GMES AND AFRICA

African Union

GDZHIAO

Supporting Local Municipalities of Bobo-Dioulasso and Ouagadougou to Deal With Vulnerability to Flooding

BACKGROUND:

This use case details the consortium's engagement with end-users in Burkina Faso to support them in analyzing climate change mitigation, adaptation, and managing flood risks. Two municipalities, Bobo-Dioulasso and Ouagadougou, were identified to implement the work.

CSE
Centre de Suivi Ecologique

END-USER'S PROFILE (BENEFICIARY ORGANIZATION):

The key end-users are the Department of Environment and Sanitation of the commune of Ouagadougou, and the SEACAP (Sustainable Energy Access and Climate Action Plan) for the commune of Bobo-Dioulasso.

USER'S NEEDS:

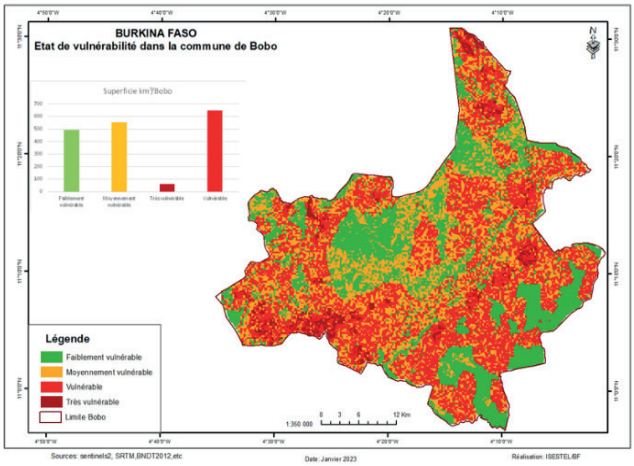
The cities of Ouagadougou and Bobo-Dioulasso are facing regularly flooding during the rainy season. In 2009, the country received approximatively 300 mm of rain in a single day, leading to extensive damages to buildings, roads, socioeconomic infrastructures in both cities.

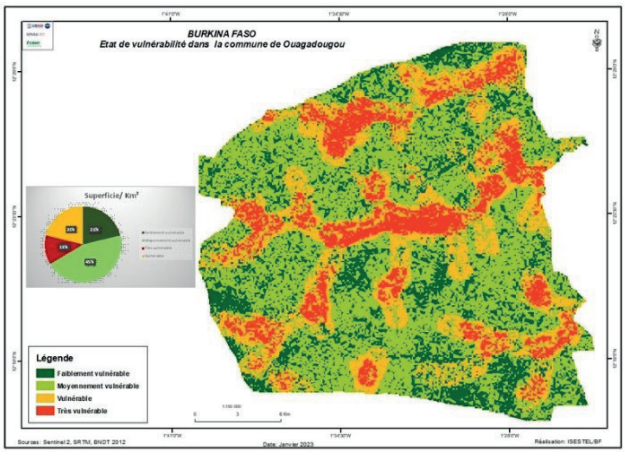
Since then, a program of preparedness program was set to avoid similar disasters. However, the end-users required technical assistance in setting up a permanent flood risk evaluation mechanism that can provide local municipal authorities with information and strategies for flood preparedness and emergency response.

SERVICE INFORMATION PROVIDED:

To address the end-user's needs, the consortium developed a comprehensive service using Sentinel-2 and Landsat images to develop a toolkit of indicators on land vulnerability to floods. This toolkit considers factors such soil, geomorphology, slope, land use/land cover and proximity to water bodies. These tools and data enabled the generation of annual analytical maps highlighting areas vulnerable to floods but also maps depicting the socio-economic impacts of flood vulnerability in both raster and vector formats.

The dissemination of all theses information's and products is facilitated through GDZHIAO platform (gdzhiao.gmes.cse.sn), ISSELTEL and concerned communes.





SERVICE USAGE:

End-users can access and utilize the service/products through the GDZHIAO platforms and ISSELTEL. The service provides information on: i) How floods impact the communes; ii) Physical criteria to analyze flood vulnerability; iii) Current state of vulnerability to floods; iv) Projected socio-economic impacts based on vulnerability mapping.

For instance, the analysis for Bobo-Dioulasso identifies areas with limited, medium, high and very high vulnerability levels to floods. It also maps the vulnerability of education facilities and buildings. Similar analysis is available for Ouagadougou.

To ensure effective utilization of the flood vulnerability mapping service, endusers were trained through various means, including: National workshop in January 2023 to validate implementation plan; GMES national & regional workshops; Community of practice meetings; Summer schools; Online training workshops; On-demand technical support; Dedicated communal workshop on mobile data collection in Bobo-Dioulasso, etc..

IMPACT:

This service plays a vital role in saving lives by identifying all buildings that are at risk of flooding based on their vulnerability. With this information, existing infrastructures can be more protected before flooding occurs, and new infrastructures can be built with consideration vulnerability in mind. Prior to the GMES and Africa program, this crucial information was not available.

A key impact of this service is its support for the development of the Sustainable Energy Access and Climate Action Plan (SEACAP) for the commune of Bobo- Dioulasso. With financial support from GIZ/EU, the service has contributed to:

- Protecting households and vulnerable groups from floods
- Safeguarding socio-economic infrastructure
- Enhancing disaster preparedness for floods and climate changes
- Supporting sanitation programs
- Developing early warning systems
- Creating action plans for disaster risk reduction.

SERVICE OUTREACH:

To raise awareness about the service, the consortium conducted national workshops, published materials on social media, and provided a dedicated use case section on dissemination platforms.

In conclusion, this comprehensive use case demonstrates how the consortium codesigned a satellite data-driven flood vulnerability assessment service to build local capabilities in climate adaptation, disaster preparedness and sustainable development planning across communes in Burkina Faso.