



The HuT

Data Management Plan

Deliverable D7.2

DEVELOPED WITHIN

WP7 Coordination and Management, T7.2 Data management

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1. Technical references

Project Acronym	The HuT
Project Title	The Human-Tech Nexus - Building a Safe Haven to cope with Climate Extremes
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* PU = Public

PP = Restricted to other programme participants (including the Commission Services)

RE = Restricted to a group specified by the consortium (including the Commission Services)

CO = Confidential, only for members of the consortium (including the Commission Services)



1.1. Document history

Version	Date	Lead contributor	Description
0.1	28.03.2023	Michele Calvello (UNISA)	First draft
0.2	05.04.2023	Eisharc Jaquet (ARANTEC)	Critical review and proofreading
1.0	07.04.2023	Michele Calvello (UNISA)	Final version



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none



3. Data summary

3.1. Purpose of the data collection/generation

The HuT project aims to employ innovative disaster risk reduction solutions, accounting for the potential variations induced by climate change. This will involve integrating and leveraging best practices and successful multi-disciplinary experiences that have been recently developed within various territorial contexts by leading European research groups, institutions, and stakeholders, to deal with extreme climate events. A set of ten demonstrators will constitute a multi-hazard arena wherein possible disastrous events associated with climate extremes will be dealt with jointly by representatives of the scientific and technical communities, practitioners, policy-makers and local communities.

3.2. Relation to the objectives of the project

The Demonstrators' Arena is the "heart" of The HuT. The demonstrators selected (Table 1) are characterized by different geomorphological features and socio-economic conditions, and they are affected by multiple extreme climate events. The main extreme climate events investigated for each Demonstrator are identified considering the project's six classes of events: i) forest fires, including wildland urban interface fires; ii) meteorological, hydrological, agricultural droughts, including associated water shortage; iii) heatwaves; iv) weather-induced landslides, including debris flows and avalanches; v) fluvial and pluvial floods; vi) storms, including heavy rain, hail, thunderstorms, and storm surges. The starting point of each case study is very different. Therefore, the types of data that will be generated and collected, as well as the needs for storing, processing and sharing these data, are different for the 10 demonstrators. Indeed, some demonstrators will be able to boost already existing consolidated expertise (also available for cross-transferring elsewhere), while in other demonstrators, where DRR solutions are currently limited or poorly developed, The HuT will serve as a means of importing best practices from more developed demonstrators.

Table 1: Location and main characteristics of the 10 sites of the demonstrators' arena.
[DLead=Demonstrator's leader, FF=Forest Fires, D=Droughts, H=Heatwaves, L=Landslides, F=Floods, S=Storms]

ID (DLead)	Site	Country	Area (km ²)	Boundaries	Events
DEM1 (UPV)	Valencia city	Spain	134 + 29501	Administrative (local government) and physical (2 river basins)	D, H
DEM2 (UPC)	Val d'Aran region	Spain	650	Administrative (regional government)	F, L, S



DEM3 (CMCC)	Lattari mountains	Italy	300	Administrative (local government) and physical (mountain range)	F, FF, L, S
DEM4 (VU)	Vilnius city	Lithuania	401	Administrative (local government)	F
DEM5 (HEREON)	Schleswig-Holstein state and harbour cities	Germany	466 km of coastline	Administrative (regional and local governments)	H, S, F
DEM6 (IMO)	East fjords	Iceland	3500	Administrative (local government) and physical (fjord)	L, S
DEM7 (KOTIVIZIG)	Hungarian Tisza River basin	Hungary	7180	Administrative (regional government) and physical (river basin)	F
DEM8 (CMCC)	Ogliastra province	Italy	1855	Administrative (intermediate local government)	D, FF, H
DEM9 (BGS)	Dorset county	UK	2653	Administrative (intermediate local government)	F, L, S
DEM10 (UNIGE)	Bern canton	Switzerland	5960	Administrative (regional government)	F, L, S

3.3. Types and formats of data generated/collected

Each demonstrator will have a data portal to share information across stakeholders enabling participatory and two-way communication, thus acting as a virtual platform for the L-DRRnF. The data portals will be co-designed with the potential users in native languages, where knowledge sharing and the exchange of ideas would become available to a much wider community.

The foreseen “Architecture of demonstrator’s data portal” in the 10 sites is described in the Deliverable 1.3 (version 1.0, 23.03.2023), to which one can refer to for the details, and it is mainly based on replies gathered by administering a questionnaire to each demonstrator. The demonstrator sites have a wide range of existing data management and communication strategies, ranging from sophisticated dedicated data portals serving a broad public purpose, to specific data use plans meeting primarily the needs of the demonstrator site as a scientific research activity. The type of information that will be included in the data portals will typically be a combination of the following items:

- photos or information related to historical hazardous events that occurred in the demonstrator;
- susceptibility/hazard/risk maps for the weather-induced hazards of interest;
- observed weather/ impact data by available networks or implemented in The HuT;



- real-time weather/impact data by available networks or implemented in The HuT;
- weather forecasts;
- warning messages;
- emergency plans;
- warning actions;
- other data/information to be shared.

Besides the data that will be generated, collected and shared in the data portals, a series of questionnaires and surveys are planned, producing unstructured data. This information is the base to increase our understanding of specific needs in the different sites, and more generally in the demonstrators' arena, and to conduct the project activities in the different WPs.

3.4. Origin and size of the data

The datasets that will be generated and managed in The HuT can be grouped in the following two categories.

