This document presents a short summary of and key lessons from the European Space Agency’s Earth Observation for Sustainable Development (EO4SD) Climate Resilience Cluster’s recent webinar “The how, when, and why of using EO data in climate resilience decision-making - Showcase 2: Urban resilience and Environmental and Natural Resources”. The webinar, the third in a series of seven held by the EO4SD Climate Resilience Cluster in June and July 2020, provided an introduction to identifying when to use Earth Observations (EO) for climate resilience at different stages throughout a project, and outlined the different types of data available for decision-making.

Anestis presented the different services that are applicable for decision-making for urban resilience and resource management. Thematic Exploitation Platforms (TEPs) were conceived with the purpose of allowing data, infrastructure, tool, algorithm, and knowledge owners to share their assets. These platforms allow users to easily access satellite data and extract information without the need to download a dataset. A multi-purpose component of the Land Service is the Copernicus Global Land Service, which provides a series of bio-geophysical products on the status and evolution of land surface at a global scale.

Lydia then outlined how climate-related data can be used in decision making. To do this successfully, we need to identify data, leverage it for specific decisions, ensure we have the skills to take advantage of it, and provide feedback to inform those that produce the data about how they improve it. Satellite data is unrivalled in generating consistent and comparable climate data. Each vary in the type of observations they make, and have a range of spatial resolutions, coverage, and revisit times. Lydia outlined how the cluster had identified specific points in projects where EO data could add the most value in enhancing decision-making. For example, the World Bank is working with the Lake Victoria Basin Commission (LVBC) to strengthen trans-boundary natural resource management by improving regional information services on water quality and ecosystem health, encouraging sustainable land and water resource management and building climate resilience in select hotspots in the Basin. In developing a Climate Risk Summary, the Cluster identified the climate related risks the project is exposed to which then shaped the EO-based products and services offered. The Cluster piloted two products that measure the evolution of water hyacinth (an invasive species associated with major negative economic and ecological impacts), and changes in shoreline due to river sedimentation, droughts, and eutrophication. Planned development of the prototypes will extend analysis to other hot spots as part of a regular monitoring service.
Another ongoing World Bank project in Monrovia aims to identify adaptation policies that can help them to be better prepared to absorb urban growth in a context of extreme poverty, fragility and increasing risks from climate change. The Cluster contributed data about coastal erosion rates and analysis of the coastal climate change risk due to sea-level rise and urban land subsidence. This helps decision makers to understand and mitigate against the risks of sea-level rise and identify suitable adaptation options. Swati Sachdeva, and Soraya Goga, Lead Urban Specialist, both from the World Bank, gave further detail about the project and how the World Bank uses EO data. As Liberia is a very fragile, conflict-affected country lacking comprehensive datasets, EO data is able to help fill the gaps. It also helped disseminate findings to communities, not just local stakeholders. They have found that it is also important to understand which way the city growth is moving, as this, coupled with the EO data, help to identify where to start investing in infrastructure in particular parts of the city, and then how to shift growth in that direction.

Key Takeaways

- Satellites are unrivalled in their ability to generate consistent and comparable data at scales from micro to macro.
- Effectively managing resources, particularly across borders, needs transparent and reliable data in order for agreements to be reached - EO data can provide this.
- Combining EO data maps with maps of assets can help monitor and categorise the resilience of an area, charting how this is changing and is likely to change over time, and signaling the need to either defend, adapt, or move assets.

"These multi-sectoral spatial analytics can really help in prioritisation of any sort of investments, policy decisions, spatial planning, or day to day management of the city".

- Swati Sachdeva, World Bank

For more information about the EO4SD Climate Resilience Cluster, visit the website here: http://eo4sd-climate.