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DEKA, PRANJAL, "A Study on Co-occurrence of Author Keywords and Keywords Plus in Flood Management Research Publications During 2010-2019" (2020). *Library Philosophy and Practice (e-journal)*. 4623.

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A Study on Co-occurrence of Author Keywords and Keywords Plus in Flood Management Research Publications During 2010-2019

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Abstract:

The flood is a significant disaster in various countries; the significant impacts of flooding includes loss of human life, property damage, destruction of crops, loss of livestock, and deterioration of health conditions due to waterborne diseases. The communication links and infrastructure such as power plants, roads, and bridges are damaged and disrupted, some economic activities may come to a standstill. People are forced to leave their homes, and everyday life is disrupted. So, to manage this kind of disaster is a critical task for human civilization. Flood management is a significant part of solving this problem.

This paper tries to trace the co-occurrence of author keywords and keywords plus on flood management research publications during 2010-2019. The data are collected from the Web of Science database.

Keywords: Flood Management, Author Keywords, Keywords Plus, Web of Science, VOSviewer

Introduction:

Flood is a major disaster that has a terrible impact on our society. It has created severe issues for humans and other living beings. It can change the scenario of living as well as the economic, health, and communication environment. Due to floods, a massive number of people faces lots of problems across the globe. Flood management is an essential task to solve pre and post-flood environments. Flood management deals with the management of floods related task. The significant steps are -Flood Forecasting, Reduction of Runoff, Reducing Flood Peaks by Volume Reduction (Constructing Dams and Detention Basins), Reducing Flood Levels, Protection against Inundation (Construction of Embankments), and Flood Plain Zoning (FPZ). To reduce the loss from floods, flood management is a crucial point for our society. The different scholarly community works on this matter. This paper tries to highlight the dimension of flood management research by analyzing author keywords and keywords. This can give a pre-define scenario on flood management research publications with changing context. All related data were collected from the Web of Science database and visualization done by using the VOSviewer.

Objectives of the Study:

- To find out the co-occurrence of author keywords and Keywords Plus in flood management research publications.
- To select the top twenty keywords in the field of flood management research publications.
- To find out the value of Overlap and Redundancy of keywords in the field of flood management.

Methodology:

To conduct this study, data were collected from the Web of Science database. In Web of science core collection which is used is the TI= FLOOD MANAGEMENT in advance search, in relation to that 848 documents are available from 2010-2019. All data are saved in the TXT file. Collected data is visualized through the VOSviewer; keywords are separately shown through excel sheets.

Data Analysis and Interpretation:

The occurrence of Author Keywords:

Author Keywords is a major part of scholarly publications. In flood management research publications during 2010-2019 available a total no of 2159 keywords and 82 meet the threshold with minimum five occurrences. The Keywords are Adaptation-24 (44), Bangladesh-5(7), Climate Adaptation-7(14), Climate Change-54(98), Climate Change Adaptation-8(17), Collaboration-5(9), Cost-Benefit Analysis-5(16), Decision Making-9(18), Decision Support-6(9), Decision Support System-7(10), Decision-Making-5(10), Disaster Management-10(7), Disaster Risk Management-6(13), Disaster Risk Reduction-8(13), Ecosystem Services-8(10), Emergency Management-9(13), England-6(14), Environment-5(10), Eu Floods Directive-7(16), Flash Flood-7(8), Flexibility-7(22), Flood-59(59), Flood Control-8(8), Flood Damage-7(7), Flood Directive-5(6), Flood Hazard-8(8), Flood Management-63(67), Flood Mitigation-12(8), Flood Protection-8(13), Flood Risk-61(76), Flood Risk Management-114(146), Flood Risk Management Plan- 5(6), Flooding- 40 (43), Floods-29(29), Floods Directive-6(3), Gis-14(21), Governance-16(28), Green Infrastructure-5(8), Hydrological Model-5(3), Hydrology-6(7), Insurance-8(15), Integrated Flood Risk Management-12(15), Integration-6(11), Land Management-6(11), Land Use -10(16), Land Use Change-5(9), Management-6(9), Natural Flood Management-15(14), Natural Hazard-5(5), Optimization-9(17), Participation-7(16), Planning-6(17), Poland- 5 (14), Policy-11 (20), Public Participation-5(7), Real Options-6 (16), Remote Sensing-11(8), Resilience- 27(50), Risk-14(17), Risk Analysis-5(10), Risk Assessment -7(10), Risk Communication-9(16), Risk Governance-6(7) Risk Management-24(36), Risk Perception-8(16), Robustness-5(16), Sea Level Rise- 5(13), Simulation-5(7), Social Learning-6(7), Spatial Planning-9(17), Stakeholder Engagement-6 (8) Stakeholders-5(8), Sustainability-6(5) ,Sustainable Development- 8(14), The Netherlands-9(21), Uncertainty-20(33), Urban Drainage-9(14), Urban Flooding-11(11), Vulnerability-21(43), Water Governance-6(8), Water Management-10(13), Watershed Management-5 (4)

