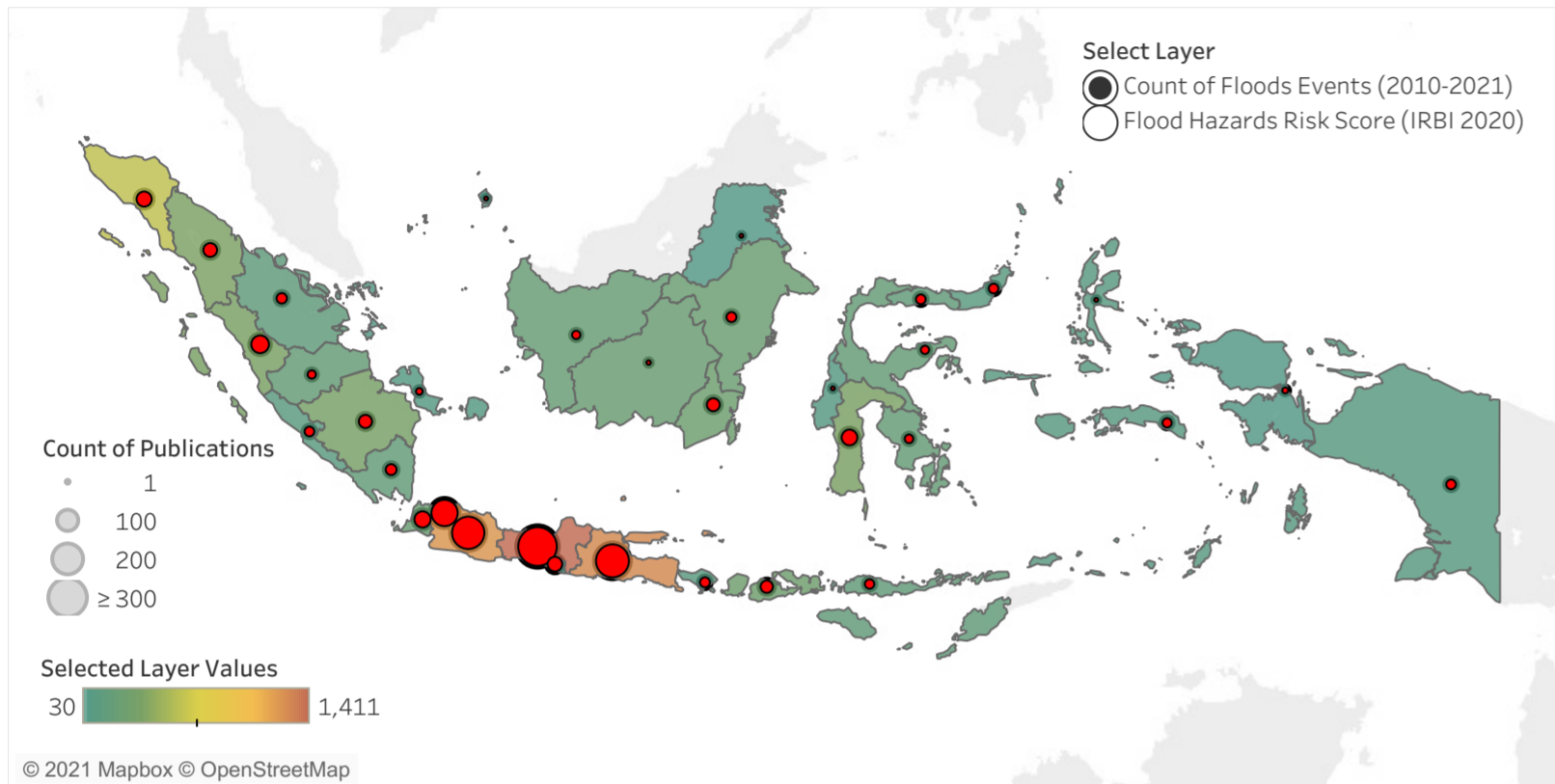


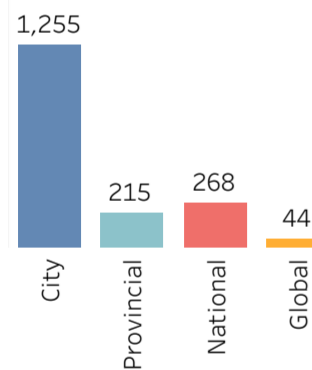
Indonesia Disaster Knowledge Update - October 2021



