Space 4 Climate Action

Advancing the use of space in addressing a generational challenge

10th Annual UN-SPIDER Conference

The United Nations International Conference on
Space-based Technologies for Disaster Risk Reduction
"Lessons learned during the unprecedented pandemic situation"

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Facing the climate emergency

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Climate change is a **complex global crisis** with effects that are often felt most acutely at local levels. We must mobilize every effort to **mitigate emissions** and **adapt** to the realities and consequences of the changing climate.

- A changing climate and warming Earth affects agricultural production, freshwater availability, frequency and severity of extreme weather, and many other facets of habitability and security
- Since the mid 20th century, anthropogenic greenhouse gas (GHG) emissions have been the largest driver of climate change
  - Result from human activities related to industry, transportation, agriculture, power production, etc.
- Between 1998 and 2017, natural disasters killed over 1,3 million people and injured more than 4,4 billion while hitting the economies with almost $3 trillion in damages
  - Reported losses between the two 10-year periods have increased by 151%

How can space technology enable climate action?

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Space technologies such as **Earth observing satellites** can provide significant contributions to more than half of the **54 Essential Climate Variables**. This data gives a more **precise understanding** of climate change and its drivers, which is critical information for **policymakers**. However, space technologies are **underutilized** in addressing climate challenges.

Climate change mitigation. Data from space can:

- Help reduce emissions and pollution
- Improve crop yields through precision farming
- Enable more efficient use of water resources
- Identify best locations for solar and wind farms

Climate adaptation and resilience. Space technologies can:

- Identify areas at risk of flooding
- Help understand shifting weather patterns
- Provide early warnings for natural disasters
- Provide critical communications infrastructure and impact assessment for first responders

UNOOSA: Supporting UN and its Member States

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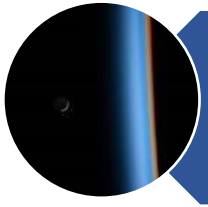
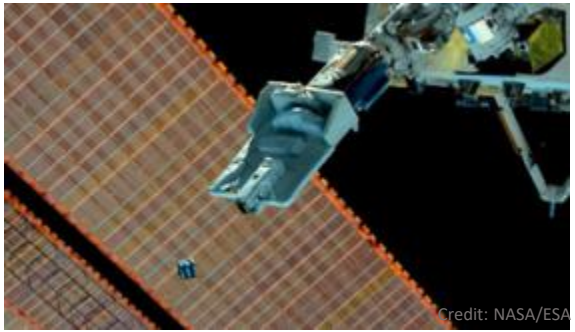
UNOOSA, as the UN entity **responsible for advancing international cooperation** in the peaceful uses of outer space, has a mandate to **develop and implement programs that support sustainable development**, including climate action.



CAPACITY BUILDER: UNOOSA provides access to cutting edge space-data and information and builds capacity to use such data to accelerate sustainable development.

CONVENER: UNOOSA facilitates international cooperation among UN Member States to develop new space policy.

GATEWAY: UNOOSA - the sole UN agency dedicated to space affairs - coordinates UN activities using space-related technology to support sustainable development.



Capacity-building

Space Solutions for the Pacific

Space for Climate Action

Space for Global Health

Access to Space for All

UN-SPIDER

International Committee on GNSS

Space for Women Project

Space for Youth

Space Law for New Actors

Space for Water

Space 4 Climate Action

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The **full potential** of space technologies in addressing climate change is **not currently being realized**.
UNOOSA identified areas in which it **can help enable** global climate action by using space assets.

The **Space 4 Climate Action** initiative aims to promote, strengthen and deliver targeted capacity-building and technical advisory activities, facilitate multi-stakeholder collaboration, and promote efforts to encourage the use of space for climate action from local to national to international levels.

Through its activities, Space 4 Climate Action will support SDG 13: Climate action, and as addressing this global challenge influences virtually all human activities, the initiative has direct or indirect implications on other SDGs.

SPACE
4SDGS

Assessing the landscape of climate initiatives

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The first step in formulating Space 4 Climate Action was to **assess existing initiatives** that use space data to inform climate-relevant programs and policies, and to **understand where gaps exist.**

- More than **30 initiative**s across national space agencies, government organizations, academic organizations, UN entities, and commercial companies were assessed
- Results of this study indicated that **national and regional-level capacity** for space-based climate initiatives is often not developed or only in early-stage development in many countries
- Assessment of existing initiatives indicated a need for **coordination on capacity-building** and UN **inter-agency** collaborative projects.
- There are few existing initiatives to support **global coordinated use** of climate-relevant data gathered from space infrastructure. The **Space Climate Observatory** is one such existing initiative.

Coordinating globally, acting locally

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Although the collective and global nature of climate change requires a **strong component of global response**, recent policy analysts advocate for both **top-down and bottom-up approaches** to climate action.

- Top-down measures:
  - International cooperation is necessary to achieve a global picture of climate change and its impacts
  - International cooperation is necessary to set global limits on GHG emissions
  - On a national scale, government policies are important for developing regulatory and market instruments to enforce limits on GHG emissions
- Bottom-up measures:
  - Effective actions in agriculture, resource management, energy, and manufacturing at regional and local levels can take into account unique societal contexts and produce immediate benefits to communities there

Effective climate action requires both international cooperation AND tailored national and local initiatives.

