



GeoConnect

Connecting Geospatial Expertise
for Responsible and Transparent
Governance

1.1.1 Train the Trainer Curriculum – Part 2

1. ENHANCED INSTITUTIONAL CAPACITY
1.1 STRENGTHENED
GEOSPATIAL DATA MANAGEMENT



ITC
UNIVERSITY
OF TWENTE.

kadaster



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FGU

Federalna uprava za geodetske i imovinsko-pravne poslove

Executive Summary

The GeoConnect Train-the-Trainer Program (Activity 1.1.1) supports the development of sustainable, locally led capacity for geospatial data management and National Spatial Data Infrastructure (NSDI) implementation in Bosnia and Herzegovina.

The Train-the-Trainer workshops delivered in March 2026 at the University of Sarajevo (10 March) and the University of Mostar (12 March) represent the first iteration of a structured process to build training capacity and initiate the design of an NSDI curriculum for Bosnia and Herzegovina. These workshops are not intended to validate a completed curriculum or training programme.

Instead, the focus is on strengthening pedagogical, conceptual, and organisational capacity while jointly initiating NSDI curriculum development. Through facilitated curriculum design activities, participants begin developing draft curriculum components that can be further refined, adapted, and embedded within local university programmes and professional training initiatives.

Leadership and ownership of curriculum direction and content are explicitly positioned with Bosnian academic institutions, particularly the University of Sarajevo and the University of Mostar, acting as co-owners of the emerging NSDI curriculum. International partners from ITC University of Twente and Kadaster International contribute as facilitators, providing methodological guidance and international reference while supporting locally driven curriculum development.

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1. Introduction

1.1 Overview

This report outlines Activity 1.1.1 of the GeoConnect project: the **Train-the-Trainer Program**, a key initiative under the objective of **Enhanced Institutional Capacity**. GeoConnect, part of the Matra G2G 2025–2029 program, aims to strengthen responsible governance in Bosnia-Herzegovina by improving the use of geospatial data within the National Spatial Data Infrastructure (NSDI). Led by the University of Twente’s Faculty ITC, this activity focuses on developing and delivering a curriculum that equips selected local trainers—primarily from the Federal Administration for Geodetic and Real Property Affairs (FGA)—with the skills to independently conduct future training. The program supports EU INSPIRE compliance and fosters sustainable capacity building. This report details the curriculum development, implementation milestones, and evaluation of training outcomes, highlighting how this initiative contributes to improved data management, institutional collaboration, and long-term geospatial governance in FBiH.

1.2 Aim

To document the development and implementation of Activity 1.1.1 - Train-the-Trainer Program - designed to build local expertise in geospatial data management and support institutional capacity within Bosnia-Herzegovina’s NSDI framework.

1.3 Structure

This report is structured to provide a comprehensive overview of Activity 1.1.1 – Train-the-Trainer Program. It begins with the **background**, detailing the nature, motivation, justification, and implementation context of the activity. The **activities** section outlines the core components of the training initiative. **Planning and realisation** covers the timeline, deliverables, roles, and execution milestones. The **methodology** section explains the approach used to design and deliver the training. A detailed **curriculum outline** and **schedule** are provided, followed by a summary of **resources and materials** used. Finally, the **evaluation** section presents the methods and indicators used to assess the effectiveness and impact of the program.

2. Background

2.1 Motivation for Training

The Train-the-Trainer Program was developed to address a critical gap in geospatial data management capacity within Bosnia-Herzegovina’s public institutions. While foundational datasets and standards exist, their effective use in governance is limited by a lack of technical expertise and institutional coordination. This activity aims to empower a core group of local trainers with the skills and confidence to lead future training initiatives. By building internal capacity and fostering knowledge transfer, the program supports long-term sustainability, promotes alignment with EU INSPIRE standards, and strengthens the NSDI framework. The curriculum is designed to be practical, inclusive, and scalable, ensuring that trained professionals can cascade knowledge across agencies and sectors, ultimately contributing to more transparent, data-driven governance.

2.2 Nature of the Training

The Train-the-Trainer program under Activity 1.1.1 is designed to build foundational and advanced competencies in geospatial data management among selected professionals within Bosnia-Herzegovina’s NSDI framework. Developed and led by the University of Twente’s Faculty ITC, the training adopts a practical, hands-on approach, combining technical instruction with mentoring and peer learning. The curriculum emphasizes EU INSPIRE compliance, data interoperability, and governance applications, equipping participants to become multipliers of knowledge within their institutions. Through structured workshops, real-world use cases, and follow-up activities, the program ensures that certified trainers can confidently deliver future sessions, fostering sustainable capacity development across government agencies and academic institutions.

