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Knowledge FOR Resilient soCiEty

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Discussing flood damage assessment in the case of Albania

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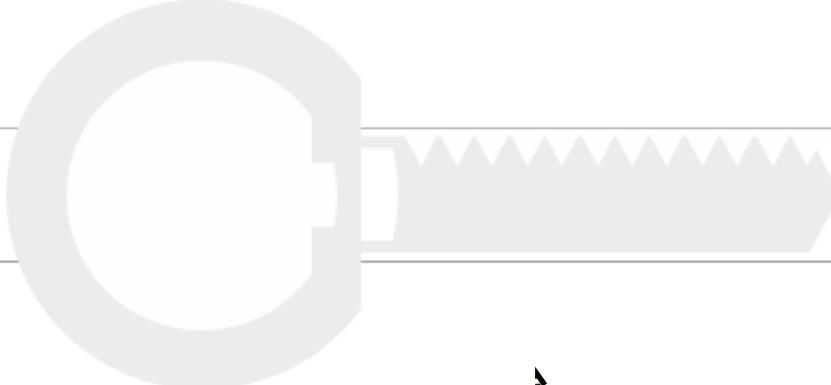
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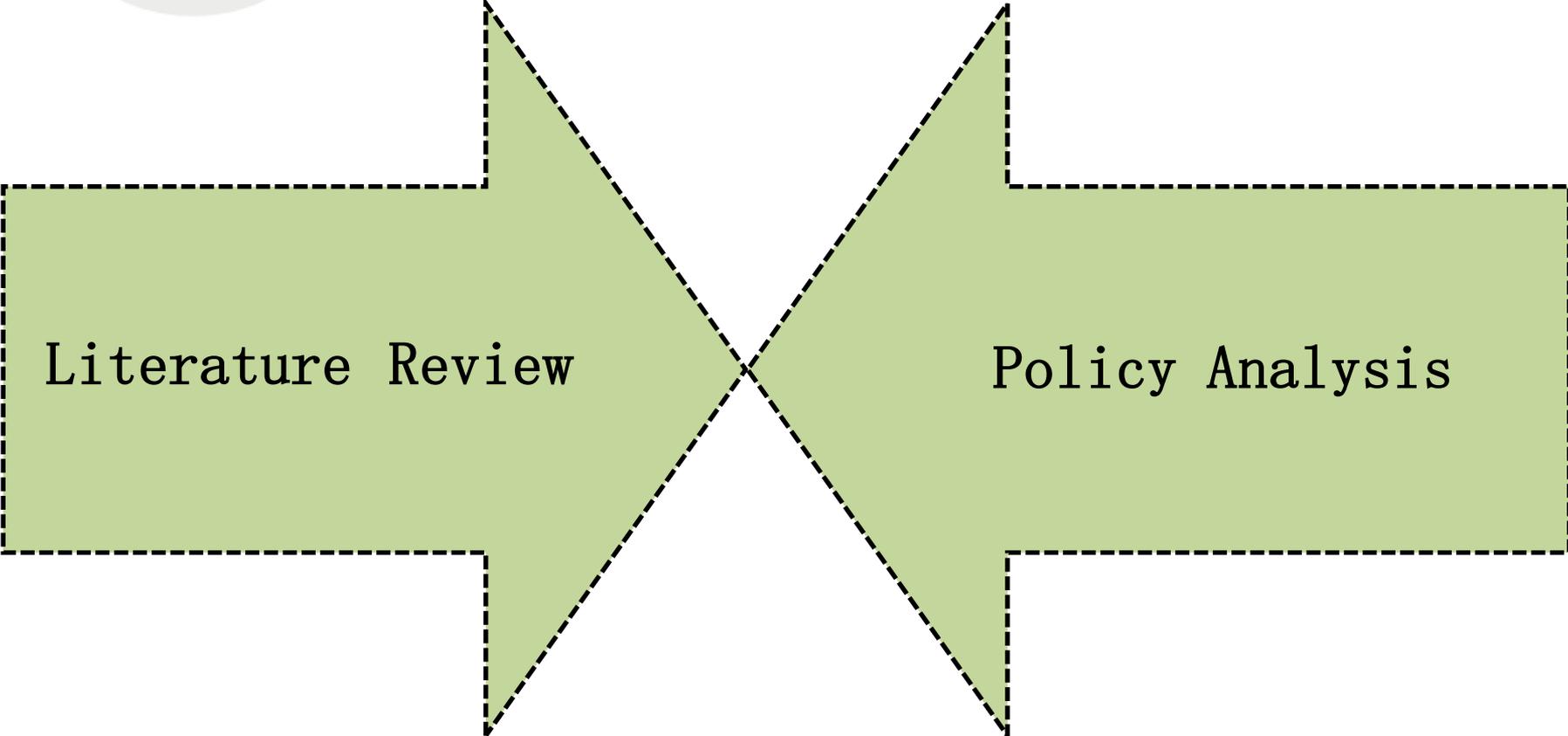
AIM AND GOALS