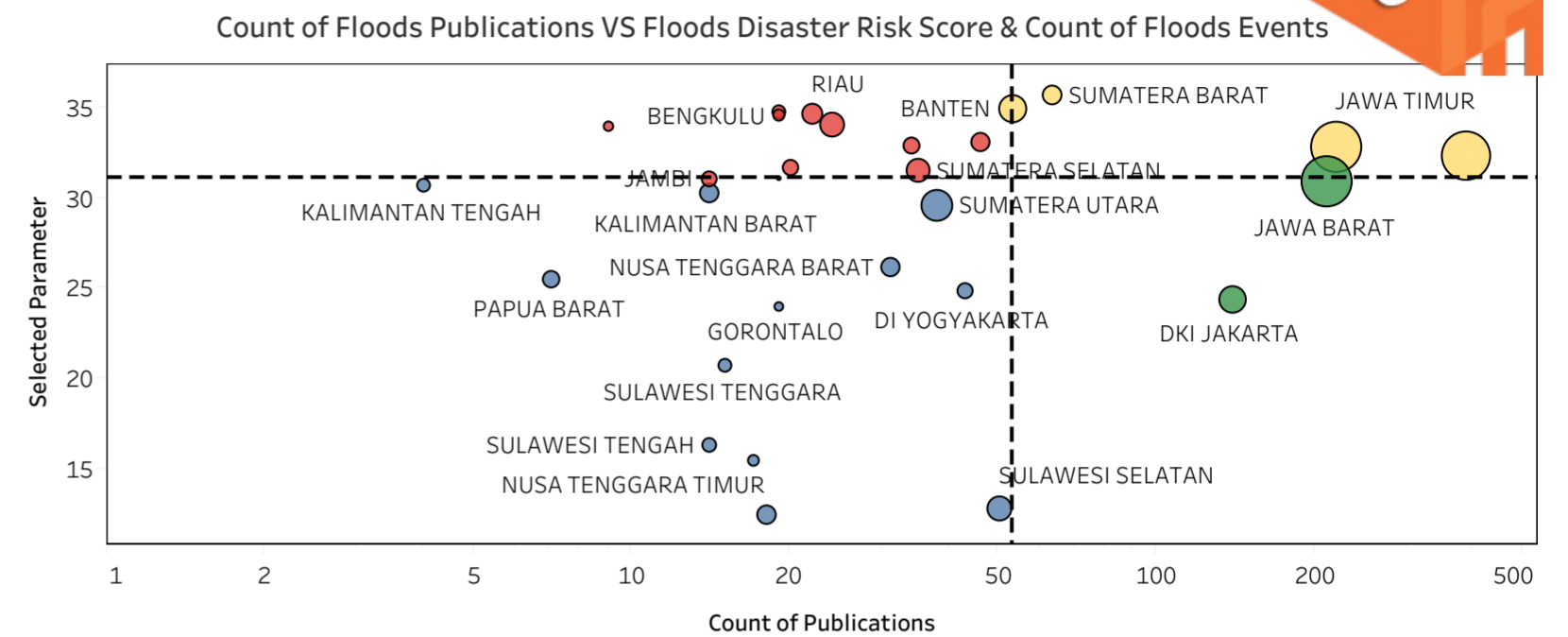
Research publications about Flood Hazards in Indonesia



