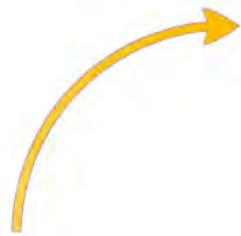
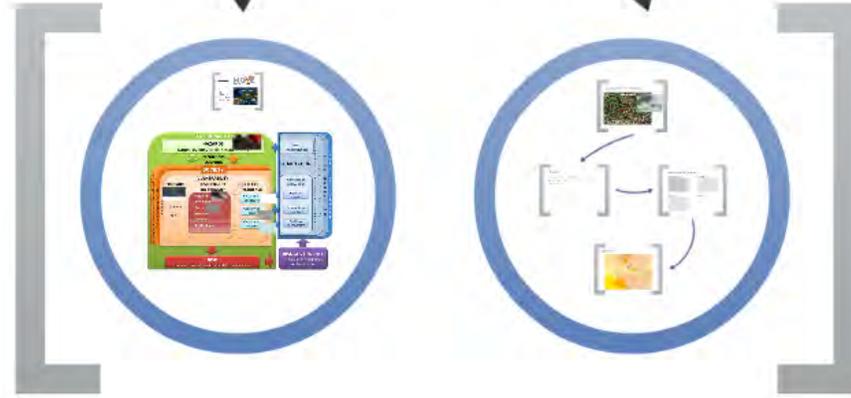


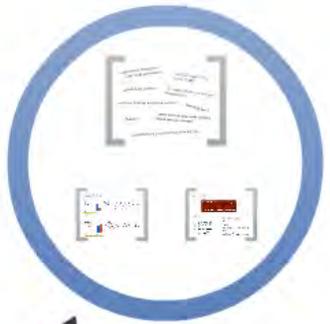
MOVE

Konzept

Umsetzung



Fazit



Einführende, unreflektierte Gedanken zu Resilienz

Räumliche Modellierung von Vulnerabilität
Integration von Suszeptibilität und Resilienz

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Dr. Stefan Kienberger
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stefan.kienberger@sbg.ac.at | www.zgis.at

Vielen Dank



- Zusammenfassung
- Gute Akzeptanz des Frameworks bei 'Stakeholder'
- Methoden der räumlichen Modellierung
- Indikatorenfindung im Bereich Resilienz am herausfordernden.
- > Resilienz als Teil der Verwundbarkeit
- > Zweck einer Verwundbarkeitsbewertung
 - > Defizite aufzeigen
 - > Handlungsorientiert.

Räumliche Modellierung von Vulnerabilität

Integration von Suszeptibilität und Resilienz



Dr. Stefan Kienberger

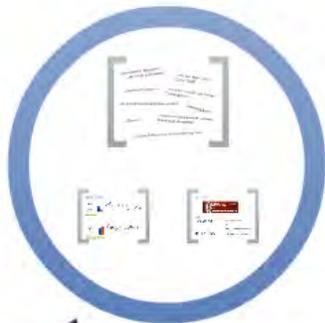
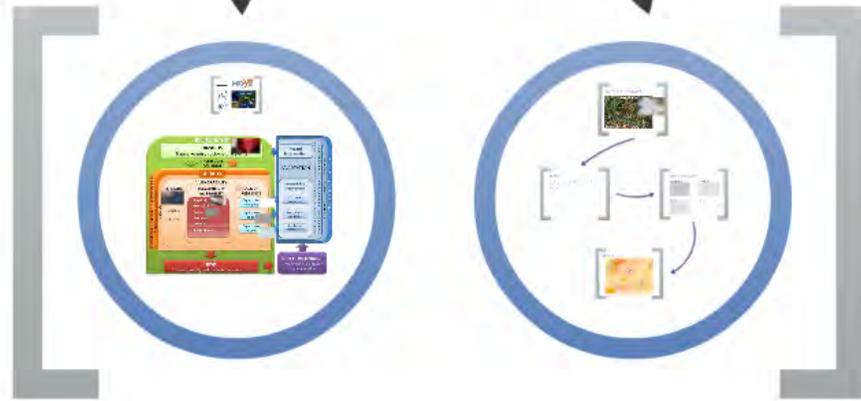
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Fazit

Räumliche Modellierung von Vulnerabilität
Integration von Suszeptibilität und Resilienz

UNIVERSITÄT
SALZBURG

ZGIS

Dr. Stefan Kleinberger
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stefan.kleinberger@sbgu.ac.at | www.zgis.at

Vielen Dank



...das nächste Schlagwort
 ...die Herde zieht weiter...
 ...und nun sogar Cutter
 [Cutter 2008]
 ...phonetisch schöner...
 ...wir erklär' ich das nun meinen
 "Stakeholdern" ...
 ...wie kann Konzept umgesetzt werden?
 ...bouncing back?
 ...Nutzen?
 ...wenn man das eine nicht versteht,
 nimmt man das nächste...
 ...auf alle Fälle in den nächsten Antrag rein...



Definitions

ISDR

Resilience Alliance

The slide contains definitions for ISDR (International Strategy for Disaster Reduction) and Resilience Alliance. The ISDR definition is: 'The ability of a system or community to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the use of existing and emerging risk reduction measures that address climate change and its impacts.' The Resilience Alliance definition is: 'Resilience is the ability of a system or community to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the use of existing and emerging risk reduction measures that address climate change and its impacts.'

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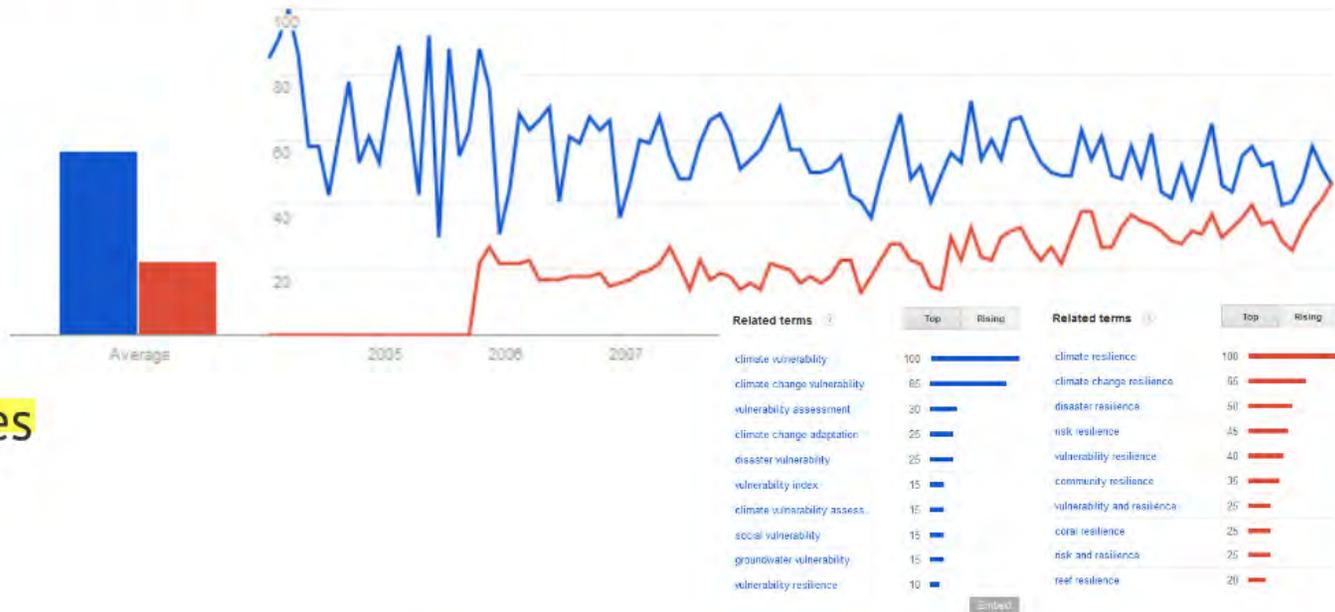
Google Trends

Search terms ?

