



History and Perspectives

Sustainable Development

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Brief History



- › Though SD thinking is widely recognized to have its origins in the **1972** UN Conference on the Human Environment.
- › SD as a concept began to gather momentum in
 - **1987 Brundtland Report**, and
 - **1992** UN Conference on Environment and Development (UNCED), the Earth Summit.



Brief History



- › For the first time, the Brundtland Report introduced the need for the integration of *economic development, environmental protection, and social justice and inclusion.*



A new blueprint for international action on the environment



- The United Nations Conference on Environment and Development (UNCED), also known as the 'Earth Summit', was held in Rio de Janeiro, Brazil, from 3-14 June 1992.
- The 'Earth Summit' concluded that the concept of sustainable development was an attainable goal for all the people of the world, regardless of whether they were at the local, national, regional or international level.

The main outcomes of the Earth Summit



- › **The Rio Declaration**, which recognized 27 principles of sustainable development, including the well-known precautionary and **polluter pays principles**;
 - › Endorsement of the **Forest Principles**, which recognized the importance of forests for economic and social development, indigenous communities, biodiversity, and maintaining ecological processes;
- The signing of the **Convention on Biological Diversity** and the Framework Convention on Climate Change;
 - And **Agenda 21**, a voluntary SD plan of action, for implementation by national, regional, and local governments.



Polluter pays principle



- › The 'polluter pays' principle is the commonly accepted practice that those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment



Planetary Boundaries

- › To crystallize the concept of environmental limits, a group of 28 scientists developed the concept of the nine Planetary Boundaries in 2009.
- › 9 boundaries that indicate the state of the Earth's health



The planetary boundaries framework was first proposed by **Johan Rockström**

9 Categories of the planetary boundaries

Climate change

CO₂ concentration, energy balance between Earth and space

Atmospheric aerosol loading

The amount of air pollutants

Stratospheric ozone depletion

Stratospheric ozone concentration

Ocean acidification

Carbonate ion concentration in the ocean

Freshwater change

Amount of water available for human and plants

Land use change

Size of forest area

Biosphere integrity

Percentage of functional diversity, speed of extinction

Biogeochemical flows

Outflow of nitrogen and phosphorus in synthesized fertilizers

Novel entities

Includes pollution caused by compounds such as plastics

to define the **environmental limits within which humanity can safely operate to maintain Earth's stability and biodiversity.**