Level of Research Scope



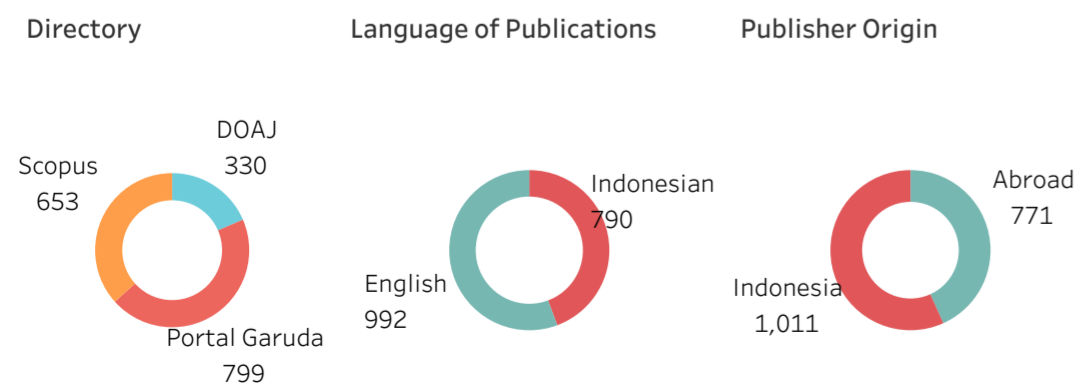
The map shows the distribution of research publications on flood hazards in every province of Indonesia (source: CARI! repository-of-repositories, 2021). The blue dots and their diameter size represent the count of publications in each province. The map color shade is the selected layer of the count of flood events in 2010-2021 (source: DIBI, 2021) and the flood disaster risk index (Indeks Risiko Bencana Banjir Indonesia) (source: BNPB, 2021). From a total of 1.782 articles in Indonesia, a portion of 44 articles were analyzed at the global level with implications to Indonesia, 268 at the national level, 215 at the provincial level, and 1.255 at the city level. The overall trend, the provinces that have been struck by flood disaster events more frequently has more publications produced. It can be clearly seen in the provinces in Java Island and Aceh province, especially Jawa Tengah province that has the highest count of publications is also the province that has the most floods events, 1.441 events. However, the publication trend does not correlate with its flood hazards risk score in each province. Such as Sumatera Barat province has the highest risk score of 35.73, only has a moderate count of publications.



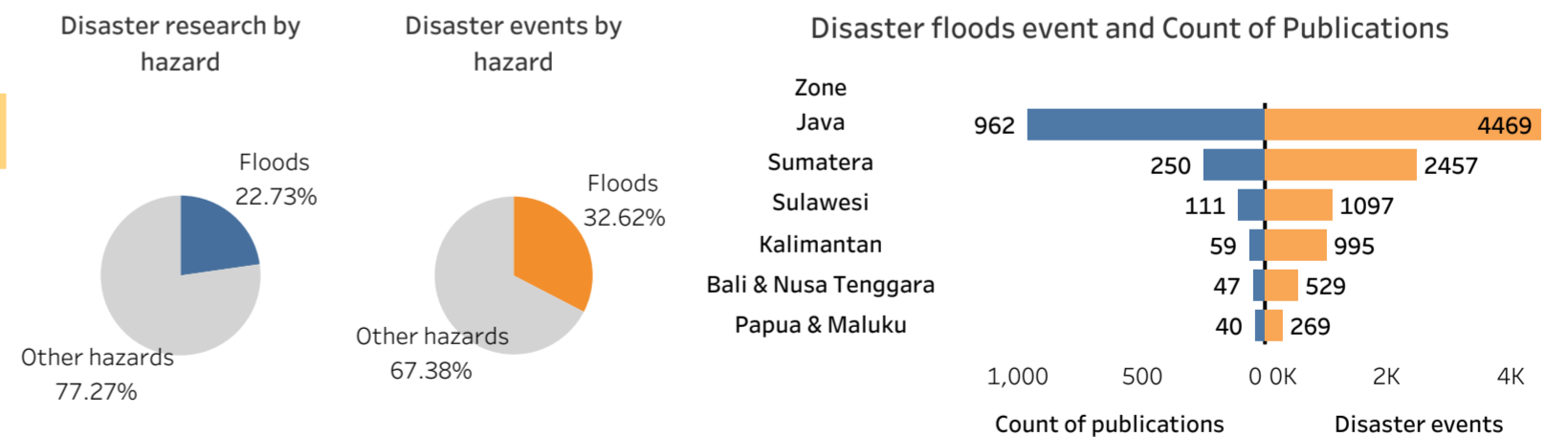
Quadrant plot shows the provinces class category based on Count of Research Publications (CRI) and Floods Disaster Risk Score (FDRS) (source: BNPB, 2021). Six provinces have a high count of publications, where 4 of them are higher than the median flood disaster risk score, only Jakarta and Jawa Barat provinces which have a lower score. Eleven provinces mostly from Sumatra and Kalimantan Island are in the higher flood risk zone but have a small number of publications. Provinces in Nusa Tenggara, Sulawesi, Papua, and Maluku have a relatively small number of publications and also lower flood risk. Higher populations provinces generally also have higher counts of publication as well.