- × vulnerability
- × resilience
- + Add term
- Other comparisons

Limit to

Earth Sciences

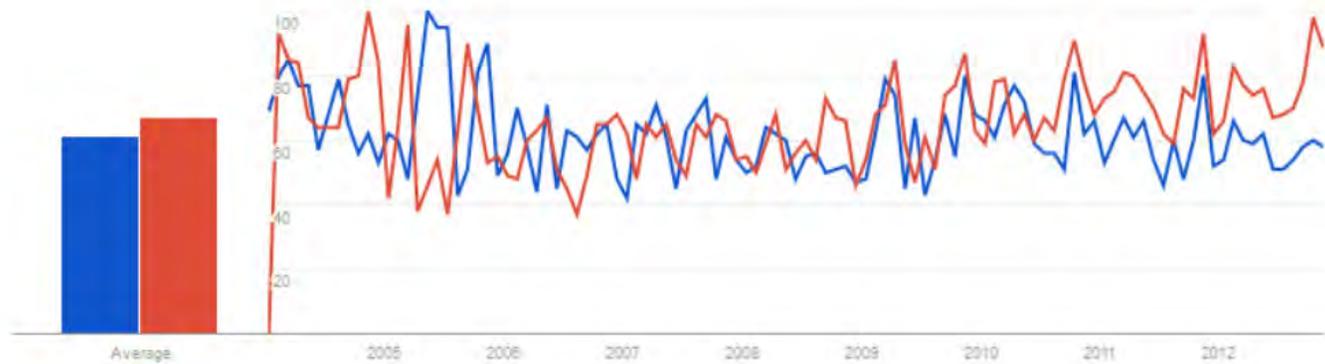


Search terms ?

- × vulnerability
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Limit to

Environment & Ecology





Related terms ?

climate vulnerability	100	<div style="width: 100%;"></div>
climate change vulnerability	85	<div style="width: 85%;"></div>
vulnerability assessment	30	<div style="width: 30%;"></div>
climate change adaptation	25	<div style="width: 25%;"></div>
disaster vulnerability	25	<div style="width: 25%;"></div>
vulnerability index	15	<div style="width: 15%;"></div>
climate vulnerability assess...	15	<div style="width: 15%;"></div>
social vulnerability	15	<div style="width: 15%;"></div>
groundwater vulnerability	15	<div style="width: 15%;"></div>
vulnerability resilience	10	<div style="width: 10%;"></div>

Embed

Related terms ?

climate resilience	100	<div style="width: 100%;"></div>
climate change resilience	65	<div style="width: 65%;"></div>
disaster resilience	50	<div style="width: 50%;"></div>
risk resilience	45	<div style="width: 45%;"></div>
vulnerability resilience	40	<div style="width: 40%;"></div>
community resilience	35	<div style="width: 35%;"></div>
vulnerability and resilience	25	<div style="width: 25%;"></div>
coral resilience	25	<div style="width: 25%;"></div>
risk and resilience	25	<div style="width: 25%;"></div>
reef resilience	20	<div style="width: 20%;"></div>



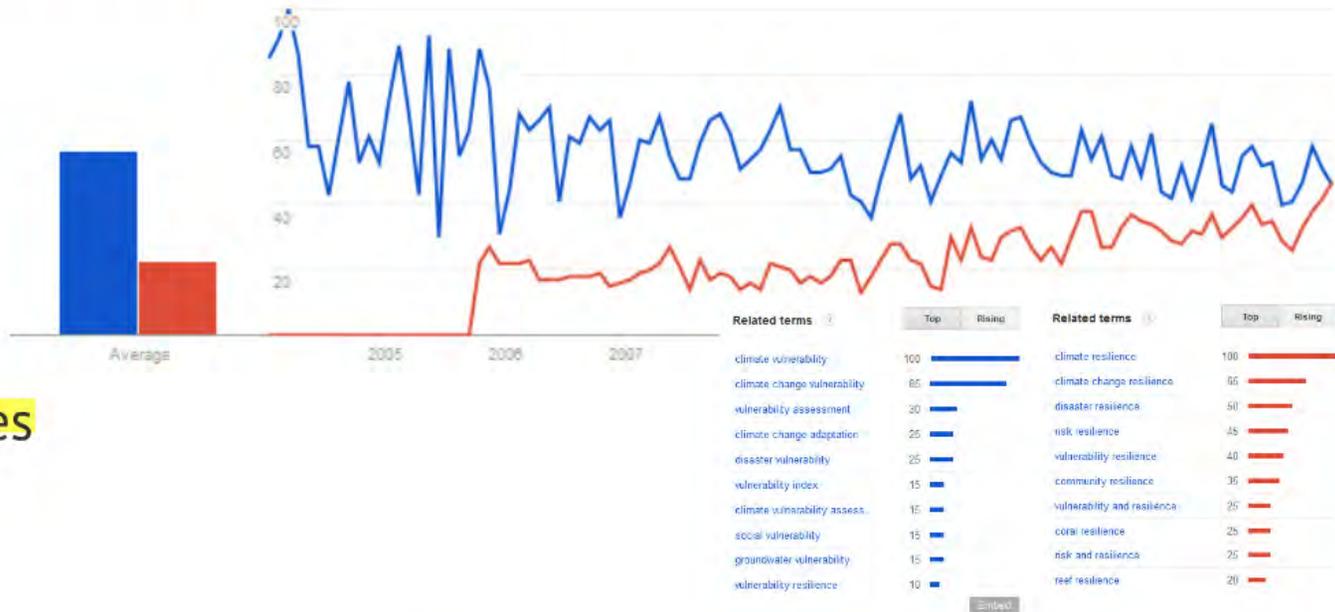
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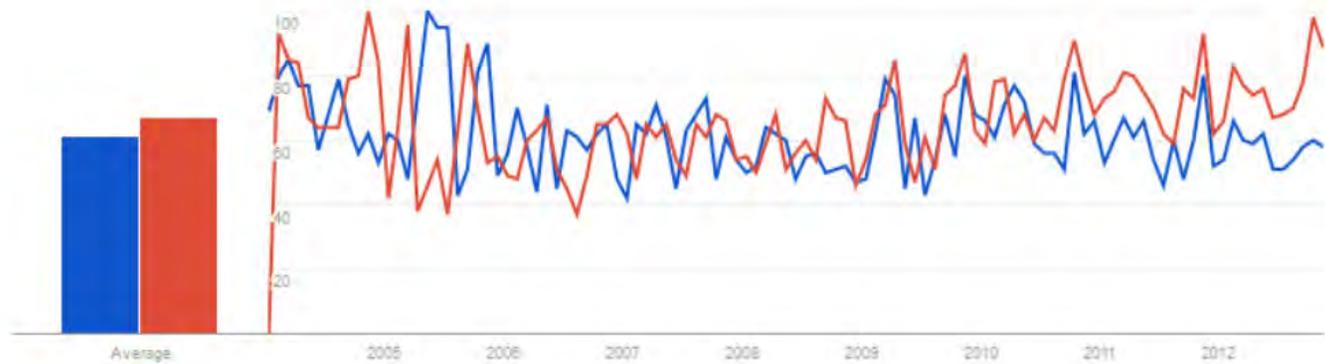


Search terms ?

