

Monitoring environmental treaties using earth observation data

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Earth observation has become a common good since 1972, when the first Landsat satellite was launched. In the 1970s only a handful of satellites were in orbit. Today, more than 60 are continuously monitoring the state of the earth, including the atmosphere and land and ocean surfaces. Over the next 15 years, approximately 1150 earth observation satellites with over 300 different instruments will be in orbit. While the first decades of remote sensing were characterized by scientific exploitation, the past decade has shown increased use of space-derived information for global environmental monitoring. Rapid advances in satellite technology, on increase in the number of available sensors taking more frequent measurements and an increased awareness of the need for global environmental observation have progressively introduced space technology to the environment community. This is not without reason. Information derived from space has a number of distinct advantages over conventional, ground-based measurements:

- Satellite-derived information is comparable. The same instrument takes measurements of the whole globe, allowing data to be compared between different geographic areas and times of acquisition.
- Satellite measurements are taken remotely. Satellite operators do not need the consent of a country or a party to a treaty to monitor a particular area.
- Satellite measurements are verifiable. Raw satellite data can be reprocessed by independent parties from commonly accessible data archives.
- Satellite measurements are continuous. Their global nature and long-term operation help close measurement gaps in space and time, providing a more integrated picture of the state of the earth's environment.