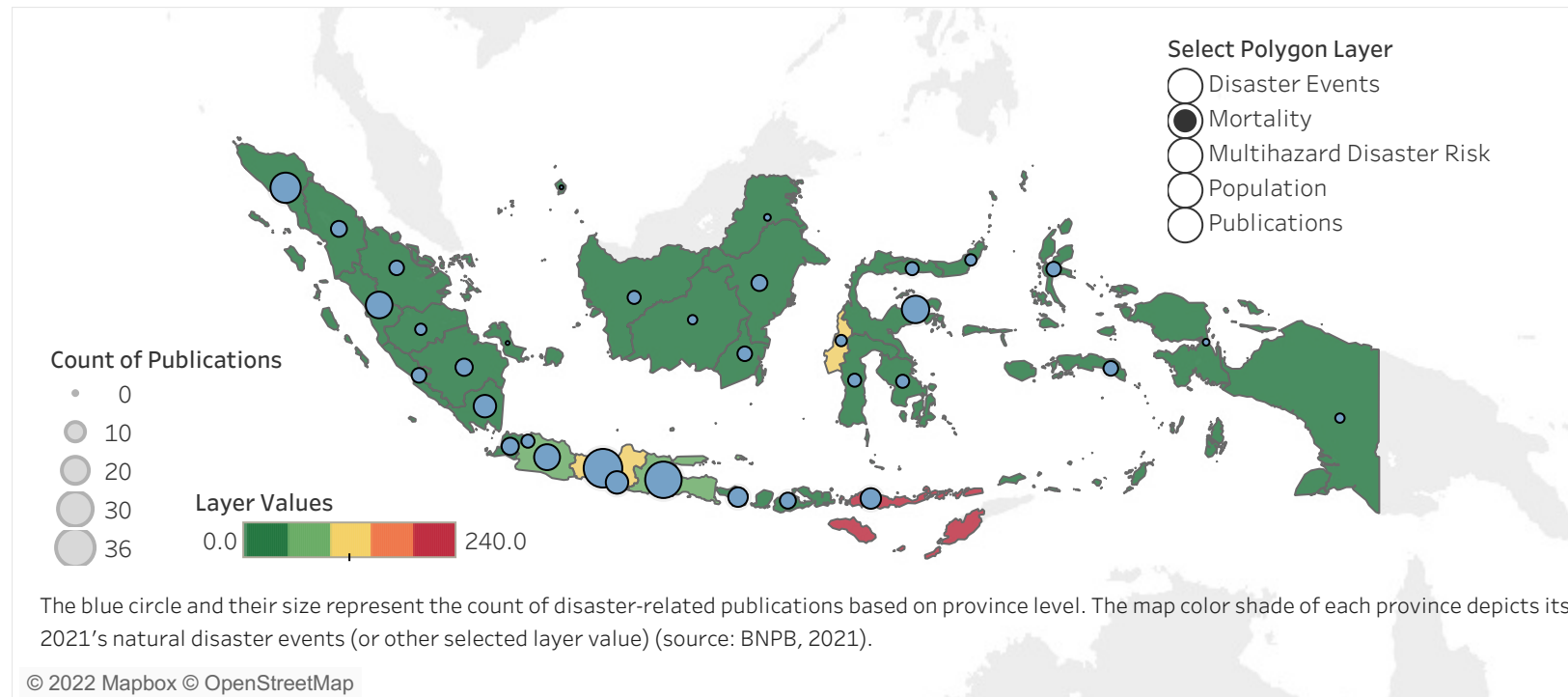


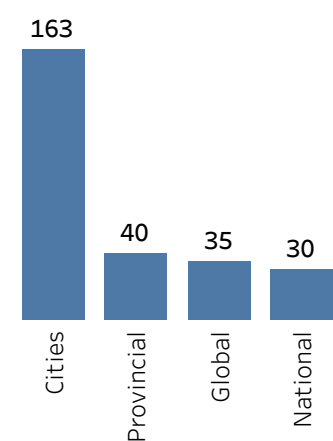
Indonesia Disaster Knowledge Update - January 2022



