SPECIAL MOBILITY STRAND

PREVENTIVE MEASURES IN FUCTION OF FIRE INSURANCE COST

Doc. dr Ljiljana Popović

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Faculty of Technical Sciences

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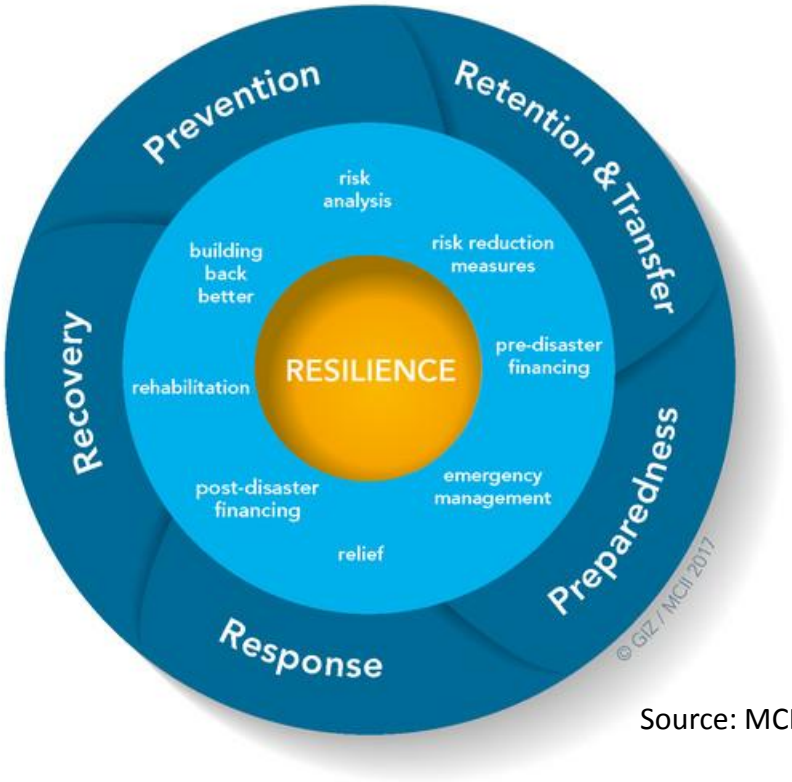
Disaster Risk Management



Source: MCII, 2017

To mitigate our vulnerability to unexpected, and in some cases disaster event, we need to manage risk through holistic approach.

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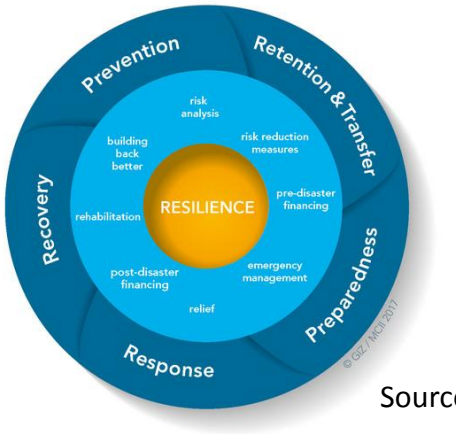
Disaster Risk Management

- First part of this holistic approach is **Prevention.**
- If we define a risk as combination of probability of adverse event and harmful consequences of that event, we can decrease a risk on two ways…

$$R = P \times C$$

- Prevention influence frequency: build the river bands, take regularly your motor vehicle on technical inspection, properly dispose flammable materials.
- Mitigation influence severity: sand bags near the river basin, airbag, fire extinguisher.