2.4 Justification for Training

The curriculum, workshops, and training under Activity 1.1.1 are essential to operationalize the GeoConnect project’s goals and ensure consistent, scalable knowledge transfer across institutions. A structured curriculum provides a coherent framework for delivering technical content, aligning learning outcomes with national and EU standards. Workshops serve as dynamic environments for testing and refining practical applications, fostering peer learning and cross-sector collaboration. Training sessions, particularly the Train-the-Trainer model, ensure continuity by embedding expertise within local institutions, reducing reliance on external support. These components are not only pedagogical tools but strategic mechanisms to embed geospatial governance practices into everyday operations, enabling institutions to adapt, replicate, and evolve their capabilities over time.

2.4 Implementing the Training

The implementation of the Train-the-Trainer programme commenced in mid-2025 with the development of initial curriculum concepts and training materials. This process was

intentionally iterative, allowing ideas, approaches, and content to evolve in response to expert input, institutional context, and project objectives.

Building on this preparatory work, the Train-the-Trainer workshops were delivered in March 2026 at the University of Sarajevo and the University of Mostar. These workshops were not designed to pilot or validate a completed curriculum. Instead, they focused on building training capacity and initiating the design of an NSDI-oriented curriculum for Bosnia and Herzegovina, led by participating universities.

Through facilitated sessions and collaborative curriculum design activities, participants began developing draft curriculum components that can be further refined, adapted, and embedded within academic and professional training contexts. Outputs from the workshops form the basis for continued curriculum development and institutional consolidation, rather than representing a finalised training product.

2.5 From Initial Workshop to Curriculum Initiation

The Train-the-Trainer workshop delivered in September 2025 served as an initial iteration focused on shared understanding of NSDI concepts, pedagogical approaches, and capacity-building needs. The March 2026 workshops intentionally move beyond introductory training towards building capacity for curriculum design, recognising that sustainable NSDI education in Bosnia and Herzegovina must be led and owned by local academic institutions.

Rather than validating a fixed curriculum, this phase supports universities in initiating the design of an NSDI-oriented curriculum, grounded in national needs, institutional realities, and international good practice. The emphasis is on starting a curriculum design process that can evolve over time, rather than finalising content during a single event.

3. Activities, Planning and Realisation

3.1 Activities

To implement Activity 1.1.1 – Train-the-Trainer Program, the following sequential tasks were undertaken:

- Agreement on the scope and structure of the training program within the GeoConnect framework
- Development of a concept note and iterative curriculum for the training
- Coordination of administrative and logistical arrangements for the pilot delivery
- Delivery of the pilot training workshop as a pre-event to SDI Days in Sarajevo (23 September 2025)
- Collection and analysis of participant feedback for curriculum refinement
- Repeat delivery in March 2026 in 2x locations, and then follow-up refinement of the curriculum design

3.2 Roles and Responsibilities

Key personnel involved in the development and delivery include:

- University of Sarajevo – Co-owner of NSDI curriculum development; lead contributor to curriculum design activities and future institutional embedding
- University of Mostar – Co-owner of NSDI curriculum development; lead contributor to curriculum design activities and future institutional embedding
- ITC, University of Twente – Curriculum design facilitator; provider of methodological guidance and international reference
- Kadaster International – Facilitator and strategic advisor; contributor of international NSDI experience and capacity-building perspectives

3.3 Deliverables

The main deliverables for this activity include:

- Finalized Train-the-Trainer curriculum and course outline
- Delivery of the pilot training workshop
- Participant feedback and evaluation summary
- Recommendations for scaling and institutional embedding
- Draft NSDI curriculum outlines developed collaboratively during the Sarajevo and Mostar workshops
- Initial articulation of learning outcomes, module structures, and indicative content for NSDI education and training in Bosnia and Herzegovina
- Shared understanding among participating universities regarding future refinement and institutional embedding of NSDI curriculum components

3.4 Planning

The planning timeline for Activity 1.1.1 reflects an iterative approach to capacity building and curriculum initiation rather than the delivery of a single pilot event. Key planning phases included:

- **Initial curriculum concept development:** July – September 2025
- **Refinement of training approach and materials:** October 2025 – February 2026
- **Workshop preparation and logistics:** January – March 2026
- **Train-the-Trainer workshop delivery:** March 2026 (Sarajevo and Mostar)
- **Post-workshop reflection and consolidation:** Following delivery, as part of ongoing curriculum development

This phased approach supports gradual strengthening of trainer capacity and the initiation of NSDI curriculum development led by participating universities.

