


EDITORIAL

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# Authors, geographies and the content of papers published in *Geoenvironmental Disasters* (2014–2018)

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## Abstract

*Geoenvironmental Disasters* - an open access journal of the International Consortium on Geo-disaster Reduction (ICGdR) - is being published since 2014. This contribution aims at characterising 115 papers published in the first five volumes of the journal (2014–2018) and outlining some future perspectives. It is shown what research topics (types of natural hazards and disasters) are a subject of published papers, what methods are employed to investigate them and what is the geographical focus. Further, it is shown who publishes research results in *Geoenvironmental Disasters*, international cooperation network and the impact of published papers. Based on these findings, we conclude that *Geoenvironmental Disasters* became established journal for disseminating results of research on diverse types of natural disasters in various geographical environments across the globe, and we opine that further advancement of the journal might be achieved by onward indexing efforts.

**Keywords:** Geoenvironmental disasters, Natural hazards, Bibliometrics, Scientometrics

## Introduction the five-year history of the journal

The ICGdR is an international non-governmental and non-profit making scientific organization legally registered as a non-profit organization in 2013 in the Shimane Prefecture government according to the Japanese law. The ICGdR contributes to a safe and secured social and natural environment by promoting the reduction of disasters triggered by geological and geophysical phenomena on the earth.

*Geoenvironmental Disasters* is the official journal of the ICGdR. It is devoted to multi-disciplinary applied and fundamental research on various types of geoenvironmental hazards (e.g. typhoons, earthquakes, volcanic activity, landslides, floods, tsunamis and intensive erosion), and their impacts on the infrastructure, natural environment, and society. The journal publishes research papers, quick reports of recent geoenvironmental disasters and any efforts for geo-disaster reduction, review

papers, and technical reports of various geoenvironmental disaster-related case studies.

*Geoenvironmental Disasters* started publication by Springer as an open access journal in 2014. In the first 5 years, 115 papers have been published (see [General characteristics](#) section) and the journal acceptance rate was about 46.5%. One best paper was selected by the Editorial Board every year, and awarded in the International Symposium on Geo-disaster Reduction. The best papers in the first 4 years are listed in Table 1 (Wang et al. 2014; Tuladhar et al. 2015; Havenith et al. 2016; Casagli et al. 2017). Since 2019, the teaching material in the field school of UNESCO Chair on Geoenvironmental Disaster Reduction will be included in the special issue of *Geoenvironmental Disasters*, which can represent the up-to-date research results worldwide related to geoenvironmental disaster reduction. Recently, the journal has been accepted for coverage in Scopus, which marks an important milestone in the history of the journal.

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**Table 1** Best Papers of the Geoenvironmental Disasters in the first 4 years

Title	Authors	Publication Year
Spaceborne, UAV and ground-based remote sensing techniques for landslide mapping, monitoring and early warning	Nicola Casagli, William Frodella, Stefano Morelli, Veronica Tofani, Andrea Ciampalini, Emanuele Intrieri, Federico Raspini, Guglielmo Rossi, Luca Tanteri and Ping Lu	2017
A new classification of earthquake-induced landslide event sizes based on seismotectonic, topographic, climatic and geologic factors	Hans-Balder Havenith, Almaz Torgoev, Anika Braun, Romy Schlögel and Mihai Micu	2016
Disaster risk reduction knowledge of local people in Nepal	Gangalal Tuladhar, Ryuichi Yatabe, Ranjan Kumar Dahal and Netra Prakash Bhandary	2015
Key factors influencing the mechanism of rapid and long runout landslides triggered by the 2008 Wenchuan earthquake, China	Fawu Wang, Ping Sun, Lynn Highland and Qiangong Cheng	2014

## Published papers (2014–2018)

### General characteristics

A total of 115 papers have been published in the first five volumes of *Geoenvironmental Disasters* (2014–2018). Majority of these ( $n = 87$ ; 75.7%) are classified as research articles, followed by methodological papers ( $n = 7$ ; 6.1%) and editorials ( $n = 7$ ; 6.1%). Short reports, reviews, databases, technical note and erratum were further published (see Table 2). While 7 papers were published in the first volume (2014), following volumes contain between 24 papers (2018) to 30 papers (2016). Each of 115 papers has been described by qualitative (e.g. research topic, methodological approach employed, geographical focus) and quantitative characteristics (e.g. times cited, number of references), which are further analysed in this paper.