Source: MCII, 2017

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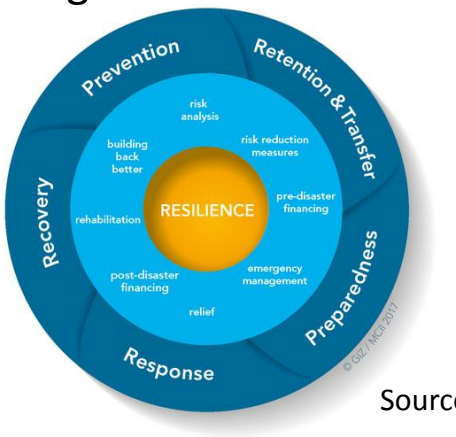
Disaster Risk Management

- Second part of this holistic approach is **Retention and Transfer.**
- But what about the residual risk? When we did everything in our power to prevent risk.
- Some risks are acceptable after prevention and we could choose to retain risk… But, some other are not and they could still threaten us. Those risk needs to be transfer and to be financially managed.
- This way of managing risk is called ***ex ante risk financing***, and it could be done on two ways, through insurance, or by savings.



Source: MCII, 2017

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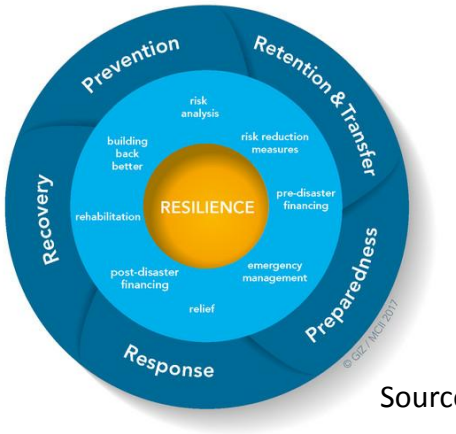
Disaster Risk Management

- When we did all previously mentioned, in case of disaster event, then we need to **prepare** for.
- We did everything to protect our asset, but the lives goes first. That means to avoid risk.
- Evacuation. Go to secure place till the emergency pass.
- But, if the frequency of occurrence is high, we might choose to manage risk by permanent avoiding the risk and to move from hazardous zone.



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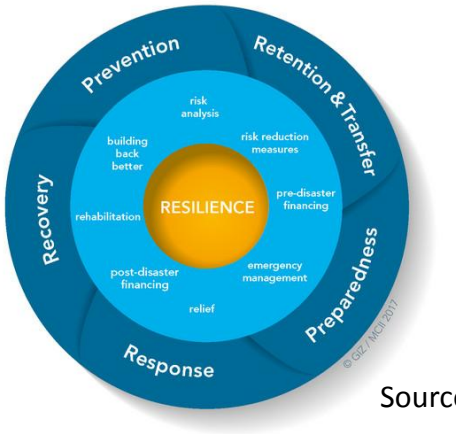
Disaster Risk Management

- After preparation goes the **Response** phase.
- In this phase emergency services comes on scene… firefighters, rescue services, military and police, red cross, etc…
- If we prepared well through prevention and preparedness phase, than response will be efficient



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Disaster Risk Management

- When emergency ends, than starts the **Recovery** phase.
- If risk was ex ante financed, than society will be able to recover quickly, in early reconstruction phase.
- But, if it is not a case, reconstruction will had to wait for ***post ante risk financing***. That means to get a loan or to wait for government or international help to recover and rebuild….
- So if you want to be resistant to any kind of risk, you need to be ***financially resilient.***

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Insurance as mechanism for financial resilience

- The basic principle of insurance is to protect an individual, or a company from the effects of unexpected and sudden financial loss.
  - Safety
  - Financial security
- ….But behind all financial and economic aspects of insurance is actually a **RISK.**
- Risk is assessed by insurers in terms of **frequency**, how often something might happen, and **severity**, how costly it would be if it did happen.
- Possibility of greater damage implies greater risk for Insurers.

