Occurance of Flood, 2002-2022
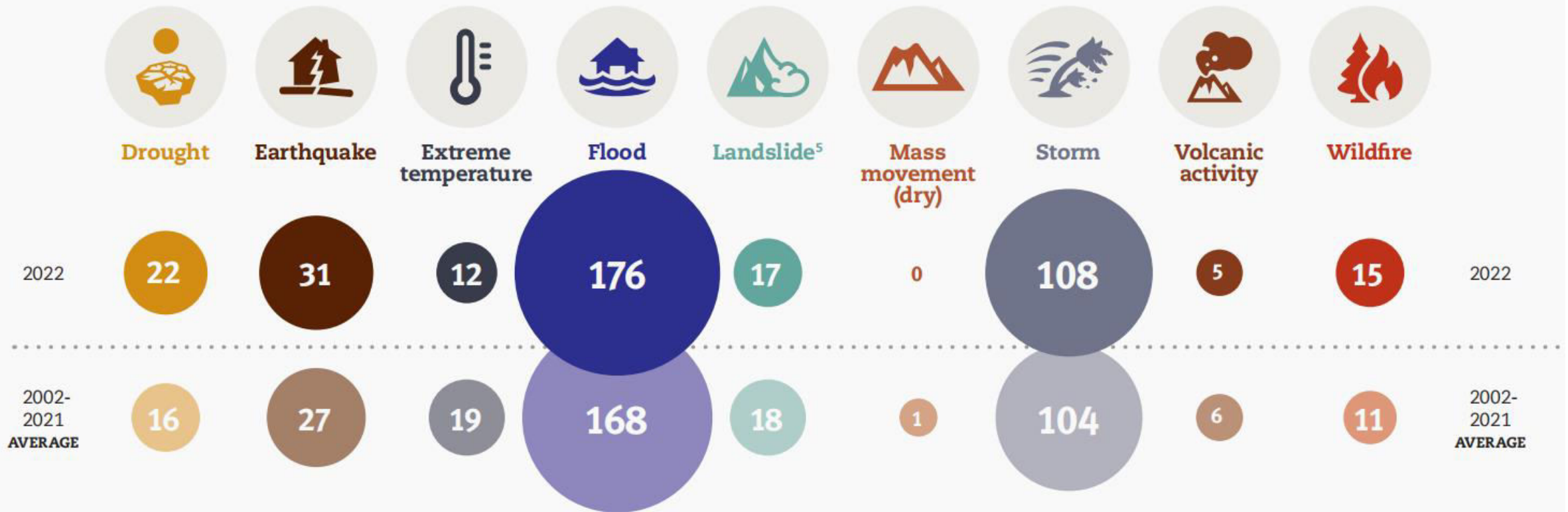

Occurrence by disaster type: 2022 compared to the 2002-2021 annual average

168/370 2002 to 2021 〈 176/387 in 2022

	Drought	Earthquake	Extreme temperature	Flood	Landslide[5]	Mass movement (dry)	Storm	Volcanic activity	Wildfire	
2022	22	31	12	176	17	0	108	5	15	2022
2002-2021 AVERAGE	16	27	19	168	18	1	104	6	11	2002-2021 AVERAGE

(source: Centre for Research on the Epidemiology of Disasters, 2023)

