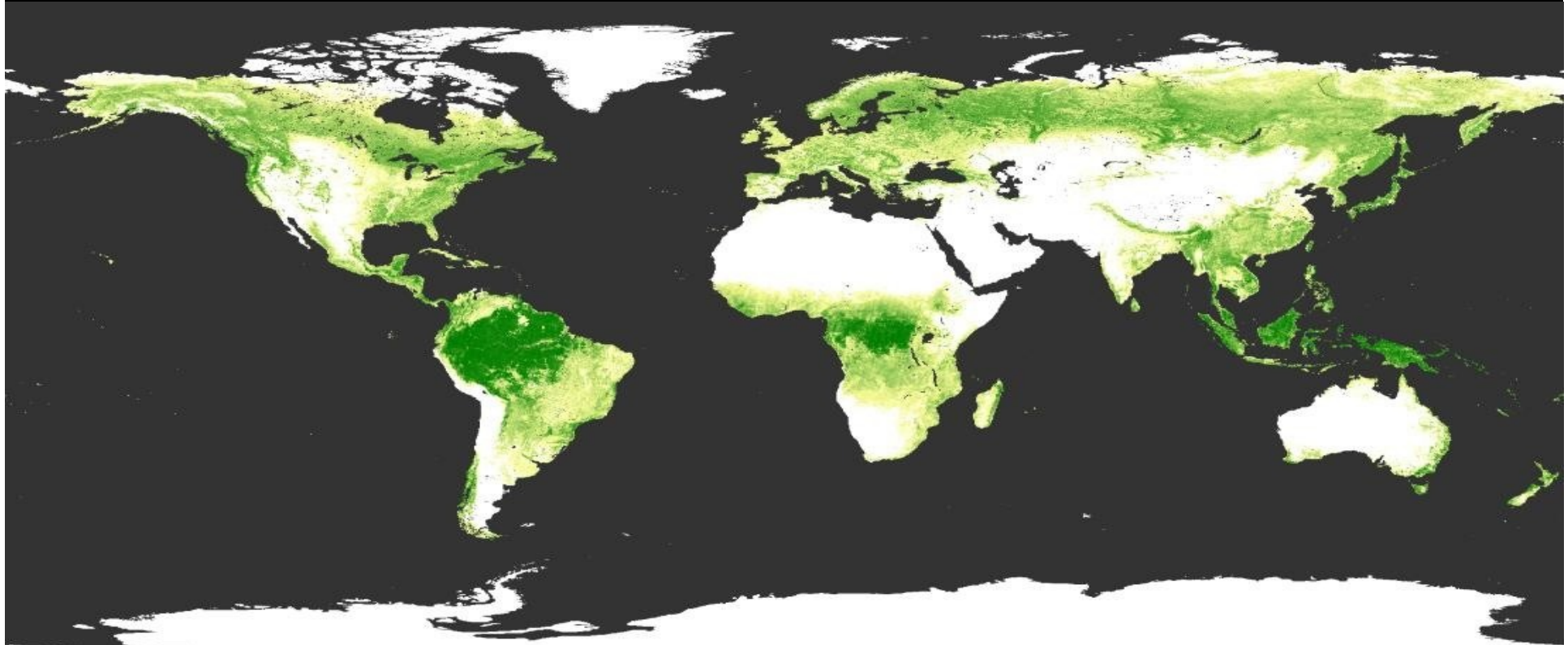


International Cooperation on Remote Sensing: Challenges and Opportunities

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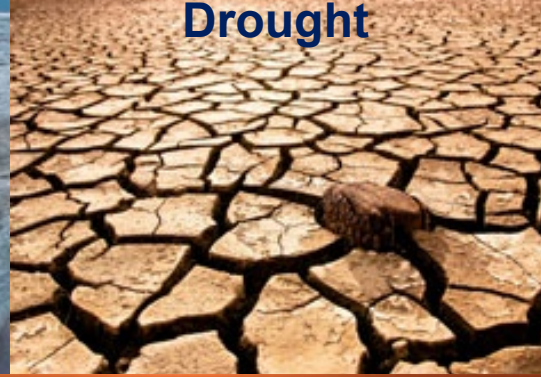


Environmental Changes Demand Global Attention

Melting Glaciers



Drought



Sea Level Rise



Melting Permafrost



Fire



Floods

Global Imperative— The world is interconnected and Earth remote sensing missions are by definition a matter of international cooperation