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Limit to

Environment & Ecology



Definitions

IFRC

For the IFRC, resilience is defined as:

The ability of individuals, communities, organisations, or countries exposed to disasters and crises and underlying vulnerabilities to:

- ↘ *anticipate,*
- ↘ *reduce the impact of,*
- ↘ *cope with,*
- ↘ *and recover from the effects of adversity without compromising their long-term prospects.*

ISDR

Resilience

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Comment: Resilience means the ability to “resile from” or “spring back from” a shock. The resilience of a community in respect to potential hazard events is determined by the degree to which the community has the necessary resources and is capable of organizing itself both prior to and during times of need.

Resilience Alliance

Term

Resilience

Definition

Resilience is the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks.

Source

Walker, B., C. S. Holling, S. R. Carpenter, and A. Kinzig. 2004. Resilience, adaptability and transformability in social–ecological systems. *Ecology and Society* 9(2): 5. [online] URL: <http://www.ecologyandsociety.org/vol9/iss2/art5/>

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Resilience Alliance

Team

ISDR

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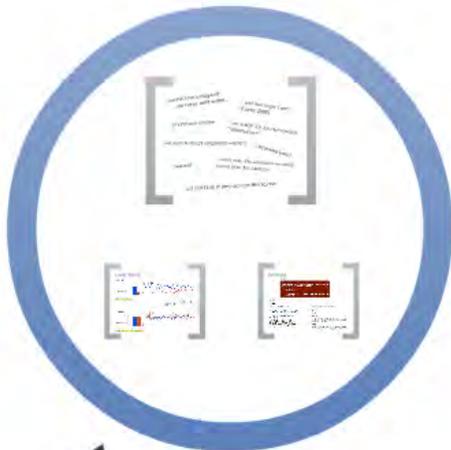
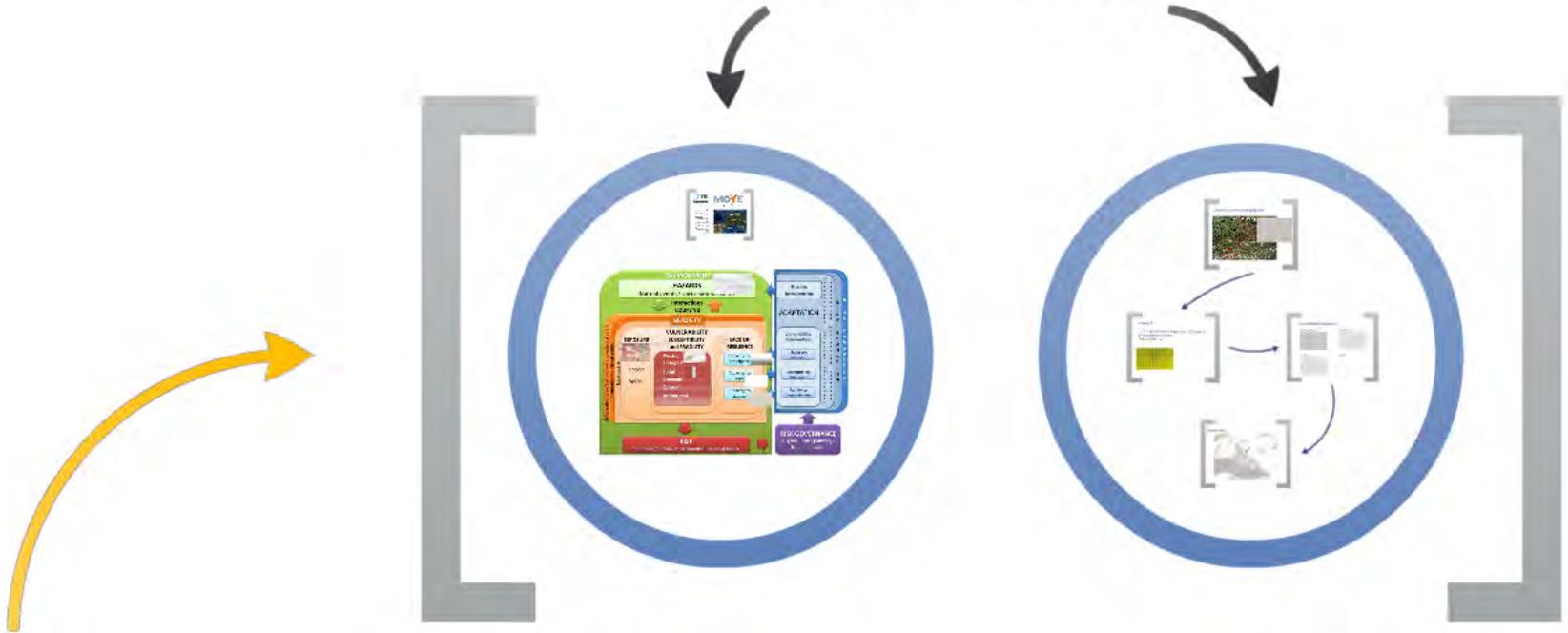
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MOVE