3.5 Realisation

Activity 1.1.1 commenced in mid-2025 with the development of initial curriculum concepts and training materials, supported by international partners and local institutions. Building on this early work, the Train-the-Trainer workshops were delivered in **March 2026** at the **University of Sarajevo** and the **University of Mostar**.

The workshops focused on capacity building and the initiation of NSDI curriculum design, rather than validation of a completed programme. Universities played a central role as co-owners of the emerging curriculum, with international partners contributing as facilitators and providers of methodological support. Outputs from the workshops form the basis for continued curriculum refinement and institutional embedding beyond the workshop period.

4. Methodology

4.1 Teaching and Learning Philosophy

The teaching and learning philosophy underpinning the Train-the-Trainer program is grounded in **practicality, relevance, and empowerment**. The curriculum is designed to reflect the operational realities of geospatial data use within Bosnia-Herzegovina's NSDI framework, with a strong emphasis on **hands-on learning** and **real-world application**. Training activities will incorporate a mix of modern pedagogical approaches, including **blended learning, problem-based learning, interactive workshops, group work, and case study analysis**. The aim is to foster not only technical proficiency but also critical thinking and collaborative problem-solving skills among participants, enabling them to confidently deliver future training sessions within their institutions.

4.2 Co-Creation and Collaborative Design

The curriculum and training content will be developed through a **collaborative design process**, involving experts from **ITC University of Twente, Kadaster International, FGA**, and academic partners from the **University of Sarajevo** and **University of Mostar**. This co-creation approach ensures that the training is contextually relevant, technically robust, and aligned with both EU INSPIRE standards and local institutional needs. It also facilitates **knowledge exchange** among partners and strengthens institutional relationships, enhancing the long-term sustainability and adaptability of the training program.

5. Curriculum Outline and Schedule

5.1 Course Title

Train-the-Trainer: Geospatial Data Management for Transparent Governance

5.2 Date and Location

The course is delivered as a **one-day intensive Train-the-Trainer workshop**, implemented in **March 2026** at two academic institutions in Bosnia and Herzegovina:

- **University of Sarajevo – 10 March 2026**
- **University of Mostar – 12 March 2026**

The workshops are delivered as stand-alone training events hosted by the participating universities. They are designed to support local capacity building and to initiate the development of an NSDI-oriented curriculum, rather than being organised as pre-events to a conference or external programme.

5.3 Contact Hours

6-8 contact hours = 1 full day of face-to-face training

5.4 Requisites

Participants should be mid-career professionals or technical staff from FGA, other government agencies, or academic institutions involved in NSDI coordination, spatial data management, or geospatial governance. Prior experience with GIS or spatial data is recommended.

5.5 Credit Points and Certification

Participants will receive a **certificate of completion** jointly issued by **ITC University of Twente** and **FGA**, with the potential for recognition as part of continuing professional development (CPD) or future academic credit.

5.6 Mode of Delivery

The course will be delivered **face-to-face**, with pre-readings and post-event materials provided online. The format is **blended**, combining interactive lectures, group activities, and practical exercises.

5.7 Aims

This course aims to equip selected trainers with the pedagogical and technical skills needed to deliver future geospatial data training within their institutions. It focuses on building confidence in teaching, understanding NSDI principles, and applying EU INSPIRE-aligned standards in practice. The course also introduces modern teaching methods and collaborative learning strategies to support long-term institutional capacity building.

5.8 Learning Outcomes

By the end of the course, participants will be able to:

- Explain the role of NSDI and geospatial data in transparent governance
- Apply EU INSPIRE-aligned standards in data management and exchange
- Design and deliver effective geospatial training sessions
- Use modern teaching methods to engage adult learners
- Collaborate with peers to co-develop training content and share best practices

5.9 Content

The course will include the following modules:

- Introduction to NSDI and the GeoConnect project
- EU INSPIRE principles and metadata standards
- Collaborative data governance and institutional roles
- Teaching and learning strategies for adult professionals
- Designing and delivering geospatial training
- Case studies and use cases from the Netherlands and BiH
- Peer learning and feedback techniques
- Planning for follow-up training and institutional embedding

5.10 Teaching Staff

- **Dr. Dimo Todorovski** – ITC University of Twente
- **Prof. Rohan Bennett** – Kadaster International / ITC
- **Jelena Zelić** – FGA
- **Tatjana Džeba** – University of Mostar
- **Nedim Kulo** – University of Sarajevo

5.11 Draft Schedule

Train-the-Trainer Workshops (March 2026)

Note: This draft schedule was applied for the Train-the-Trainer workshops delivered at the University of Sarajevo (10 March 2026) and the University of Mostar (12 March 2026). Minor adjustments may be made to reflect local context and participant needs.

