



Perspective Blog - May 2023

## Satellite Data Sharing: Paths Toward Data Democracy

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*Increasing geopolitical tensions require more thoughtful and responsible use of the latest available satellite technologies. The war in Ukraine and recent environmental disasters, namely the earthquake in Türkiye and Syria, have alarmed the space policy community on the criticality of sharing Earth Observation (EO) and remote sensing data for human and environmental security.*

### Leading the Transformation

As explained by the Secure World Foundation,<sup>1</sup> domestic-level policies since the 1980s on the regulation of data sharing have set a clear direction toward more open frameworks for satellite data sales. The fundamental concept leading this transformation is “**data democracy**.” Satellite data and imagery (see example to the right<sup>2</sup>) support decision-making during emergencies, and the prompt delivery of EO information is essential to provide disadvantaged geographical areas of the world with the necessary tools to react to emergencies and build their capacity to prevent future harm. Promoting cooperative solutions for space sustainability<sup>3</sup> becomes a strategic consideration to empower alliances, providing self-developable warranties in the case of unexpected destructive events. Open data platforms, like NASA Earthdata<sup>4</sup> or ESA Copernicus, allow virtually anyone with internet access to use satellite data for service or business-oriented purposes.



### Pondering the Perspectives

There are three main perspectives for space policy makers to consider when regulating international EO data sharing: economic, normative, and institutional. Data sharing has proven of enormous economic value: the more data is freely and openly shared, the more researchers and data scientists are able to innovate. A normative perspective reflects on the opportunity to free governmental budgets and instead allocate the risks (and returns) to private entities. Moral considerations rule the sale of free and open data so that it is not subject to trading speculations, especially when serving the public good or acting during

<sup>1</sup> Mariel Borowitz, "International Cooperation on Climate Monitoring via Satellite: Incentives and Barriers to Data Sharing," (Washington, DC: Secure World Foundation, July 15, 2013).

<sup>2</sup> Image: La Palma as captured by Copernicus Sentinel-2. It contains modified Copernicus Sentinel data (2021), processed by ESA, CC BY-SA 3.0 IGO.

<sup>3</sup> Anja Sheppard, "Space Sustainability: We Need to Do More," published September 2022, Space Generation Advisory Council, <https://spacegeneration.org/us-task-force>.

<sup>4</sup> "NASA Earthdata," NASA, <https://www.earthdata.nasa.gov/learn/get-started>.



humanitarian or disaster recovery initiatives. Finally, the institutional perspective considers that no country can exploit the full potential of satellite data alone.

### Referring to Policy Principles

Harmonization and coordination of domestic policies with international frameworks should be maintained as policies evolve to incorporate new security measures in data sharing. A possible reference to consult is the UN Remote Sensing Principles,<sup>5</sup> a set of guidelines developed by the United Nations in 1987 to promote the responsible use of remote sensing technology. Here, we highlight the 4<sup>th</sup> principle: data sharing must be intended “for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development” and “on the basis of respect for the principle of full and permanent sovereignty of all States and peoples over their own wealth and natural resources.”<sup>6</sup> Another document to consider in the effort to overcome the challenges of unethical exploitation of data is the International Charter "Space and Major Disasters,"<sup>7</sup> cooperatively started in 2000 by multiple space agencies to reinforce operations during emergencies in areas afflicted by war and catastrophes. The Charter allows authorized organizations and agencies to request satellite images and data from its member agencies, which are then provided free of charge to support emergency response and recovery efforts. Leveraging this authorization, member agencies can act as data exchange intermediaries during political conflicts, fears of conflict escalations, or ongoing geopolitical tensions to exchange data safely, rapidly, and responsibly for humanitarian purposes.



**Author Bio:** Tatiana Quercia is a space engineer with a Master in Satellite Systems and Services (2021, Sapienza University of Rome). She worked in Project Management for customers like the European Space Agency and Airbus.

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<sup>5</sup> "Remote Sensing Principles," published 1987, United Nations Office for Outer Space Affairs, <https://www.unoosa.org/oosa/en/ourwork/spacelaw/principles/remote-sensing-principles.html>.

<sup>6</sup> Ibid.

<sup>7</sup> "Satellite Data to Support Disaster Response Worldwide," The International Charter Space and Major Disasters, <https://disasterscharter.org/>.