CZECH AID

CZECH GEOLOGICAL SURVEY

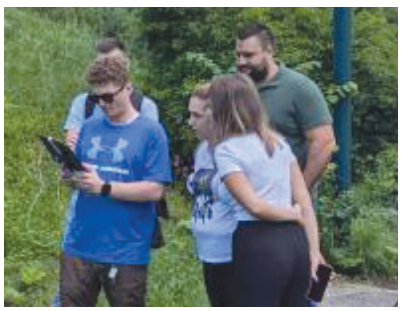
No. 3
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Newsletter

of the project Innovation of Geological Information Systems in Bosnia and Herzegovina



Project duration:	01/2023–12/2027
Project implementer:	Czech Geological Survey (CGS)
Project partners:	Geological Survey of the Federation of Bosnia and Herzegovina (FZZG); Geological Survey of the Republic of Srpska (RZZGI)
Source of funding:	Czech Development Agency (CDA)







https://cgs.gov.cz/en/projects/682800-gis-bih

FOREWORD

Dear readers,

It is my great pleasure to introduce the third issue of the newsletter of the project **Innovation of Geological Information Systems in Bosnia and Herzegovina**. In recent months, the project has entered an important new stage. The technical infrastructure and professional capacities developed in previous periods are now being transformed into practical tools and working procedures that will support the long-term management and sharing of geological data.



At the end of January 2026, the **Czech Geological Survey** hosted a coordination meeting in Prague. Together with our partners, we evaluated the results achieved to date and discussed ensuring the **long-term sustainability and utility** of the project outputs. The meeting also opened a broader discussion on future cooperation in mineral resources, the monitoring of mining environments, geohazards, hydrogeology, and geothermal energy – paving the way for a new memorandum of understanding between the participating institutions.



In early February, we reached another major milestone with the official handover of **new metadata catalogues** to both partner geological surveys. The catalogues are based on the **MIcKA system** and have been adapted to the operational needs of the Geological Survey of the Federation of Bosnia and Herzegovina and the Geological Survey of the Republic of Srpska. They provide a modern foundation for systematic data discovery, sharing, and connection to the European Geological Data Infrastructure.







Professional training continued in Sarajevo during March and April. A course dedicated to **ArcGIS Enterprise** strengthened the partners' knowledge of system architecture, portal administration, web services, security, and maintenance. It was followed by a practical **ArcGIS Pro workshop** covering the complete workflow from field data collection and database management to cartographic processing and the publication of map outputs. Our capacity-building efforts extended into the summer months, featuring advanced QGIS and UAV mapping workshops in June, and concluding with an intensive laboratory and geochemistry internship at the CGS headquarters in Prague in July.

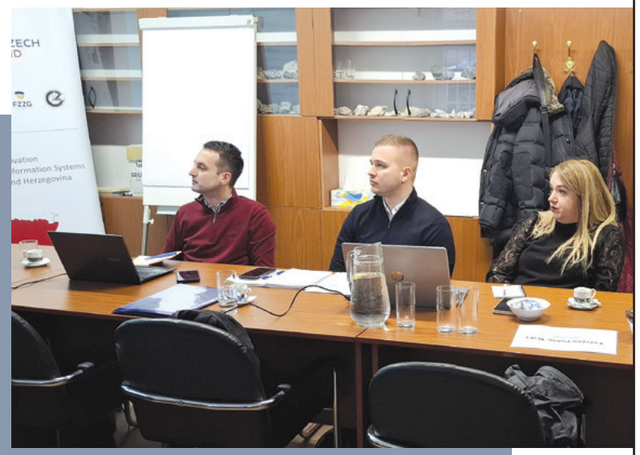
I am also pleased that the project became the main theme of the first 2026 issue of the CGS magazine ***Svět geologie***. The feature highlights that beyond technologies and databases, our project is fundamentally about sharing expertise, strengthening professional capacities, and making geological information accessible to specialists, public authorities, and the wider public.

The progress presented in this newsletter confirms the value of close cooperation between our institutions. I would like to thank all partners and colleagues for their expertise, commitment, and enthusiasm. I look forward to the next stage of our joint work and to the further development of modern geological information systems in Bosnia and Herzegovina.

