Global Gateway

# PanAfGeo+

## The Pan-African Support to Geological Sciences and Technology

# Call for Applications for PanAfGeo+ WP6 Training Session

**WP6 – Geoscientific Information Management (WP6-2-EN)**

- October 12-23, 2026
- Lobatse, Botswana
- In English

## MAIN CONTEXT OF PANAFGEO+

"PanAfGeo+" for "Pan-African Support to Geological Sciences and Technology, Africa-EU Partnership" is a project which supports the training of geoscientific staff from African geological surveys through the development of an innovative training programme. This programme includes the acquisition and development of important professional skills that complement existing qualifications and technical skills. The training programme is carried out by world-class geoscientific experts coming from African and European geological surveys. PanAfGeo+ is a continuation of the well-established PanAfGeo-2 Project.

PanAfGeo+ is funded by the European Commission (DG INTPA). The PanAfGeo+ Consortium is composed of the European Geological Survey (EuroGeoSurveys – EGS) and the Organisation of African Geological Surveys (OAGS), and is coordinated by the French Geological Survey (BRGM).

This program enables trainees to acquire a state-of-the-art toolkit containing methodologies and/or fieldwork techniques from eight geoscientific domains.

The "PanAfGeo Charter for Trainees" provides the general quality framework for selection of trainees who will attend the training sessions carried out in the frame of the PanAfGeo+ Project. This charter is awarded for the full duration of the PanAfGeo+ Project. Implementation of the Charter will be monitored and violation of any of its principles and commitments may lead to its withdrawal by the PanAfGeo+ project coordination.

The overall objective and impact of the PanAfGeo+ Project is to improve governance, sustainable use of African mineral resources and related infrastructure.

## CONTENTS & METHODOLOGIES OF THE TRAINING COURSE "WP6 – GEOSCIENTIFIC INFORMATION MANAGEMENT":

Geological data, including maps and inventories of mineral resources, are the essential basis for assessing the potential of mining projects and granting exploration and mining licenses. In this way, comprehensive geological and mineral resource databases provide governments with options for more informed decision-making and the capacity to negotiate sustainable mineral prospecting and exploration contracts with local and foreign investors. Information technologies (IT), namely equipment and professionals, make a valuable contribution to the design and development of spatial data infrastructure, enabling each of the Geological Survey Organisations to fulfil its mission regarding the management of geoscientific information. This mission includes (i) collecting, (ii) storing and managing, (iii) valorising, and (iv) ensuring the availability of reliable georeferenced data to various target groups, including other governmental organisations, regional and national communities, the private sector, the education system, and citizens.

As part of the PanAfGeo Project, "WP6 – Geoscientific Information Management" aims to improve and/or strengthen the capabilities of professionals (existing and newly recruited) working for the African Geological Survey Organisations and involved in the geoscientific information management and related information technologies at the operational level, with adaptation to the local context and the sustainability potential.

"WP6 – Geoscientific Information Management" is coordinated by the Geological Survey of France (BRGM) in collaboration with the Geological Survey of Burkina (BUMIGEB) as co-Leader. Along with a close technical and scientific assistance, the training support is provided by BRGM, the Geological Survey of Denmark and Greenland (GEUS), the Geological Survey of Slovenia (GeoZS) and the National Laboratory of Energy and Geology (LNEG) in Portugal.

### a) Training approach and methodology:

This basic course comprises three main components: the first provides introduction to GIS basics, the second is on spatial database management systems (SDDBMS) and the third on remote sensing (RS) techniques.

In GIS basics component, participants will learn to work with different spatial data, explore approaches to spatial management, and conduct spatial analysis. Participants will be introduced to all aspects of spatial data infrastructure (SDI), from data preparation and acquisition to publishing, including standardisation, harmonisation, interoperability, and legal aspects.

The SDDBMS component presents and describes how to create and manage a relational spatial database and how to efficiently store spatial data in a PostgreSQL/PostGIS database. Participants will learn how to connect a database to QGIS and how to make the data available on web maps through standard services. Real data will be used to develop an SDDBMS from scratch.

Regarding remote sensing (RS), the course will cover data acquisition and processing using optical sensors (Sentinel 2 and Landsat 8/9) and SAR (Sentinel 1), to generate products supporting geological mapping and mineral identification. The processing of optical data using UAVs (Unmanned Aerial Vehicles) will also be addressed, focusing on the data processing component, specifically the generation of orthophoto maps and digital surface and terrain models (DTMs/DSMs). Methods for acquiring field data using open-source tools will also be discussed, as a way to verify the acquired data in the field.

This training course will utilise an interactive learning method through lessons and practical exercises using QGIS, QField, PostgreSQL + PostGIS and pgAdmin, GeoServer, DBeaver, SNAP, WebODM, etc.

## b) Course Content

- GIS basics
    a. Introduction to GIS and SDI
    b. Creation, modification and management of different types of spatial data
    c. Conducting basic spatial analysis
    d. Creation, modification, and administration of relational and spatial databases
    e. Loading and updating spatial data in a GIS environment
    f. Automation of spatial analysis processes using the Model Designer module

- Spatial database management
    a. Creating data models
    b. Creating queries and optimising them with data indexing
    c. User management and privileges over database objects
    d. Import and export data

- Remote sensing
    a. Acquisition and processing of multispectral images from remote sensing – Sentinel/Landsat/Aster mission
    b. Acquisition and processing of SAR (Synthetic Aperture Radar) images
    c. Processing of data collected with UAVs and generation of orthophoto maps, digital terrain models and digital surface models and subsequent data processing

- Making spatial data available on web maps using Web Map Services and Web Feature Services

- Creation and configuration of smart forms for collecting field data

## c) Exercises:

The training will have a strong practical component, and each topic will be followed by exercises. Trainers will explore prepared datasets to illustrate the concepts of spatial analysis, data management, database construction and remote sensing data processing, using real data and applying them to specific problems. Where possible, various content areas can also be prepared in collaboration with co-trainers.