Top Twenty most frequently used Author Keywords:

Table-1 shows the top twenty most frequently used author keywords in the fields of flood management research publication. Fig-3 also shows the link between the top twenty keywords. Flood Risk Management is a highly used keyword with 114 occurrences and 55 link strength. Other keywords are with their occurrence and link strength – Flood Management -63(35), Flood Risk- 61 (44), flood -59 (30), Climate Change -54 (70), Flooding-40 (20), Floods- 29(16), Resilience-27 (27), Adaptation -24 (33), Risk Management -24 (18), Vulnerability-20 (31), Uncertainty- 20 (24), Governance -16 (14), GIS- 14(12), Policy -11(12), Optimization-9 (13), The Netherlands-9 (13), Decision Making- 9 (12), Climate Change Adaptation- 8 (9), Flexibility-7 (14).

Table-1: Top Twenty most frequently used Author Keywords

Sl. No	Keyword	Occurrences	Total Link Strength
1	Adaptation	24	33
2	Climate Change	54	70
3	Climate Change Adaptation	8	9
4	Decision Making	9	12
5	Flexibility	7	14
6	Flood	59	30
7	Flood Management	63	35
8	Flood Risk	61	44
9	Flood Risk Management	114	55
10	Flooding	40	20
11	Floods	29	16
12	GIS	14	12
13	Governance	16	14
14	Optimization	9	13
15	Policy	11	12
16	Resilience	27	27
17	Risk Management	24	18
18	The Netherlands	9	13
19	Uncertainty	20	24
20	Vulnerability	21	31

Top Twenty Most frequently used Keywords Plus:

Table-2 shows the top twenty most frequently used Keywords Plus in the flood management research publication in flood management research publications. Fig-4 also shows the top twenty highly used keywords plus is Climate-Change with 91 occurrences and 148 link strength. Other keywords plus are with the occurrence and links strength- Model-58 (65), Policy- 53(96), Governance- 51(89), Adaptation -46(112), Vulnerability- 46(91), Impact-41 (43), Risk- 37 (45), Uncertainty-37(67),Water-33(37), River-32 (38),Framework-30(57), Impacts- 29 (49), Resilience

27 (63), Climate-27 (37), Water Management-25(53), Risk Management- 24 (40), Insurance -21 (40), Public Participation- 19 (45), Information-17 (37).

Table-2: Top Twenty Most frequently used Keywords Plus

Sl. No	Keyword	Occurrences	Total Link Strength
1	Adaptation	46	112
2	Climate	27	37
3	Climate-Change	91	148
4	Framework	30	57
5	Governance	51	89
6	Impact	41	43
7	Impacts	29	49
8	Information	17	37
9	Insurance	21	40
10	Model	58	65
11	Policy	53	96
12	Public-Participation	19	45
13	Resilience	27	63
14	Risk	37	45
15	Risk-Management	24	40
16	River	32	38
17	Uncertainty	37	67
18	Vulnerability	46	91
19	Water	33	37
20	Water Management	25	53

Fig-3: Top Twenty Author Keywords

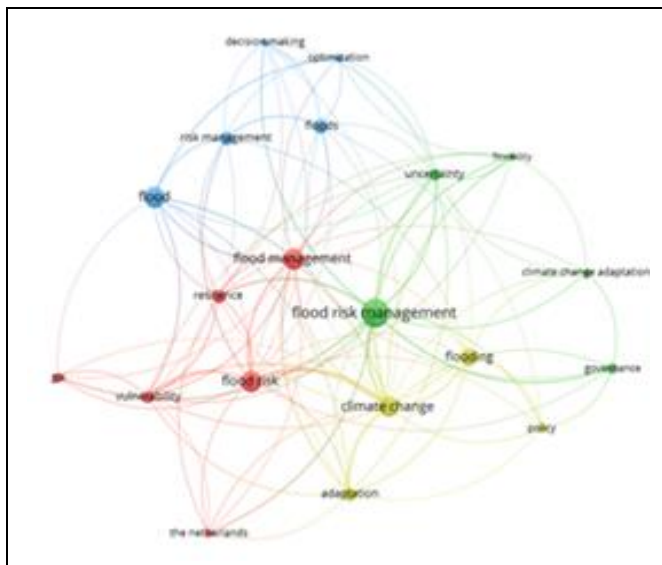
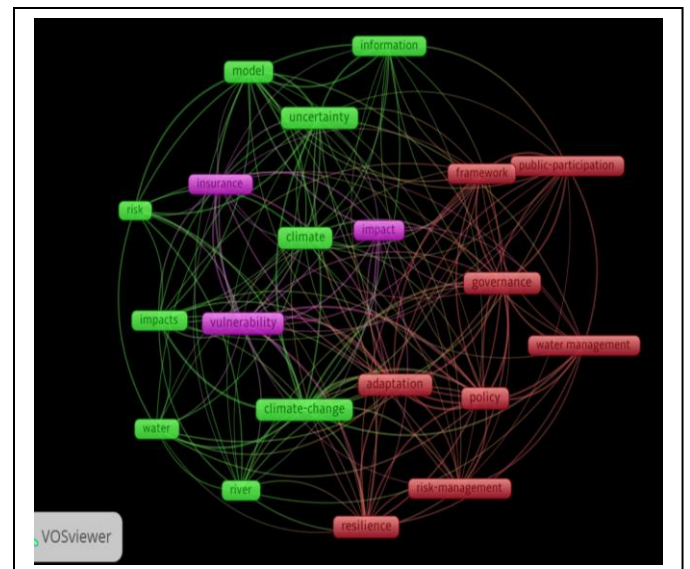