### Research topics

Eight different research topics were distinguished and used to describe each paper: (i) landslide studies (including all different types of slope movements and erosion); (ii) earthquake studies; (iii) flood studies (including coastal flooding and glacial lake outburst floods - GLOFs); (iv) tsunami studies; (v) drought studies; (vi) general climate change-related studies; (vii) general disaster risk reduction studies; and (viii) other studies. A total of 76 papers are assigned to

one of these categories, while 33 studies are assigned to two or more categories (i.e., multi-hazard studies; e.g. studies of earthquake-induced landslides) and 6 papers are not assigned to any of eight categories (editorials). Landslides studies dominate among the published papers ( $n = 60$ ; 52.2%), followed by earthquake studies ( $n = 21$ ; 18.3%), flood studies ( $n = 16$ ; 13.9%), general climate change-related studies ( $n = 10$ ; 8.7%) and general disaster risk reduction studies ( $n = 8$ ; 7.0%). Other research topics are represented marginally.

Wordcloud analysis of the most frequently used words among the titles of published papers has been employed, using [wordclouds.com](http://wordclouds.com) online tool. This analysis confirmed the dominance of research on landslides (48 hits; see Fig. 1). As for other specific hazard types, earthquake (7 hits), flood (6 hits), rainfall (5 hits) and tsunami (3 hits) are represented. Hazard (11 hits), risk (11 hits), susceptibility (9 hits), mitigation (4 hits) and vulnerability, disaster, response and damage (3 hits each) are among the general disaster risk management terms represented. As for the geographical terms, China (11 hits), Nepal (7 hits), India (6 hits), Indonesia (5 hits), Japan (5 hits), Ethiopia, Nigeria and Peru (3 hits each) are represented (see also 2.4).

### Employed methodological approaches

Six types of general methodological approaches are distinguished and one or more methodological types are assigned to each paper published. We distinguish between: (i) field data-based studies; (ii) remotely sensed images-based studies; (iii) laboratory experiments-based studies; (iv) modelling-based studies; (v) participatory method-based studies (interviews, public surveys); (vi) reviews. It is shown that 56 papers (48.7%) employ one of the methodological approaches defined above (i.e., single-approach papers), while 50 papers (43.5%) use a combination of two or more methodological approaches defined above (i.e., multi-approach papers); remaining 9 papers do not employ any methodological approach (editorials, erratum).

**Table 2** Types of papers published in the first five volumes of *Geoenvironmental Disasters*

Year	Papers published	Paper type							
		RA	REW	METH	DATA	SR	EDIT	TN	ER
2018	24	19	2	1	1	0	1	0	0
2017	28	23	0	0	0	2	3	0	0
2016	30	21	1	3	0	2	1	1	1
2015	26	20	0	3	1	1	1	0	0
2014	7	4	1	0	0	1	1	0	0
total	115	87	4	7	2	6	7	1	1

RA research article, REW review, METH methodology, DATA database, SR short report, EDIT editorial (including acknowledgement to reviewers), TN technical note, ER erratum



**Fig. 1** Word cloud representation of the most frequently used words in the titles of 115 analysed papers. Only words occurring three times or more are displayed ( $n = 80$ ). The size of the font indicates the frequency of occurrence (3–48 hits)

Among those single-approach papers, modelling-based studies dominate ( $n = 22$ ), followed by field data-based studies ( $n = 11$ ) and participatory method-based studies ( $n = 8$ ). Multi-approach papers typically employ a combination of remotely sensed data and modelling ( $n = 13$ ) and a combination of field data and laboratory experiments ( $n = 11$ ). Considering both single-approach papers and multi-approach papers, majority are employing modelling ( $n = 58$ ), field data ( $n = 35$ ), remotely sensed data ( $n = 28$ ), laboratory experiments ( $n = 16$ ) and participatory methods ( $n = 14$ ).