Economic damage by natural disaster type, 1900 to 2022
Global economic damage from natural disasters, differentiated by disaster category and measured in US$ per year.
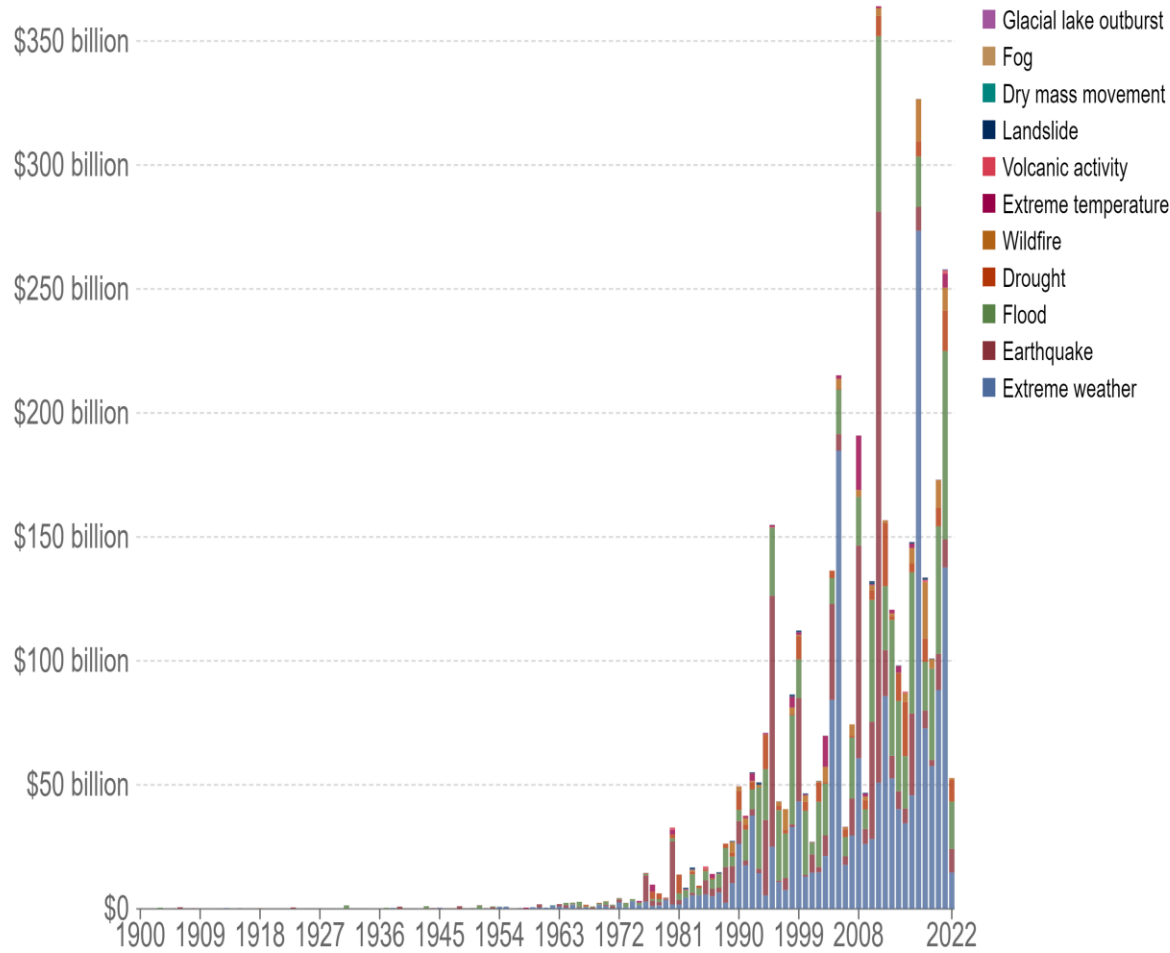
Source: EM-DAT, CRED / Université catholique de Louvain, Brussels (Belgium)
OurWorldInData.org/natural-disasters • CC BY

| Table 1 Top 10 mortality – 2022						
	Europe[10]	Heat Wave	16,305	Nigeria	Flood	603
	Uganda	Drought	2,465	South Africa	Flood	544
	India	Flood	2,035	Philippines	Tropical Storm 'Megi'	346
	Pakistan	Flood	1,739	Indonesia	Earthquake	334
	Afghanistan	Earthquake	1,036	Brazil	Flood	272

Table 3 Top 10 economic losses - 2022						
	USA	Hurricane 'Ian'	100.0 billion	Australia	Flood	6.6 billion
	USA	Drought	22.0 billion	China	Flood	5.0 billion
	Pakistan	Flood	15.0 billion	Nigeria	Flood	4.2 billion
	Japan	Earthquake	8.8 billion	India	Flood	4.2 billion
	China	Drought	7.6 billion	Brazil	Drought	4.0 billion

(Centre for Research on the Epidemiology of Disasters, 2023)
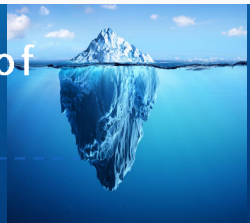
How can we communicate, negoiate, and collaborate?

Flood defense infrastructure

Dam, levee, floodzone,driange system

Adaptive flood risk governance structure

Efficient institutional design and collaborative mechanism

Alarm system, supervision, and evaluation devices

Public participation

The flexible mechanism to bridge and optimally utilize social rsources, such as discourse, data, and so on. Promoting the flood risk awareness and joint action.