Fig 4: Top Twenty Keywords Plus



Overlap and Redundancy of Author Keywords and Keywords Plus:

Overlap (O) and Redundancy (R) were calculated for the literature containing both types of keywords. Overlap (O) is defined by

$$O = \frac{K(V_i) \cap A(V_j)}{K(V_i) \cup A(V_j)}$$

Where $K(V_i)$ is the set of Keywords Plus, and $A(V_j)$ is the set of Author Keywords. O's value is 1 if $K(V_i)$ is equal to $A(V_j)$, and 0 when the two sets of keywords do not intersect at all.

$$\text{Here, Overlap (O)} = \frac{33}{182} = 0.182$$

Redundancy (R), the reappearance of Author Keywords in Keywords Plus, is defined by

$$R = \frac{[K(V_i) \cap A(V_j)]}{[A(V_j)]}$$

$$\text{Here Redundancy (R)} = \frac{33}{82} = 0.402$$

Conclusion:

This is a distinct study trend of research publications on flood management. The author's keywords shows the scholarly content and keywords' depth and detects the changing dimension in the research productivity during 2009-2019. In the flood management research publication 82 numbers of author keywords is found with a minimum of five occurrences. Flood risk management is the highly used author keywords with 114 numbers of occurrences, and climate change is the high link strength author keywords here, 132, numbers of keywords occur with a minimum of five occurrences; Climate change is the highly used keywords plus with 91 occurrences and 148 link strength. The value of the overlapping is 0.182, and the value of Redundancy is 0.402. The study of Author Keywords and keywords plus shows a distinct way for upliftment and various scholarly content with a domain. This study also attempted to visualize the distribution of scholarly content in flood management research publications.

References:

Cantos-Mateos, G., Vargas-Quesada, B., Chinchilla-Rodríguez, Z., & Zulueta, M. A. (2012, November). Stem cell research: bibliometric analysis of main research areas through KeyWords Plus. In *Aslib proceedings*. Emerald Group Publishing Limited.

Gimenez-Maranges, M., Breuste, J., & Hof, A. (2020). Sustainable Drainage Systems for transitioning to sustainable urban flood management in the European Union: A review. *Journal of Cleaner Production*, 255, 120191.

Holz, K. P., Hildebrandt, G., & Weber, L. (2006). Concept for a web-based information system for flood management. *Natural hazards*, 38(1), 121-140.

Mohanty, M. P., Mudgil, S., & Karmakar, S. (2020). Flood management in India: A focussed review on the current status and future challenges. *International Journal of Disaster Risk Reduction*, 101660.

Mohanty, M. P., Vittal, H., Yadav, V., Ghosh, S., Rao, G. S., & Karmakar, S. (2020). A new bivariate risk classifier for flood management considering hazard and socio-economic dimensions. *Journal of Environmental Management*, 255, 109733.

Salazar, S., Francés, F., Komma, J., Blume, T., Francke, T., Bronstert, A., & Blöschl, G. (2012). A comparative analysis of the effectiveness of flood management measures based on the concept of retaining water in the landscape in different European hydro-climatic regions. *Natural Hazards and Earth System Sciences (NHESS)*, 12(11), 3287-3306.

Tripathi, M., Kumar, S., Sonker, S. K., & Babbar, P. (2018). Occurrence of author keywords and keywords plus in social sciences and humanities research: A preliminary study. *COLLNET Journal of Scientometrics and Information Management*, 12(2), 215-232.

Venkataramanan, V., Lopez, D., McCuskey, D. J., Kiefus, D., McDonald, R. I., Miller, W. M., ... & Young, S. L. (2020). Knowledge, attitudes, intentions, and behavior related to green infrastructure for flood management: A systematic literature review. *Science of The Total Environment*, 137606.