Konzept

Umsetzung



Räumliche Modellierung von Vulnerabilität

Integration von Suszeptibilität und Resilienz

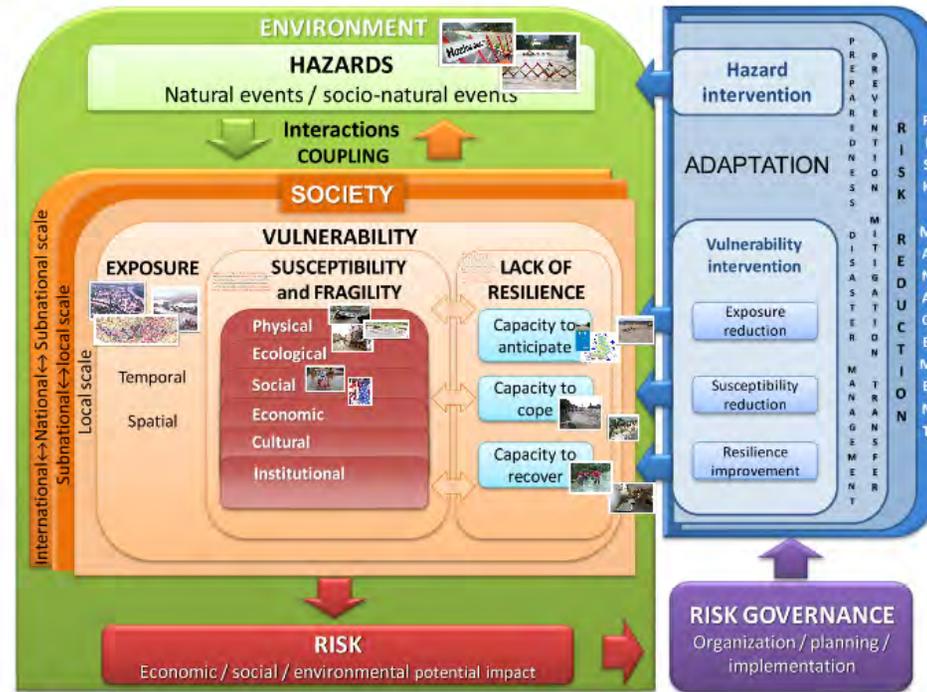


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Vielen Dank

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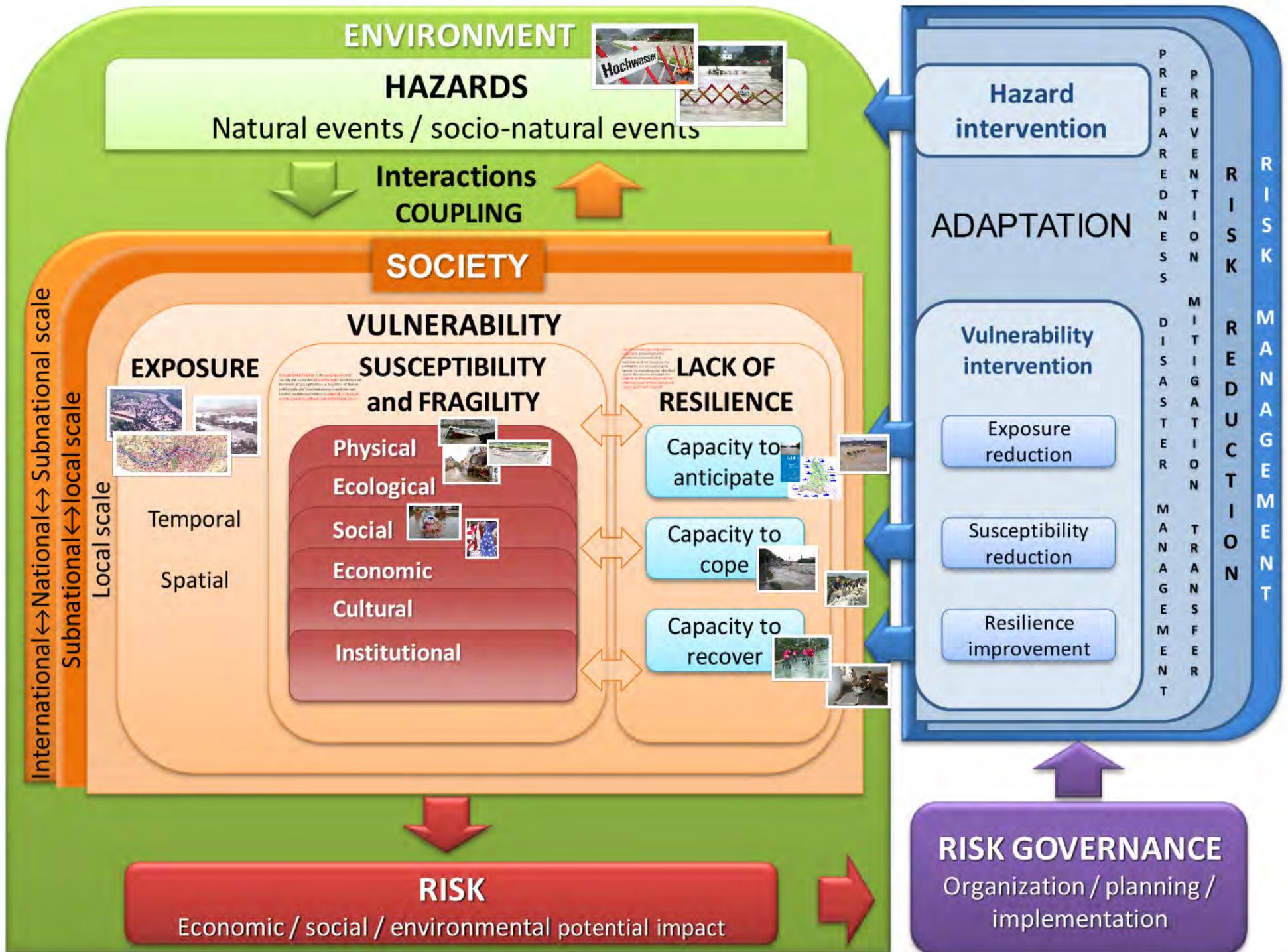
<http://www.move-fp7.eu/>
Duration: 10/2008 – 09/2011

MOVE

Methods for the Improvement of
Vulnerability Assessment in Europe

- University of Florence, ITALY, www.unifi.it 
- BRGM French geological Survey, FRANCE, www.brgm.fr 
- Centre for Geoinformatics, University of Salzburg, AUSTRIA, www.zgis.at 
- EURAC (European Academy, Institute of Applied Remote Sensing), ITALY www.eurac.edu 
- Atlas Innoglobe Tervező és Szolgáltatás Kft., HUNGARY www.atlasco.hu 
- King's College, University of London, UNITED KINGDOM, www.kcl.ac.uk 
- Norwegian Geotechnical Institute (NGI), NORWAY, www.ngi.no 
- Rupprecht Consult Forschung und Beratung GmbH, GERMANY, www.rupprecht-consult.eu 
- CIMNE, International Centre for Numerical Methods in Engineering, Barcelona, SPAIN, www.cimne.upc.es 
- United Nations University, Institute for Environment and Human Security, GERMANY, www.ehs.unu.edu 
- Dortmund University of Technology, GERMANY, www.tu-dortmund.de 
- University of Oporto, Faculty of Arts, PORTUGAL, www.letras.up.pt 
- University of Vienna, AUSTRIA, www.geomorph.univie.ac.at 





ONMENT

ARDS

ocio-natural events



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PLING

IETY



Interactions COUPLING

SOCIETY

VULNERABILITY

EXPOSURE



Susceptibility/fragility is the propensity of society and its systems to suffer harm resulting from the levels of susceptibility or fragilities of human settlements and their associated conditions and relative weaknesses related to physical, ecological, social, economic, cultural, and institutional factors.

SUSCEPTIBILITY and FRAGILITY

Physical



Ecological

Temporal

Social



Economic

Spatial

Cultural

Institutional

LACK OF RESILIENCE

Large-scale resilience (social response capability) is determined by the availability to access to and use of resources of a community in a socio-ecological system in relation to its identified needs. The response includes the ability to anticipate, cope, and recover from events (natural or man-made).

