



United Nations
Office for Outer Space Affairs

@UNOOSA



**GeoAI for an Equitable Future - Localizing Foundational Models,
Agentic Tools, and the Imperative for Openness**



United Nations Office for Outer Space Affairs (UNOOSA)

Vision

Bringing the benefits of space to humankind

Mission Statement

Promote international cooperation in the peaceful uses of outer space to achieve sustainable development goals (space law, space sustainability, Space4Oceans, Space4Women, etc)

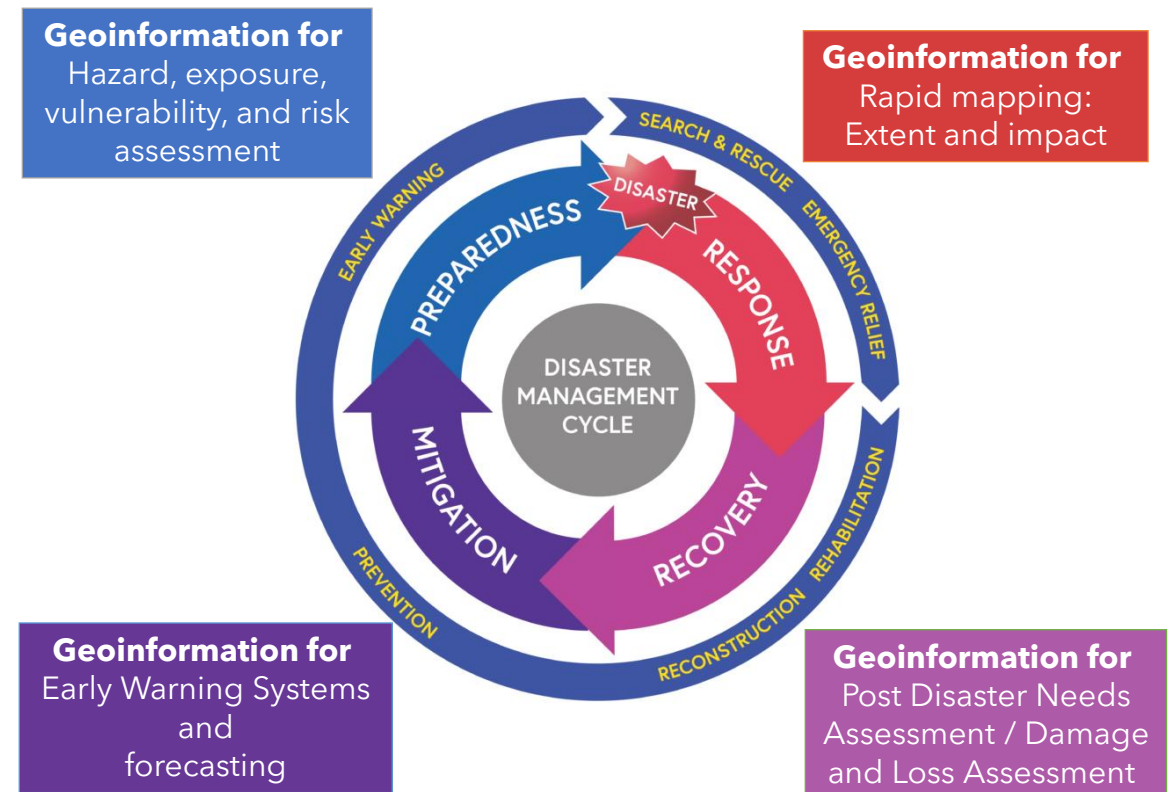


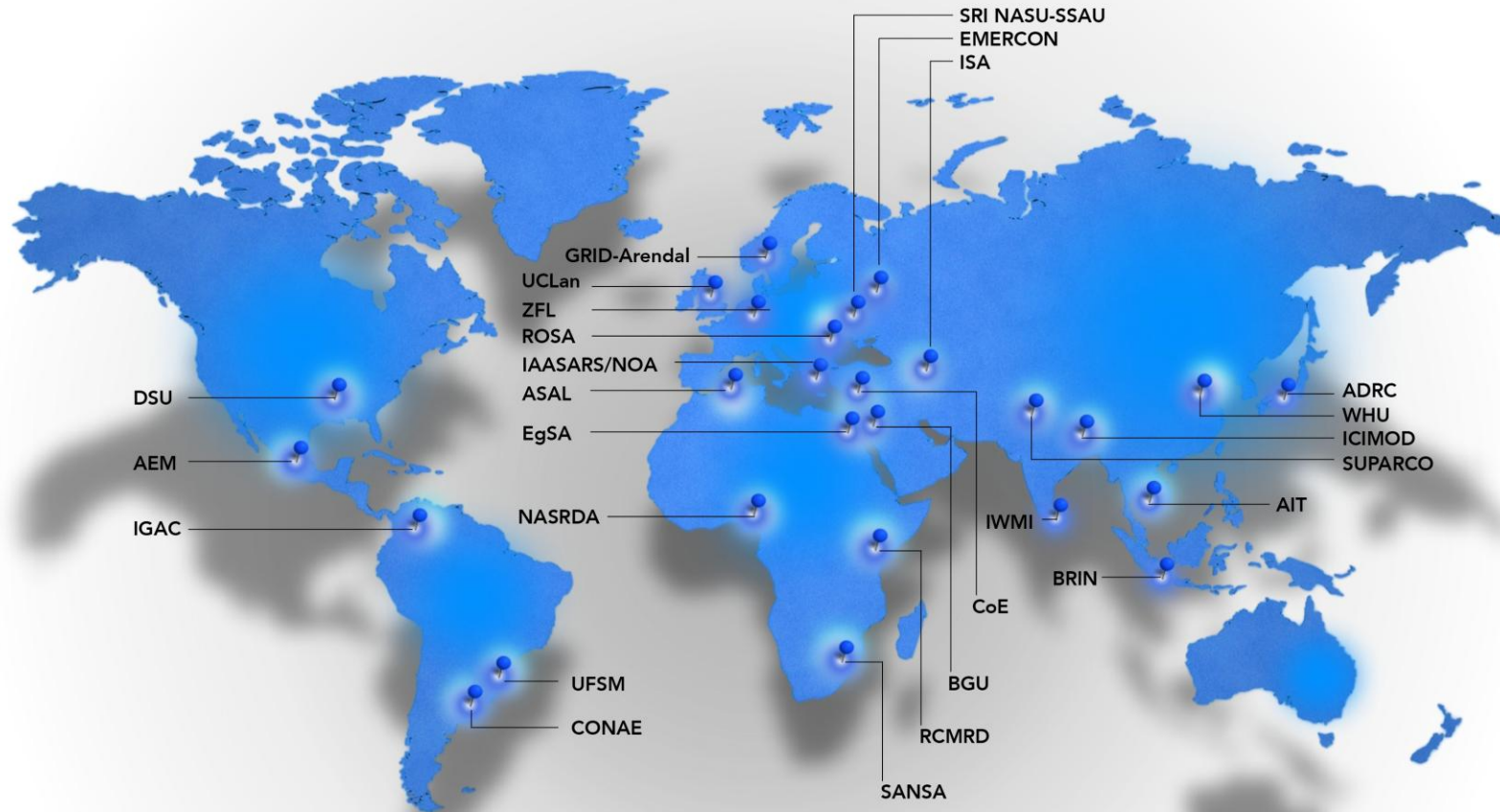
United Nations Platform for Space-based Information for Disaster Management and Emergency Response

United Nations GA Resolution 61/110, Dec. 2006

Ensure that all countries have access to and develop the capacity to use all types of space-based (Geo)information (EO data, GNSS, SatComms) to support the full disaster management cycle

Offices in Vienna, Beijing and Bonn, Latin America (upcoming)







Technical Advisory Support

UN-SPIDER supports countries in assessing their capacity in the use of space technologies in all phases of disaster management



Capacity-Building

UN-SPIDER facilitates capacity-building and institutional strengthening - offline and online



Fostering Cooperation

UN-SPIDER fosters alliances and creates fora where the space and disaster management communities can meet

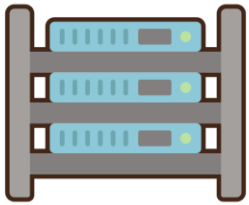


Knowledge Management

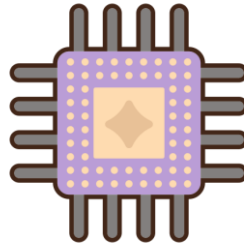
The UN-SPIDER Knowledge Portal is an online hub for discovering, accessing and learning to create space-based information products