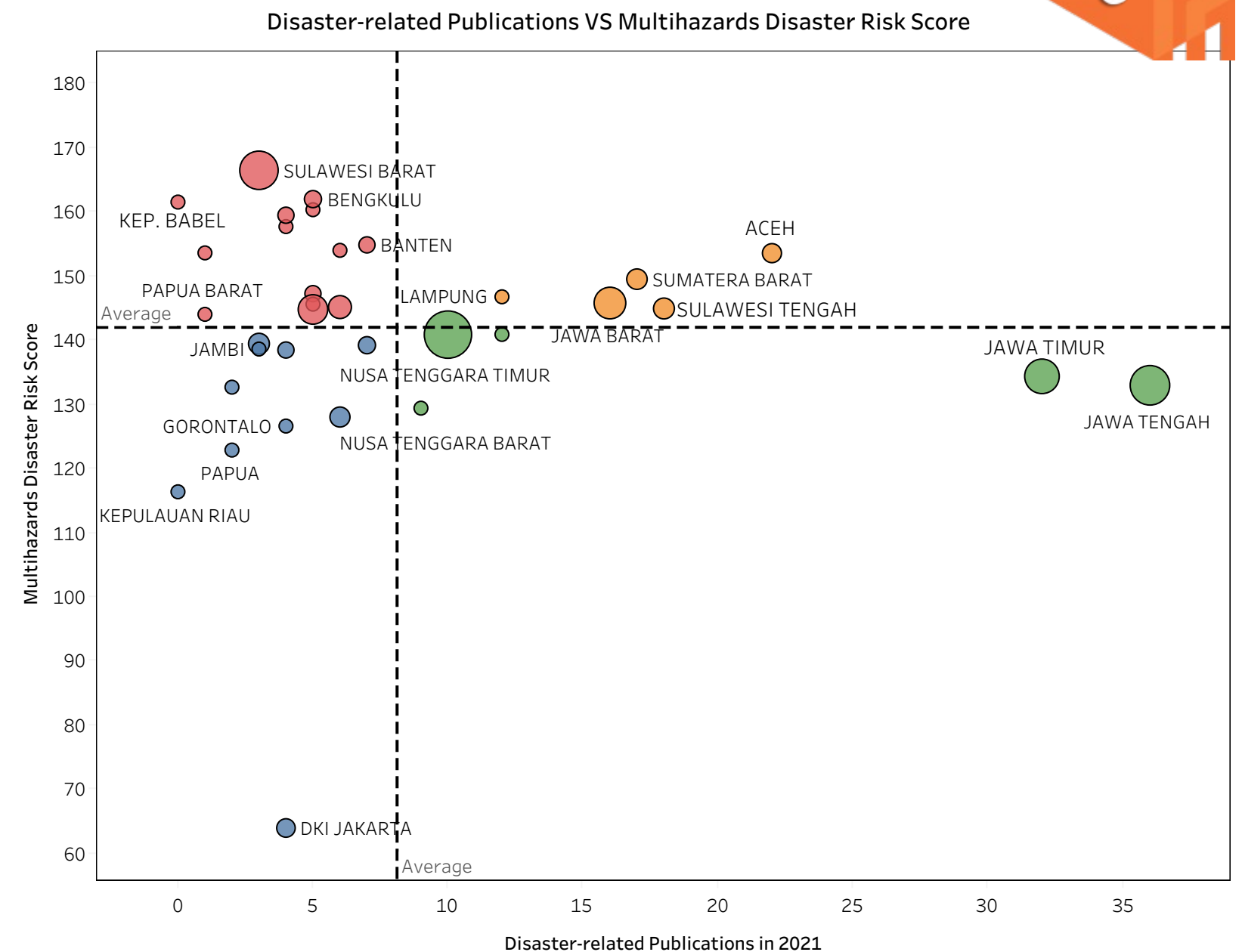
Disaster-related Research Publication in Indonesia (January - December 2021)