## Geographical focus

Geographical focus is assigned to 101 out of 115 published papers (i.e., 87.8%), spanning all continents excluding Antarctica. A total of 59 studies (58.4% of studies with geographical focus) are focused on Asia, 15 studies to Africa (14.9%), 15 studies to Europe (14.9%), 7 studies on North America (6.9%), 4 studies on South America (4.0%) and 1 study on Australia (1.0%). One study has global coverage and two studies focus on more than one country. A total of 28 different countries are covered in papers published in *Geoenvironmental Disasters* and the highest attention is attracted by China ( $n = 18$ ; 17.8%), followed by India, Nepal and Italy ( $n = 9$ ; 8.9% each). Emmer (2018) analysed geographical focus of more than half million WOS-indexed studies on different types of natural hazards, identifying hotspots of research on natural hazards as well as ‘under-researched’ regions (see Fig. 2a). Papers published in *Geoenvironmental Disasters* reflect global trends and hotspots of research on natural hazards (see Fig. 2b for comparison).

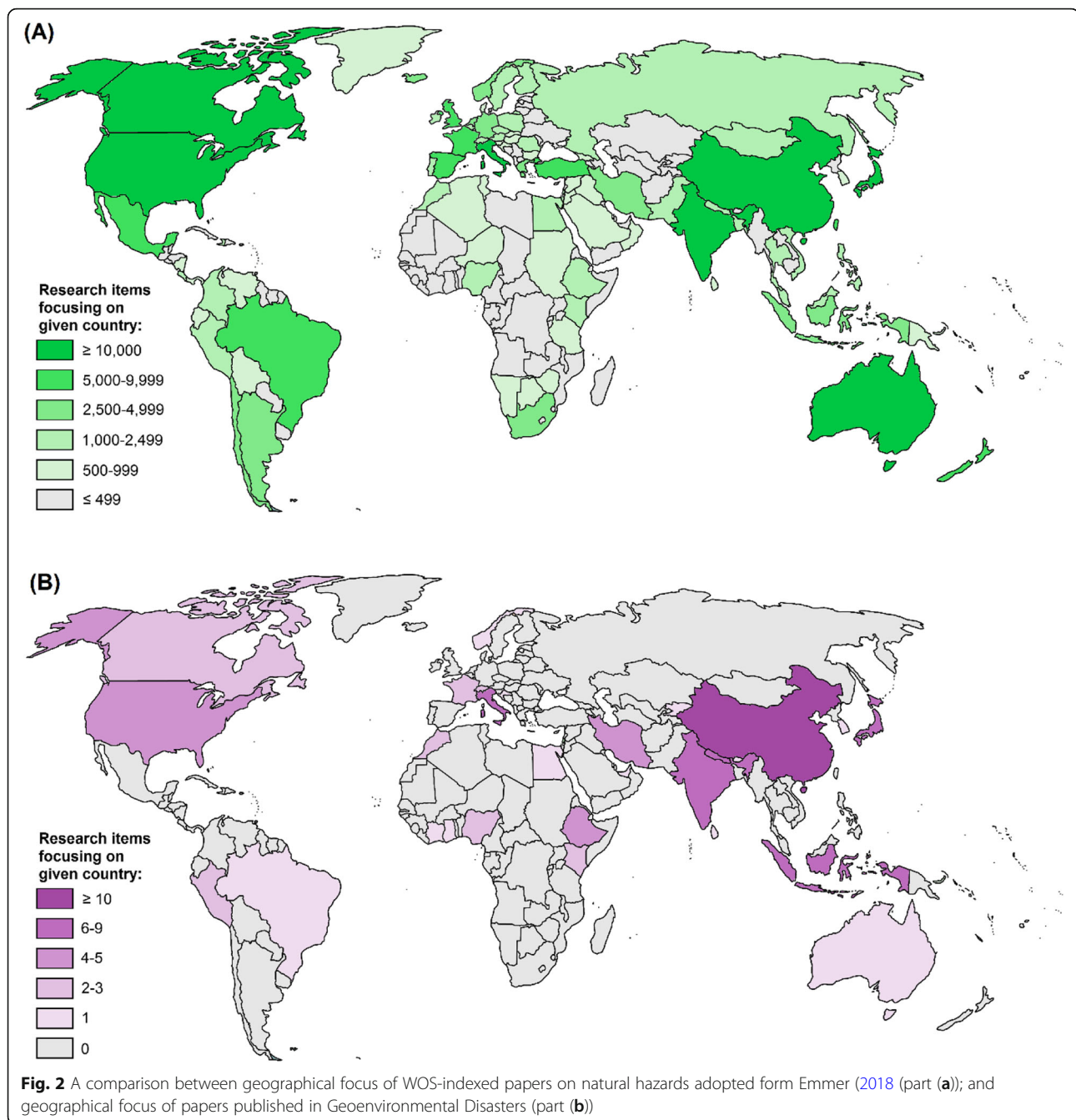
### Authors and countries

Authors affiliated with institutions in 40 different countries published their research in *Geoenvironmental Disasters*. Out of these, the authors affiliated with the institutions located in China and Japan contributed to 28 papers each (24.3%), followed by Italy and Nepal ( $n = 