





Hazard and Impact Knowledge for Europe

# **Deliverable 2.5**

Fault data collected by partners embedded in the European Fault Database, developed in cooperation with GeoERA Information Platform

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## 1 INTRODUCTION

# 1.1 Document Background and Scope

This report is a supporting document belonging to the European Fault Database which has been developed during the HIKE project in the period 1-7-2018 to 31-10-2021. The European Fault Database could be accessed via the following link: https://geoera.eu/projects/hike10/faultdatabase/

# 1.2 Overview of HIKE partners and contributing contact info

No.	Participant Legal Name	Institution	Country	Point of Contact (metadata)
1	Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek TNO	TNO (coordinator)	Netherlands	rob.vanede@tno.nl
2	Albanian Geological Survey	AGS	Albania	info.gsa@gsa.gov.al
3	Geologische Bundesanstalt	GBA	Austria	esther.hintersberger@geologie.ac.at
4	Royal Belgian Institute of Natural Sciences – Geological Survey of Belgium	RBINS-GSB	Belgium	rbarros@naturalsciences.be
5	Geological Survey of Denmark and Greenland	GEUS	Denmark	geus@geus.dk
6	Bureau de Recherches Géologiques et Minières	BRGM	France	a.hertout@brgm.fr
7	Bundesanstalt für Geowissenschaften und Rohstoffe	BGR	Germany	Geoera_HIKE@bgr.de
8	Landesamt für Bergbau, Geologie und Rohstoffe Brandenburg	LBGR	Germany	Thomas.Hoeding@lbgr.brandenburg.de
9	Landesamt für Geologie und Bergwesen Sachsen-Anhalt	LAGB	Germany	poststelle@lagb.mw.sachsen-anhalt.de
10	Bayerisches Landesamt für Umwelt	LfU	Germany	melanie.meyer@lfu.bayern.de
11	Islenskar orkurannsoknir - Iceland GeoSurvey	ISOR	Iceland	isor@isor.is





12 - 14	Istituto Superiore per la Protezione e la Ricerca Ambientale	ISPRA		pio.dimanna@isprambiente.it
	Servizio Geologico, Sismico e dei Suoli della Regione Emilia- Romagna	SGSS	Italy	
	Agenzia Regionale per la Protezione Ambientale del Piemonte	ARPAP		
15	Lietuvos Geologijos Tarnyba prie Aplinkos Ministerijos	LGT	Lithuania	jurga.lazauskiene@lgt.lt
16	Państwowy Instytut Geologiczny – Państwowy Instytut Badawczy	PIG-PIB	Poland	uste@pgi.gov.pl
17	Laboratório Nacional de Energia e Geologia	LNEG	Portugal	ruben.dias@Ineg.pt
18	Geološki zavod Slovenije	GeoZS	Slovenia	info@geo-zs.si
19	State Research and Development Enterprise State Information Geological Fund of Ukraine	GEOINFORM	Ukraine	igmel@ukr.net





## 2 BACKGROUND

### 2.1 Introduction

The HIKE European Fault Database holds collected and integrated fault information from national and regional mapping and modelling projects and repositories, maintained by project partners and several other geological survey organizations from associated GeoERA projects. The fault information has been established over a period of tens of years using many different standards, methods and formats. Consequently it was not possible to just compile the data into one comprehensive dataset. At the start of the project, the partners have therefore been involved in the specification of common standards and methods needed to classify, parameterize and display fault information. These standards are partly compliant with existing INSPIRE standards and extended with new specifications where needed. HIKE Work Package 5 has embedded the standards and definitions into an internal specifications and guidelines document for the purpose of

- 1. Developing the common data architecture of the HIKE European Fault Database
- 2. Supporting the uniform mapping and collection of fault data by project partners

This report points to the established project end-results that are available online.

### 2.2 Relation to other documents

This document is part of a group of documents associated to the HIKE European Fault Database. These documents are accessible online, through the HIKE website at:

https://geoera.eu/projects/hike10/documents/

#### **HIKE Documents**

European Fault Database Semantic Network Knowledge Sharepoint Use Cases Background Info **Documentation & Reports** 

Apart from the European Fault Database, the Semantic Network and Knowledge SharePoint, the HIKE project has also produced a series of documents. These documents provide insight in the choices that were made along the way, the technical implementation and scientific background.

All relevant documents are listed below and can be downloaded through provided links.

#	Deliverable name	WP#	Institution
D2.1b	Final Fault Data Characterization Catalogue	2	GBA / TNO
D2.2b	Final Fault Data Collection Report	2	TNO
D2.2b	Annex Country Reports	2	TNO
D2.3	Final Report on Fault Characterization and Data	2	TNO
D2.4	Final Report on FDB Application and Evaluation	2	TNO / GBA
D2.5	Fault data collected by partners embedded in the Fault database, as developed by the GeoERA Information Platform	2	TNO / GBA
D3.2	Final case study report on improved localization of seismic events, Denmark, Netherlands, Iceland	3	GEUS
D3.3	Final case study report on subsidence assessment techniques, Po Basin area, Italy	3	ISPRA
D3.4	Final case study report on improved assessment of reservoir seals, Poland	3	PIG-PIB
D3.5	Final case study report on seismicity and safety of subsurface injection, Rousse, France	3	BRGM
D4.1	Final project synthesis, recommendations and best practices report	4	TNO / BRGM
D4.2	Scientific specifications and requirements for the hazards and impacts data share point and definitions for the Semantics Web service.	4	BRGM
D4.3	Final data and knowledge share point implementation and report	4	BRGM
D5.2b	Final user manual for the Fault Database and the knowledge share point	5	TNO / GBA
D5.3	Final Project Data Management Implementation report	5	GBA / TNO





## 3 HIKE FAULT DATABASE FRAMEWORK

#### 3.1 Introduction

The HIKE project has resulted in the development of a European Fault Database that aims to collate and harmonize relevant information and knowledge on all geological faults. Prior European fault databases are mainly restricted to showing information on seismogenic faults or major faults appearing at surface only. The HIKE European Fault Database is developed in order to take into account any type of fault represented at arbitrary depth levels.

The European Fault Database not only provides the actual data for identified faults in the subsurface and at the surface. It also delivers essential knowledge on these faults, e.g. via key citations and documents which are linked to the fault objects using a generic vocabulary system and tectonic boundary classification framework based on semantic principles. In addition, vocabulary entries provide also a link to existing fault database entries.

#### 3.2 Online result

All HIKE results and linked background documents are available online through the HIKE project page at <a href="https://geoera.eu/projects/hike10/">https://geoera.eu/projects/hike10/</a>, which consists of separate sections for the actual European Fault Database, the Semantic Network and the Knowledge Sharepoint:

Hazard and Impact Knowledge for Europe (HIKE) (under construction)

The HIKE project aims to stimulate the development of common information repositories and a knowledge sharing infrastructure in order to support induced hazard and risk assessments at the geological survey organizations and other research institutions



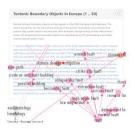


### European Fault Database



The European Fault Database is the first effort to include passive and active faults at different depths. Fault geometries and structured fault information can be accessed via the MapViewer.

### Semantic Network



The semantic network stores further information to the named fault inventory of the European Fault Database, the attributes and the hierarchical fault classification. The SKOS relations within the vocabulary itself, and with existing vocabularies and links to online sources creates an extensive network of information.

#### Knowledge Sharepoint



The knowlege sharepoint provides access to a guided search regarding the risks and hazards of human subsurface activities and the mitigation and management of it.