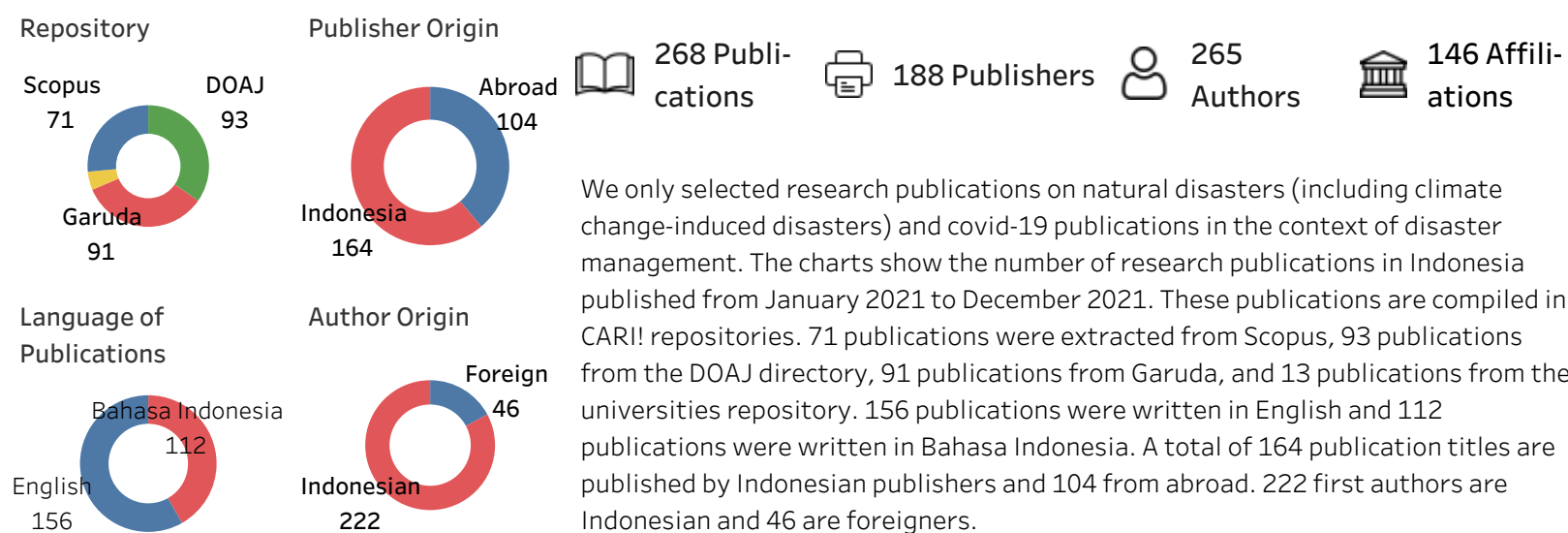
Level of Research Scope



The map shows Indonesia's disaster-related research distribution by provinces which was published in 2021 (source: CARI! repository-of-repositories, 2021). From 268 collected publications about topics with relevance to Indonesia, 163 were researching at the city/district level, 40 at the provincial level, 35 at the national level, and 30 publications at the global level in attribution to Indonesia. Most of the provinces in the Sumatra and Java region have a relatively high count of publications than the other region. Among the top provinces with many publications were Jawa Tengah (36 publications) & Jawa Timur (32 publications) in Java Island, Aceh (22 publications) & Sumatera Barat (17 publications) in Sumatra, Sulawesi Tengah (18 publications) in Sulawesi Island. Kepulauan Riau & Kepulauan Bangka Belitung provinces doesn't have any publications. The provinces that have been struck by frequent disaster events are Jawa Barat (533 events), Sumatera Utara (220 events), and Jawa Timur (215 events). However, the provinces with the highest mortality are Nusa Tenggara Timur (240 people), Jawa Tengah (218 people), and Sulawesi Barat (208 people). Although based on the number of deaths in 2021, in Nusa Tenggara Timur is relatively high, there is still not enough research done on the area, especially regarding hydrometeorological disasters.