10$ ; 8.7%), USA ( $n = 9$ ; 7.8%), India ( $n = 8$ ; 6.9%), Canada ( $n = 7$ ; 6.1%), Indonesia and France ( $n = 6$ ; 5.2%; see Fig. 3a). This differentiates *Geoenvironmental Disasters* from the general trend of research on natural hazards, which is globally dominated by the authors affiliated with institutions located in the USA (see Emmer 2018) and may be explained by the increased representation of Chinese and Japanese institutions in the ICGdR.

Only 5 research articles, 4 editorials and 2 review papers (i.e., 9.6% of all) have been written by individuals, while remaining 104 papers were written by teams, confirming previously published hypothesis about dominant role of teams in producing knowledge (Wuchty et al. 2007). Out of the 104 papers written by teams, 45 papers have been written by international teams (i.e., 39.1% of all), while remaining papers were written by individuals or mononational teams. A cooperation network between individual countries is visualised in Fig. 3b. Three main clusters of more intense cooperation are observed: (i) Japan-China-Nepal-Indonesia; (ii) Belgium-Germany-Kyrgyzstan; (iii) Austria-Czech Republic-Norway-Netherlands. These clusters, however, reflect relatively low number of cooperation ties and are, thus, sensitive to change.

## Views and citations

As of in May 2019, papers published in *Geoenvironmental Disasters* were accessed about 280,000 times (i.e., an