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Risk management matrix

$$R = P \times C$$

R – risk
P – probability (frequency) of harmful event
C – consequences (severity) of harmful event

- *4 risk management techniques:*
  - Retaining risk
  - Avoiding risk
  - Risk transfer
  - Risk prevention (risk mitigation)

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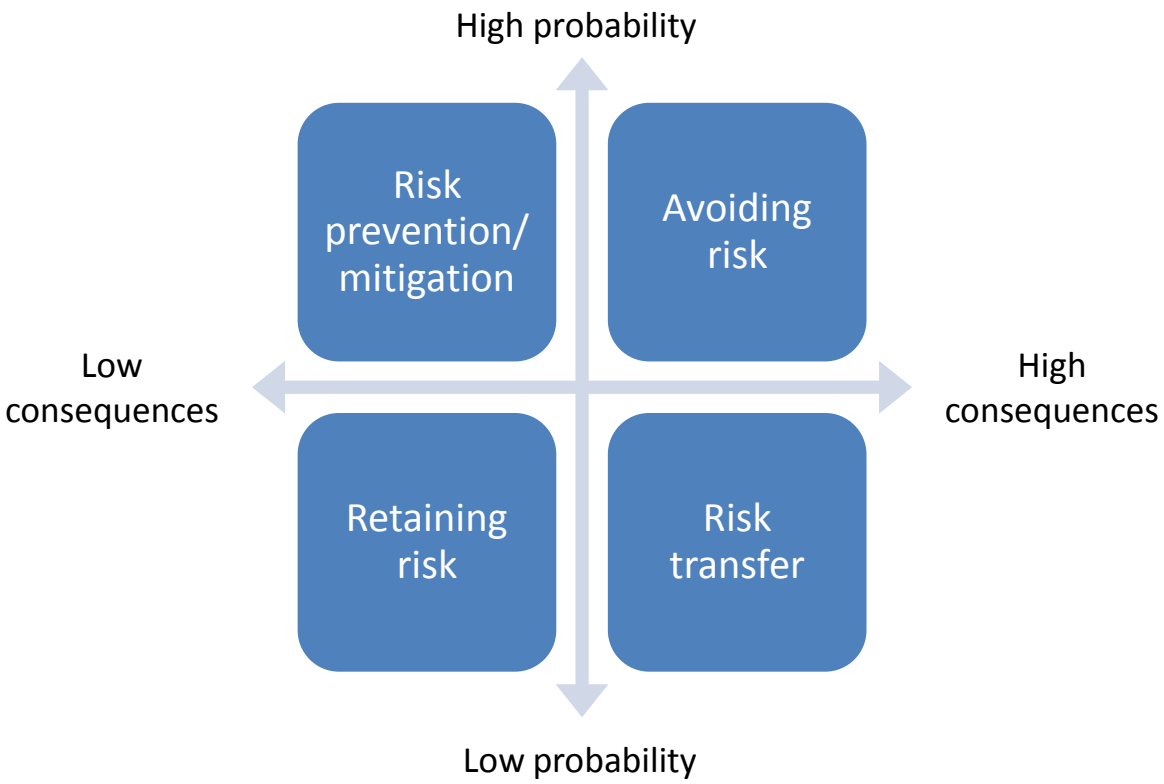
Risk management matrix



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Risk management matrix

Exercises: How big the risk is?

- *Risks:*
  - River flood
  - Hurricane/wind storm
  - Earthquake
  - Fire
  - Car accident

- *Questions:*
  - Are you exposed to the risk?
  - How often risk occurs? What is the frequency of risk?
  - How severe consequences could be? How costly?
  - How big the risk is?
  - How would you manage risk?

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Fire insurance

- Fire insurance was created in England.
- After the Great Fire of London, the very first fire insurance company was set up. It was called the **fire office.**
- In the 18th and 19th centuries insurance companies ran their own fire brigades.
- Regular fire brigades were established many years after insurance companies did that.

- The fire insurance is the most common property insurance today.

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Fire insurance premium

- On the price of fire insurance premium affects at most prevention measures that are used to prevent fire or to decrease the risk of fire.
- Prevention in fire insurance can be divided into a two categories:
  - Passive fire protection and
  - Active fire protection.

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Fire insurance premium

- **Passive fire protection measures** Insurers call “basics” for tariffing insurance premiums and they influence the cost of insurance by the presence or absence of certain measures in the moment of contracting
- According to the custom of business of insurance companies, they are divided into two categories:
    - *Construction Class and*
    - *Fire protection Class.*

- **<u>Construction Class</u>** insurer refer as:
    - *Massive Class,*
    - *Mixed Class and*
    - *Light Class*.

