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net risk work

Risk Interaction Scheme TASK B Action B2

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NET RISK WORK – PROJECT MEETING
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Forest Research Institute
Baden-Württemberg



PROTEZIONE CIVILE
Regione Autonoma della Sardegna



Risk Dimensions

Background:

The **Sendai Framework for Disaster Risk Reduction** highlights that: *“Policies and practices for disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment.*





Risk Interaction Scheme



Risk Dimensions

Risk is defined as the “**expected losses** of lives, persons injured, property damages and economic activities disrupted **due to a particular hazard** for a given area and reference period”. Another definition of risk is “the combination of the **probability of an event and its negative consequences**”

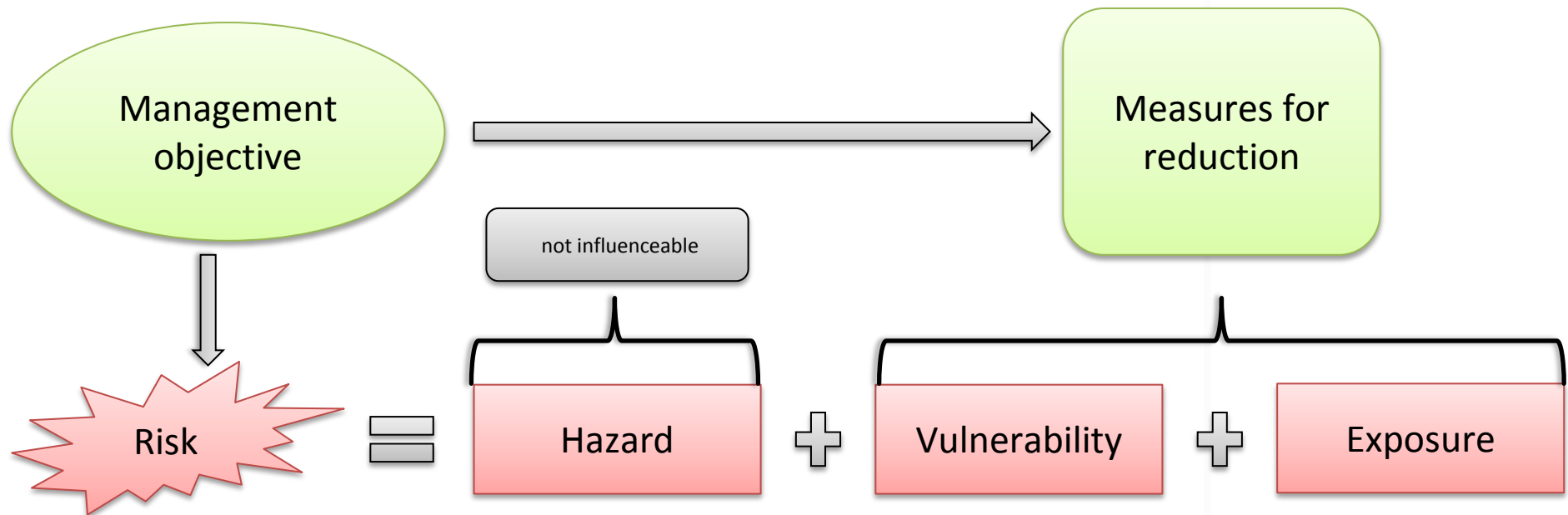
Exposure refers to the **inventory of elements in an area in which hazard events may occur**. Hence, if population and economic resources were not located in (exposed to) potentially dangerous settings, no problem of disaster risk would exist.

Vulnerability refers to the **propensity of exposed elements** such as human beings, their livelihoods, and assets **to suffer adverse effects when impacted by hazard events**



Risk Interaction Scheme

Relations between risk, its elements and management objectives



Risk Interaction Scheme

Project Integration: Single risk assessment

Objective: e.g. income, biodiversity, infrastructure protection, recreation				
Hazard	Storm	Fire	Flood	Avalanche
	Vulnerability	Vulnerability	Vulnerability	Vulnerability
	Exposure	Exposure	Exposure	Exposure

Single risk assessment overview

Objective: INCOME			
Hazard: STORM			
Impact on Vulnerability	Natural influence	i/d	
	Water logged soil (no deep roots)	↑	
Yes <input checked="" type="checkbox"/>	...		
	...		
No <input type="checkbox"/>	...		
	Human influence	i/d	🔧
	Thinning activities	↓	
	DSS tool to assess the probability of wind damage	↓	🔧
	...		
	...		
Impact on Exposure	Measures	i/d	🔧
	Early harvesting of vulnerable stands	↓	
Yes <input checked="" type="checkbox"/>	Storm damage insurance	↓	
	...		
No <input type="checkbox"/>	...		
	...		
	...		
	...		
	...		
	...		