1. RESEARCH OUTPUTS: i) data for the characterization of the demonstrators (e.g., already existing datasets); ii) outputs from monitoring and modeling activities; iii) questionnaires/interviews, (online) survey, output from focus groups.
2. PERSONAL DETAILS: (name, age, contact) of the participants to the Local/International DRR nexus Forums, or persons involved in co-design/development activities (e.g., volunteers in demonstrators), and awareness/communication activities (e.g., followers of social media profiles, newsletter subscribers).

In both cases, the datasets are originated by a project partner who will initially share them only with the other members of the Consortium. To this aim, a common repository has been created as a Google Drive database, with one MAIN SHARED FOLDER hosted and managed by The HuT coordinator UNISA, within which different partners are responsible (i.e., have editing rights) for specific subfolders related to the project activities. The structure of this repository is the following:

- one single main directory that contains all the data to be shared (read-only access granted to all the participants);
- one folder, and nested sub-folders when needed, for each Demonstrator (editing rights for the demonstrator leader);
- one folder, and nested sub-folders when needed, for each Work Package (editing rights for the work package leader);
- one folder, and nested sub-folders when needed, for each Board and Panel (editing rights for the coordinator of the board/panel);
- one folder and a series of sub-folders for the deliverables (edited by UNISA);
- specific folders are created, whenever needed, for activities and/or data sharing needs that do not fit into the previous structure (editing rights for lead contributors and reviewers).

At this stage, it is not possible to provide reliable estimations about the size of the data to be managed. Personal data should not exceed some megabytes, while many terabytes could be expected for modeling and monitoring data.



4. FAIR data

4.1. Making data findable, including provisions for metadata

Throughout the duration of the project, The HuT website (<http://thehut-nexus.eu/>) will be used as the main location for sharing all the data that will be produced by the partners of the consortium, also acting as a gateway for the data that are stored in other repositories. Codes, code lists and metadata will also be made available on Github, advertised on the project website and reported in the papers. Metadata will permit a full characterization of the associated data and will be registered and indexed as a searchable resource. After the end of the project, the website will remain active for a few more years, yet all the relevant products of the project will be placed in open existing recognized repositories, to ensure long-term data availability.

4.2. Making data accessible

The HuT will follow open science principles. All data will be openly available through The HuT website and data portals, e.g., a local data portal for each demonstrator, under CC BY 4.0. An embargo for a specified time is possible to provide the involved scientists to publish their work first. Within these portals, data can be downloaded by any Internet Browser or programmatically through standard HTTP requests. Reading the data is possible with standard text editors or freely available NETCDF viewers and libraries.

ZENODO (<https://zenodo.org/>) has been chosen as the main repository to ensure long-term data availability, for it is free to use for researchers and for the following important characteristics: safe space (data stored in CERN's Data Centre); trusted space (operated by CERN and OpenAIRE); items easily citable (every upload is assigned a Digital Object Identifier), no waiting time (uploads are made available online as soon as they are online, with DOI registered within seconds), versioning is possible (easy update of datasets with versioning feature); GitHub integration; usage statistics. The virtual portal of The HuT in ZENODO, therein called a "community", has been already created: <https://zenodo.org/communities/thehutnexus/>.

4.3. Making data interoperable

(Meta)data will meet shared, and broadly applicable standards for formats, codes and codelists. The most common formats adopted by the scientific community will be selected, also considering requirements from non-scientific stakeholders.

4.4. Increase data re-use

All The HuT outputs will be designed and developed with stakeholders and practitioners, ensuring their usefulness and usability. If specific properly justified constraints (e.g., privacy or Intellectual Property Right) do not prevent it, all the generated data will be released under an open access licence and uploaded in public repositories.



5. Allocation of resources

FAIR is a central part of The HuT data management practice, and therefore the costs associated to making the data FAIR cannot be separated from the project activities within which the dataset are generated. As already mentioned,

- all datasets originated by a project partner are initially shared, within the Consortium, by means of Google Drive database managed by UNISA, using an already available institutional license;
- The HuT website will be used as the main location for publicly sharing all the data produced during the project, and it will also act as a gateway for the data that are stored in other repositories;
- ZENODO, which is free to use for researchers, has been chosen as the main repository that will ensure long-term data availability to The HuT datasets.



6. Data security

Data stored in the mentioned online repositories (Google Drive, The HuT website, ZENODO) are also stored locally in a local file storage at the premises of the coordinator UNISA, to protect the data against disasters (e.g., fire, earthquake, flooding), cyber-attacks and physical destruction. Theft or disclosure are not a concern since the data licence allows open access.

Personal information will not be stored within the data itself, and personal data will always be aligned with the applicable EU, international and national law on data protection (in particular, Regulation 2016/67917). To this aim, personal data is: i) processed lawfully, fairly and in a transparent manner in relation to the data subjects; ii) collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes; iii) adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed; iv) accurate and, where necessary, kept up to date; and v) kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the data is processed.



7. Ethics

The HuT will comply with Horizon Europe ethical standards and guidelines and with regulation 2016/679 of the European Parliament and the Council, General Data Protection Regulation, on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and any of its amendments and related acts to be approved during the lifetime of the project. More details can be found in the Deliverable 7.2 “Ethical requirements Plan” (version 1.0, 10.02.2023).



8. Other

This data management plan was created based on the template for EU Horizon Europe Data Management Plan Template (Version 1.0, 05 May 2021) available at: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/how-to-participate/reference-documents;programCode=HORIZON>.