Better policy decisions informed by space

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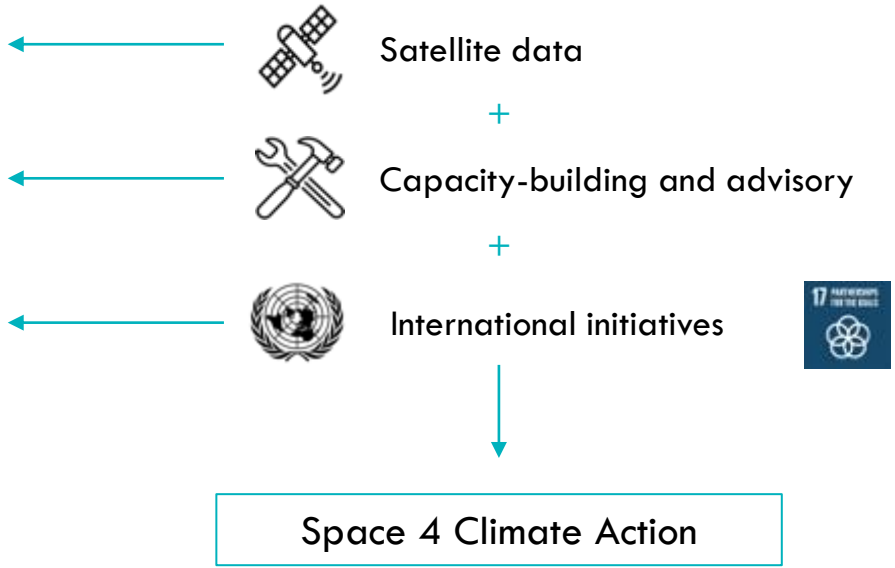
Just as measurable and substantive action on climate change cannot come to pass through single-level efforts, the approach to **climate action** must be enabled by **sound technical information paired with policy-oriented objectives**.

Since evidence-based action at multiple levels of governance has the greatest potential to affect change, climate initiatives should include one or more key elements:

- Data that enables a robust scientific understanding of climate change, its effects, and its drivers.
- Evidence-based policies and decision-making that allow national and regional governments to work towards reducing greenhouse gas emissions and adapting to the effects of climate change in their local contexts.
- International, multi-stakeholder cooperation to share data, expertise, and best practices to meet the complex environmental, social, and economic dimensions of climate change.



Space 4 Climate Action - Plan of action

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UNOOSA aims to facilitate international cooperation and the wider use of space-based technologies to implement climate change mitigation, adaptation, and resilience initiatives. This objective will be achieved by:

Promoting the use of space technologies for climate

Promoting the use and raising awareness of technical and policy-oriented strategies for using space technologies to meet climate objectives through Technical Advisory Missions focusing on climate science, monitoring, mitigation, adaptation, and resilience efforts.

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UNOOSA aims to facilitate international cooperation and the wider use of space-based technologies to implement climate change mitigation, adaptation, and resilience initiatives. This objective will be achieved by:

Capacity-building

Facilitating capacity-building in the design, monitoring, evaluation, and implementation of projects that use space-based technologies to address climate change.

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UNOOSA aims to facilitate international cooperation and the wider use of space-based technologies to implement climate change mitigation, adaptation, and resilience initiatives. This objective will be achieved by:

Coordinating international collaboration

Coordinating collaboration between United Nations Organizations, government agencies, academic organizations to develop and implement national and regional climate adaptation and mitigation projects

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UNOOSA aims to facilitate international cooperation and the wider use of space-based technologies to implement climate change mitigation, adaptation, and resilience initiatives. This objective will be achieved by:

Supporting the Space Climate Observatory

UNOOSA will actively support and contribute to the International Space Climate Observatory (SCO), which will provide a gateway to space-based information and tools to support climate adaptation and mitigation projects and will promote open access to the activities of the SCO for all.

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Technical Assistance and Cooperation

Deliver capacity development through funding and delivery mechanisms including technical advisory missions, institutional strengthening missions, and program support as well as policy developments. Inclusion of space applications in development funding and call applications (e.g. Green Climate Funds)

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Private Sector Participation

'Climate Action: A Race We Can Win. A Race We Must Win.' On 23 September 2019, UN Secretary-General António Guterres hosted the UN Climate Action Summit, calling on Heads of State and other leaders, including from the private sector, to come to New York with concrete, scalable plans towards climate action.

UNOOSA projects and initiatives

Space Solutions for the Pacific

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Space for Global Health

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UNOOSA aims to facilitate international cooperation and the wider use of space-based technologies to implement climate change mitigation, adaptation, and resilience initiatives. This objective will be achieved by:

- Serving as the secretariat for the international Space Climate Observatory, which will provide **a gateway to space-based information and tools** to support climate adaptation and mitigation projects;
- Coordinating **collaboration** between government agencies, academic organizations, and UN entities to **develop and implement national and regional climate** adaptation and mitigation projects;
- **Providing technical support and analysis** for space-based climate initiatives in partnership with local government, academia, and UN
- Facilitating **capacity-building** in the design, monitoring, evaluation, and implementation of projects that use space-based technologies to address climate change; and
- Promoting the use and raising awareness of **best practices for using space technologies to meet climate objectives** through: climate science, monitoring, mitigation, adaptation, and resilience efforts.

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Status
✓ UNOOSA supports the steering committee of the International Space Climate Observatory ✓ Outreach and development of partnerships ongoing ✓ Business plan finalisation phase ✓ Framework and parameters development ongoing ✓ Structure and process development ongoing

Thank you
&
Stay Tuned for updates!

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