United Nations
Office for Outer Space Affairs

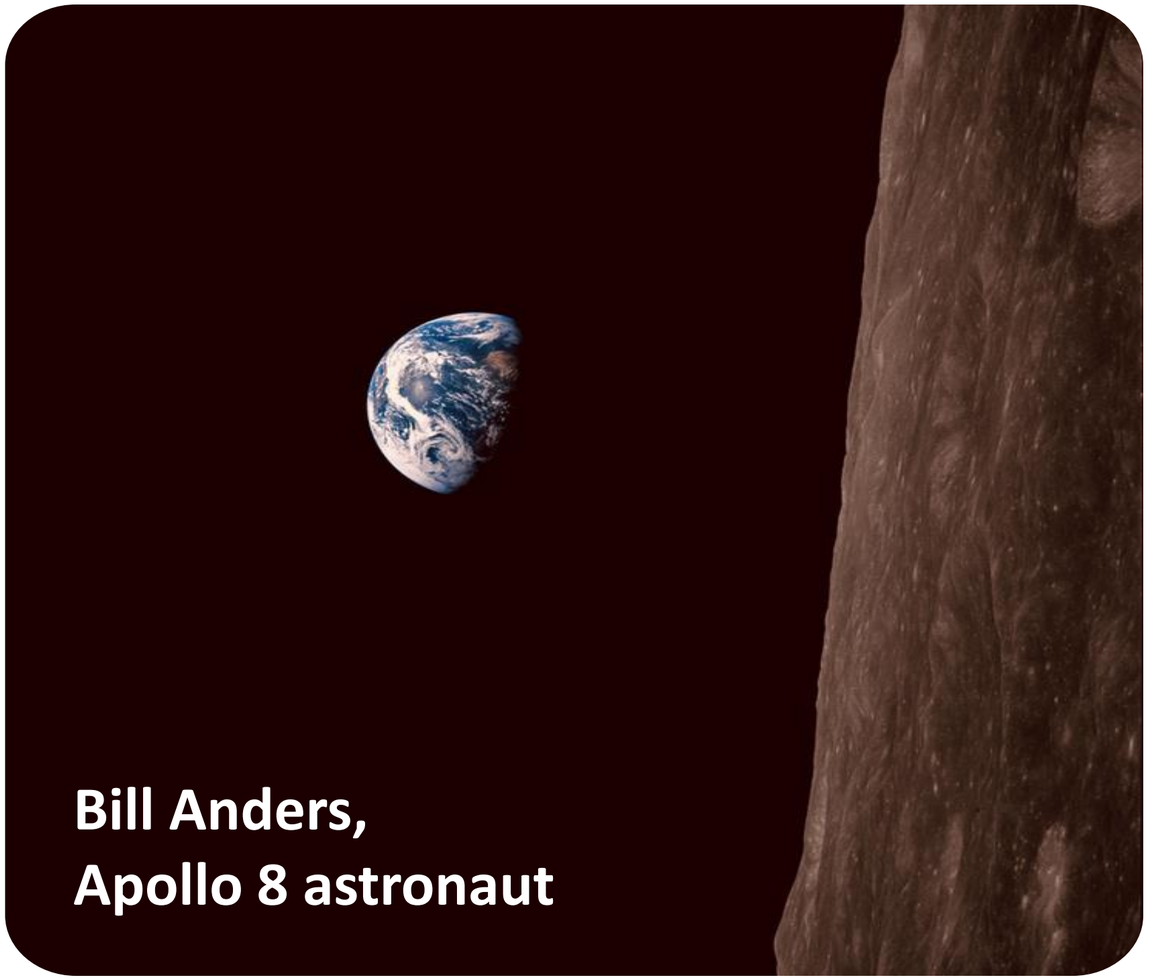
UNOOSA, estd. 1957

OFFICE FOR OUTER SPACE AFFAIRS & SPACE4SDGS

AARTI HOLLA-MAINI
DIRECTOR

“We set out to explore the Moon

and instead discovered the Earth.”