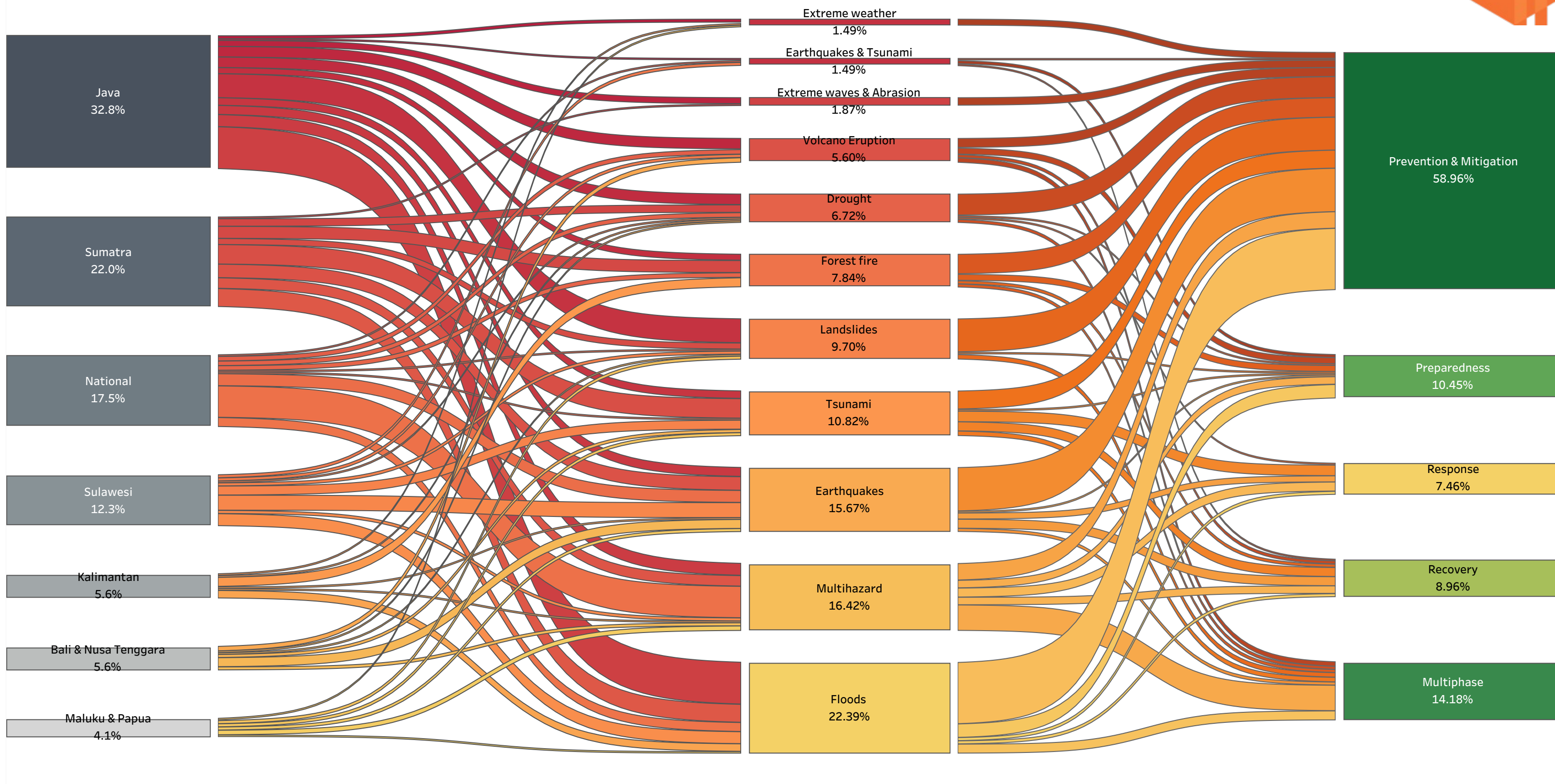


Publication Statistics



The quadrant plot shows the provinces category (represented by the different colors) based on the number of 2021's publications on disaster and its multi-hazards disaster risk score and the circle size depicts its province's 2021 disaster mortality number (source: BNPB, 2021). There are 9 provinces with the publications number higher than average, the 4 of them are in the orange category which has a higher than average risk score. 10 provinces are in the blue category which has lower than average publications and also lower risk scores. 14 provinces are in the red category which has lower than average publications and higher risk. It can be seen that there are several areas such as Sulawesi Barat and other provinces (indicated by the red dots) that have high risk but are not accompanied by a large amount of knowledge about disasters. Less in terms of the amount of research. The need for disaster knowledge is getting higher, especially for areas with a high rate of mortality caused by disaster events, especially in the areas of Sulawesi Barat and Kalimantan Selatan with higher mortality and higher multihazards disaster risk score.

