



FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:
Resilient Environment
and Sustainable
Resource Management
for All

Presented at the FIG Working Week 2024,
19-24 May 2024 in Accra, Ghana

Supporting Sustainable Development Goals (SDGs) – A Strategic Action for the Group on Earth Observations (GEO)

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Geneva

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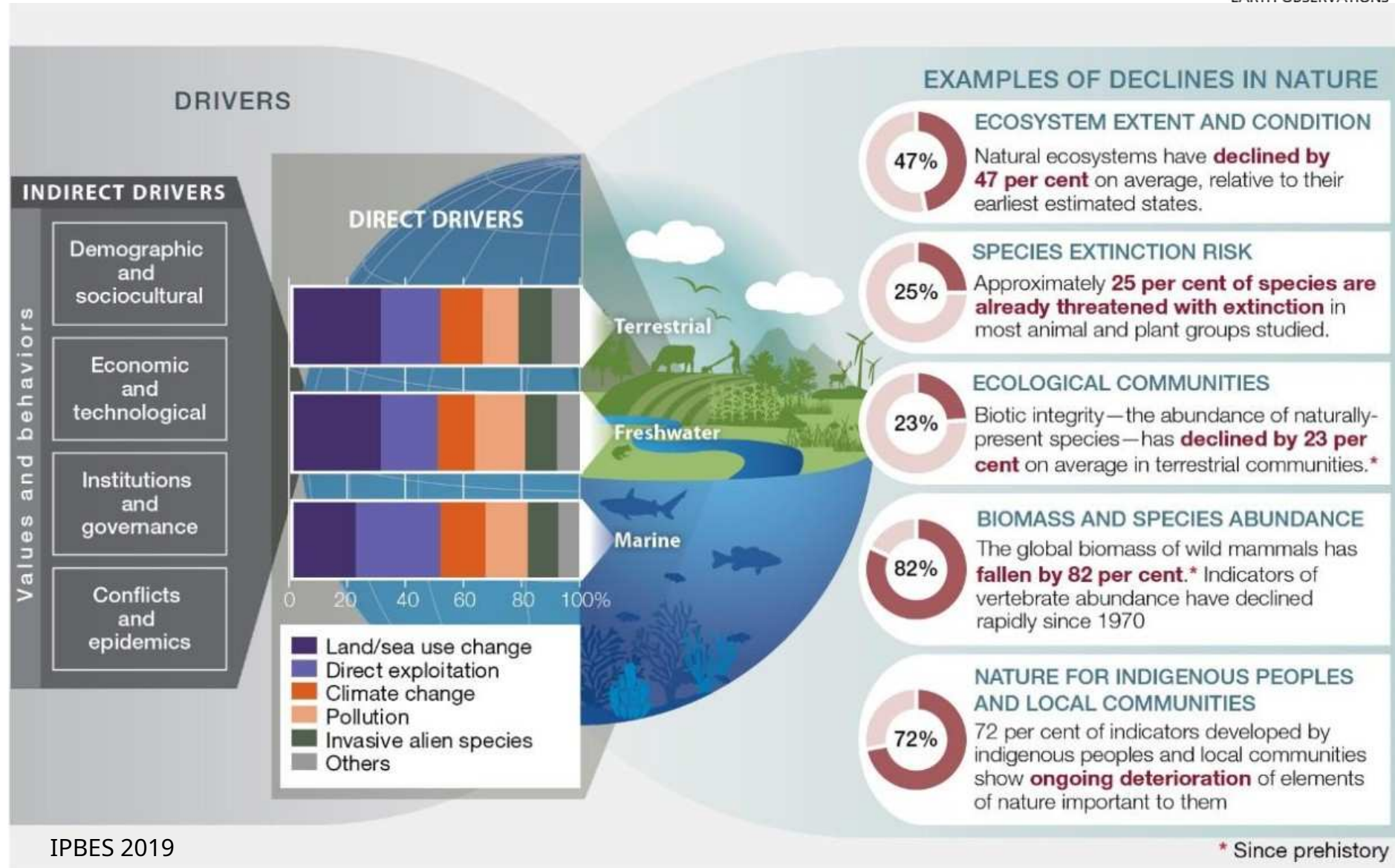


Group on Earth Observations (GEO)

- A unique **global network of governments and organizations** dedicated to creating innovative solutions to environmental challenges
- A community producing EO data, tools and services open to all
- An **inclusive organization** that welcomes multi-stakeholder partnerships



Our planet on the Brink



Living in Earth's "new normal"

IPCC 6th Assessment Report, 2023 -

Extreme heat waves now happening every decade due to rising temperatures.