Bill Anders,
Apollo 8 astronaut

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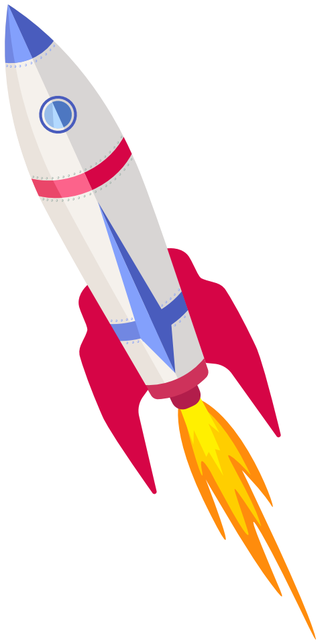
Today’s space ecosystem

Space economy is worth ~500-600 billion (0,5% of Global GDP)

Roughly 80% of the value comes from commercial activities,
mostly in the downstream segment



Government budgets have been **steadily growing** and
more countries are entering the sector **every year**

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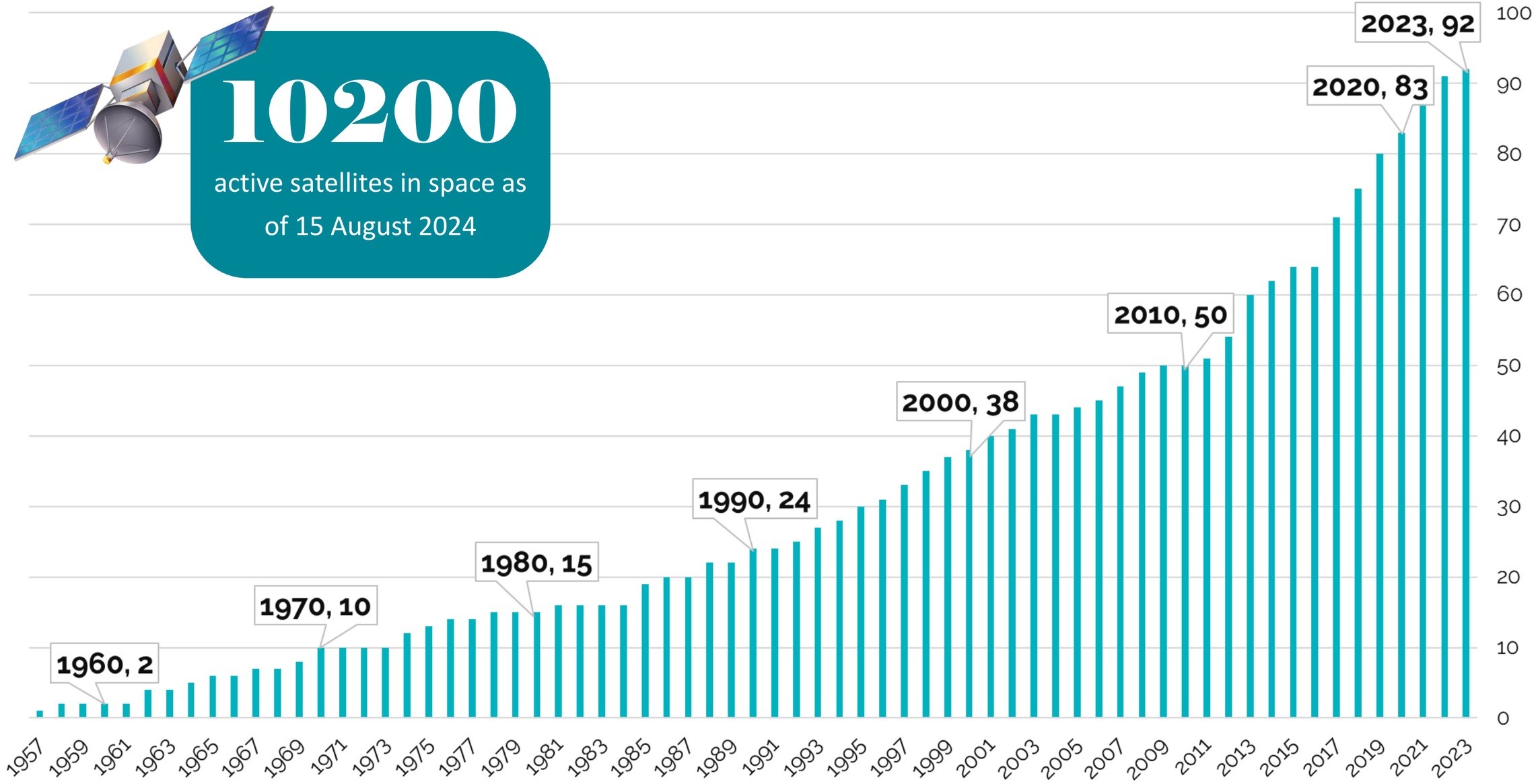
Countries with satellites