## d) IT Equipment/software:

The training room will be equipped with computers adapted for training at the operating system level (Windows 11) and selected software. Only open-source software will be offered to implement the WP6 training sessions.

- LibreOffice
- PostgreSQL
- PostGIS
- pgAdmin
- WebODM
- Notepad ++
- CloudCompare
- QGIS
- GeoServer
- SNAP
- GDAL
- DBeaver
- QField

This session is hosted by the Botswana Geoscience Institute (BGI) and jointly organised by GEUS, GeoZS and BGI.

- Duration: 10 days (October 12-23, 2026)
- Location: Lobatse (Botswana)
- Number of Participants: max. 19
- Trainers: 4 European trainers + 2 African co-trainers
- Language: English
- **Application deadline: July 17, 2026**

## RETURN-TO-WORK PLAN:

During the training session, each trainee will have to prepare and present a **Return-to-Work Plan**. This consists of applying the knowledge gained during the training to the development of a project of interest to the Geological Survey of origin, potentially to be implemented within 6 months to 1 year after the end of the course (e.g., reorganising datasets into new databases and SDIs, multi-criteria data processing applied to a geoscientific research project, training and raising the awareness internally and in connection with the Earth Sciences department at university, etc.).

## MAIN EXPECTED LEARNING OUTCOMES OF THE TRAINING COURSE:

The **overall goal** is to train participants with theoretical/practical sessions on georeferenced geology-related data.

By the end of the course, the participants will be more effective in geoscientific information management and will understand how to apply them, including:

- Understanding of GIS and SDI processes,
- Spatial data sources, organisation of geographic information, and FAIR principles,
- Spatial database management system,
- Acquisition and processing of RS data,
- Automatization of spatial analysis processes,
- Acquisition of field data,
- UAV data processing.

## WHO CAN APPLY?

The training session is open to **all individuals eligible under the "PanAfGeo Trainee Charter".**

Additionally, to be able to follow each of the topics proposed in WP6-2-EN "Acquisition, Processing and Management of Spatial Data with Geographic Information Systems and Spatial Databases (Basic Level), and fully benefit from the training, the candidates **must justify of the required education and experience level** as follows:

- Training in the field of geosciences,
- Effective knowledge and work developed in geoinformation (GIS, spatial databases, remote sensing),
- Proficiency and management of computers and software in a Windows environment.

## PLEASE NOTE:

The **Letter of Commitment** should be officially **approved by the directorate** of your institution. The **maximum of 2 applications** from any Geological Survey or adequate state Geological Institution will be accepted to the WP6 selection process for the training.

All incomplete applications with missing **passport** number and data confirming its validity for **at least 6 months after the end of the training** will be automatically excluded; please check your passport validity expiration date.

## FINANCING THE TRAINING:

The PanAfGeo+ "WP6 – Geoscientific Information Management" training session is fully supported through funds of the European Commission.

The following expenses will be covered:

- International travel costs: flight to and from African country from the international airport,
- Entrance visa fee against a receipt (please request a clear copy bearing your name),
- Accommodation, breakfast, catering and joint meals during the training session.

***PLEASE NOTE THAT NO ALLOWANCES AND NO HEALTH INSURANCE REIMBURSEMENTS ARE PROVIDED IN THIS PHASE OF THE PANAFGEO PROJECT.***

Possible arrangements of your travel to the international airport, and coverage of the international health insurance (in case of need): to be sorted out with your employer who confirms your Letter of Commitment.

## APPLICATION AND SELECTION PROCESS:

In order to be considered, applicants must complete and submit the following documents:

- 1) Application Form for this training;
- 2) Letter of Commitment signed by your employer;
- 3) Letter of Motivation;
- 4) A copy of your passport (valid for at least 6 months after the end of the training).

**Make sure you rename of all the application parts in attachments with your family name and a number, using Latin letters.**

After preparing these documents, please register here: https://panafgeo-courses.eurogeosurveys.org/ and **upload the documents as four separate PDF files** (all file names must include the candidate's first name in Latin letters) **before the submission deadline: July 17, 2026**.

The selection process will consider regional and national representation and a gender balance following the aim of strengthening skills of African Geological Survey Organisations geoscientific staff.

Acceptance letters will be sent approximately on August 5, 2026 to facilitate visa processing and delivery.

Questions regarding practical matters related to the training should be sent to the training coordinators via the following emails:

- Frands SCHJØTH: fsc@geus.dk
- Domen TURK: domen.turk@geo-zs.si

Information about PanAfGeo+ can be found on the programme website:
http://panafgeo.eurogeosurveys.org

Questions about PanAfGeo+ should be directed to:

- EuroGeoSurveys: panafgeo@eurogeosurveys.org
- Organisation of African Geological Surveys (OAGS): info-oags@oagsafrica.org

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**WE ARE AWAITING YOUR APPLICATIONS !**