

Supplementary material

Table S1 – Search strategy used to identify relevant socio-hydrology and hydrology articles within the Scopus and Web of Science databases.

Database		Search terms
Socio-hydrology search	Scopus	(TITLE-ABS ("socio-hydrology" OR "socio-hydrology" OR "socio-hydrological" OR "socio-hydrological" OR "socio-hydrologic" OR "socio-hydrologic") OR AUTHKEY ("socio-hydrology" OR "socio-hydrology" OR "socio-hydrological" OR "socio-hydrological" OR "socio-hydrologic" OR "socio-hydrologic")) AND DOCTYPE (ar) AND (LIMIT-TO (LANGUAGE, "English"))
	Web of Science	(TI=("socio-hydrology" OR "socio-hydrology" OR "socio-hydrological" OR "socio-hydrological" OR "socio-hydrologic" OR "socio-hydrologic")) or (AB=("socio-hydrology" OR "socio-hydrology" OR "socio-hydrological" OR "socio-hydrological" OR "socio-hydrologic" OR "socio-hydrologic"))or (AK=("socio-hydrology" OR "socio-hydrology" OR "socio-hydrological" OR "socio-hydrological" OR "socio-hydrologic" OR "socio-hydrologic"))
Hydrology search	Scopus	(TITLE-ABS ("hydrology" OR "hydrological" OR "hydrologic") OR AUTHKEY ("hydrology" OR "hydrological" OR "hydrologic")) AND DOCTYPE (ar) AND (LIMIT-TO (LANGUAGE, "English"))
	Web of Science	(TI=("hydrology" OR "hydrological" OR "hydrologic")) or (AB=("hydrology" OR "hydrological" OR "hydrologic")) OR (AK=("hydrology" OR "hydrological" OR "hydrologic"))

Table S2: Categories considered for classifying the articles.

Category	Sub-categories	Goal
Country of the case study	<ul style="list-style-type: none"> All cited in the articles Not applicable 	Identify how the studies are distributed across geographic regions (e.g. continents, countries). Not applicable indicates hypothetical studies.
Type of natural hazard investigated	<ul style="list-style-type: none"> Flood (Flash flood, Riverine flood, Ponding or pluvial flood, Urban flood, Coastal flood) Wave action Landslide Drought (Hydrological drought, Meteorological drought, Agricultural drought) Wildfire Glacial lake outburst Mass movement Earthquake Volcanic activity Storm Fog Extreme Temperature 	Identify the natural hazards studied. The International Disaster Database (EM-DAT) of the Centre for Research on the Epidemiology of Disaster (CRED) was applied for defining the sub-categories. Biological and extraterrestrial hazards were excluded.
Spatial scale of the physical system (a) and social system (b)	<ul style="list-style-type: none"> Individual/Household (a) (b) Group/Community (a) (b) Municipal (a) (b) River basin (a) (b) Regional (a) (b) National (a) (b) Global (a) International (b) Cross-scale (a) (b) Floodplain (a) Other (a) (b) Undefined** (a) (b) 	Identify which spatial scale was considered aiming to uncover similarities and differences between physical and social-spatial scales.
Temporal scale of the physical system (a) and social system (b)	<ul style="list-style-type: none"> Hour (a) (b) Day (a) (b) Week (a) (b) Month (a) (b) Year (a) (b) Decade (a) (b) Century (a) (b) Event (discrete recurrence) (a) Post-event (b) Other (a) (b) Undefined** (a) (b) 	Identify the temporal scale applied for understanding the physical and social systems.

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Continuation Table S2: Categories considered for classifying the articles.

Category	Sub-categories	Goal
Physical components	<ul style="list-style-type: none"> ▪ Hydrological ▪ Meteorological ▪ Hydraulic ▪ Topographic ▪ Other ▪ Not applicable* ▪ Undefined** 	Identify the components used for representing the physical system.
Social components	<ul style="list-style-type: none"> ▪ Societal memory/Risk awareness/Risk perception ▪ Experience of prior event ▪ Formal institution (norms, laws, rules) ▪ Informal institution (local norms/ rules, attitudes) ▪ Individual characteristics ▪ Demography (Displacement individual/ population) ▪ Economy ▪ Other ▪ Not applicable* ▪ Undefined** 	Identify the components used for representing the social system.
Physical data gathering sources (a) and Social data gathering sources (b)	<ul style="list-style-type: none"> ▪ Rainfall gauge (a) ▪ Stream gauge (a) ▪ Radar (a) ▪ Remote sensing (a) (b) ▪ Census data (a) (b) ▪ Narrative (a) (b) ▪ Questionnaire (a) (b) ▪ Interview (a) (b) ▪ Focus group (a) (b) ▪ Participant observation (a) (b) ▪ Direct observation (researcher) (a) (b) ▪ Social media (a) (b) ▪ Newspaper (a) (b) ▪ Official document (a) (b) ▪ Volunteered Geographic Information (a) (b) ▪ Social cartography/ mapping (a) (b) ▪ Other (a) (b) ▪ Not applicable* (a) (b) ▪ Undefined** (a) (b) 	Identify the techniques for data gathering used in the studies. This category contributes to defining the “Methodological approach” category.

