Plan Overview

A Data Management Plan created using DMPonline

Title: The Vulnerability of Tourists to Volcanic Hazard in Indonesia

Creator: Khonsa Zulfa

Affiliation: Durham University

Funder: Natural Environment Research Council (NERC)

Template: NERC Template

Project abstract:

Indonesia is one of the most tectonically and volcanically active countries in the world with over 127 active volcanoes. Each year, millions of tourists visit volcanic landscapes drawn by their unique natural beauty, adventure tourism, hot springs and spiritual and mythological significance. In 2024 nearly 14 million international tourists visited Indonesia and contributed over $16 billion to the economy (5.1% of the national economy). Indonesia has 12 UNESCO Global Geoparks, many of which have active volcanoes capable of producing sudden explosions which can cause acute health impacts such as breathing difficulties, injury, and even death. Tourists can be particularly vulnerable to a natural hazard event, as they are a transient population who may not understand the potential hazards and how to reduce their own risk, due to lack of awareness, preparedness or, in the case of international tourists, language and cultural barriers.

This project seeks to understand and analyse the exposure and vulnerability of tourists to volcanic hazards in Indonesia using a case study location. The project will explore the hazard and risk perception of tourists and tour guides, and how volcanic hazard and risk mitigation information is communicated with tourists. Given the national economic importance and international cultural value, it is important to understand the sustainability and safety aspects of tourism to these active geohazard areas.

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The Vulnerability of Tourists to Volcanic Hazard in Indonesia - Outline DMP

Outline DMP

Project Title

The vulnerability of tourists to volcanic hazards in Indonesia

Principal Investigator(s) / Grant Holder

Khonsa Indana Zulfa

Will the grant produce data?

- Yes

Nominated Data Centre(s)

- British Geological Survey (BGS)

Briefly list the datasets that the project will produce. If the total is likely to be larger than 1TB please indicate.

1. Visitor numbers to volcanic sites in Indonesia
2. Number of casualties at volcanic sites in Indonesia
3. Interview transcripts

The Vulnerability of Tourists to Volcanic Hazard in Indonesia - Full DMP

Project information

Project Name

The vulnerability of tourists to volcanic hazards in Indonesia

Project Number (NERC PIs only)

Question not answered.

Grant Reference

NE/S007431/1

Principal Investigator

Dr Melanie Duncan and Prof Claire Horwell

Organisation

Nominated Data Centre

- British Geological Survey (BGS)

Data Centre Contact

Question not answered.

Project Data Contact

khonsa.zulfa@durham.ac.uk

Please specify any other team members with responsibility for data

Question not answered.

Roles and Responsibilities

Please state all roles and responsibilities throughout the project

The PhD researcher will be primarily responsible for collecting, compiling, processing, analysing and documenting research data throughout the project.
The researcher will be responsible for:

- Obtaining secondary data from relevant Indonesian government institutions, research organisations and publicly available sources.

- Conducting and recording interviews with research participants, subject to informed consent.
- Processing, cleaning and analysing quantitative, qualitative and spatial datasets.
- Maintaining appropriate documentation, metadata and records of data sources.
- Ensuring that personal and confidential information is managed securely.
- Preparing suitable research datasets and documentation for long-term preservation and sharing, where permitted.

The supervisory team at Durham University and BGS will provide guidance on data management, storage, quality assurance, data protection and appropriate data deposition.

Data Generation Activities

What data will be created and how?

Primary data:
Semi-structured interviews will be conducted online with relevant stakeholders, potentially including volcanic monitoring institutions, geopark and national park representatives, tourism operators and tour guides. Interviews with tourists may also be conducted as part of the research.
With participants' consent, interviews will be audio-recorded and transcribed for analysis.
Secondary data:
Existing data will be collected from Indonesian government institutions, research organisations, academic publications and publicly accessible databases. These may include:

- Historical volcanic eruption records and characteristics.
- Tourist fatalities and injuries associated with volcanic activity.
- Annual and seasonal visitor numbers at volcanic tourism destinations.
- Volcanic monitoring and hazard information.