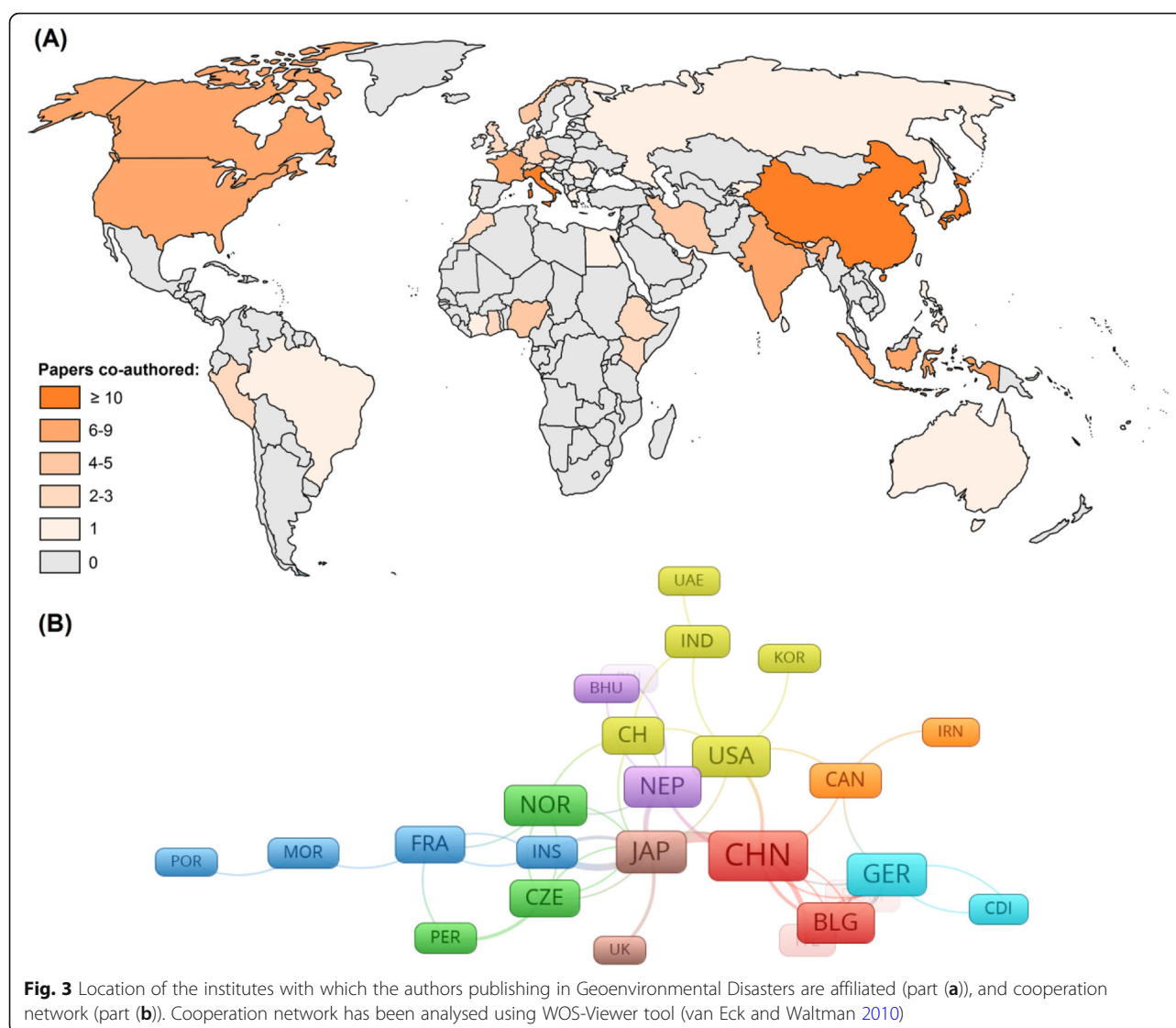


average of more than 2430 views per paper), ranging from 371 to 16,417 views per paper (the most accessed paper of Wang et al. 2014; see Fig. 4a). Considering publishing years of individual papers, view per year vary from 180 to 3680 views per year. Published papers obtained a total of 417 citations (based on Citations.Springer.com tool), i.e., an average of 3.63 citations per paper. The two most cited papers obtained 27 citations each (Anbalagan et al. 2015; Casagli et al. 2017). The relationship between views and citations is, however, weak. A total of 71 papers (i.e., 61.7% of all) obtained at least 1 citation; the majority of not cited papers

are, however, those published in last two volumes (2017–2018; see Fig. 4b).

Considering different research topics, it is revealed that landslide studies were cited 4.94 times on average, while papers on earthquakes 2.81 times on average and papers on flood 2.61 times on average. It is also shown that multi-hazard papers are slightly more cited (4.00 citations per paper on average) compared to single-hazard papers (3.46 citations per paper). Considering different types of papers, research articles obtained 3.65 citations on average, while methodological papers 6.42 citations





**Fig. 3** Location of the institutes with which the authors publishing in *Geoenvironmental Disasters* are affiliated (part (a)), and cooperation network (part (b)). Cooperation network has been analysed using WOS-Viewer tool (van Eck and Waltman 2010)

on average and review papers 7.00 citations on average (low number of review papers, however, need to be taken into consideration). Multi-approach papers have similar citations (3.56 citations per paper) compared to single-approach papers (3.68 citations per paper).