Publication Statistics

1.782 Publications | 832 Publishers | 1.687 Authors



Statistics show research publications about flood hazards in Indonesia published between 1989 and September 2021. These publications are compiled in CARI! repository-of-repositories data, curated from Scopus, Directory of Open Access Journal, and Portal Garuda. 653 publications are sourced from Scopus only, 330 publications from the DOAJ directory, and 799 from Portal Garuda. A total of 1.011 publication titles are published by Indonesian publishers and 771 from abroad. These charts include publications written in Bahasa Indonesia and English.

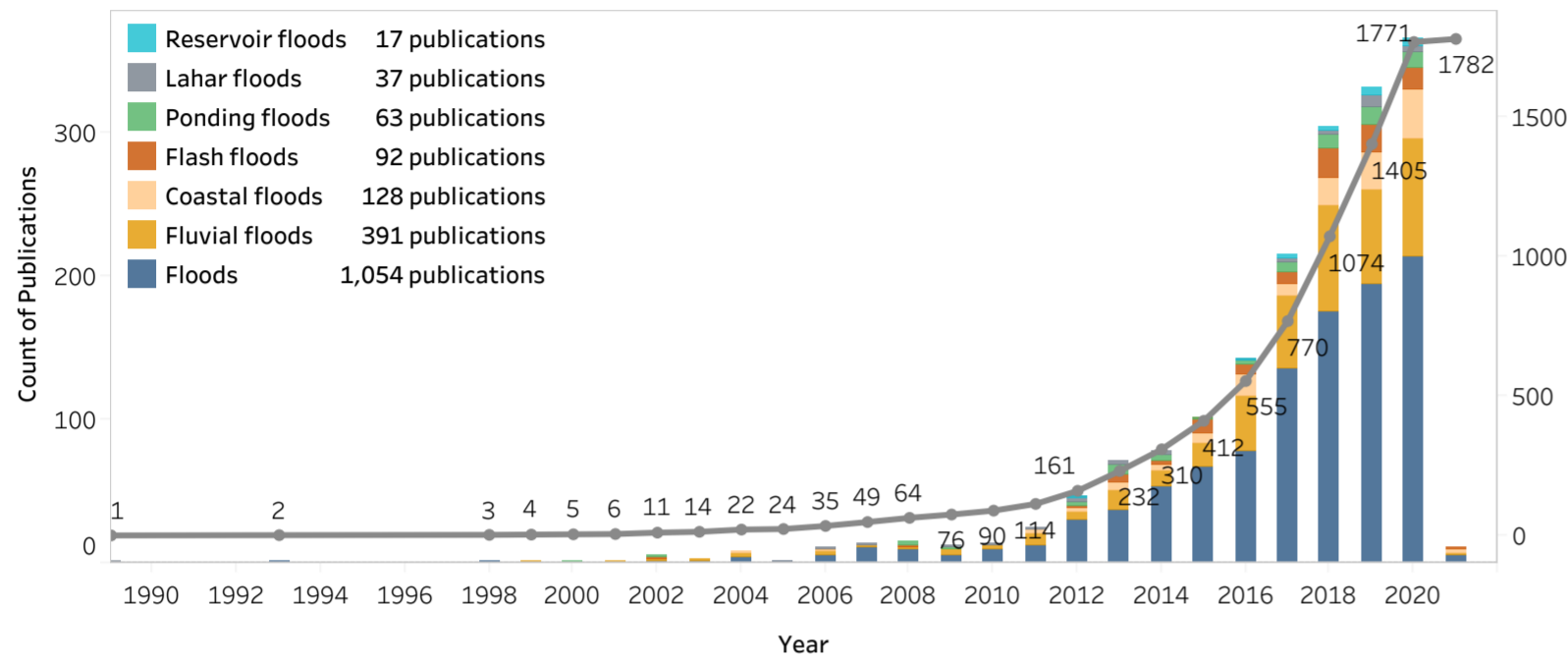


Flood hazards in disaster-related research publications in Indonesia are nearly a quarter of all total publications, making it the most studied hazard in Indonesia (source: CARI! repository). Floods disaster events are also the most frequent disaster that occurred in Indonesia, which comprised more than one-third of all-natural disaster events in 2010-2021 (source: BNPB). Java Island is the most often hit by floods disaster events in the last eleven years by almost 4.500 events. The second is Sumatera, then Sulawesi, Kalimantan, Bali & Nusa Tenggara, and Papua & Maluku zone. In general, the counts of flood hazards research publications are linearly increasing with the floods disaster events in every zone.

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Research Publication Trends of Various Types of Flood Hazards