Sankey Diagram of 2021's publications: Location to Hazard types to DRM Phase



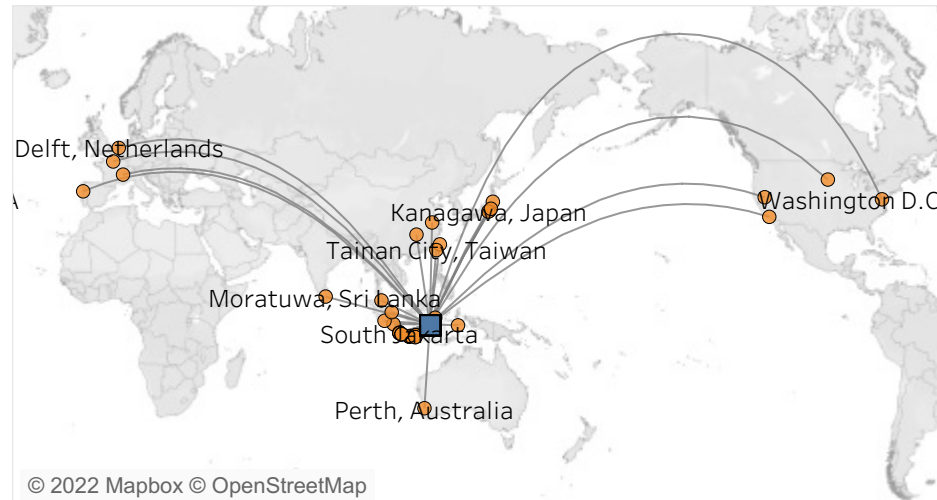
This Sankey diagram is calculated based on the number of publications. The box and the thickness of the flows show the number of publications related to the topics. Java region is the most studied region in Indonesia (88 publications) with the highest relevancy to floods hazard (28 publications) and landslides hazard (16 publications). The 2nd region is Sumatra (59 publications) with the main research on floods and tsunami hazards. The national-level study majorly studied more in multi-hazards (21 publications). Sulawesi region dominantly has published research in earthquake hazard (10 publication), whereas Kalimantan dominantly in floods and forest fire hazard, Bali & Nusa Tenggara in earthquake hazard, and Maluku & Papua in multihazard research. Floods are the most studied hazard, followed by earthquakes, tsunamis, landslides, and so on. Most of the hazards were studied in relevancy to prevention & mitigation disaster management phase, except the multi-hazards research were dominantly examined also in multiphase. The response and recovery phases are less researched in the disaster management area, preparedness phase also quite less researched but has a lot of attribution from floods hazard.

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Where are the researchers located and where is their research conducted?

Nation-wide study



Maluku & Papua

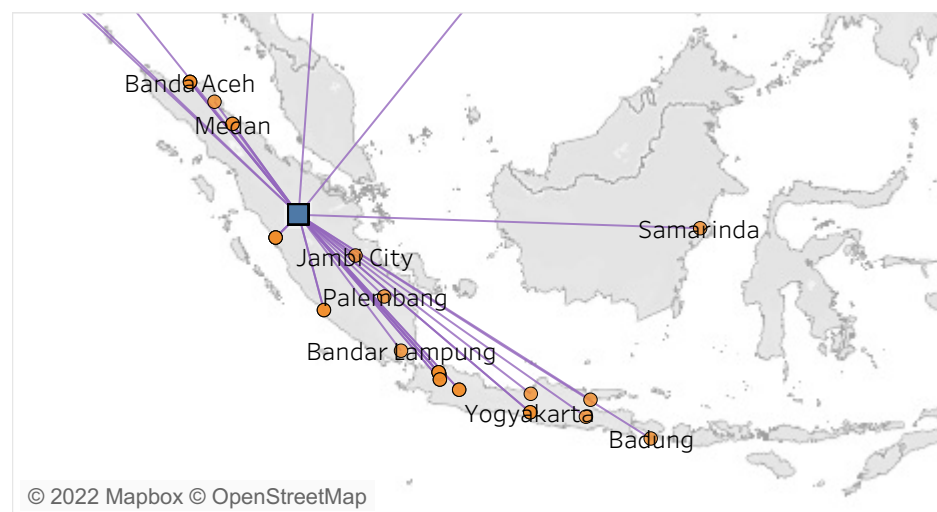


Location Distribution of Affiliation



The following are maps of the distribution of the affiliation locations of each researcher related to disasters with the area of research. At the national level research, many researchers from inside and outside the country contributed, there were 19 research publications produced by 19 foreign researchers spread across Europe, East Asia, America, and Australia. While there are 23 publications produced by domestic researchers spread from various Indonesian universities and research institutions, the largest contribution was made by researchers from the University of Indonesia with 4 publications in 2021. Disaster research in Sumatra is also carried out by researchers from various parts of the world (8% of publications), but with a larger number of domestic researchers (92% of publications). Researchers at Syiah Kuala University contributed quite a lot with 9 publications on Sumatra and also other universities based in Sumatra (45% of publications), the rest were produced by researchers from Java and Kalimantan.