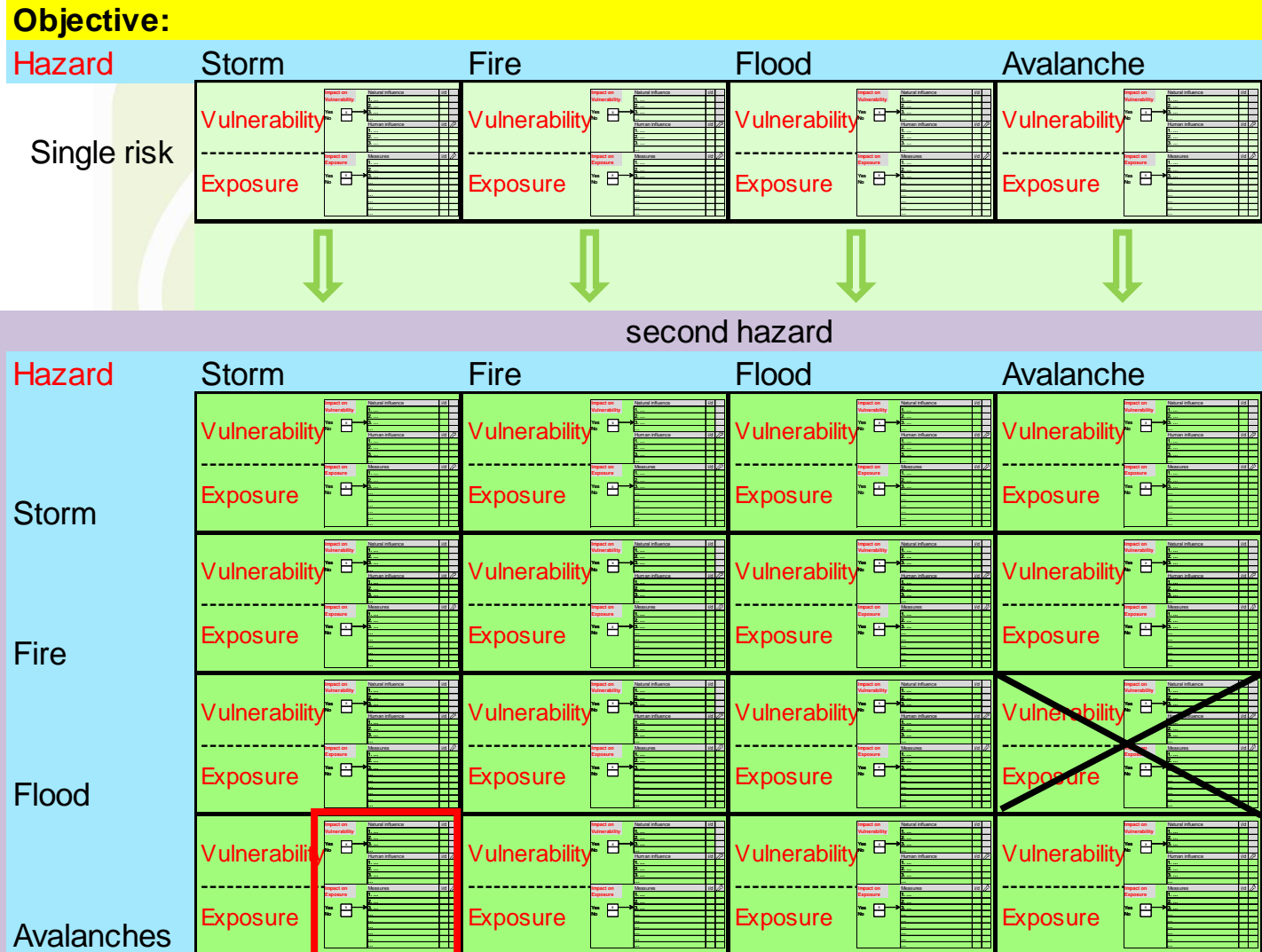
Single risk assessment in detail



Risk Interaction Scheme

Next step: risk interaction assessment

Risk interaction assessment, overview from single risk to risk interaction





Risk Interaction Scheme

Next step: risk interaction assessment

Example:

Management objective:
"Income"

Hazard:
"Storm" after
"Avalanche"



Objective: INCOME			
Hazard: AVALANCHE → STORM			
Impact on Vulnerability Yes <input checked="" type="checkbox"/> → No <input type="checkbox"/>	Natural influence	i/d	
	Water logged soil (no deep roots)	↑	
	<i>Destabilisation of stands through avalanche damage</i>	↑	
	...		
	...		
	Human influence	i/d	🔧
	<i>Thinning activities / salvage logging after avalanche</i>	?	
	DSS tool to assess the probability of wind damage	↓	🔧
	...		
	...		
Impact on Exposure Yes <input checked="" type="checkbox"/> → No <input type="checkbox"/>	Measures	i/d	🔧
	Early harvesting of vulnerable stands	↓	
	Storm damage insurance	↓	
	...		
	...		
	...		
	...		
	...		
	...		
	...		



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Thank you



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