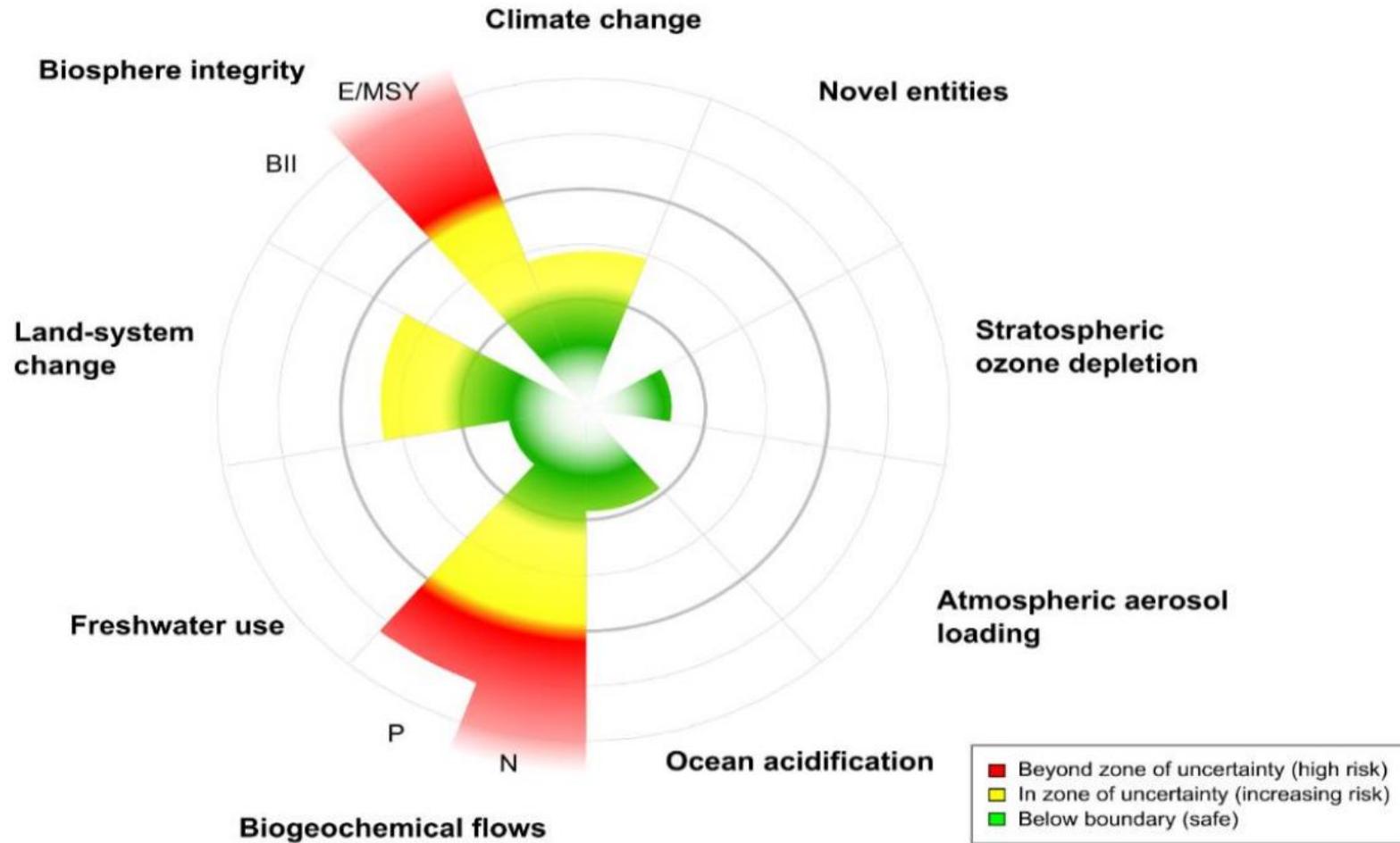


Image credit: Steffen et al, 16 January 2015, Science

If we cross these boundaries, earth that no longer support our current way of life.

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Traditional Science versus Sustainability Science

Traditional science

- › Mechanistic
- › Curiosity-driven
- › Value free
- › Divide and conquer
- › No direct policy
- › Expert / corporate dominated
- › Profit /prestige seeking

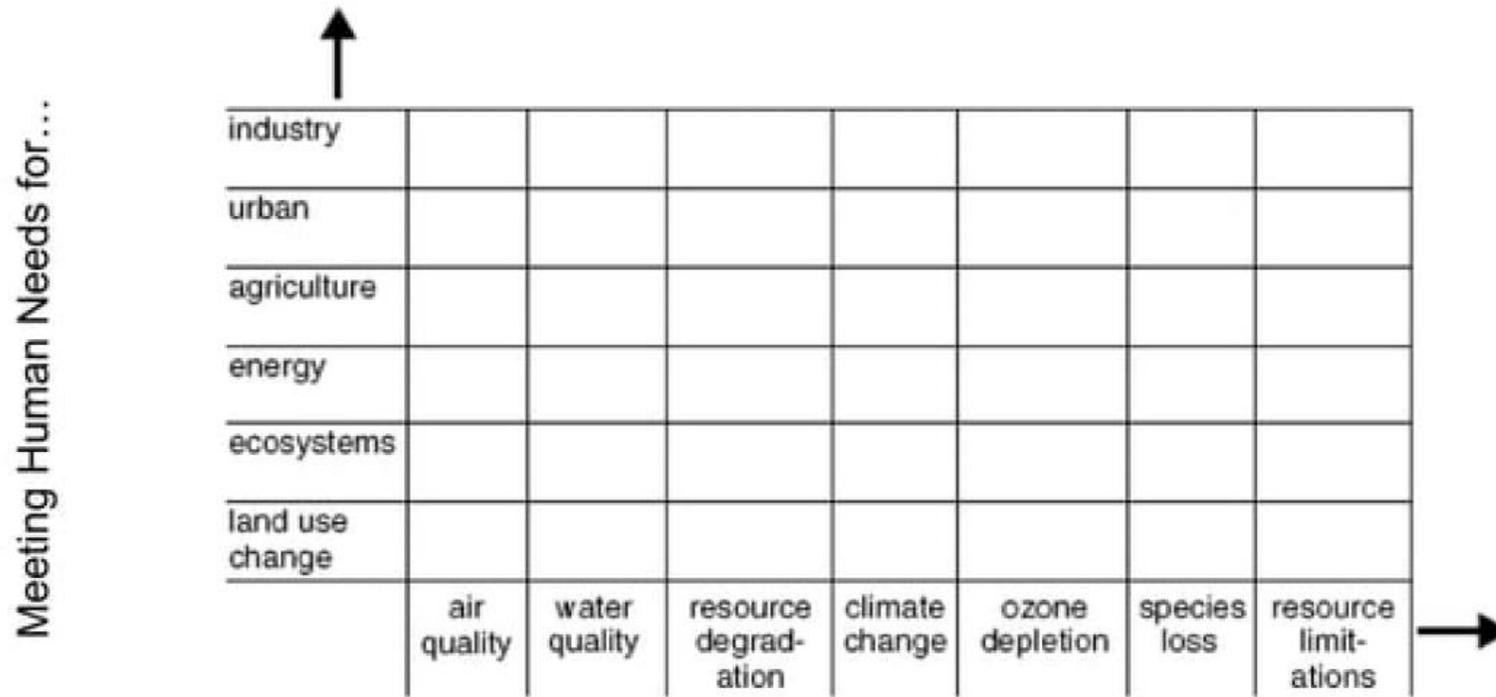
Sustainability Science

- › Evolutionary
- › Problem-driven; problem-solving
- › Value inclusive
- › Integrate and be open
- › Extended peer-reviewed
- › Socially relevant

Integration of Scientific and Traditional knowledge

- › If the people can contribute their local resources and practices, the development becomes not only sustainable but also **accelerated**.
- › Combined traditional and scientific knowledge is called community knowledge.
- › Indigenous knowledge is also a potential source for the conservation of biodiversity.
- › The significance of traditional knowledge has been recognized in India through initiatives such as the **National Ayush Mission (NAM)** and the **Traditional Knowledge Digital Library (TKDL)**.