10200

active satellites in space as of 15 August 2024



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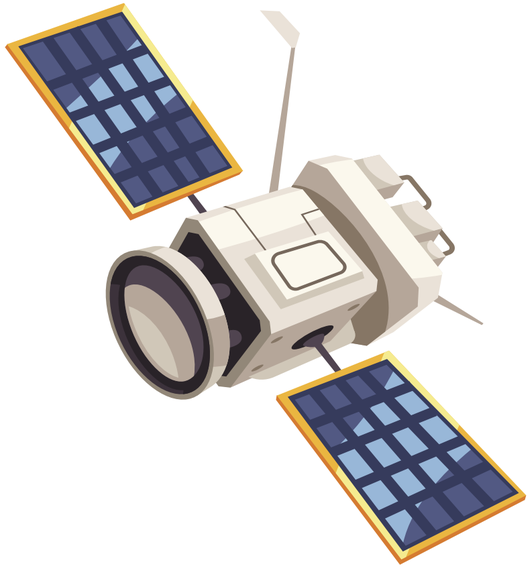
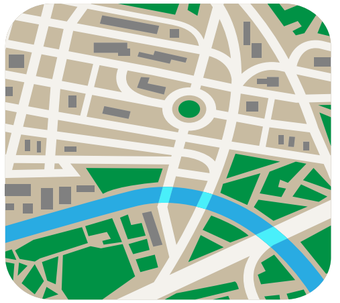
Space as an enabler

Space technology, data & services are part of our daily lives

- Developed World
- Developing Countries



Satellite Navigation



Satellite Imagery

Satellite Communications

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Space as an enabler

Space assets are essential for a better future

17 **Sustainable Development Goals**

all the SDGs are positively impacted by the benefits from the use of GNSS, Earth observation and Satcoms

65 **out of 169 SDG Targets**

directly benefit as satellites either help monitor progress towards their achievement or contribute to their fulfillment

10+ **percent of the GDP**

in advanced economies is underpinned by satellite data, services and applications

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Climate Change / Water Issues

Source: ESA

32 of the 54 Essential Climate Variables are primarily measured from space

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Space as an enabler

Without satellites, we wouldn't know there is a climate crisis

50%

of the 54 Essential Climate Variables

can only be measured reliably and repeatedly from space using satellites

1k+

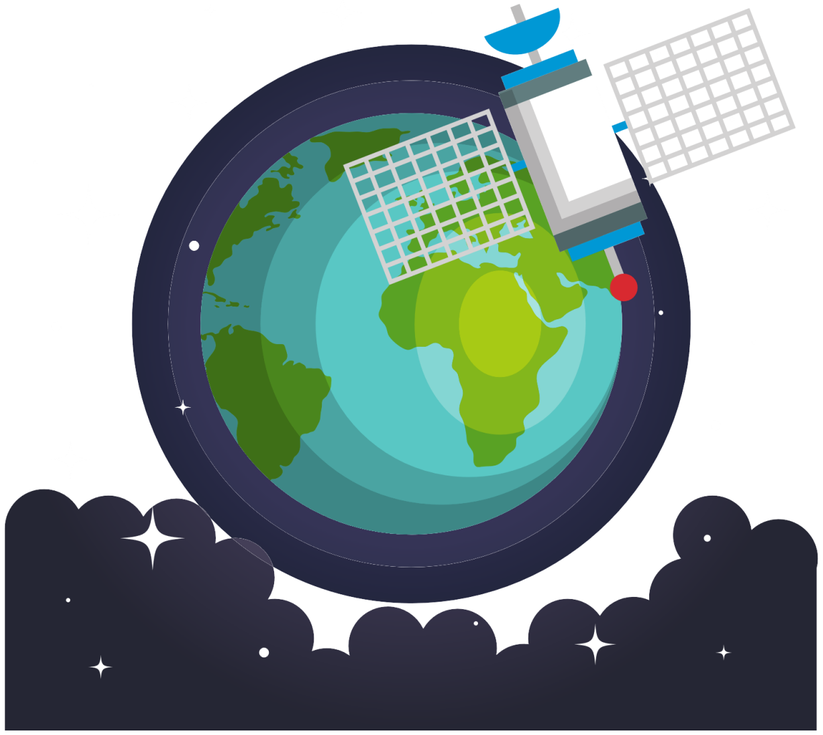
satellites in orbit are used for EO

enabling the monitoring and understanding of the evolution of the Earth's climate over time

90%

of accurate weather forecasts

rely on data from satellites that are fed into numerical weather prediction models



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Space as an enabler

Space assets provide means for **telemedicine**, mapping **disease outbreaks** and disease-spreading **insects**, and unique **biomedical research.**

3 GOOD HEALTH AND WELL-BEING

Source: Inmarsat

Space supports Global Health in more ways than we can imagine

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Space as an enabler

Space inspires the pursuit of STEM education & careers, including for women, girls and ultimately all of society.