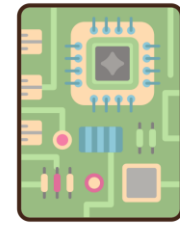
We are living in the **golden age**



DATA



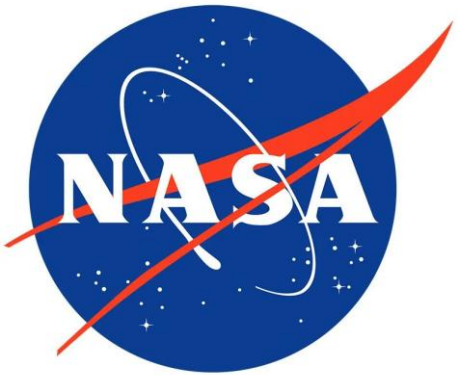
COMPUTE



GeoAI



1,300 out of the **8,000** satellites in orbit
are EO satellites



70 TB / day



20 TB / day



10 TB / day



70-100 exaFLOPS (aggregate global capacity).





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Compendium of Best Practices

- **9** RSOs
- **22** Practices
- **6** Thematic Areas





Why “going local” matters for AI /Geospatial Foundation Models (GFM)



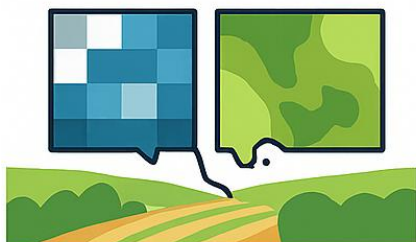
Global pre-training
≠ Local reality



Fine-tuning with local data
yields step-changes in
accuracy



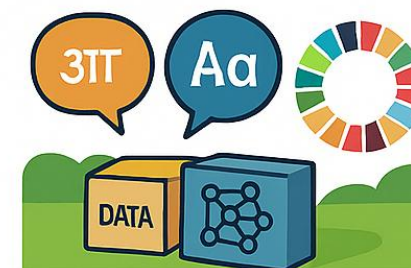
On-the-ground impact
hinges on local rel-
evance, not just pixel-
level accuracy



Language & taxonomy
localization drives
adoption



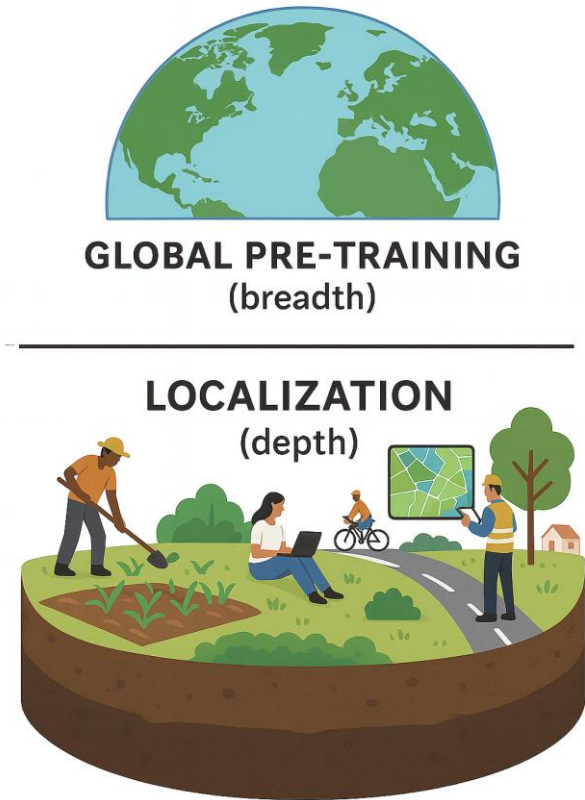
Open data + open
weights enable
local fine-tuning



Health, environment &
SDG monitoring
benefit disproportionately



Key steps for an effective localisation pipeline



- **Data curation** - assemble recent, high-resolution imagery and authoritative local labels.
- **Domain adaptation** - fine-tune frozen encoder layers on local tiles; add task-specific heads.
- **Evaluation** - use local ground surveys or high-precision drone orthomosaics.
- **Deployment** - compress models for edge inference; wrap outputs in local-language dashboards.
- **Capacity building** - train local agencies and startups to modify and audit the models.



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Q&A

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