Capacity to
anticipate



Capacity to
cope



Capacity to
recover



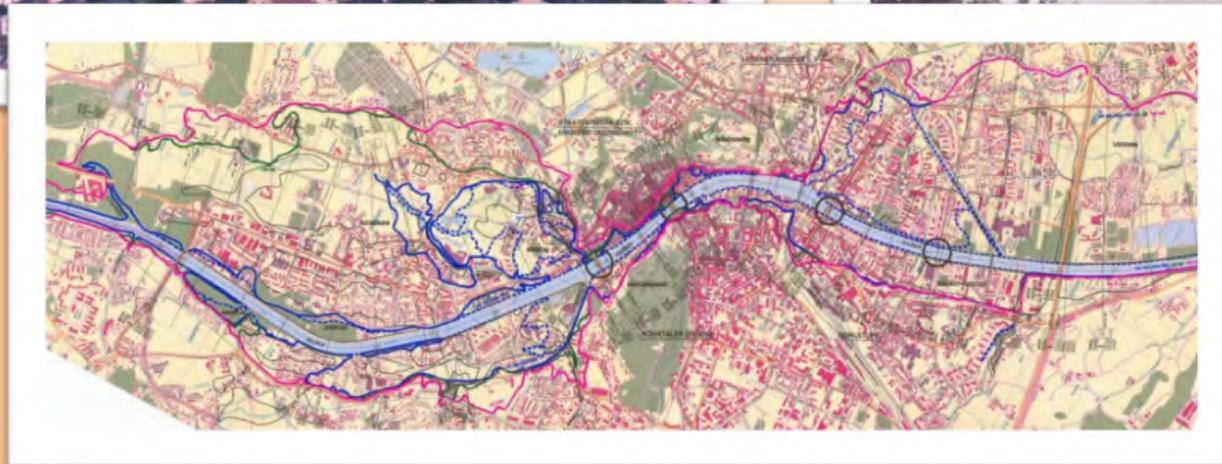
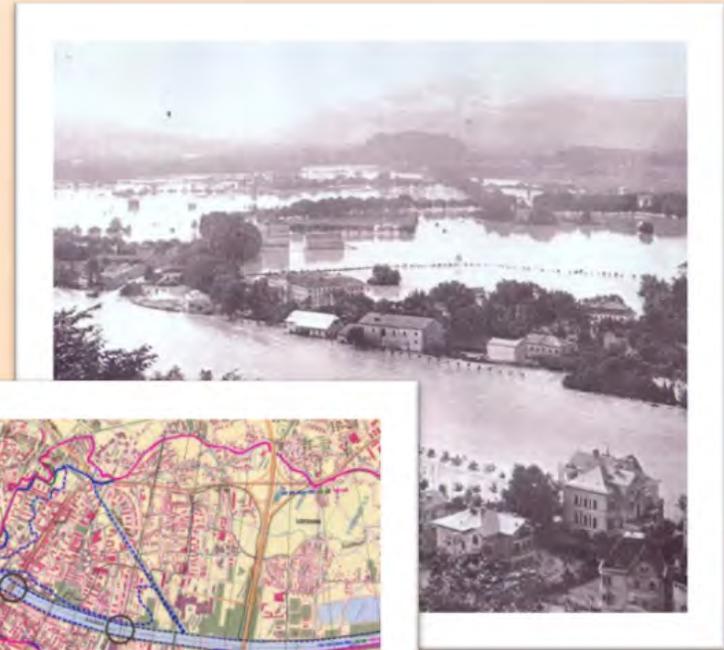
International ↔ National ↔ Subnational scale

Subnational ↔ local scale

Local scale



EXPOSURE



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SUSCEPTIBILITY and FRAGILITY

Susceptibility/Fragility is the predisposition of society and ecosystems to suffer harm resulting from the levels of susceptibilities or fragilities of human settlements and disadvantageous conditions and relative weaknesses related to physical, ecological, social, economic, cultural, and institutional issues.

Physical



Ecological

Social



Economic

Cultural

Institutional

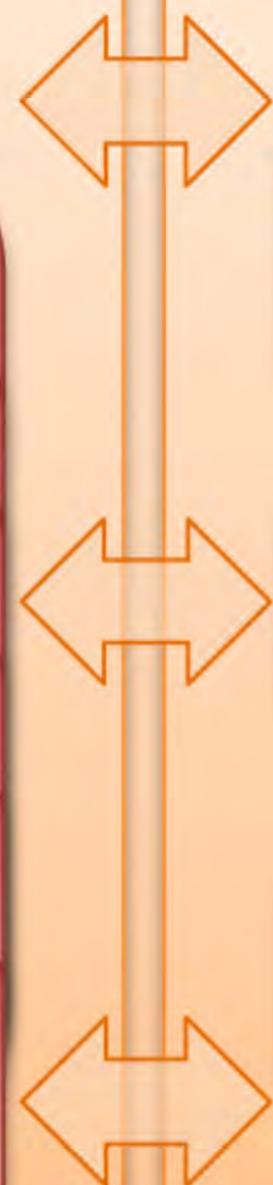
Lack of resilience (societal response capacity) is determined by the limitations in access to and mobilization of the resources of a community or a social-ecological system in responding to an identified hazard. The resilience includes the capacity to anticipate (pre-event risk reduction), cope (in-time coping) and recover (post-event recovery).

LACK OF RESILIENCE

Capacity to anticipate

Capacity to cope

Capacity to recover



Susceptibility/Fragility is the **predisposition** of society and ecosystems **to suffer harm** resulting from the levels of susceptibilities or fragilities of human settlements and disadvantageous conditions and relative weaknesses related to **physical, ecological, social, economic, cultural, and institutional issues**.

and FRAGILITY

Physical



Ecological



Social



Economic

RESILIENCE

EXPOSURE

VULNERABILITY

Final

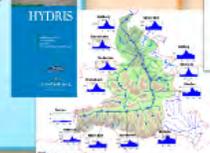
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LACK OF RESILIENCE

Capacity to anticipate

Capacity to cope

Capacity to recover



Vulnerability intervention

Exposure
reduction

Susceptibility
reduction

Resilience
improvement

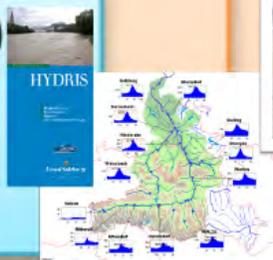
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TY

reducing, cope (in-time coping) and recover (post-event recovery).