Dana Čápová
Project Manager

CGS hosted a coordination meeting in Prague





The Czech Geological Survey organized a project coordination meeting in Prague on January 27–28, 2026. The agenda focused on evaluating the results achieved to date, ensuring the sustainability of project outputs, and defining the future direction of cooperation between the participating institutions.

A key priority was the continued use and development of the tools created during the project. Participants discussed how the new **systems, data models, metadata catalogues**, and the **digital archive** can be seamlessly integrated into the daily operations of the partner geological surveys.

The programme also featured a professional workshop focused on practical deliverables. Dedicated sessions covered data models and cartography, the metadata catalogue, the digital archive, **QGIS training**, and web content management. By bringing together technical specialists and project representatives, the workshop successfully bridged the gap between strategic planning and practical implementation.

Looking ahead, participants explored themes for future professional collaboration. These included mineral resources, the monitoring of mining environments, technology-driven **geohazard assessments**, and hydrogeology (including geothermal energy). These areas are expected to form the foundation of a **new memorandum of understanding** between the CGS and its partner institutions in Bosnia and Herzegovina, confirming a strong mutual interest in long-term cooperation beyond the current project lifespan. «



Key message: The meeting successfully connected past achievements with a shared vision for the sustainable use of project outputs and future professional collaboration.

New geological data catalogues for Bosnia and Herzegovina

New metadata catalogues have been successfully created for the Geological Survey of the Federation of Bosnia and Herzegovina and the Geological Survey of the Republic of Srpska.

Officially handed over in early February 2026, these catalogues mark a significant step toward the more effective management, sharing, and international interoperability of geological data.

Developed in close cooperation with our Bosnian partners, the catalogues are specifically tailored to the operational needs of both institutions. Their technological core is the **MIcKA system**, which supports spatial data management in full compliance with international standards. The solution was also configured for a multilingual environment and seamlessly integrated into the new IT infrastructure established through the project.

The groundwork for this milestone began in 2023, encompassing the inventory of data sources, the development of metadata methodologies, specific capacity building, and professional training. These new tools now empower users to systematically search for available datasets, providing clear insights into their content, origin, quality, accessibility and conditions of use.



Metadata catalogue https://app.geozavodrs.com/metapodaci/en/

Metadata catalogue https://app.fzzg.gov.ba/metapodaci/en/

The required metadata from both Bosnian organisations is regularly harvested into the EGDI.

In the next phase, CGS will continue to provide expert support to ensure that metadata can be shared with other metadata systems, particularly those in Bosnia. «

Key message: Reliable metadata make geological data easier to discover, understand, share, and reuse at both national and European levels.



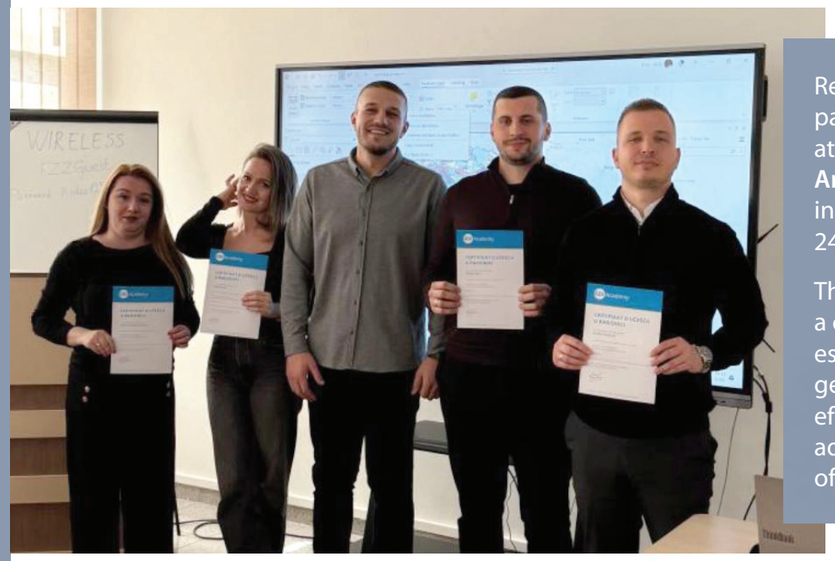
Check out the first issue of our project newsletter!

In the first edition, you will find:

- An overview of the main objectives and expected results
- A summary of key achievements and milestones
- The most interesting highlights from recent meetings, missions, and events

Scan the QR code to read the full issue.