WEF Global Risks Report 2024 -

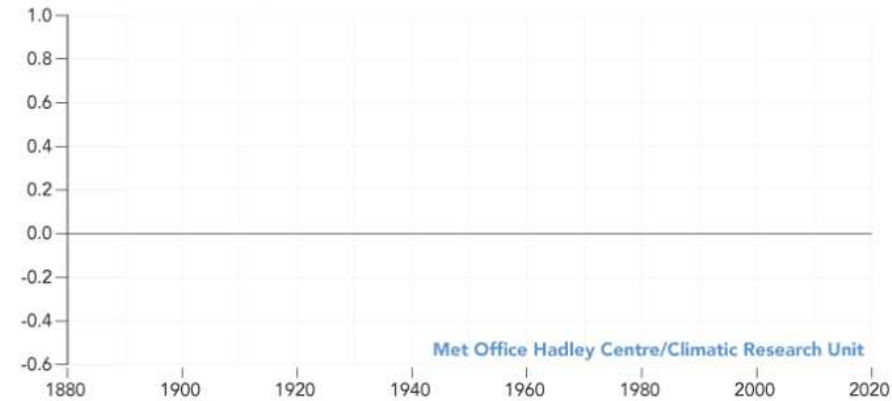
Top risk in 2024 – Extreme weather (heatwaves, droughts, and wildfire).

IPCC 6th Assessment Report, 2023 - Over 420 million ha of forest lost to deforestation from 1990 to 2020.

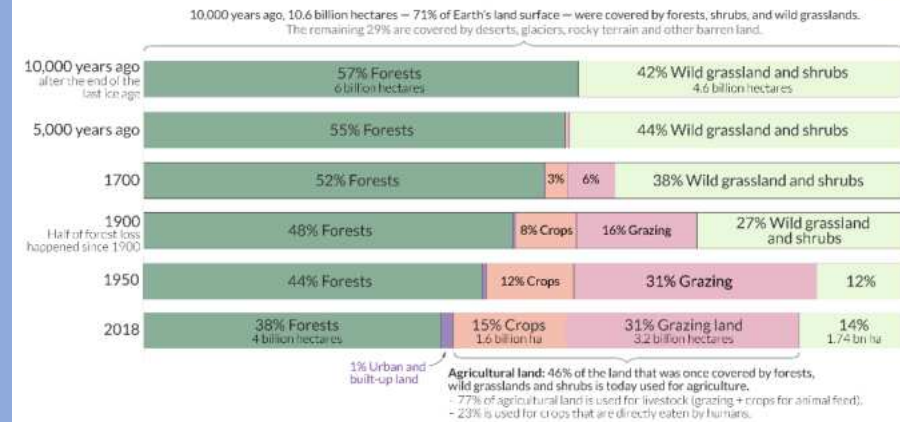
UN Urbanization Prospects 2018

Since 1950, the world's urban population has risen almost six-fold, from 751 million to 4.2 billion in 2018.

A World of Agreement: Temperatures are Rising
Global Temperature Anomaly (relative to 1951-1980, °C)

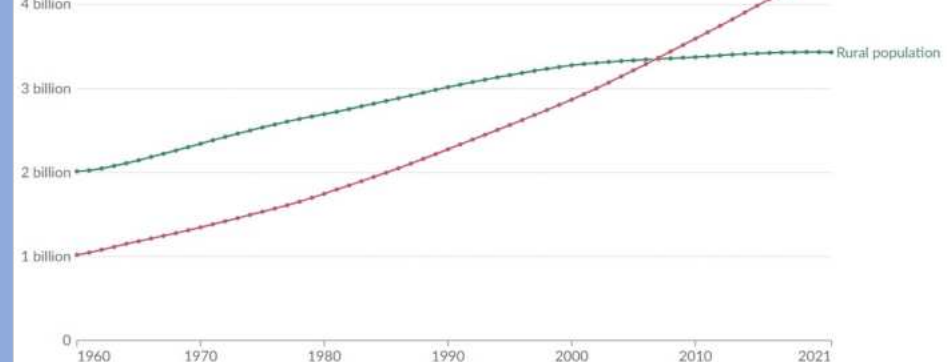


Humanity destroyed one third of the world's forests by expanding agricultural land
Agriculture is by far the largest driver of deforestation. To bring deforestation to an end humanity has to find ways to produce more food on less land.



Data: Historical data on forests from Willams (2003) - Deforesting the Earth. Historical data on agriculture from The History Database of Global Environment (HYDE). Modern data from the FAO. OurWorldInData.org - Research and data to make progress against the world's largest problems. Licensed under CC-BY by the authors Hannah Ritchie and Max Roser.