RESILIENCE

Capacity to anticipate



Capacity to cope

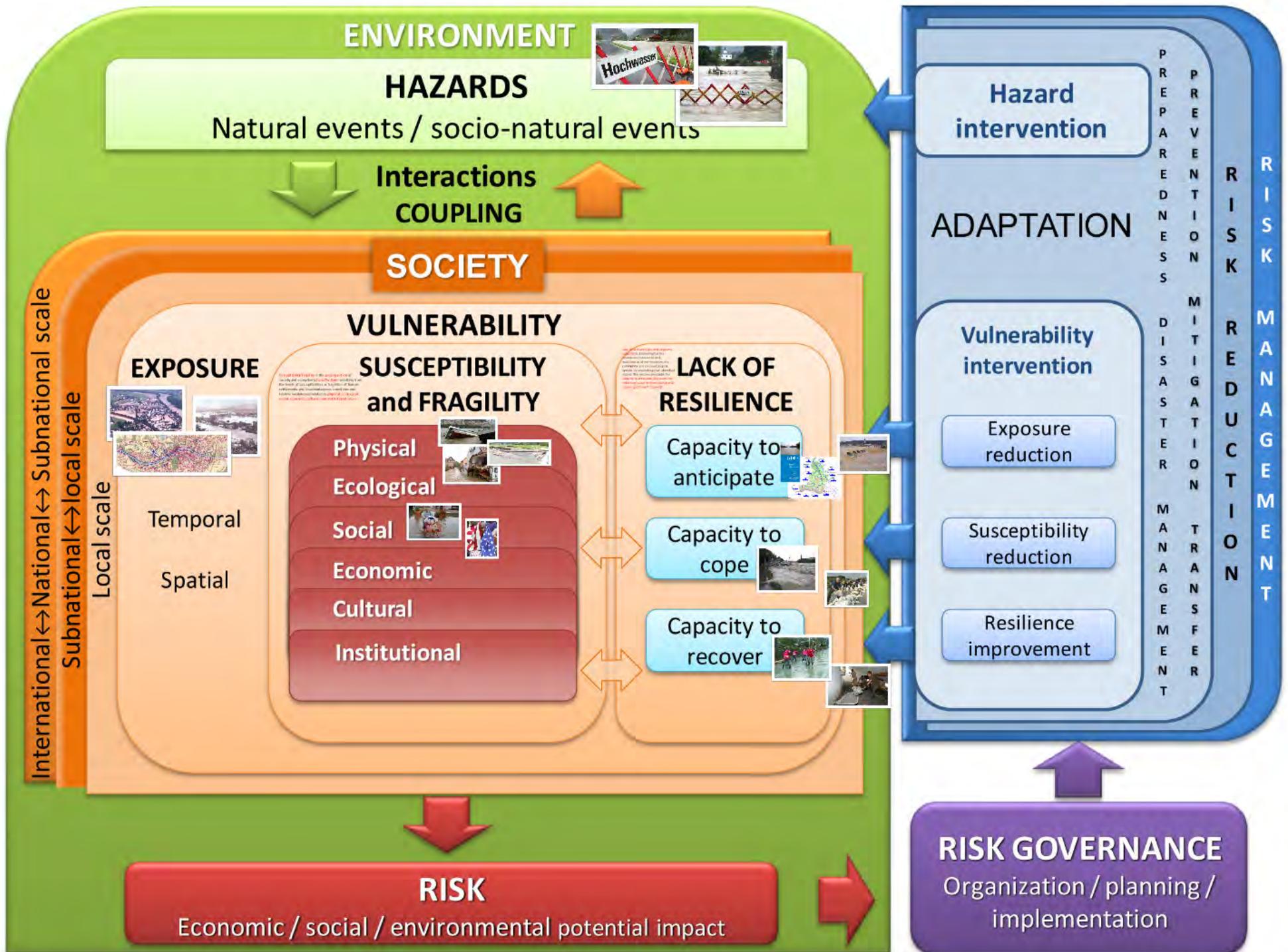


Capacity to recover



Su

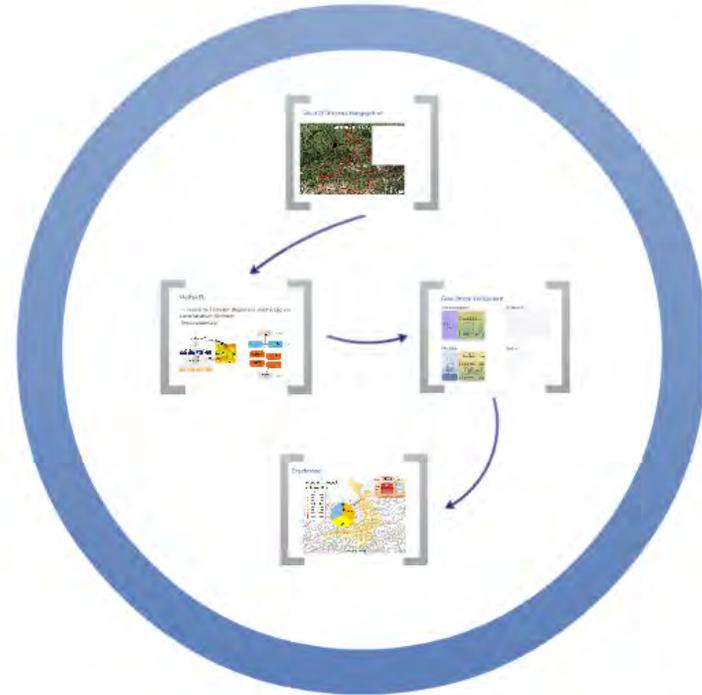
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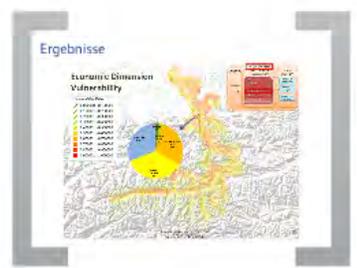