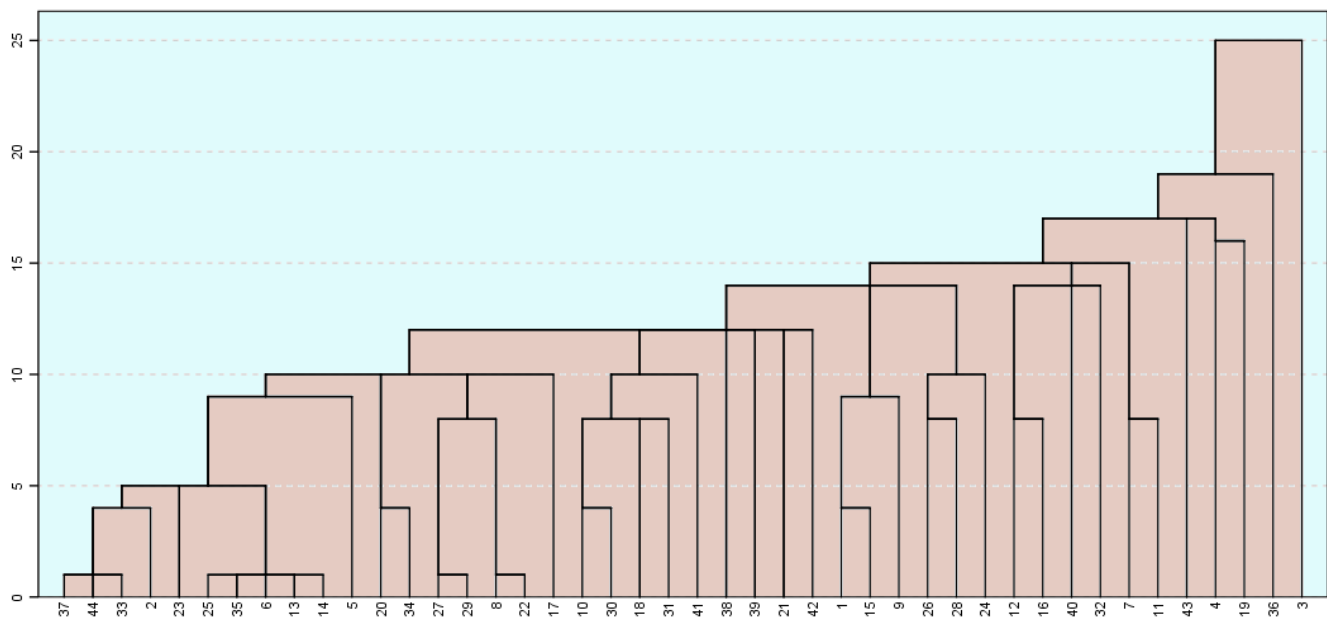
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Continuation Table S2: Categories considered for classifying the articles.

Category	Sub-categories	Goal
Physical data processing (a) and Social data processing (b)	<ul style="list-style-type: none"> Agent-based modelling (a) (b) Bayesian networks (a) (b) Behavioural game (a) (b) Cellular automata (a) (b) Comparative analysis (a) (b) Conceptual diagram (a) (b) Content analysis (a) (b) GIS (a) (b) Grounded Theory (a) (b) Mathematical modelling (a) (b) System dynamics (a) (b) Statistical analysis (a) (b) Other (a) (b) Not applicable* (a) (b) Undefined** (a) (b) 	Identify the data processing technique used. This category contributes to defining the “Methodological approach” category.
Methodological approach	<ul style="list-style-type: none"> Qualitative Quantitative Mixed (Quantitative-Qualitative) 	Identify the approach used considering the data gathering and processing steps.
Interdisciplinarity	<ul style="list-style-type: none"> Mono-disciplinary Weakly Multi or Interdisciplinary Multi or Interdisciplinary 	Identify the composition of disciplinary perspectives of authors considering their affiliation.
Transdisciplinarity	<ul style="list-style-type: none"> There was stakeholder engagement There was not stakeholder engagement 	Identify if people were included in the study at some level like invited to fill surveys or to express their views, among other activities.

**Not applicable* indicates that the category was not applied in the study.

***Undefined* indicates that the category was not clear.



Supplementary Figure 1: Cluster analysis relating social components, data gathering, and processing tools used. The numbers on the x axis indicate the article number. Categories “Other”, “Undefined”, and “Not applicable” were excluded.