ArcGIS Enterprise course: building the foundations of a modern geoportal



Representatives from both partner geological surveys attended a specialized **ArcGIS Enterprise course** in Sarajevo on March 24–25, 2026.

The training marked a crucial step toward establishing a modern geoportal for the efficient visualization, administration, and sharing of geological data.

The programme introduced the architecture of the **ArcGIS Enterprise** platform and the core principles of administering its individual components. Participants learned how to manage web services and portal content, define user roles, protect data, and configure the system for institutional use.

Practical exercises provided participants with **hands-on experience** in system configuration and publishing web services. The course also covered essential maintenance procedures, including data backup and recovery, which are vital for the secure and sustainable operation of the new platform.



Organized by the **Czech Geological Survey** with the support of the Czech Development Agency, training was provided by **GDi Sarajevo**. By developing the technical skills of local specialists, the training ensures the long-term independence of the partner organizations and their ability to operate the new geological information systems effectively. «

Key message: Modern technology can only deliver lasting benefits when partner institutions have the knowledge and confidence to administer it independently.

From field data to map outputs: practical training in ArcGIS Pro







On April 22–23, 2026, Sarajevo hosted a practical workshop focused on the advanced processing and publication of geological mapping data in **ArcGIS Pro**.

The event brought together specialists from the **FZZG** and the **RZZGI**, building directly on the project's previous technical activities.

Led by CGS instructors Martina Fifernová and Barbora Paulusová, the programme covered the complete geodata processing workflow. Participants engaged in **field data collection, database management, cartographic symbolization, digital terrain model analysis, and spatial interpolation**. They also practised preparing and sharing final map outputs.

This hands-on approach enabled participants to directly apply these methods and discuss solutions to real-world challenges encountered in geological mapping. Consequently, the workshop contributed not only to individual professional development but also to the **harmonization and increased efficiency** of working procedures across both partner institutions.

Representatives from the **Embassy of the Czech Republic** in Bosnia and Herzegovina, Esma Smajkan and Adam Lorenz, also attended the event. Their presence underscored the continuing support of Czech diplomacy for strengthening the professional capacities of local institutions and fostering long-term Czech–Bosnian cooperation. «

Key message: Connecting fieldwork, databases, spatial analysis, and cartography within a single workflow significantly improves both the efficiency and quality of geological map production.

QGIS AND UAV
GEOLOGICAL WORKSHOPS IN SARAJEVO

From June 22 to 26, 2026, Sarajevo hosted specialized practical training sessions focused on **open-source Geographic Information Systems (QGIS)** and the application of **Unmanned Aerial Vehicles (UAV)** in geological practice.

The workshops were organized as a key capacity-building component of the ongoing project, with continued funding from the Czech Development Agency (CzDA).

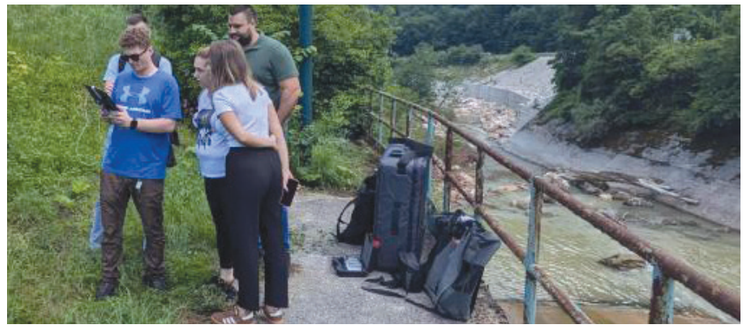


The first segment of the program was dedicated to intensive **QGIS training**. Under the guidance of experts from the Czech Geological Survey, fourteen regional professionals mastered essential techniques, including vector and raster analyses, digital elevation model (DEM) processing, georeferencing, and map layout creation. The diverse group of participants included representatives from the Geological Survey of the Federation of Bosnia and Herzegovina (FZZG), the Geological Survey of the Republic of Srpska (RZZGI), the University of Tuzla, and the University of Banja Luka, fostering a strong environment for cross-institutional knowledge exchange.