Statistical analyses will be conducted using R, where appropriate.
The expected total data volume is anticipated to be below 1 TB. This estimate will be reviewed as the project develops.

In-Project Data Management Approach

How will the data be managed?

All digital research data will be stored using Microsoft Team group within Durham University system.
Data will be organised into clearly structured folders according to data type, collection stage and research activity. Appropriate file-naming conventions and version control will be applied to maintain consistency and traceability.
Personal and confidential information, including interview recordings, consent forms and contact details, will be stored separately from anonymised research datasets. Access will be restricted to the researcher and authorised individuals where necessary.
Regular backups will be maintained using approved institutional storage systems to minimise the risk of data loss.
Sensitive and identifiable research data will not be stored on publicly accessible platforms or shared without appropriate authorisation.
Research scripts, analytical workflows and relevant documentation will be maintained to support reproducibility and future verification of research findings.

Metadata and Documentation

Outline plans for metadata, noting standards that will be used

For secondary datasets, documentation will include:

- Original data source and organisation.
- Geographical coverage and temporal period.
- Definitions of variables and indicators.
- Data formats, units and any relevant classifications.

- Data processing, cleaning and transformation procedures.

For primary interview data, documentation will include interview dates, participant identification codes, interview protocols and transcription information.

Data Quality

What procedures will be used to control data quality?

Secondary datasets:

- Original sources will be recorded and prioritised, particularly official government and institutional sources and peer-reviewed academic publications.
- Differences in definitions, units, temporal coverage and geographical classifications will be documented.
- Where information is obtained from multiple sources, cross-checking will be undertaken where possible.

Interview data:

- A consistent semi-structured interview guide will be used.
- Audio recordings will be checked for completeness and clarity.
- Transcripts will be reviewed against recordings to identify transcription errors.
- Coding and analytical decisions will be documented.

Quantitative datasets:

- Data cleaning and validation procedures will be applied.
- Missing values, duplicate records and potential outliers will be examined.
- Analytical scripts and modelling procedures will be documented to support reproducibility.

Exceptions or Additional Services

Clarify any support needed from data centres that exceeds the norm, and show this has been planned / costed.

At this stage, no exceptional data centre services or additional storage requirements are anticipated.
The project is expected to generate less than 1 TB of research data.

Data Management Plan Information

Author

Khonsa Zulfa

Date

Question not answered.

Version Number

Question not answered.

Approved by PI/PM

Question not answered.

Approved by (Data Centre)

Question not answered.

New Datasets

Digital Information

Dataset Description	Contact	Data Volume	Data Format	Issues	Delivery Date	Embargo Date	Reuse Scenario	Preservation Plan
Interview Transcript	*Khonsa*		Text					*Data will be kept until 10 years after the project ended in a Microsoft Teams group within Durham University System*
Audio Recordings	*Khonsa*		MP3					*Data will be kept until 10 years after the project ended in a Microsoft Teams group within Durham University System*
Number of visitors	*Khonsa*		Tabulation					*Data will be kept until 10 years after the project ended in a Microsoft Teams group within Durham University System*
Number of incidents (fatalities, injuries)	*Khonsa*		Tabulation					*Data will be kept until 10 years after the project ended in a Microsoft Teams group within Durham University System*
Historical eruption data (frequency, magnitude)	*Khonsa*		Tabulation					*Data will be kept until 10 years after the project ended in a Microsoft Teams group within Durham University System*

Hardcopy Records

Dataset Name	Contact	Data Volume	Data Format	Issues	Delivery Date	Preservation Plan

Physical Collections & Samples

Dataset Name	Contact	Data Volume	Data Format	Issues	Delivery Date	Preservation Plan

Third Party/Existing Datasets

Third Party/Existing Datasets

Dataset Name	Contact	Location	Contents	Estimated Size	Responsibility	Licence Issues	Comments
Name of dataset	*Name of contact for dataset*	*Where is it stored*	*Brief description*		*Who is responsible for sourcing the dataset*		*Any additional information (e.g. licence or use restrictions?)*