Resilient Urban planning

Nature-based solutions; Design philosophy

Learning in the Context of Multilevel Flood Risk Governance:
A Conceptual Framework

presenter：董丽杰

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Date: 11-09-2023

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01

选题背景与意义
Background and Rationale

选题背景
Background and Rationale

Practical challenge

Paradigm Transformation

Theoretical gap of learning

Systematic flood risks/ Urbanization/ Climate change/ Inefficient governance structure

Reactive to Proactive/ Lack of social consensus and participatory approach of collaborative flood risk governance

flood-oriented learning remains an ongoing research topic, esaecially within the context of multilevel flood risk governance.

02

研究过程及方法

Research process and method

研究过程及方法
Research process and method

☐ **Searching Scope:**

The narrative literature review was conducted based on 100 pieces of literature drawn from Web of Science, Scopus, scoINDEX, and Google Scholar.

☐ **Keywords filtration:**

flood risk management, flood risk governance, flood-oreiented learning, disaster learning, social learning, policy learning, policy diffusion, climate adaptation governance, multilevel governance, multi-layerd governance, flood risk governance, public crisis management, collaborative governance, public participation and communication, community resilience, and policy change.

01 Web of Science

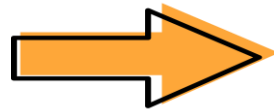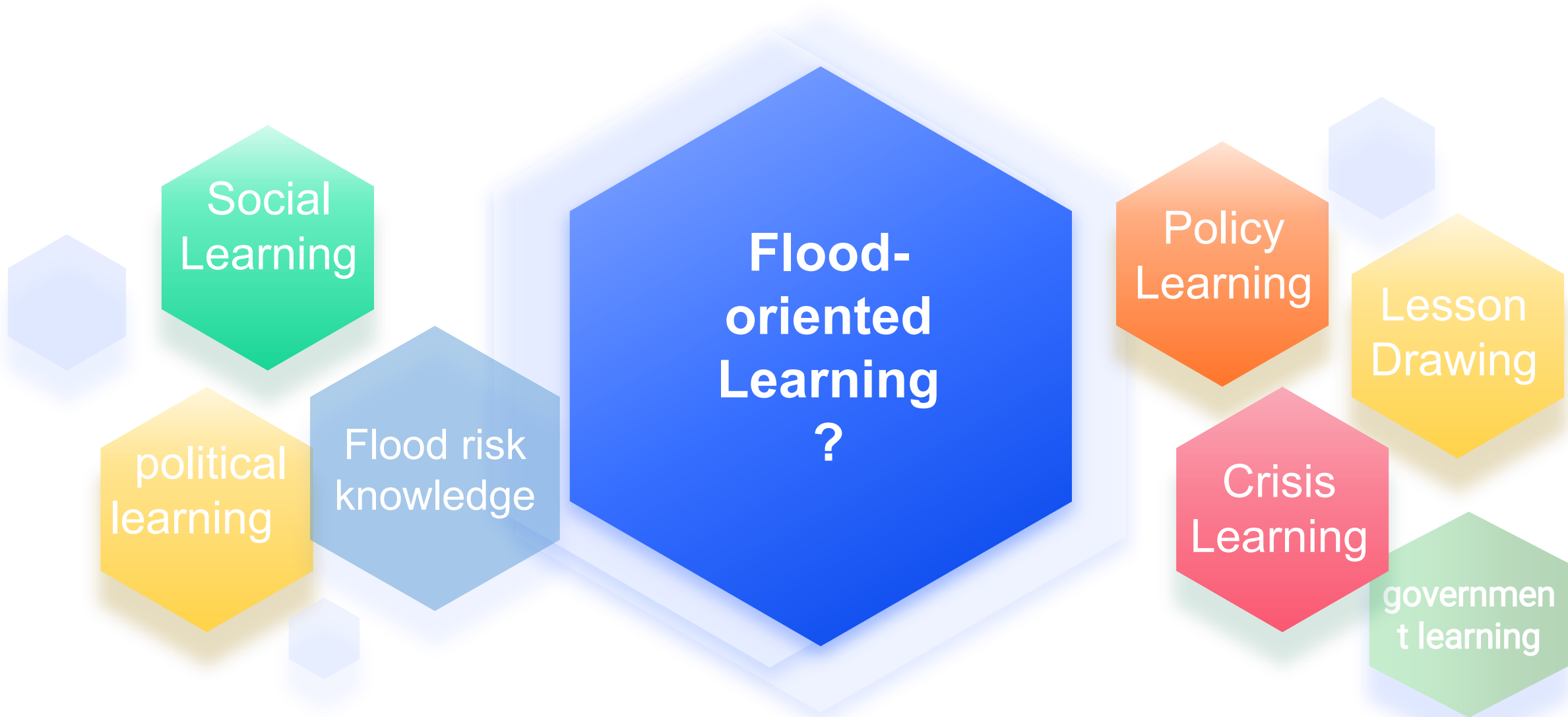02 Scopus