MOVE

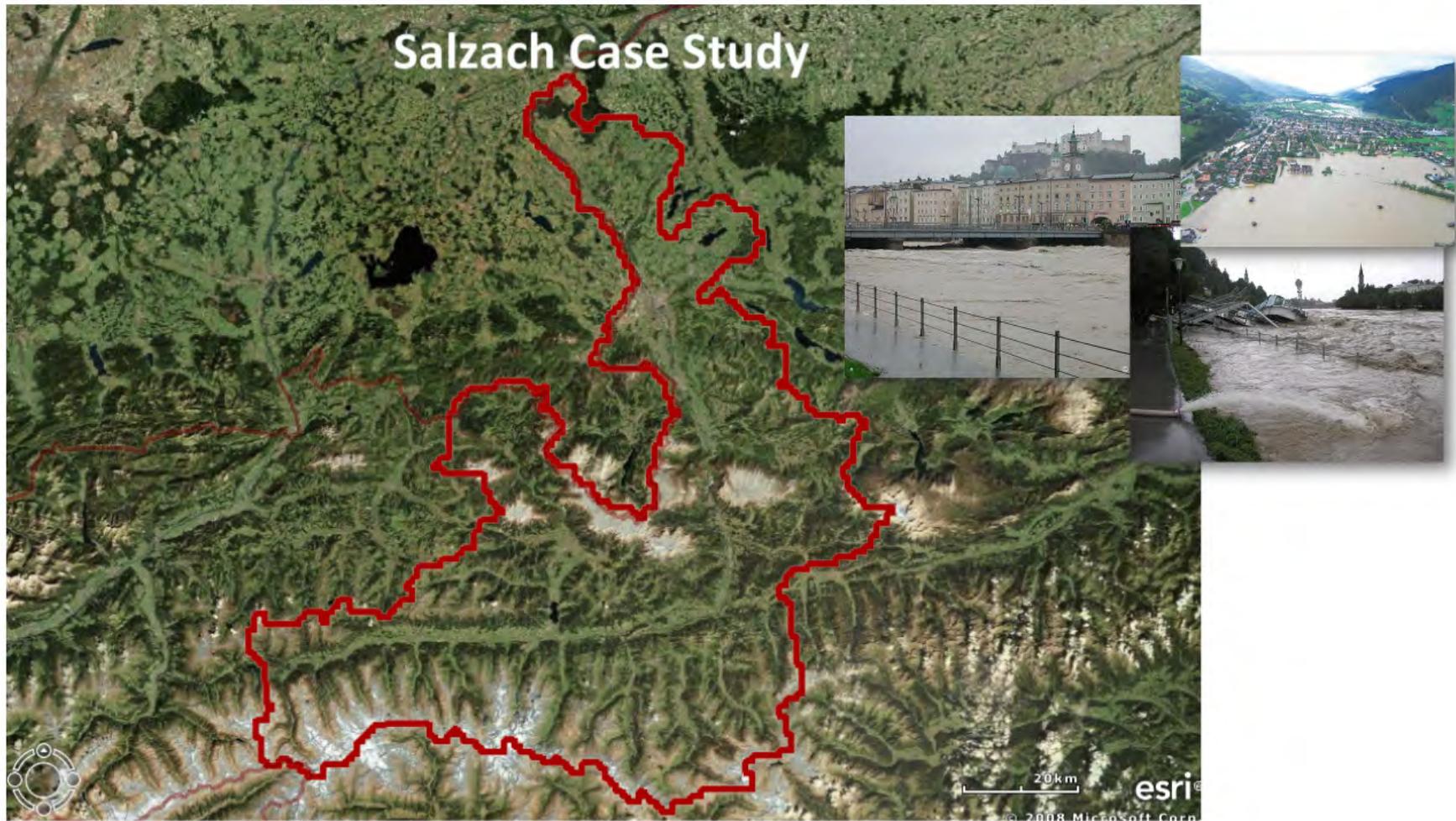
Konzept

Umsetzung



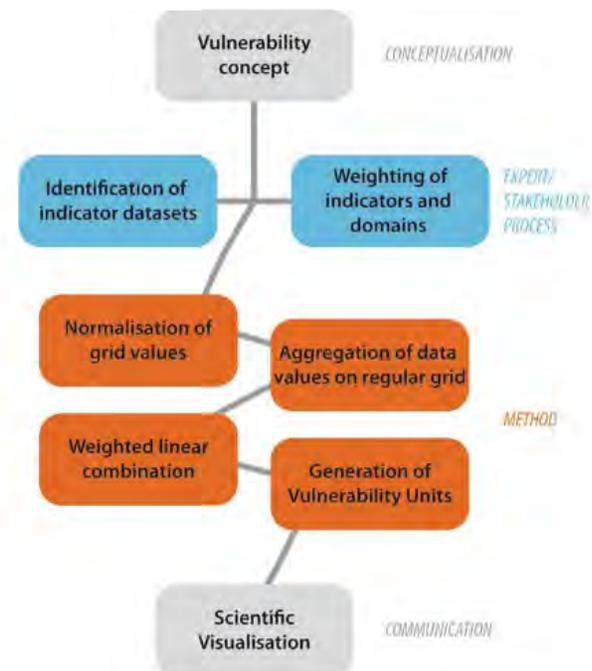
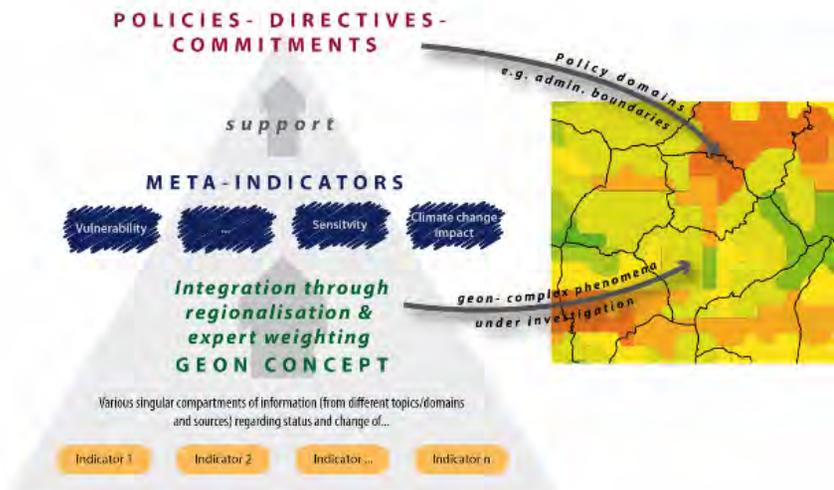


Salzach Untersuchungsgebiet



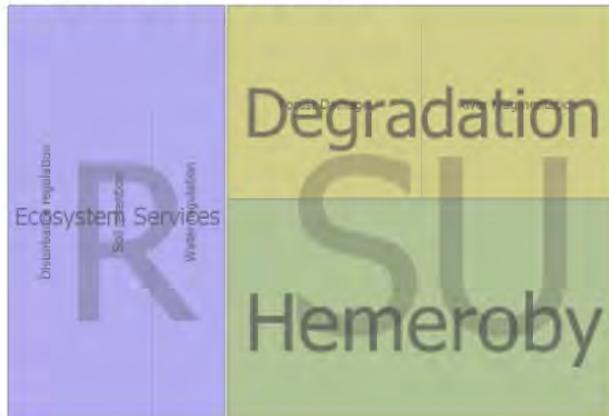
Methodik

--> räumliche Einheiten (Regionen) unabhängig von administrativen Einheiten
 "Regionalisierung"