## Future perspectives

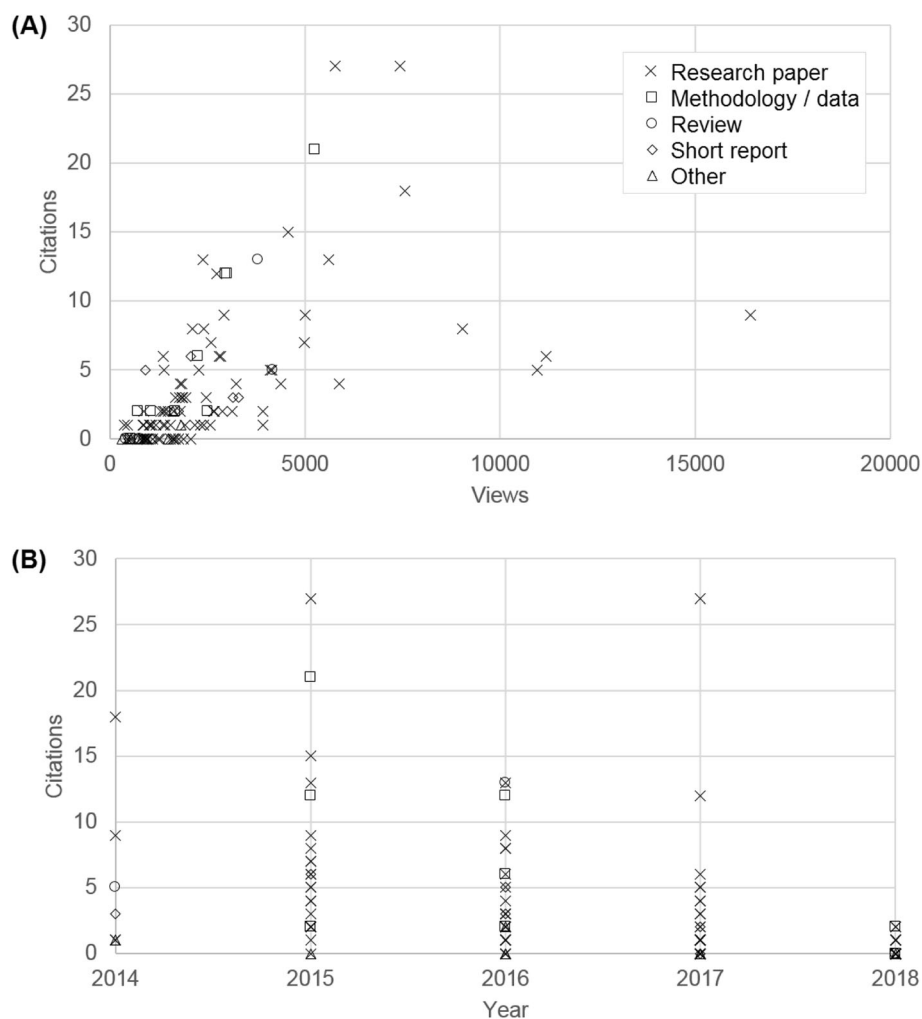
### SWOT analysis

The journal is rather strong in terms of complexity and methods used for the research. This fact could be revealed from the first few years of publishing, nevertheless more detailed evaluation could be done after another 5 years. The other positive factor is that in rather short time an international journal has been created with wide scope of authors as well as research field areas. To support the journal quality, we need also to identify weaknesses. The analysis also revealed that *Geoenvironmental Disasters* have rather low share of papers outside the ICGdR community. For the early

stage of the journal life it is obvious that mainly the ICGdR members are willing to contribute, but this trend should be changed and we have to attract the whole “hazard community”. For instance special thematic issues could address the appropriate scientific community and bring the journal into the focal point of their interest. When the journal will build up a regular range of readers the journal will start to be attractive for papers of the highest research quality.

### Suggestions and recommendations

Since we entered the SCOPUS database in 2019, the journal will start to be more attractive for several other research teams and international activity of core members of ICGdR will help to promote the journal worldwide. The next quality milestone is to enter the Web of Science database and further aim at enhancing the values of indexes calculated by SCOPUS (SJr, SNIP and Cite Score) -



**Fig. 4** The relationship between views and citations for different types of papers published (Part (a)) and citations obtained by years (Part (b))

to strengthen the position of the International Consortium on Geo-disaster Reduction in the frame of the international community dealing with natural hazards and risks. The journal *Geoenvironmental Disasters* is considered as one of the columns for ICGdR (research, publishing, conferences) which work in synergy for disaster risk reduction.

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#### Authors' contributions

Emmer and Vilemek wrote the first draft. Wang revised the first draft. All authors read and approved the final manuscript.

#### Competing interests

The authors declare that they have no competing interests.

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