- Discussing the flood damage assessment globally and in Albania*
- Identifying problems of damage assessment methodologies*
- Propose effective solutions considering studies and methods used in other countries*
- Emphasizing the importance of flood modelling and ex-ante evaluation of flood damages*





METHODOLOGY



Literature Review

Policy Analysis

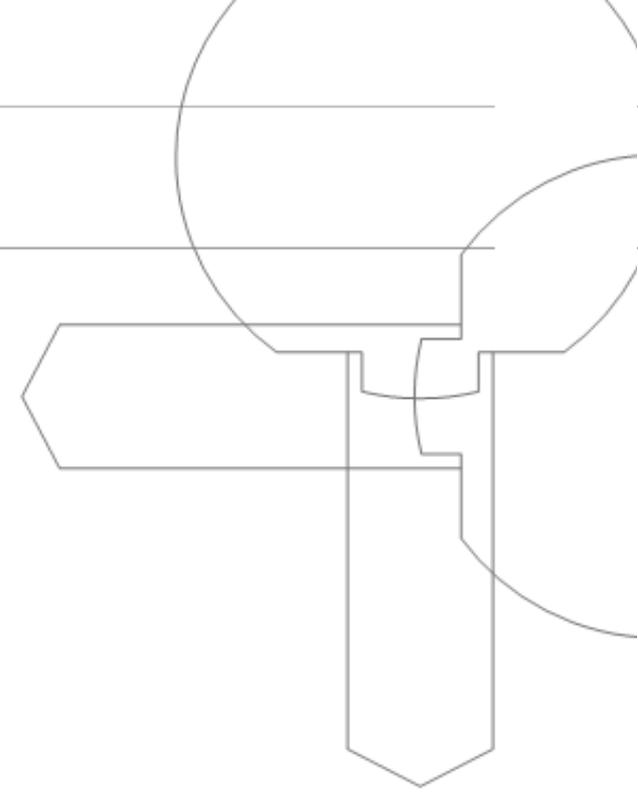


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WORLDWIDE STATISTICS

- ➔ More than **\$7 trillion** is accounted for the economic damage caused worldwide as a result of natural disasters from 1900 to 2015 (*The Karlsruhe Technological Entity, 2016*).
- ➔ In terms of human loss the study reports that **8 million people** have died throughout this time frame from disasters such as earthquakes, volcanoes, droughts, fires, etc.



GLOBAL PRACTICES AND METHODS

KULTURisk as a conceptual framework and SERRA (Socio-Economic Regional Risk Assessment) as the implementation methods *Giupponi et al 2015*

Urban Flood Simulation Model (UFSM) and Urban Flood Damage Assessment Model (UFDAM) *Li et al 2016*