5 GENDER EQUALITY

Space can help combat gender **inequality**, particularly when it comes to **violence** and human **trafficking**. Satellites also help women through **economic empowerment**.

Source: NASA

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Space as an enabler

Space activities are catalysts for economic growth, high value-added job creation and innovation across a range of different industries.

8 DECENT WORK AND ECONOMIC GROWTH

Space technologies contribute to a range of sectors including **service** delivery, **banking** and finance, **agriculture**, **communications**, and more.

Source: Avanti

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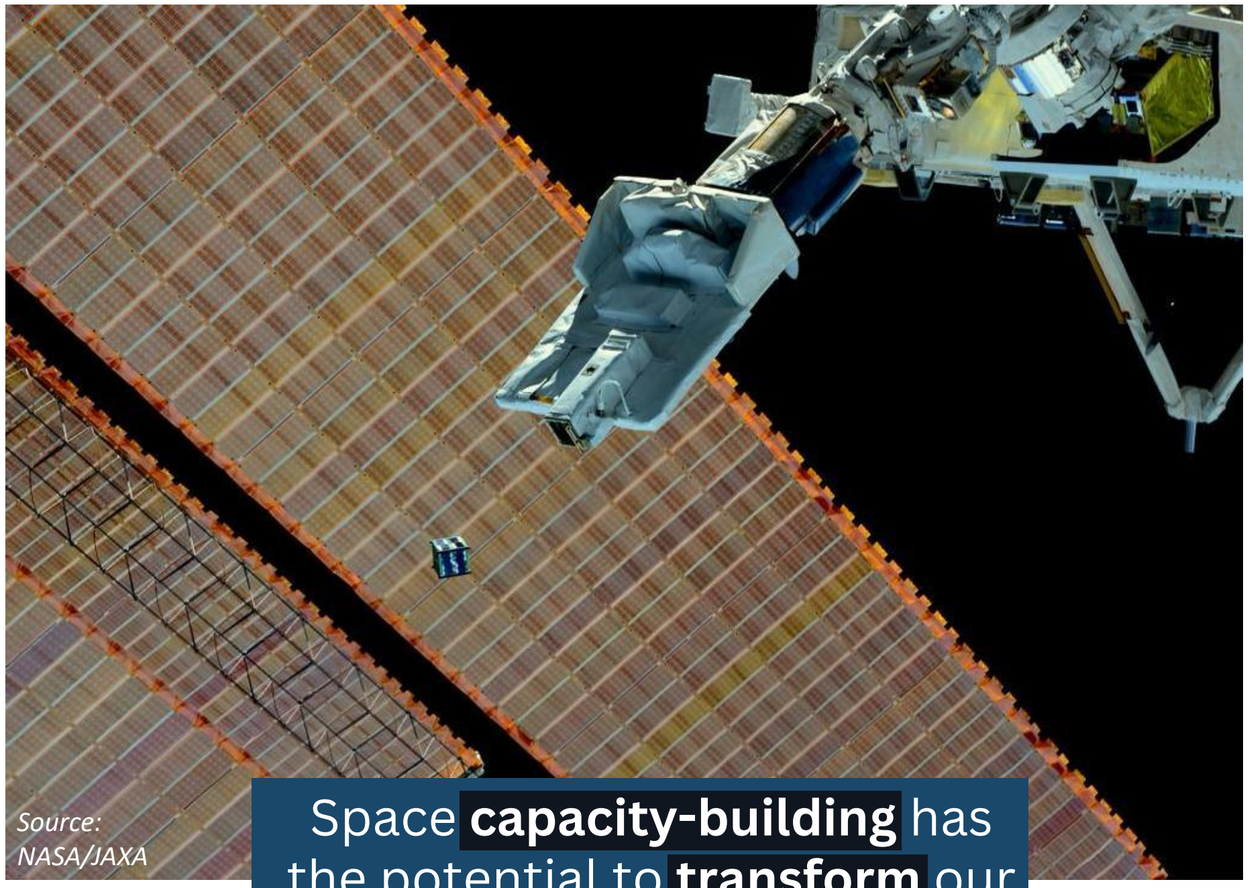
Space as an enabler

Partnerships unlock access to capital, technologies and know-how that would otherwise remain hidden for many countries, stakeholders and societies.