03 scoIN DEX

04 Google Scholar

Flood risk management

Flood risk management(FRM) is a strategic approach to reducing flood impacts by employing a diversity of instruments and sharing responsibilities among the governmental and societal actors (Klijn et al., 2008; Sayerset al., 2013; Simonovic, 2013).
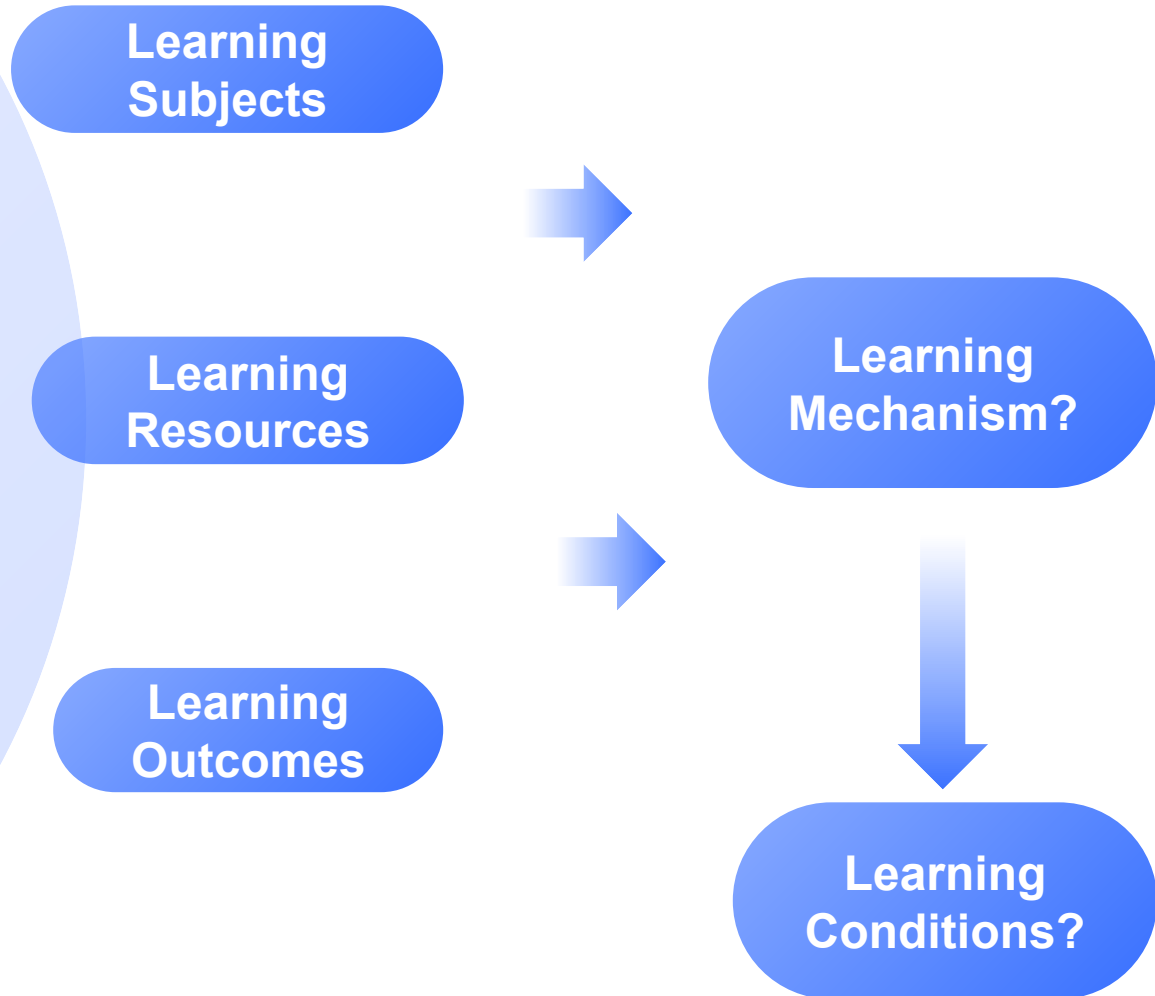
What is their Nature and Evolution?