From 1989 to 2008, the number of published research articles on flood hazards in Indonesia per year is relatively low. Only by the year 2009, the number of articles has increased exponentially until 2020, and 2021 with current total publications has reached 1.782 articles. The broad floods type category dominates the portion of publications in all years with 1.054 articles. It is followed by fluvial flood type, coastal flood type, flash flood, ponding flood, lahar flood, and reservoir flood type. The floods type are adapted from the UNDRR hazards cluster list (source: UNDRR, 2020).

Top Articles based on Scopus directory

- Flood risk assessment for delta mega-cities: a case study of Jakarta**
Budyono Y. | Natural Hazards
Published on 2015-01-01 | cited by 51 articles
- Floods in Jakarta: When the extreme reveals daily structural constraints and mismanagement**
Texier P. | Disaster Prevention and Management: An International Journal
Published on 2008-01-01 | cited by 48 articles
- The importance of integrated solutions to flooding and water quality problems in the tropical megacity of Jakarta**
Costa D. | Sustainable Cities and Society
Published on 2016-01-01 | cited by 28 articles
- River flood risk in Jakarta under scenarios of future change**
Budyono Y. | Natural Hazards and Earth System Sciences
Published on 2016-03-17 | cited by 27 articles
- Flood-induced mortality across the globe: Spatiotemporal pattern and influencing factors**
Hu P. | Science of the Total Environment
Published on 2018-12-01 | cited by 25 articles

The top-five publications on flood hazards in Indonesia are shown. The selection criteria are based on the number of citations from 1989 to 2021 based on the Scopus directory only. The research articles of flood case study in Jakarta are the most cited by researchers. Obviously, The DKI Jakarta province's status as the national capital city and center of many sector activities makes it has the highest attention among other provinces in Indonesia.