Science for Sustainable Development: Interdependence of variables relating to sustainable development



while Preserving Life Support Systems of...

Sustainability Science and a Systems Approach

- ▶ A system is perceived as a whole whose elements are interconnected
- ▶ Systems thinking has developed a substantial body of knowledge drawn from a number of areas of study including:
 - ▶ Cybernetics, ecology and complexity theory
 - ▶ Emphasises the positive and the negative interactions within a system.



Systems thinking

- ▶ The use of pesticides on crops is one example of how a solution to one problem has created greater problems. While trying to combat a pest or disease to improve food production, pesticides in many cases have disrupted ecosystems, some of which indirectly support the crop being grown and have had adverse health effects on people from pesticide residues on food crops



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Challenges-As per the Sustainable Development Goals Report, 2019

- › Increasing inequality among and within countries
- › 3 out of every 4 stunted children live in Southern Asia and sub-Saharan Africa.
- › Young people are more likely to be unemployed than adults.
- › Barriers in achieving gender equality.
- › Global hunger has been on the rise after a prolonged decline.
- › Extreme poverty is three times higher in rural areas than in urban areas.
- › 2018 was the fourth warmest year on record.



Challenges-As per the Sustainable Development Goals Report, 2019

- › Levels of CO₂ concentrations continued to increase in 2018.
- › Natural environment is deteriorating at an alarming rate.
- › Sea levels are rising.
- › Ocean acidification is accelerating. Ocean acidity is 26% higher than in pre-industrial times.
- › 1 million plant and animal species are at risk of extinction.
- › Land degradation continues unchecked.



Major Milestones

- **1993** – the creation of the Commission for Sustainable Development to monitor and promote the implementation of Agenda 21;
- **1997** – Earth Summit +5, which reviewed and renewed commitment to implementation of Agenda 21;
- **2000** – Millennium Summit in New York, which resulted in the UN Millennium Declaration, a set of targets to be achieved by 2015 that included environmental sustainability, the eradication of extreme poverty and equality for women, now known as the Millennium Development Goals;
- **2002** – World Summit on Sustainable Development in Johannesburg, which renewed international commitment to the pursuit of SD with the Johannesburg Plan of Implementation (JPOI);
- **2012** – Rio+20, which resulted in an outcome document, *The Future We Want*, in which States reaffirmed commitments to all previous SD agreements, plans and targets. They also committed to develop a suite of **Sustainable Development Goals (SDGs)** building on the priorities identified in Agenda 21 and the JPOI, and decided to **replace the Commission for Sustainable Development with a 'high-level political forum'** to progress implementation of Agenda 21 and the JPOI, and the achievement of the SDGs.



Global issues Related to Sustainable Development



- › Tackling climate change and fostering sustainable development are two mutually reinforcing issues.
- › Intellectual Property Rights (IPRs): There is a need for welfare for all rich and poor to have affordable access to the results of innovation that can lead to sustainable development.
- › **Inequitable growth of national economies**
- › Loss of Biodiversity



Climate Change

Perspectives of Sustainable Development



Perspectives of Sustainable Development



› **Environmental Perspective:** Focuses on preserving **natural resources**, **reducing pollution**, and mitigating climate change to ensure a healthy planet for future generations.

• **Social Perspective:** Aims to **address social inequalities**, **promote inclusive societies**, ensure access to education, healthcare, and basic necessities for all, and empower marginalized communities.

• **Economic Perspective:** Emphasizes sustainable economic growth that doesn't **compromise future needs**, **encourages innovation**, and considers long-term benefits over short-term gains.



Perspectives of Sustainable Development



- › **Cultural Perspective:** Values the diversity of cultures, traditions, and heritage, promoting practices that respect and preserve cultural identities within sustainable development initiatives.
- › **Political Perspective:** Involves policies and governance structures that support sustainable practices, fostering international cooperation, and setting global agendas for sustainable development goals.





UNITED NATIONS
SYSTEM STAFF COLLEGE

The 2030 Agenda for Sustainable Development



By endorsing the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) in 2015, the world community reaffirmed its commitment to Sustainable Development. Through this Agenda, 193 member states pledged to ensure sustained and inclusive economic growth, social inclusion, and environmental protection, fostering peaceful, just, and inclusive societies through a new global partnership.

Thank You!!!

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