17 PARTNERSHIPS FOR THE GOALS



Source: NASA/JAXA

Space **capacity-building** has the potential to **transform** our civilization and **accelerate** the achievement of the SDGs across the board.

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Agriculture / Biodiversity / Deforestation

Source: FAO

Space applications support sustainable agriculture & prevent deforestation

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Space as an enabler

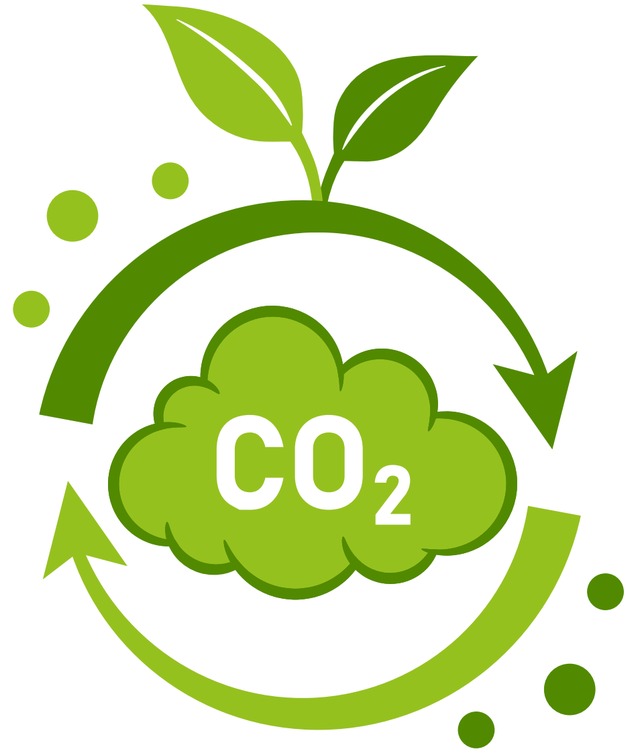
Satellites are not only used for climate monitoring but also for climate action

MITIGATION

10% **of journey times of road vehicles**
can be saved using satellite navigation systems also reducing emissions of harmful and polluting substances

20% **of agricultural inputs**
such as fuel and pesticides can be saved while increasing yield using precision farming techniques

30% **of solar energy forecasts**
can be improved using space technology enabling better decision-making for solar farms and energy policies



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Disasters / Emergencies

Source: Turksat

Source: TSFi

Satellite applications are often the only communications when disaster strikes

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Space as an enabler

Satellites are not only used for climate monitoring but also for climate action

RESILIENCE

strengthen resilience and adaptive capacity

to climate-related hazards and natural disasters in all countries

use data for visual storytelling

to convey information in a compact format to policymakers

provide information on different types of disasters

including prevention, preparedness, response and recovery

Source: TSFi

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WHY AND HOW IS THE UNITED NATIONS INVOLVED?

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Space at the UN

COPUOS & UNOOSA established

1950s-60s

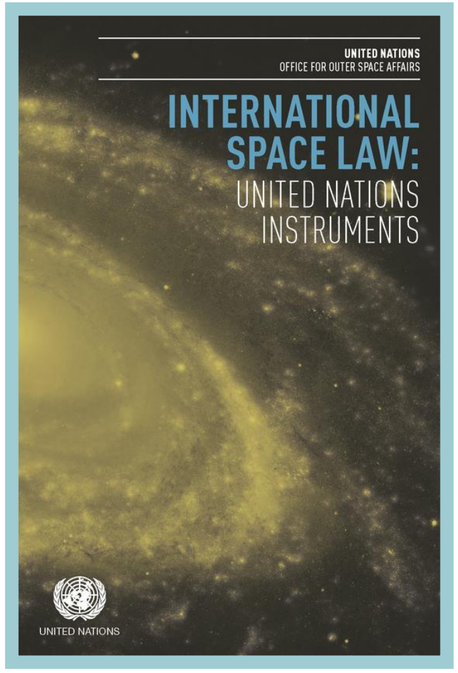
1. *Establishes* an *ad hoc* Committee on the Peaceful Uses of Outer Space composed of the representatives of Argentina, Australia, Belgium, Brazil, Canada, Czechoslovakia, France, India, Iran, Italy, Japan, Mexico, Poland, Sweden, the Union of Soviet Socialist Republics, the United Arab Republic, the United Kingdom of Great Britain and Northern Ireland and the United States of America, and requests it to report to the General Assembly at its fourteenth session on the following:

(*a*) The activities and resources of the United Nations, of its specialized agencies and of other international bodies relating to the peaceful uses of outer space;

(*b*) The area of international co-operation and programmes in the peaceful uses of outer space which could appropriately be undertaken under United Nations auspices to the benefit of States irrespective of the state of their economic or scientific development, taking into account the following proposals, *inter alia*:

Treaty development

1960s-70s



Principles on outer space

1980s-90s

Development of soft law

2000s-10s

UNISPACE+50 and Space2030

2010s

Pact for the Future

2024

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About Us

UNOOSA promotes international cooperation in the peaceful use and exploration of space and using space science and technology for sustainable economic and social development.

CONVENER

Coordinates UN activities using space-related technology to support sustainable development

GATEWAY

A gateway between technology & Member States to support their needs & the SDGs

CAPACITY BUILDER

Empowers States to use space solutions to accelerate sustainable development & address national priorities

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Key Roles

SECRETARIAT SERVICES PROVIDED TO

- COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE
- INTERNATIONAL COMMITTEE ON GNSS
- SPACE MISSION PLANNING ADVISORY GROUP
- INTER-AGENCY MEETING ON OUTER SPACE ACTIVITIES

CAPACITY-BUILDING

- UN-SPIDER
- PROGRAMME ON SPACE APPLICATIONS
- SPACE LAW FOR NEW SPACE ACTORS
- SPACE ECONOMY, SPACE4WOMEN, SPACE4WATER...

TREATY OBLIGATIONS

- UN REGISTER OF OBJECTS LAUNCHED INTO SPACE

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Space Multilateralism

Signing of the Outer Space Treaty, 1967

1967

⇒ **18 states in 50's**

⇒ **104 in 2024**

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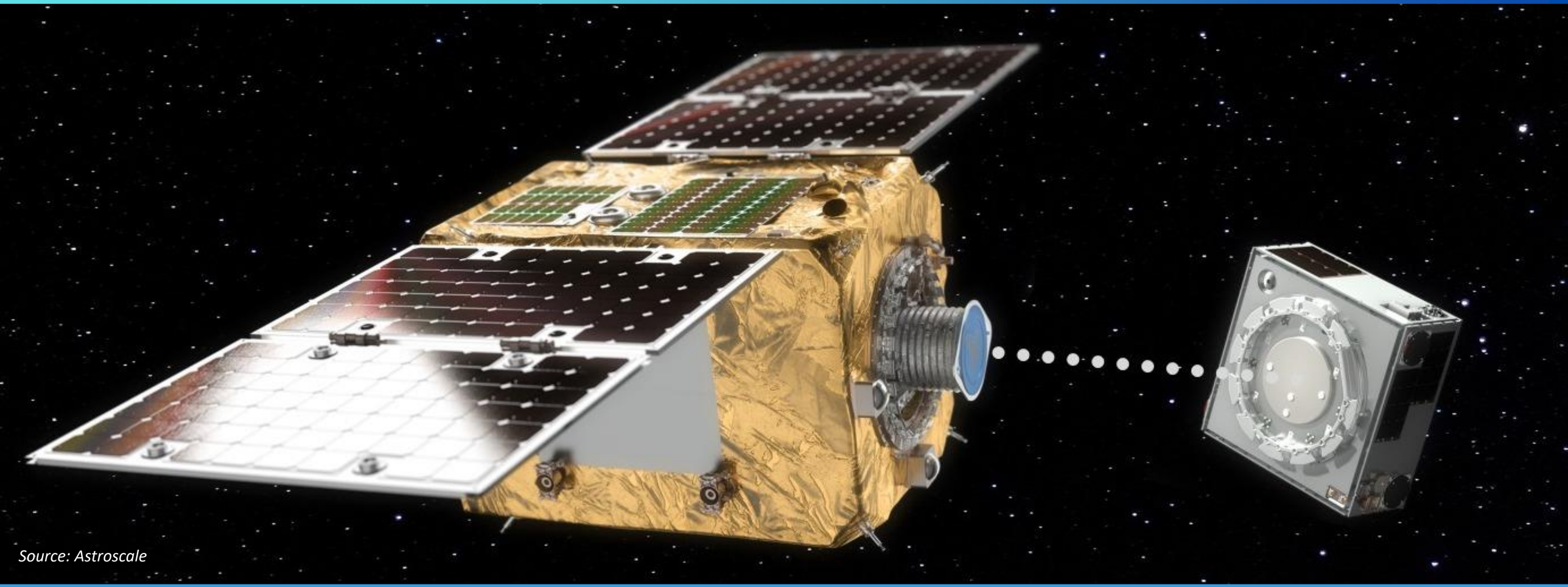
Space Sustainability