Flood risk govrenance

Flood risk governance is a more participatory and interactive risk governance to reduce flood hazards and impacts by facilitating communication and collaboration among multiple stakeholders and engaging them in decision-making(Alexander et al., 2016; Dordi & Thistlethwaite, 2022).).

Social Learning

political learning

Flood risk knowledge

Flood-oriented Learning ?

Policy Learning
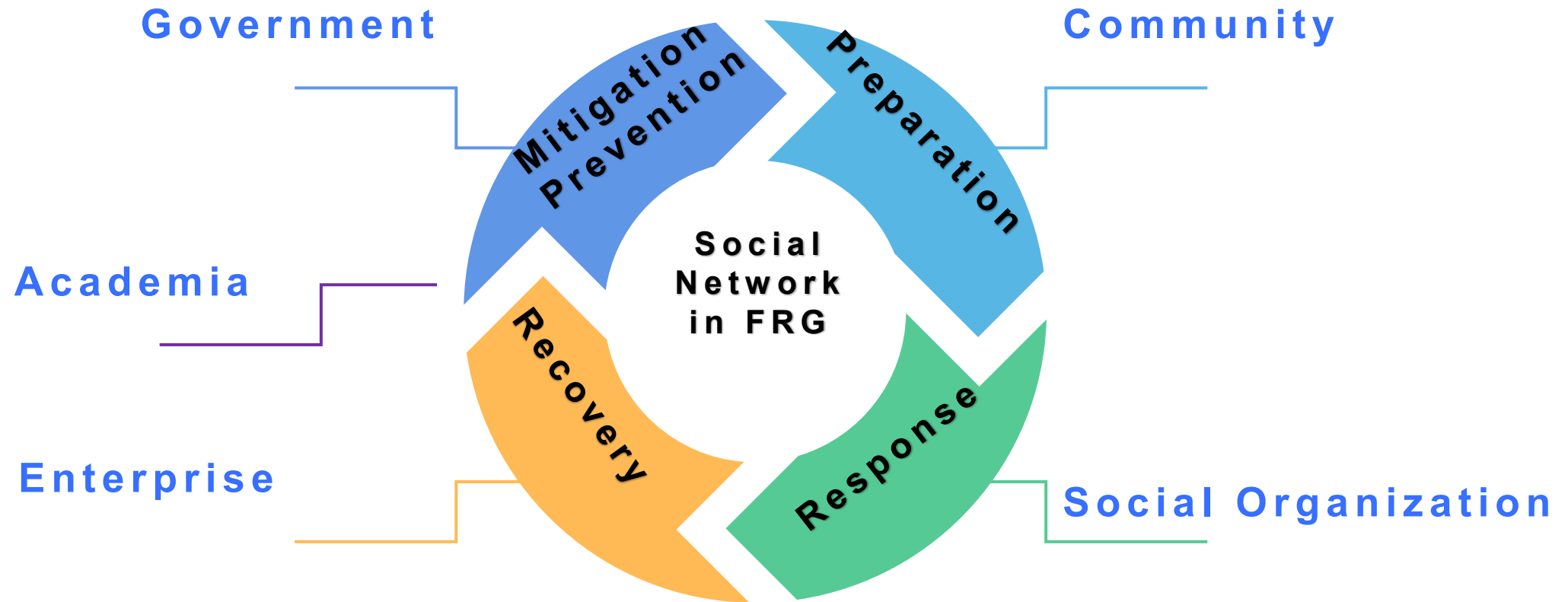
Lesson Drawing

Crisis Learning

government learning

What is learning?

Flood-oriented learning refers to the interactive transformation of flood knowledge and joint efforts among the stakeholders through social networks.

In the context of multilevel flood risk governance, learning refers to the scaling up of flood knowledge from various stakeholders into decision-making process, which happens during flood risk management cycle, including the mitigation, preparation, response, and recovery stages.

Learning Subjects

Learning Resources

Learning Outcomes

Learning Mechanism?

Learning Conditions?

Who are the key stakeholders in flood risk governance?

