot be overstressed.
- Involving stakeholders in policy design may improve the policy and increases the chances of its acceptance.


# Illustrative results of policy evaluation

- *Air: Traditional regulatory approaches, including the use of emissions and technology standards, have been successful in addressing some pollution sources*
- *Biodiversity: sustainable growth and development of the green economy (low in carbon, resource-efficient and socially inclusive) can promote and enhance biodiversity*
- *Oceans: Promoting more sustainable fisheries may require several policy instruments, given the range of contexts in which problems in this sector arise.*
- *Land and Soil: Land-use planning, sustainable use of land resources and sustainable land management are the answers to balance production with environmental protection*
- *Freshwater: a variety of freshwater policy types and governance approaches can diffuse to fit diverse local contexts*
- *Systemic policy approaches to the energy system, the food system and the circular economy*



# Outlooks on current trends

- A continuation of current trends will probably not lead to fulfilment of selected environment related targets of the SDGs and related MEAs.
- Without new policies, the objectives of the Paris Agreement are not achieved.
- Under current trends, environmental pressures related to the agricultural and food system will further increase.
- Ambient air pollution is expected to continue to contribute to millions of premature deaths in the coming decades.
- Global water scarcity and the population affected by it are expected to increase.
- Oceans are expected to continue to be polluted and overexploited.
- Preventable environmental health risks are projected to remain prominent in 2030, with related negative impacts on child mortality.
- This is not the Future We Want.

A stylized, layered landscape illustration. The foreground features rolling green hills with dark brown soil patches. On the left, there is a green tree, a purple flower, and some orange rocks. A small red bird is flying in the sky above the tree. The background consists of light blue and white wavy bands representing the sky and distant hills.

# Environmental outlooks and the way forward: Part C

# Focusing on three Main Messages

**Energy** – demand increase versus the need for decrease in fossil fuels

**Food** – the need to feed 10 billion people in 2050, while reducing environmental impact by 2/3

**Waste & Circularity** – 1/3 of food wasted, 8 million tonnes of plastics entering the ocean per year, etc. , versus the need to move towards a circular economy due to resource constraints, pollution, etc.





# Pathways Towards Sustainable Development

- Pathways exist for achieving the targets, but the pathways require transformative changes.
- Achieving the sustainability goals will require a broad portfolio of measures based on technological improvements, lifestyle changes and localized solutions.
- Eliminating hunger, preventing biodiversity loss and halting land degradation is possible by combining measures related to consumption, production and access to food with nature conservation policies.
- Reducing greenhouse gas emissions to levels consistent with the Paris Climate Agreement requires transformative changes which need to be implemented rapidly.
- Air pollution emissions can be reduced significantly.
- Reducing global water stress, including groundwater depletion, requires more efficient water use, increasing water storage and investing in wastewater reuse and desalination capacity.
- Achieving environmental targets related to oceans requires consistent policies in other sectors.
- There are more synergies than trade-offs within and among the SDGs and their targets.

# The Way Forward

- A groundswell of bottom-up efforts to realize the SDGs and other multilateral environmental agreements is currently under way.
- Transformations to sustainability require both social and technical innovations, as well as an enabling policy environment.
- Transformative pathways to sustainable development require (1) visions to guide systemic innovation towards sustainability, (2) social and policy innovation, (3) the phasing out of unsustainable practices, (4) policy experimentation and, (5) engaging and enabling actors and stakeholders.
- A healthy planet is the ultimate foundation for supporting all life forms and human well-being – the global health savings (US\$54.1 trillion) of a strategy to reach less than 2°C warming by the end of this century are estimated to be more than double the global policy costs (US\$22.1 trillion).



HEALTHY  
PLANET  
HEALTHY  
PEOPLE



# Asanteni Sana – Thank You

<https://www.unenvironment.org/resources/global-environment-outlook-6>



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