Source: Astroscale

Pro-active efforts required to support space sustainability

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Pact for the Future

A Call to Action by Heads of State to COPUOS

Safe and sustainable use of space plays a critical role in the achievement of the 2030 Agenda:

Action 56. We will Strengthen international cooperation for the exploration and use of Outer Space for Peaceful Purposes and for the benefit of all Humanity

We decide to:

a) Reaffirm the importance of the widest possible adherence to and full compliance with the 1967 Outer Space Treaty and **discuss the establishment of new frameworks for space traffic, space debris, and space resources through the Committee on the Peaceful Uses of Outer Space.**

b) Invite the engagement of relevant private sector, civil society, and other relevant **stakeholders**, where appropriate and applicable, **to contribute to intergovernmental processes** related to the increased safety and sustainability of outer space.

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The Way Forward

Implementing a Strategy based on Member States priorities

Space sustainability

Ensure Space is Safe & Sustainable for Future Generations

Climate Action

Drive Climate Action through Space

Sustainable Development Goals

Advance progress on the Sustainable Development Goals through the use of space

Developing Countries

Ensure developing countries/Africa can contribute to & benefit from space

Stakeholder Engagement

Accelerate achieving the goals by strengthening engagement with non-governmental actors

- An application & **results-oriented** approach
- Driven by **partnerships** with Member States

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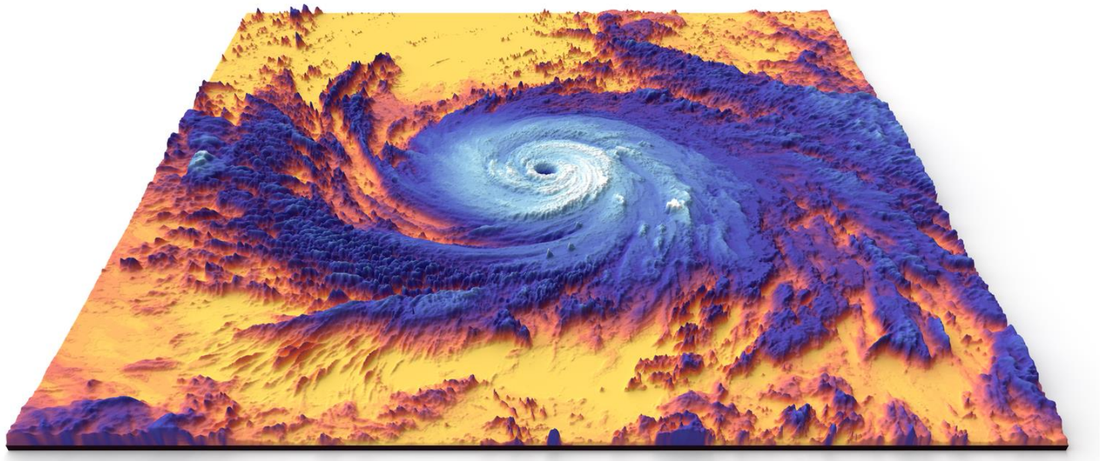
UN-SPIDER

WWW.UN-SPIDER.ORG

UN-SPIDER helps communities benefit from space solutions for disaster-risk management

- Technical Advisory Mission (TAM)
- Institutional Strengthening Mission (ISM)
- Expert Missions (EM)



Credit: NASA

IMPACT

100+ capacity-building missions

50+ supported countries

40+ TAMs delivered

Namibia, Mozambique, Zimbabwe, Zambia, Gabon, Cameroon, Ghana, Nigeria, Togo, Burkina Faso, Tunisia, Sudan, Cap Verde, South Africa, Mozambique, Ethiopia, Sudan, Algeria Philippines, Armenia, LAO, Nepal, Tonga, Myanmar, Sri Lanka

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Space and Global Health

Strengthening capacity-building and networking through regional technical cooperation projects and by strengthening collaboration between the space and global health sectors.