The software training was seamlessly complemented by an advanced, **hands-on UAV mapping workshop** for a selected group of specialists. Following theoretical







preparation and flight planning, participants conducted field photogrammetric data collection utilizing Ground Control Points (GCPs) at the Stočna Pijaca training site and the Bogatići dam landslide. The acquired field data were subsequently processed into **high-precision 3D models** and orthophotos using Agisoft Metashape and the open-source WebODM platform, directly bridging theoretical methodologies with practical field implementation.

The successful execution of these workshops underscored the excellent collaborative spirit among the participating organizations. Special thanks go to the Geological Survey of the Federation of Bosnia and Herzegovina (FZZG) for providing the training facilities, and particularly to Maida Zejnić and Medina Halilović Nezirević for their invaluable help with the local organization of the event. «

Key message: *Practical capacity building in QGIS and UAV technologies significantly enhances the technical expertise and operational readiness of Bosnian geological institutions for modern spatial data acquisition and analysis.*

The project featured in *Svět geologie*



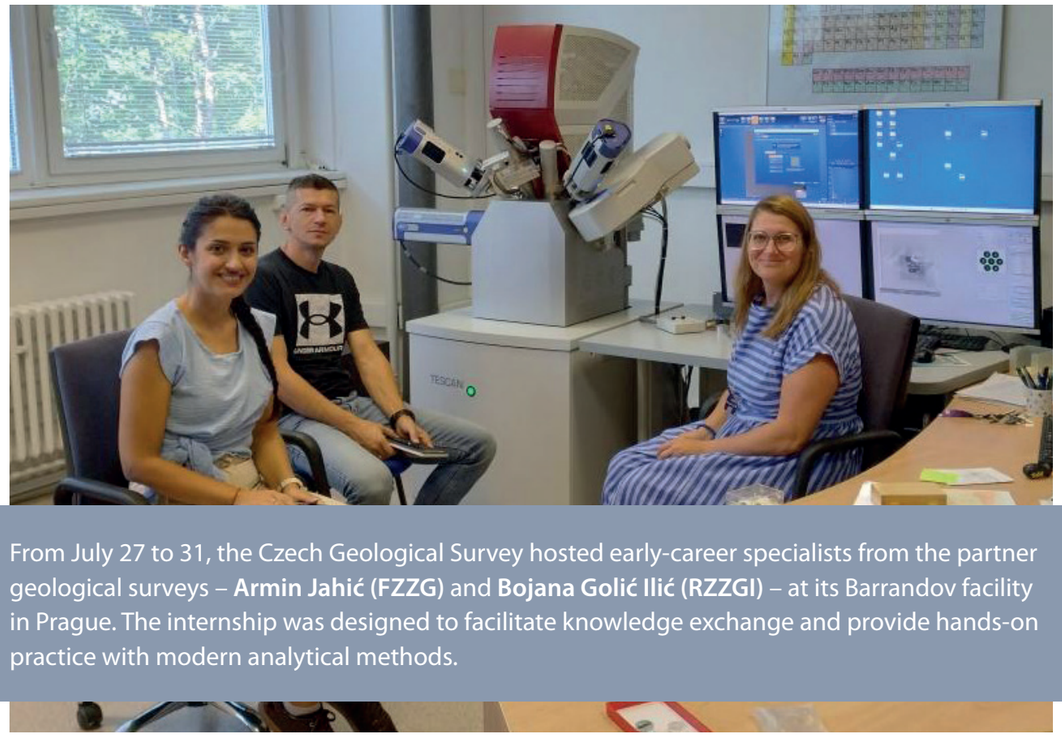
The modernization of geological information systems in Bosnia and Herzegovina became the main theme of the first 2026 issue of the Czech Geological Survey magazine, ***Svět geologie*** (World of Geology). The redesigned magazine aims to make geological topics accessible **not only to experts but also to a broader readership**.

The feature presents the project as more than just a technological upgrade. While new databases, catalogues, and information systems are crucial, their long-term value ultimately depends on the people who use and develop them. For this reason, the article places particular emphasis on **sharing expertise, supporting professional capacities**, and **strengthening cooperation** between the participating institutions.

The magazine also helps communicate why accessible geological information matters to society at large. Well-managed data support **scientific research, public administration, spatial planning, natural risk assessment**, the responsible use of mineral resources, and informed decision-making.