Top Investigated Cities



Top Investigated Provinces

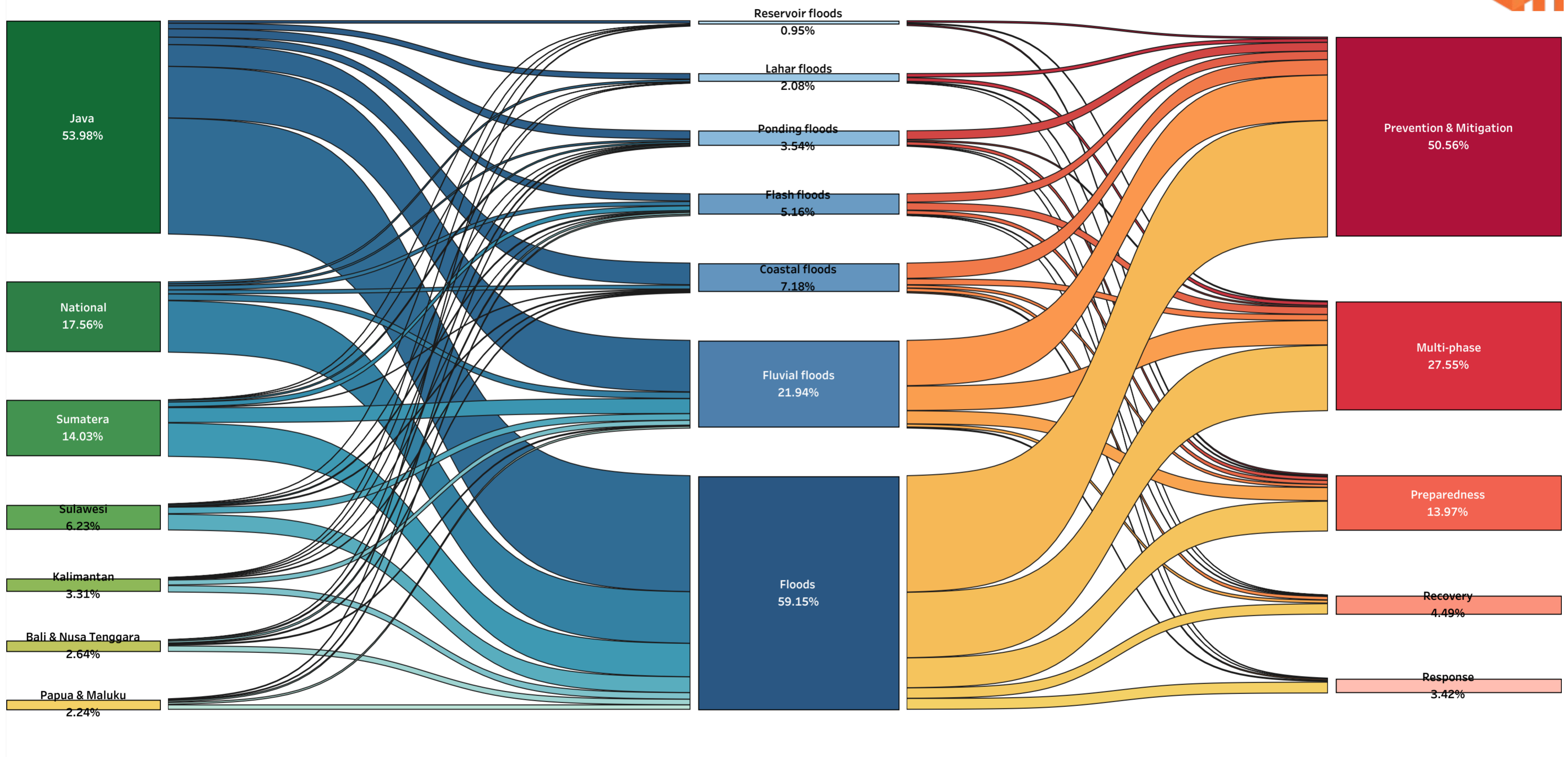


Top Topics by Disaster Management Phase



The flood research publications are dominated by studies in city administrative status (Kota) and fewer studies in regency administrative status (Kabupaten). The Top Investigated Cities section only shows cities that have more than 10 flood-related publications. Kota Semarang is the top investigated city by 154 articles, followed by Kota Bandung and Kota Surabaya. However, the total flood-related publications of 6 cities combined in DKI Jakarta Province may be the second most investigated city after Kota Semarang. Furthermore, the provinces in Java Island are the most investigated province. Finally, hazard assessment is still the most frequent topic analyzed by researchers, followed by improving infrastructure and early warning topics.

This Month's Sankey Diagram of Flood hazards publications: Location to Flood hazards type to DRM Phase



This Sankey diagram was calculated based on the number of articles. One article only represents one value of the Sankey flow. The floods studies in Java Island make up to 962 articles, surpasses the number of articles in the national scope study. Sumatera has made it to the third, then Sulawesi in the fourth. Kalimantan, Bali & Nusa Tenggara, and Papua & Maluku shared the number of studies much the same between 40-60 articles. In the floods type, all of the flood articles type dominated by research in Java Island. We see the general floods type comprises the biggest amount of research, more than half of all articles. The other half are fluvial floods, coastal floods, flash floods, ponding floods, lahar floods, and reservoir floods respectively. The prevention & mitigation phase is the most frequently discussed in disaster risk management phase research. The multi-phase DRM makes it the second most frequent and followed by the preparedness, recovery, and response phase.