Deforestation



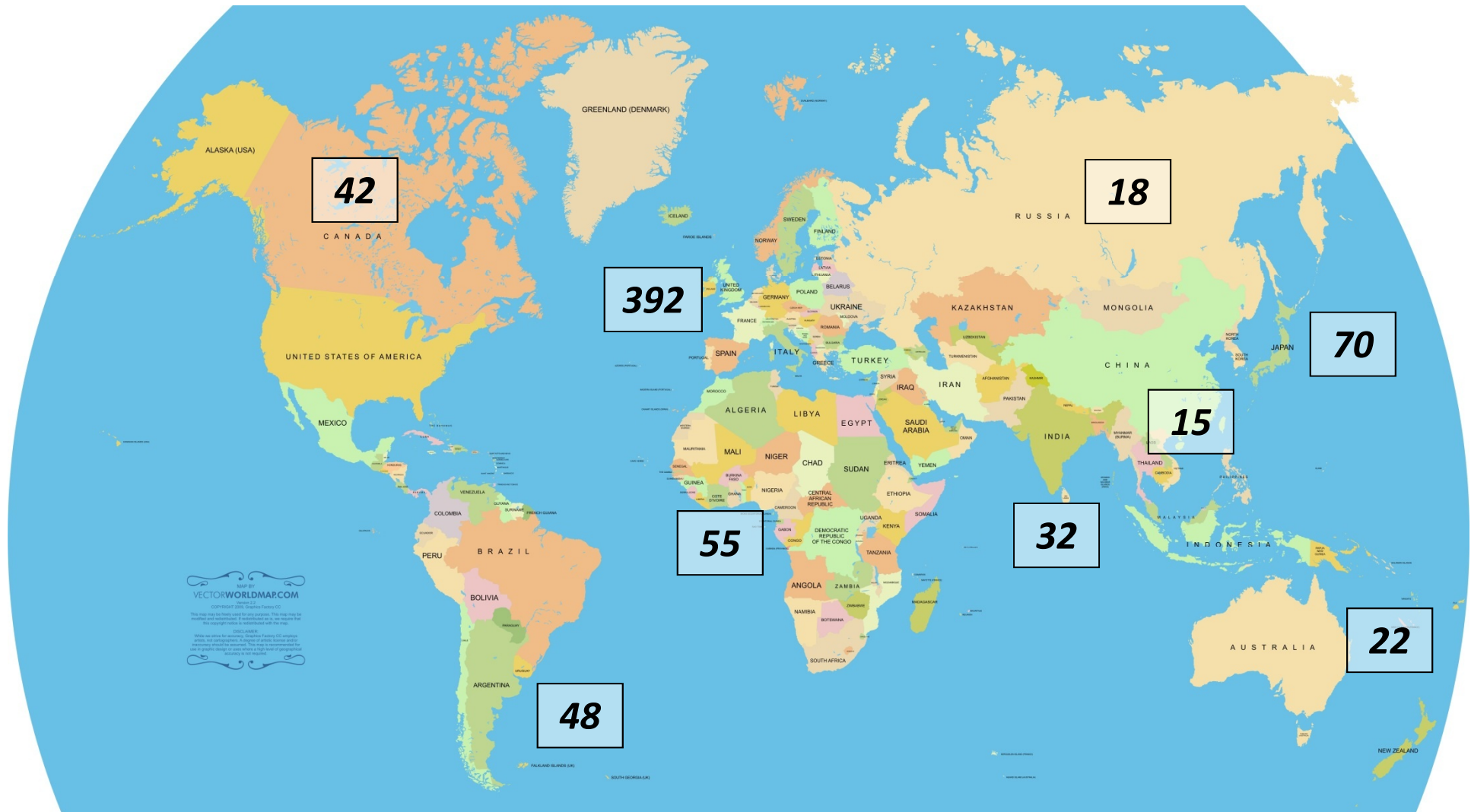
Extreme Weather



Global Reach: Current International Cooperation at NASA

Total International Agreements = 698

Total Countries: 122 +2 international organizations



NASA Earth Observing Satellite Fleet

Increase understanding of our home planet, improve lives, and safeguard our future.

- Formulation
- Implementation
- Primary Ops
- Extended Ops



1 NO POVERTY



2 NO HUNGER



3 GOOD HEALTH



4 QUALITY EDUCATION




5 GENDER EQUALITY




6 CLEAN WATER AND SANITATION



7 RENEWABLE ENERGY



8 GOOD JOBS AND ECONOMIC GROWTH



9 INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE AND JUSTICE



17 PARTNERSHIPS FOR THE GOALS



THE GLOBAL GOALS
For Sustainable Development

Earth Observations and Geospatial Information

Support to SDGs

Direct measures of some Indicators and indirect support to others.

Contribute to progress on the Targets, which will show up in the Indicators.



	Population distribution	Cities and infrastructure mapping	Elevation and topography	Land cover and use mapping	Oceanographic observations	Hydrological and water quality observations	Atmospheric and air quality monitoring	Biodiversity and ecosystem observations	Agricultural monitoring	Hazards, disasters and environmental impact monitoring
1 No poverty										
2 Zero hunger										
3 Good health and well-being										
4 Quality education										
5 Gender equality										
6 Clean water and sanitation										
7 Affordable and clean energy										
8 Decent work and economic growth										
9 Industry, innovation and infrastructure										
10 Reduced inequalities										
11 Sustainable cities and communities										
12 Responsible consumption and production										
13 Climate action										
14 Life below water										
15 Life on land										
16 Peace, justice and strong institutions										
17 Partnerships for the goals										



Challenges to International Cooperation on Earth Remote Sensing



- National Security – National security missions are typically domestic; limited opportunity for international cooperation
- Economic Benefit – Nations prioritize domestic economic benefit of launch and satellite development
- Limited Budgets – Limited national budgets and high costs of missions
- Data Distribution – Nations have different policies regarding cost of distribution of data
- Public Awareness – Public not aware of importance

International cooperation on Earth remote sensing missions is vital



- Multilateral Cooperation Mechanisms
 - International Charter for Disaster response
 - Group on Earth Observations (GEO) and Committee on Earth Observation Satellites (CEOS)
 - Regional efforts (e.g. SERVIR; Sentinel Asia)
- Bilateral Cooperation
- Highlight multiple uses of data
- Diplomatic efforts to highlight importance of cooperation
- Public outreach