By presenting the project to a wider audience, Svět geologie complements the project's technical activities and demonstrates the broader significance of **Czech development cooperation** in Bosnia and Herzegovina. «

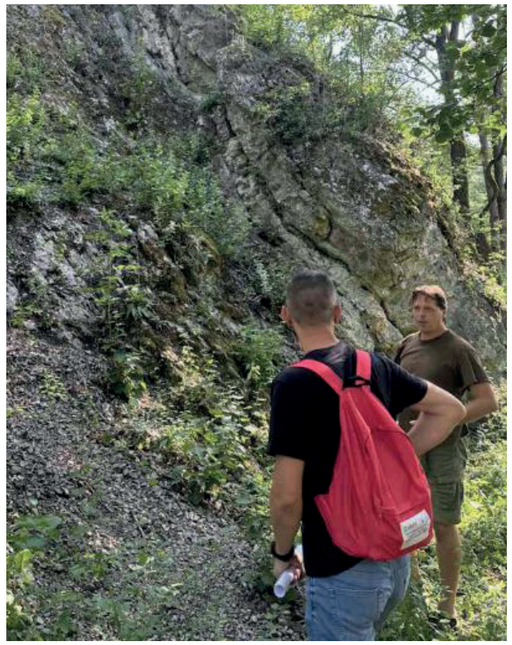
Key message: *Communication with the public is an important part of ensuring that modern geological information services deliver benefits beyond the specialist community.*



From July 27 to 31, the Czech Geological Survey hosted early-career specialists from the partner geological surveys – **Armin Jahić (FZZG)** and **Bojana Golić Ilić (RZZGI)** – at its Barrandov facility in Prague. The internship was designed to facilitate knowledge exchange and provide hands-on practice with modern analytical methods.

Bosnian geologists complete specialized internship at CGS





An intensive one-week program focused primarily on geochemistry and laboratory techniques. During their stay, our international colleagues gained practical experience with **X-ray diffraction (XRD), electron microscopy, and portable XRF spectrometry**. They were also introduced to the U–Pb dating of rock samples, and the entire program successfully concluded with a joint field excursion.

Our sincere gratitude goes to **František Laufek** and his team – Nikol Novotná, Ilja Knésl, Michal Poňavič, and other colleagues – for their time and excellent transfer of professional expertise. Special thanks also go to **Anna Vymazalová** for her initiative in arranging this internship. We believe the newly acquired knowledge will be highly beneficial for our Bosnian colleagues in their future work and will further strengthen our international cooperation. «





Key message: *Sharing specialized laboratory and geochemical expertise directly enhances professional capacities and deepens mutual institutional collaboration.*

Building the foundations: ArcGIS Pro Essential Workflows

Laying the groundwork for the advanced spatial analysis workshops held later in the project, an intensive "ArcGIS Pro: Essential Workflows" training took place in Sarajevo from November 18 to 21, 2025.

Ten specialists from the partner geological surveys were introduced to key platform functionalities, including spatial data management, visualization, and data preparation. Delivered in cooperation with GDI d.o.o. Sarajevo, this foundational course was highly rated by participants. It represented a crucial first step in strengthening the technical capacities of Bosnian geological institutions for the subsequent, more complex mapping tasks undertaken in 2026. «



Key message: *Comprehensive foundational training is essential for the effective adoption of modern spatial analysis tools in everyday geological practice.*



From September 15 to 17, 2026, the fourth joint meeting of the project team took place in Bihać, marking the project's entry into its penultimate year.

Partners present project results in Bihać

From September 15 to 17, 2026, the fourth joint meeting of the project team took place in Bihać, marking the project's entry into its penultimate year. Representatives from both partner geological surveys showcased practical demonstrations of newly developed solutions, including the Metadata Catalogue, Geoportal, Digital Archive, and new institutional websites. Thematic sessions and panel discussions highlighted the ongoing modernization of geological data management, as well as the significant benefits of the professional training and internships detailed throughout this newsletter. The program also featured an Advisory Board meeting focused on future cooperation, attended by officials from the Czech Development Agency, the Embassy of the Czech Republic, and local stakeholders. Special thanks go to FZZG for organizing the meeting and for their exceptional hospitality. «





Key message: *The joint meeting successfully showcased the practical implementation of new digital tools and reaffirmed strong international cooperation.*

Newsletter of the project Innovation of Geological Information Systems in Bosnia and Herzegovina 3/2026

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