Number of Urban Dwellers





Sustainable Development Goals – Progress

- Recognition of slow progress and limited Impact
- Challenges in reporting SDG progress
- Need for diverse data sources
- Call for integrated approaches

SDGs and Earth observations

Sustainable Development Goals

- Global recognition of Earth observations
- Supporting SDG indicator tracking and implementing solutions for specific targets

Earth observations (from satellite, airborne, and in situ sensors)

- Earth observation can potentially drive \$3.8 trillion in economic benefit from 2023-2030 while positively impacting climate and nature (WEF, 2024)
- 94% comes from downstream applications in industry, notably applications in agriculture, electricity, mining, oil and gas, and supply chain and transport (WEF, 2024)



WEF 2024



Era of Digital Earth Transformation

Digital
Earth
Africa

Digital
Earth
Pacific





A



Mountaintop Mining, West Virginia

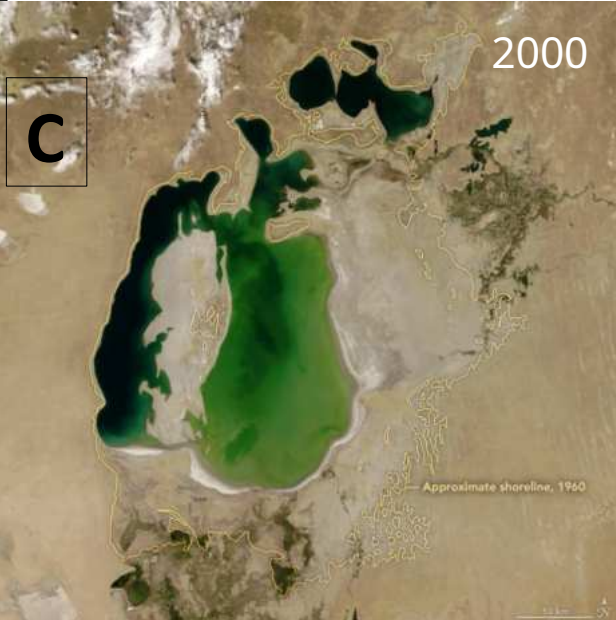
Source: NASA Earth Observatory

B



Urban Sprawl, Shanghai, China

Source: NASA Earth Observatory



Shrinking Aral Sea (Lake)

Source: NASA Earth Observatory



Seasons of the Indus River

Source: NASA Earth Observatory

Target Contribute to progress on the Target, not necessarily the Indicator							Goal	Indicator Direct measure or indirect support to the Indicator					
				1.4	1.5		1 No poverty	1.4.2					
				2.3	2.4	2.c	2 Zero hunger	2.4.1					
			3.3	3.4	3.9	3.d	3 Good health and well-being	3.9.1					
							4 Quality education						
						5.a	5 Gender equality	5.a.1					
5.1	6.3	6.4	6.5	6.6	6.a	6.b	6 Clean water and sanitation	6.3.1	6.3.2	6.4.2	6.5.1	6.6.1	
			7.2	7.3	7.a	7.b	7 Affordable and clean energy	7.1.1					
						8.4	8 Decent work and economic growth						
			9.1	9.4	9.5	9.a	9 Industry, innovation and infrastructure	9.1.1	9.4.1				
				10.6	10.7	10.a	10 Reduced inequalities						
11.3	11.4	11.5	11.6	11.7	11.b	11.c	11 Sustainable cities and communities	11.1.1	11.2.1	11.3.1	11.6.2	11.7.1	
			12.2	12.4	12.8	12.a	12.b	12 Responsible consumption and production	12.a.1				
			13.1	13.2	13.3	13.b	13 Climate action	13.1.1					
14.1	14.2	14.3	14.4	14.6	14.7	14.a	14 Life below water	14.3.1	14.4.1	14.5.1			
15.2	15.3	15.4	15.5	15.7	15.8	15.9	15 Life on land	15.1.1	15.2.1	15.3.1	15.4.1	15.4.2	
						16.8	16 Peace, justice and strong institutions						
17.6	17.7	17.8	17.9	17.16	17.17	17.18	17 Partnerships for the goals	17.6.1	17.18.1				

SDG Targets and Indicators supported by Earth observation

Supporting SDGs through the



Work Programme



GEO Global Agricultural Monitoring (GEOGLAM)

SDG 2, SDG 6, SDG 12 and SDG 13

- Target 2.c.
- Targets (2.1, 2.4, 2.a, 2.3) and (Indicators 12.3 and 13.3).