Course Modules and Curriculum Design Session

Module / Session	Focus / Description	Duration / Notes
Introduction to NSDI and the GeoConnect project	Overview of NSDI concepts and the GeoConnect initiative	—
EU INSPIRE principles and metadata standards	INSPIRE principles, standards, and implications for BiH	—
Collaborative data governance and institutional roles	Institutional responsibilities and coordination for NSDI	—
Teaching and learning strategies for adult professionals	Adult learning principles and pedagogical approaches	—
Designing and delivering geospatial training	Practical approaches to planning and delivering training	—
Case studies and use cases from the Netherlands and BiH	Applied examples illustrating NSDI implementation	—
Peer learning and feedback techniques	Techniques to support collaborative learning and reflection	—
Planning for follow-up training and institutional embedding	Approaches for sustaining training and embedding it institutionally	—
Curriculum Design for NSDI Capacity Building in Bosnia and Herzegovina	Initiating NSDI curriculum design led by local universities	90 minutes

Curriculum Design Session – Structure and Outputs

Part	Focus	Key Elements
Part 1 – Framing NSDI curricula and university leadership	Establishing curriculum context and leadership	<ul style="list-style-type: none"> • NSDI curricula vs standalone training • Role of universities in long-term NSDI capacity building • International reference examples (as inspiration, not templates)
Part 2 – Guided curriculum design	Collaborative curriculum development	<ul style="list-style-type: none"> • Identify priority audiences in BiH • Define high-level learning outcomes • Develop draft curriculum structures, including: <ul style="list-style-type: none"> – Module titles – Indicative content – Delivery modes (academic, professional, blended)
Part 3 – Sharing and consolidation	Reflection and alignment	<ul style="list-style-type: none"> • Presentation of draft curricula • Peer feedback across institutions • Identification of common

		elements and context-specific adaptations <ul style="list-style-type: none"> • Agreement on next steps for refinement
Outputs	Tangible results of the session	<ul style="list-style-type: none"> • Draft NSDI curriculum outlines produced collaboratively • Shared ownership of curriculum direction by participating universities

5.12 Assessment

There is **no formal assessment** associated with the Train-the-Trainer workshops. The emphasis is on capacity building, collaborative learning, and curriculum initiation rather than evaluation or grading.

Participant engagement is demonstrated through active participation in discussions, group work, and curriculum design activities. Curriculum artefacts developed during the workshops serve as **formative outputs**, not assessed submissions.

5.13 Resources and Materials

Participants will be provided with a curated set of digital training materials (after the session) including slides, handouts, and reference documents. Key resources include:

- **INSPIRE Directive Overview** – European Commission documentation on spatial data standards
- **UN-GGIM IGIF Framework** – United Nations guidelines for integrated geospatial information management
- **ITC and Kadaster Examples** – Practical examples and templates from the Netherlands’ NSDI implementation
- **GeoConnect Project Summary** – Background and strategic context for the training
- **Interactive Worksheets** – Used during group activities and session design exercises

5.14 Evaluation

Activity 1.1.1 will be evaluated through a combination of participant feedback and observational insights gathered during the pilot workshop. No formal assessment will be conducted; instead, evaluation will focus on participant engagement, perceived relevance of the content, and confidence in applying the training methods. Feedback will be collected via short surveys and group reflection at the end of the session. These insights will inform refinements to the curriculum and delivery approach before broader rollout. Additionally, follow-up communication with participants will help assess the extent to which the training is being applied within their institutions.

6. Recommendation and Next Steps

This section will be updated following the completion of the **March 2026 Train-the-Trainer workshops** in Sarajevo and Mostar. Reflections and feedback from participants and facilitators will inform **ongoing refinement of the emerging NSDI curriculum**, the workshop design, and future capacity-building activities. The emphasis is on iterative development rather than evaluation of a fixed programme.

Following the March 2026 workshops, the following **priority follow-up activities** are recommended to support continued curriculum development and institutional embedding:

- Further refine draft NSDI curriculum components developed during the workshops through collaboration among participating universities
- Consolidate learning outcomes, module structures, and indicative content to support reuse and adaptation in different academic and professional contexts
- Clarify roles and responsibilities for continued curriculum development, with universities acting as co-owners and international partners providing facilitation support as required
- Develop and share supporting materials and templates to enable further curriculum design work within institutions
- Maintain light-touch feedback and reflection mechanisms to capture insights from subsequent use or adaptation of curriculum components
- Engage relevant stakeholders to support awareness, alignment, and longer-term institutional uptake of NSDI education and training

These steps support a **progressive, locally led approach to NSDI curriculum development**, strengthening institutional capacity over time and contributing to the broader GeoConnect capacity-building objectives.