Government

Community

Academia

Enterprise

Social Organization

Mitigation Prevention

Preparation

Recovery

Response

Social Network in FRG

03
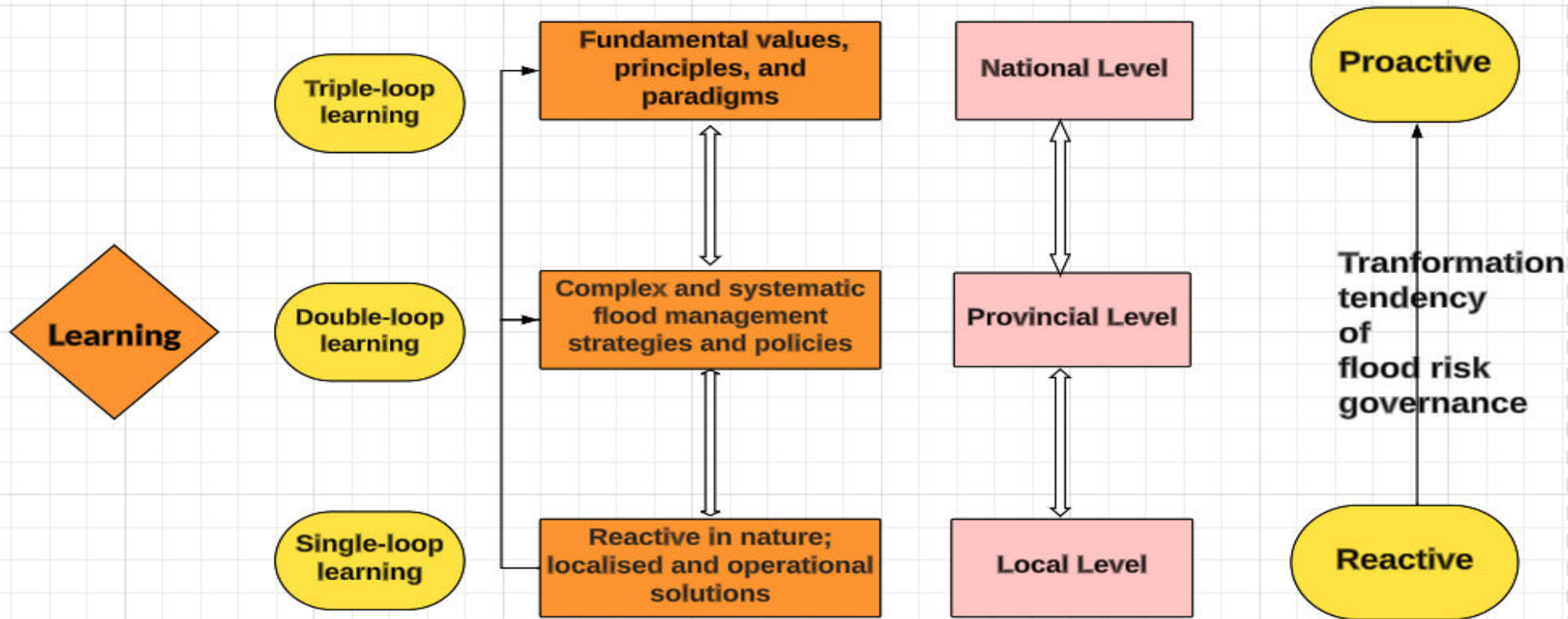
理论模型及运用

Theoretical model and application

Learning and policy change in the context of multilevel flood risk governance

Theoretical Framework

04

研究归纳与展望
Research induction and Expectations

研究意义
Contribution of the research

Theoretically:

This research will support theoretical basis for relevant study and help us understand how the key stakeholders are engaged into flood risk governance.

Practically:

- This research will inspire further empirical exploration of learning in varied flood risk governance settings, and therefore propose suitable suggestions to policymakers.

- However, there is no one-fit-all solutions. We need to explore tailor-made measures to reply to the specific demands.

访谈招募

访谈主题：洪水或自然灾害的应急管理及风险治理。

访谈对象：政府工作者，学者，企业，志愿者，经历者。
访谈时间：30-60 分钟

学术道德原则：许可、匿名、保密。

您可第一时间了解我国洪涝风险治理案例和后续国内外比较的成果。

欢迎学术合作和探讨！

Would you like to add Your Voice?
For our more flood-resilient and sustainable society ：）

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Thanks for your attention!

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