GEO Land Degradation Neutrality (GEO LDN)

SDG 15

- Target 15.3



The Global Forest Observations Initiative (GFOI)

SDG 15

- Target 15.2



Digital Earth Africa (DE Africa)

SDG 2, SDG 6, SDG 9, SDG 11, SDG 13, SDG14 and SDG 15



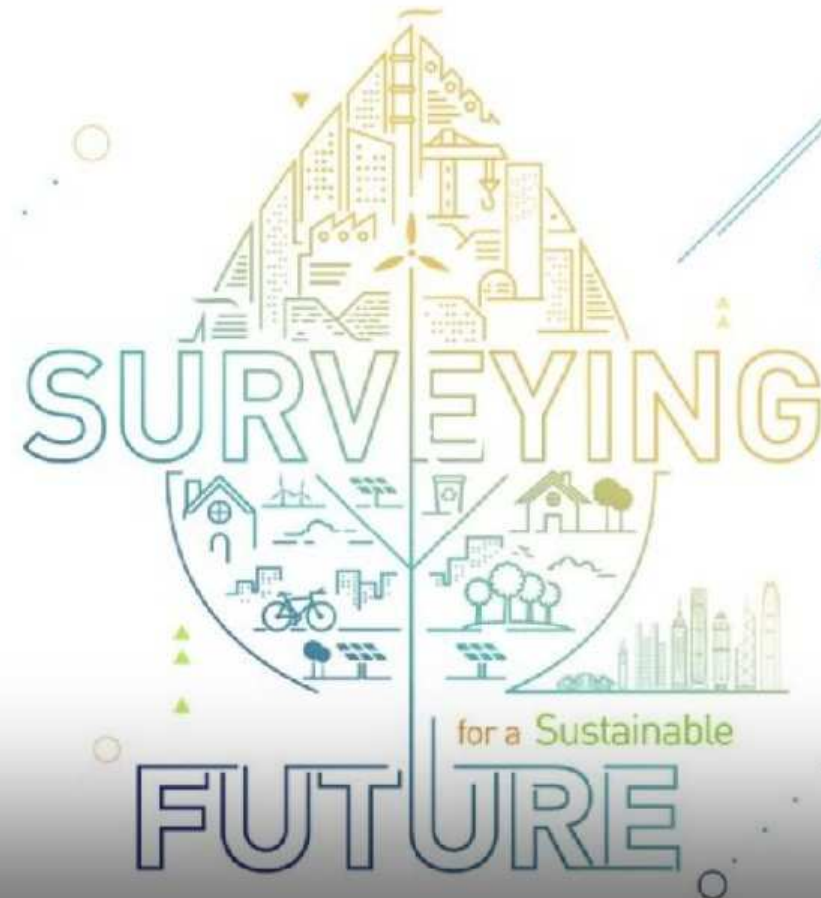
GEO Global Water Sustainability (GEOGLOWS)

SDG 6

- Target 6.3
- Target 6.3.2

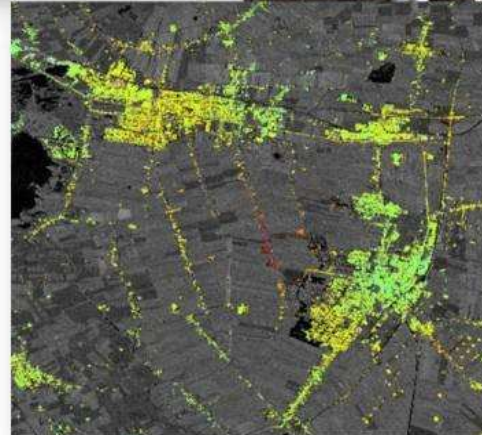
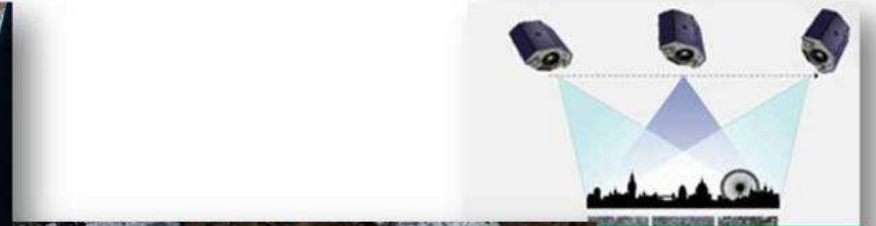
Surveying: An Indispensable Profession for Sustainable Development

- 'Boots on the Ground' providing accurate data and information.
- However, high cost, terrain variation, accessibility, weather conditions, etc. limit surveying effort.



Shaping the Surveying Landscape with EO

- EO technologies can support survey techniques/ data
- EO technologies can enhance surveyors' safety
- Space-based data with on-the-ground surveys can grant:
 - Wider coverage and additional data sources
 - Access to difficult terrain and consistent data source
 - Time and Cost Savings
 - Higher Spatial and Temporal Resolution



Concluding Remarks

**Pursuing a
resilient and
sustainable
future
necessitates
global
collaboration
and partnerships**





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Your World, Our World:
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SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals

Serving Society for the Benefit of People and Planet



Thank you!

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 **GROUP ON
EARTH OBSERVATIONS**