Damage assessment methodologies in urban areas *Genovesse 2006*

GIS technology with computer-based flood modelling *Vojinovic 2008*

Inundation depth assessment *Bouwer et al 2009*

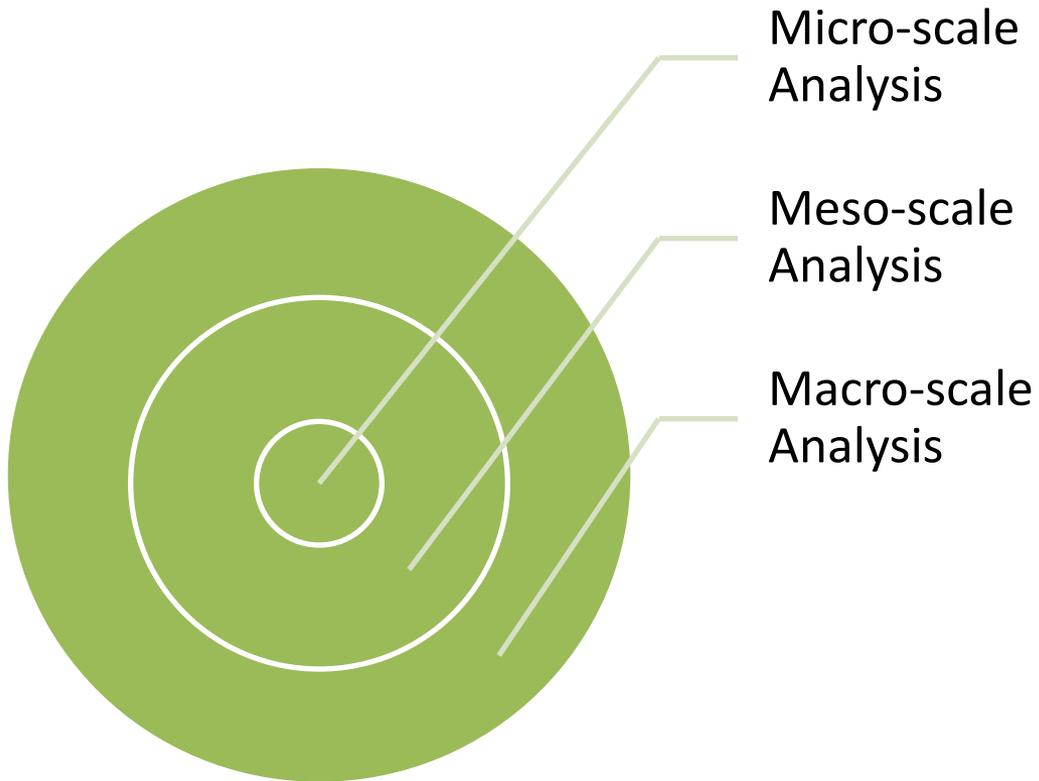
Statistical regressions with socio-economic World Development Indicators *Huizinga et al 2017*



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ANALYSIS OF FLOOD DAMAGES



Differences

- Spatial Accuracy
- Differentiation of land use categories
- Damage function

FLOODS AND DAMAGE ASSESSMENT IN ALBANIA

- *504 registered flood cases on the five regions of western lowland from 1900–2018*

- *Damage assessment in Shkodër region December 2010*

REGION	No. flood cases
Tirana	65
Durrës	77
Lezhë	133
Shkodër	183
Vlorë	46

12.145 affected evacuated inhabitants

7120 affected houses

400 assets at risk

10.280 ha cultivated land and croplands

32.634 animals were evacuated

500.350.000 ALL economic damage



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OTHER DATA...

Location

- Lowest part of Kurbin and Lezha

Period

- September 2002
- Winter 2009–January 2010

Estimated Loss

- 17 mln\$
- 150.000\$



EX-ANTE DAMAGE EVALUATION IN ALBANIA

- *One of the few attempts to perform ex-ante damage evaluation in Albania:*
 - *Identification and Implementation of Adaptation Measures in Drini Mati River Deltas*
 - *Damage evaluation for communities living within the area*
 - *Baseline: Expert forecast of flooded people for a 100 years time horizon*
 - *Method used: Benefit transfer based on a study of Netherlands floods damage valuation*
 - *Calculated value: Value of damages from 1.7 mln to 1.9 mln EUR for a 50 years time horizon*

Parametres	Entity	2030	2050		2080	2100	
Flooded people	1000/year		0.019	0.040		0.006	0.007

CONCLUSIONS

-  The modelling of flood risk and damage assessment in Albania is executed only after the flood event.
-  The available data related to damage costs is limited or non-existent.
-  Inclusion of indirect costs in flood damages costs evaluation.
-  Usage of GIS mapping technique and its incorporation with numerical models.
-  Usage of costs and benefits economic analysis for flood risk management.
-  Avoiding underestimation of economic, social and ecological impact of forecasting methods.



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Thank you
for your attention

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