GA Resolution 77/120 of 2022

International Conferences

- Collecting global **recommendations**
- Exchanging actionable **solutions**
- Building **bridges** and **networks**

Space & Global Health Strategy

- Institutional **strengthening**
- **Knowledge** and **awareness-raising**
- **Capacity-building**

Space & Global Health Network

- Working Groups
- Coordinate the preparation of the **curriculum** on space and global health

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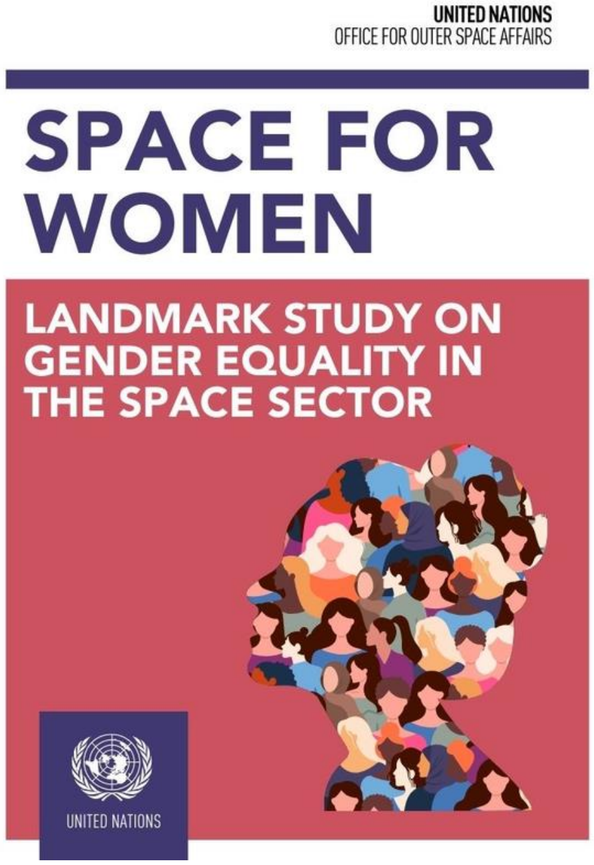
Space and Gender Equality

Women's skills, perspectives and ideas are essential for innovation and maximizing space solutions' impact on society. We must listen to them and empower them.

Workstreams of the Space4Women Programme

- Annual Expert Meeting
- Space4Women Mentorship
- Capacity-building

SPACE 4 WOMEN



SPACE4WOMEN.UNOOSA.ORG

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Supporting Thriving Space Economies

UNOOSA helps countries grow national space economies.

OBJECTIVES OF THE SPACE ECONOMY INITIATIVE

Increase global awareness and understanding of how space sector growth can reinforce socio-economic development, in line with the 2030 Agenda.

Help countries scale up economic growth by developing thriving space ecosystems.

Enhance cooperation across the space sector, to facilitate greater adoption of space applications & services

UNOOSA/UNDP/BRAZIL PARTNERSHIP

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Access to Space 4 All

Leaving no one behind is the fuel that drives our engine to deliver space solutions to everyone.
Countries big & small, developed & developing - all need to take full advantage of space benefits.

Workstreams of Access to Space4All

- Microgravity and Hypergravity
- Satellite Development and Deployment
- Education and Space Exploration

ACCESS • TO • SPACE • 4 • ALL

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13 partners from Space Agencies, Academia and Industry

5 satellites developed and launched through KiboCUBE

10 experiment series in modified gravity conditions

70+ fellowships supporting students in Master's and PhD

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Space4Climate Action

The full potential of space technologies in addressing climate change is not currently being realized.

UNOOSA strives to ensure that space technologies, data and services are:

available, accessible & affordable

for all Member States who need them

used to integrate climate change measures

into national policies, strategies and planning

utilised to address climate-related challenges

such as disaster-risk reduction & environmental sustainability

SpaceApps Program

Central UN procurement hub the for commercial data

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THANK YOU!

AARTI HOLLA-MAINI
DIRECTOR