Gewichtete Indikatoren

Environmental



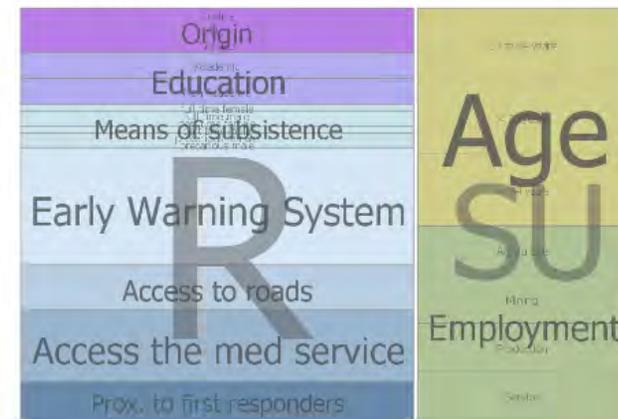
Economic



Physical

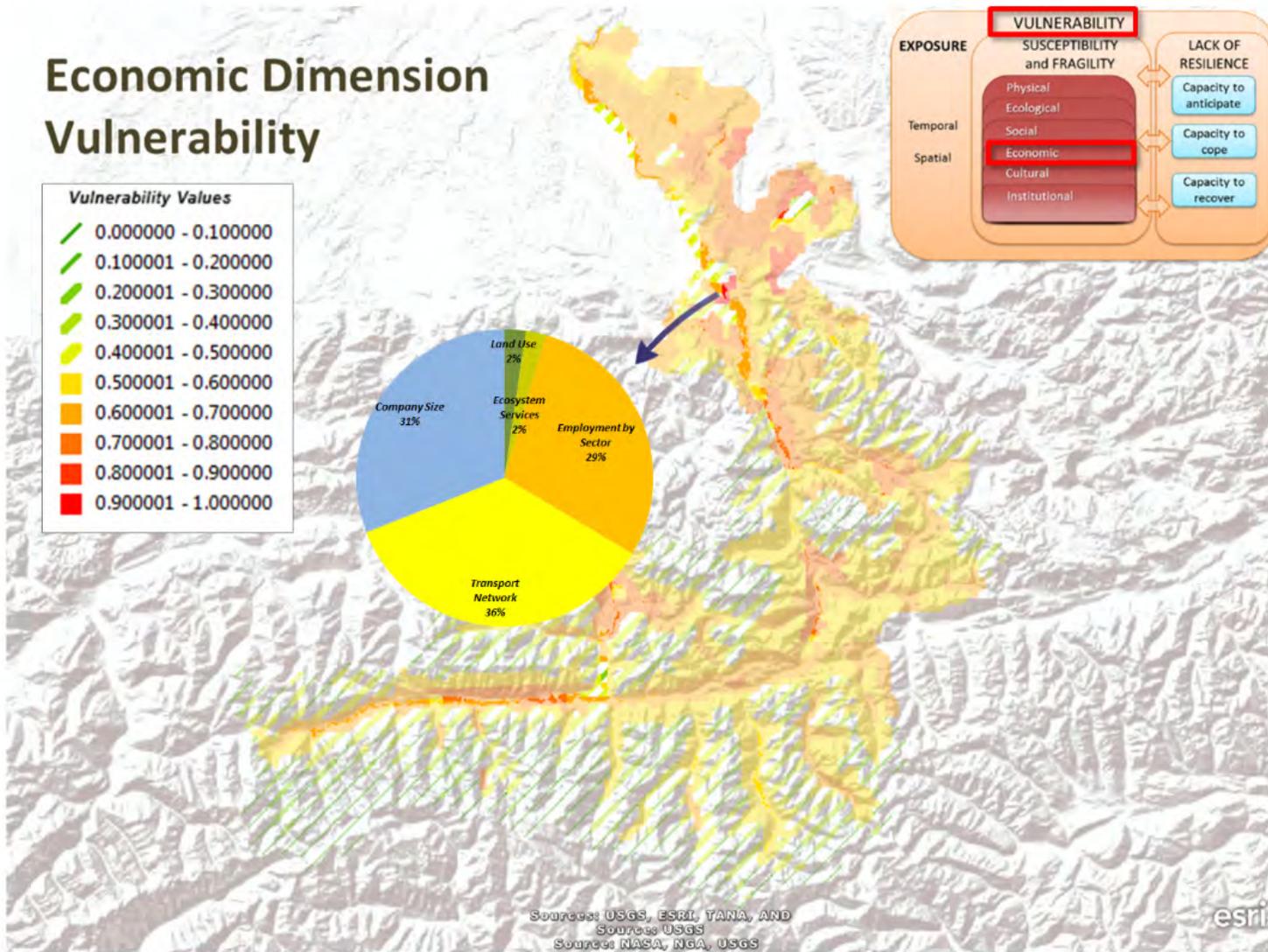
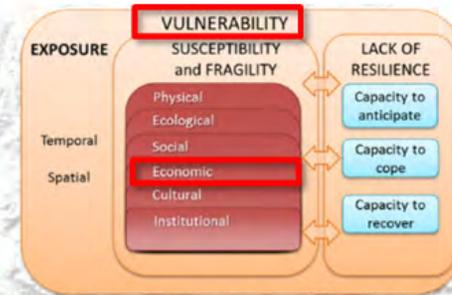
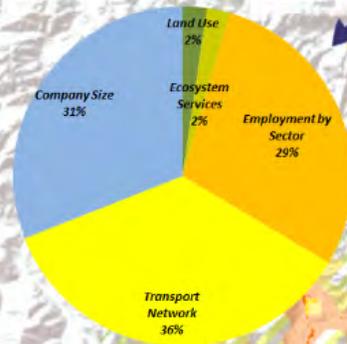
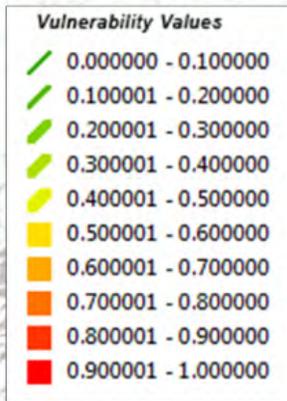


Social



Ergebnisse

Economic Dimension Vulnerability



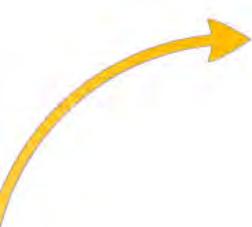
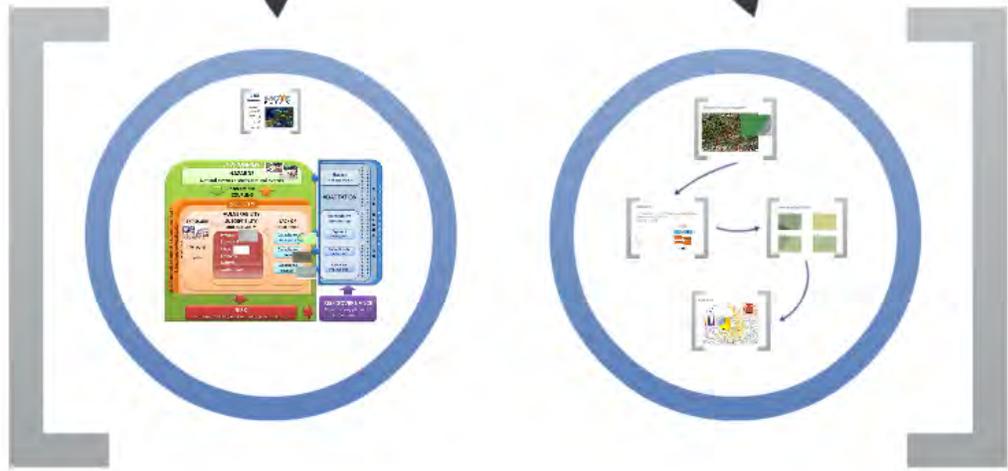
Sources: USGS, ESRI, TANA, AND
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 Sources: NASA, NGA, USGS



MOVE

Konzept

Umsetzung



Fazit



Räumliche Modellierung von Vulnerabilität

Integration von Suszeptibilität und Resilienz



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führende, unreflektierte
denken zu Resilienz

Zusammenfassung

Gute Akzeptanz des Frameworks bei
'Stakeholder'

Methoden der räumlichen Modellierung

Indikatorenfindung im Bereich
Resilienz am herausforderndsten

--> Resilienz als Teil der Verwundbarkeit

--> Zweck einer Verwundbarkeitsbewertung

--> Defizite aufzeigen

--> Handlungsorientiert

Räumliche Modellierung von Vulnerabilität

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