Sumatera

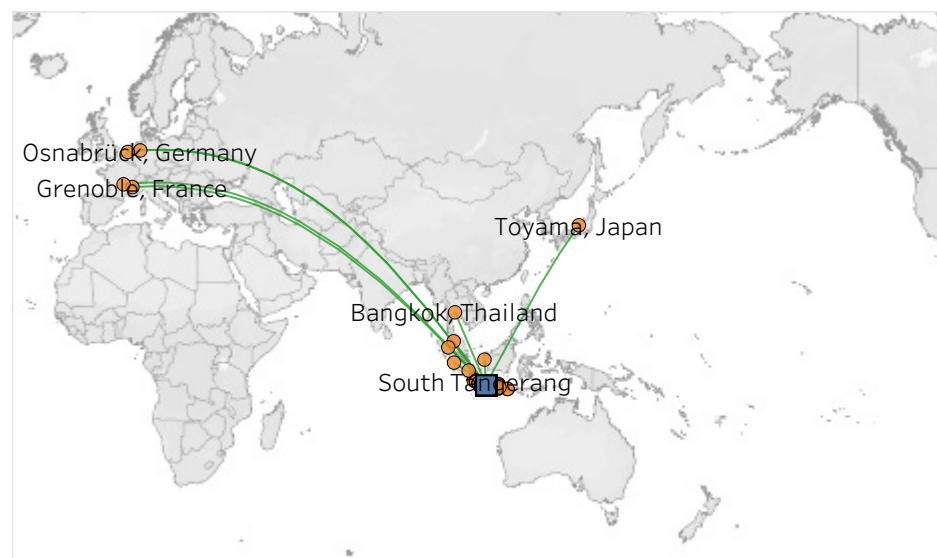


Sulawesi

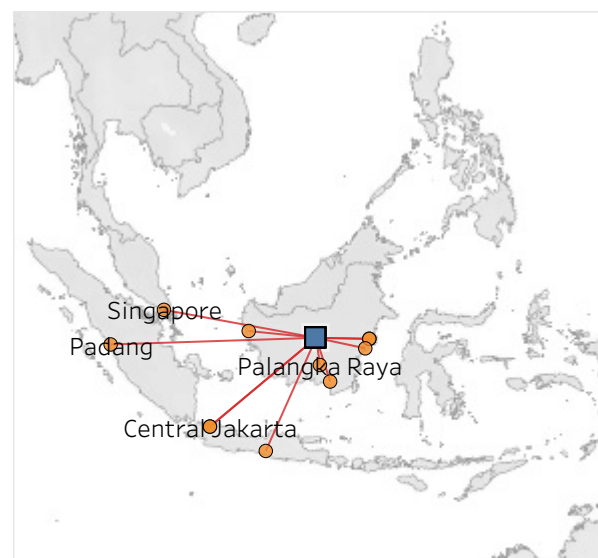


While research in Java Island is dominated by domestic researchers with the most affiliations from Diponegoro University (9 publications) and Gadjah Mada University (8 publications), several researchers located in big cities in Java also produced more than 1 publication, such as in Bogor, Bandung, and Malang. Researchers from abroad who researched Java came from European and Asian institutions (7 publications). Research in Kalimantan has not attracted the attention of foreign researchers, there is only 1 publication, namely from NTU Singapore, while domestic researchers are dominated by institutions in Kalimantan (9 publications) and the rest from government research institutions in Java.

Java



Kalimantan



Bali & Nusa Tenggara



Quite a number of researchers based in foreign institutions have investigated disasters in Sulawesi (9 publications), mainly due to the 2018 Palu Earthquake and tsunami disaster. Researchers from Sam Ratulangi University produced 4 publications on Sulawesi, other studies were also carried out by universities in various provinces in Sulawesi. Researchers from Java are also quite a lot researching Sulawesi with 10 publications. The Maluku & Papua zones, which have little research, have also attracted the attention of researchers from South Korea and Canada (2 publications). Unlike other zones, research institutions in Maluku & Papua are still less active in researching their own territory, there is only one university from Maluku (3 publications), the rest are from researchers from Java (6 publications).

Research publications on Bali & Nusa Tenggara were produced by 3 foreign institutions and 8 domestic institutions, 3 institutions from the zone itself, and the rest from Java. All provinces in Bali & Nusa Tenggara already have researchers who publish their research, mostly from Udayana University (13% of publications). Overall, the landscape of researchers and research sites in Indonesia is heavily dominated by universities and research institutions from Java. There are very many researchers based in Java who research outside Java, but very few researchers in other zones investigate outside their own zone. Of course, this gap can become a problem when the final results of research on certain zones do not reach the people who live in those zones, for example, research on Papua which is discussed on the island of Java without involving researchers or people from Papua. This needs to be encouraged so that the understanding of the region can be richer and explored more deeply, especially from research from universities and other local affiliates.

The orange dot is the city of the researcher's affiliation registered, the blue square is the zone where the researchers conducted their study. The line connected the city and the zone of the researcher, the width of the line represents the number of research.