



ADAPTATION FUND
Readiness Programme
for Climate Finance

Webinar: Harnessing Earth Observation Technology for Climate Adaptation

9 December 2024

Summary Report



Introduction

The Adaptation Fund (the Fund or alternatively, the AF) hosted a webinar in collaboration with the European Space Agency on Harnessing Earth Observation Technology for Climate Adaptation, on 9 December 2024. The event brought together a diverse audience of accredited Implementing Entities (IEs) of the AF from around the globe, offering an interactive platform to learn, exchange ideas, and identify practical solutions for enhancing climate adaptation projects worldwide with space-born EO technology.

All presentations made by the speakers are available on the AF website: <https://www.adaptation-fund.org/readiness/news-seminars/>

Welcome Remarks and key updates

The session began with welcome remarks from Mr. Mikko Ollikainen, Manager at the secretariat, who highlighted the importance of this webinar due to the recent board decisions and the implications it will have on all implementing entities. He highlighted the value of integrating EO solutions into climate adaptation initiatives, emphasizing the transformative potential of these technologies in strengthening project outcomes. Mikko focused on the importance of the partnership and collaboration between the Fund and ESA and underlined that collecting rich data on the world's problems is the first step toward fixing them.

Key highlights from the webinar include:

- Total technically reviewed projects amount to US\$ 372.36 M.
- ESA partners with many actors to develop Earth-observing satellites and ensure the delivery of actionable information from the data.
- World Cover is a freely accessible global land cover map at 10m resolution for year 2020, based on Sentinel-1 and Sentinel-2 data.
- ESA developed a Desert Locust monitoring service in collaboration with the World Bank and the East African Intergovernmental Authority for Development (IGAD) to support early warning actions, by tracking egg breeding as well as impact assessment of damaged crop areas.
- ESA works together with the Asian Development Bank (ADB) to assess the impacts of air-pollution forecasts on people's movement patterns and exposure to non-communicable disease risk factors of greater Hanoi.
- ESA works together with the World Bank and their teams on the Nature-Based Solutions (NBS) Opportunity Scan to assess most impactful NBS integration.
- ESA can provide support to implementing entities on the use and integration of Earth Observation technologies to inform processes related to accessing Adaptation Fund financing as well as ensure the efficient and impactful use of the funding. This entails the mobilization of potential ESA support to:
 - o Inform the elaboration of National Adaptation Plans
 - o Support implementing entities throughout the Adaptation Fund project cycle
 - o Strengthen the capacity of implementing entities to better receive and manage climate financing

- ESA provides independent information to identify and quantify the current state and trends in climate risks to different systems or sectors.
- ESA can provide a scientific justification for proposed climate action investments, plans and policies, including climate scenarios and prioritization of adaptation measures.
- ESA can potentially inform implementation of investments and measures with timely information for more proactive policies and programs that are more effective in terms of cost and human impact.
- ESA can provide support in generating long term capabilities in the country on the use of EO technologies to increase capacity for receiving and managing climate investment financing.
- The ESA GDA Knowledge Hub is an online environment that will provide an extensive and interactive repository of Earth Observation (EO) service capabilities.
- The ESA GDA Analytics Processing platform is a non-expert user-friendly analytical environment that will allow users to execute EO-based analytics on the fly anywhere on earth.

The Q&A session from the webinar is highlighted below:

| Questions | Answers |
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| What are spatial and temporal resolutions and does it cover global south as well? | You would be able to get something that is weekly and there are different ways to downscale the resolution. Upon doing this, it allows you to get more granular picture on urban islands |
| Is it possible to share this dataset on urban heat? | Urban heat needs to be computed from imagery so not available yet. Some of our collaborators are working on producing a free imagery for urban space so ESA can work with them and make it available. |
| Great presentation. The examples provided were insightful. However, I'm curious about the extent of Earth Observation coverage in SIDS. Could you elaborate on this? | Satellites have global coverage, and very good coverage on Caribbean and Indian ocean. Coverage increasing over Pacific Ocean but lacks some satellite data as it is very isolated. |
| If an Entity would like to work with you (ESA) on a project, how to take it forward? | Reach out to ESA and with every idea or project requiring solution, reach out to ESA |
| Do you have a detailed roadmap publicly available covering future plans / milestones? | There is a program being launched in January that aims at supporting IEs of the AF, so the roadmap will have a 2 year period to support entities. |
| How about the urban flooding dataset development in the global south? Are there similar plans or partnership from ESA? | There are different options, some datasets are already available by John research center of the EU. There are also other options that are commercial that provide |

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| | options for flood risks. When it comes to partnerships, it is more of an exposure with more tailored case specific approach. We did a tailored and customized view in South Sudan, which is more granular. |
| How can geospatial data and satellite imagery be integrated into financial decision-making for adaptation projects? Are there examples of using these tools to design or monitor climate finance initiatives, particularly for SMEs or microfinance institutions? | Thank you very much for the question. Yes, satellite data can strongly support climate finance by providing cost-effective and transparent ways to track the impact of financed projects, assessing risks for SMEs investing in NBS for example or renewables, also it provides transparent tracking for your funded projects. |
| In your experience, what are the more common limitations when using satellite image analysis for monitoring floodings? What criteria are taken into consideration when advising to use these technology? | the main limitation is the revisit time of the satellites. It is very complicated to get the max of a flooding using satellites, and it is not possible to get a reliable estimate of the depth. Understanding the characteristics of the region and the satellite availability it is possible though to produce added value products |
| Is there a way we can access the case study for Sudan | The GDA ESA website has some articles on this case study. Final tools are being developed by the world Bank as this is still piloted so they have not been made public yet. Here is the article to the case study on South Sudan: https://gda.esa.int/story/climate-resilient-flood-management-in-south-sudan-through-earth-observation-insights/ |
| It may happen that satellite data takes into account neighboring areas. In this case, can you combine with the data produced by the country to help the Entity produce precise analysis and mapping? | yes absolutely. In general, it is precisely by combining satellite data with field data that we can make the most of these technologies and consequently produce precise and reliable maps. |

Closing Remarks

The webinar closed with concluding remarks from Farayi Madziwa, who thanked everyone for their participation and their engagement in the webinar.