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Fire insurance premium

Massive Class

- *exterior walls are made of:*
  - stone,
  - sand bricks,
  - concrete blocks;
- *roof is made from:*
  - tiles,
  - concrete,
  - sheet metal,
  - reinforced glass or
  - similar hard materials,

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Fire insurance premium

***Mixed Class**:*

- *exterior walls:*
  - have wooden construction,
  - are built with lightweight construction, like siporex,
  - are built with rammed earth;
- *roof is made:*
  - like in Massive Class or
  - only partly with wood, reed, straw or plastic

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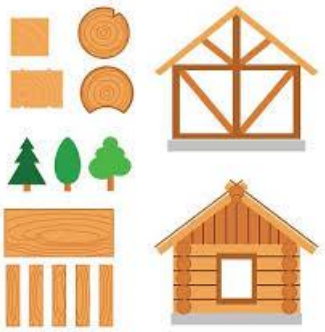
Fire insurance premium

Light Class:

- all building objects are made from:
  - different materials of previously mentioned or
  - mixing first two classes



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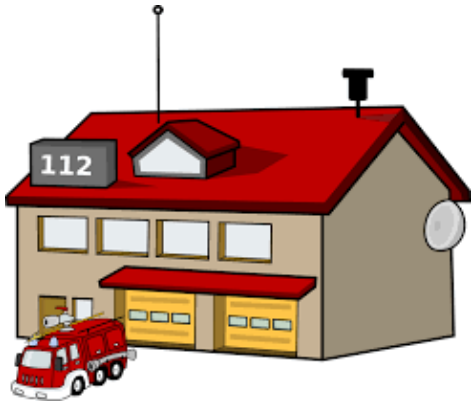
Fire insurance premium

Fire Protection Class shows insurer:

- Does the community have fire station and how many?
- How well equipped fire stations are?
- Number of hydrants and how close they are to homes in the town.
- Communications network and existence of telephone system.



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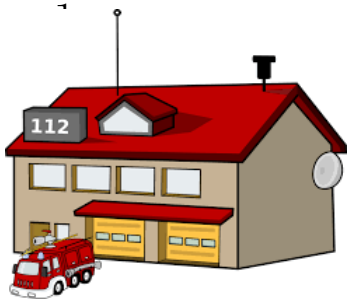
Fire insurance premium

There are three ***fire classes***:

- *First Class* belong to all places that have a professional Fire Station that can respond within 15 minutes;
- *Second Class* belong to all places that have a professional or volunteer Fire Station that can respond within 30 minutes;
- *Third Class* belong to all other



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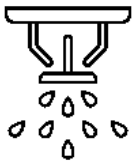
Fire insurance premium

Acive fire protection:

- automatically or manually actuated Fire alarm systems;
- heat detectors, smoke detectors;
- fire extinguishers, fire sprinklers or some other manual or automatic fire suppression tools;
- security guarding, etc.



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Fire insurance premium

- Fire risk can be expressed as a function of following complex parameters:

$$R_f = f\{cc, f_pc, a_{fp}, fc, v, \dots\}$$

cc – *Construction Class*
f_pc – *Fire protection Class*
a_{fp} – *Active fire protection*
fc – *Fire Class of goods*
v – *Value at risk*

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Fire insurance premium

$$P = r \times S \times a$$

P – Insurance Premium
r – Insurance Rate
S – Sum Insured (asset value)
a – discount (bonus) or penalty (malus) related to active protection measures

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Fire insurance premium

Example:

Sum Insured is 100.000,00 €

Construction Class	Fire protection Class					
	I class		II class		III class	
	rate (‰)	premium (€)	rate (‰)	premium (€)	rate (‰)	premium (€)
Massive Class	0,45	45,00	0,90	90,00	1,36	136,00
Mixed Class	1,36	136,00	2,49	249,00	3,62	362,00
Light Class	3,39	339,00	4,52	452,00	5,65	565,00

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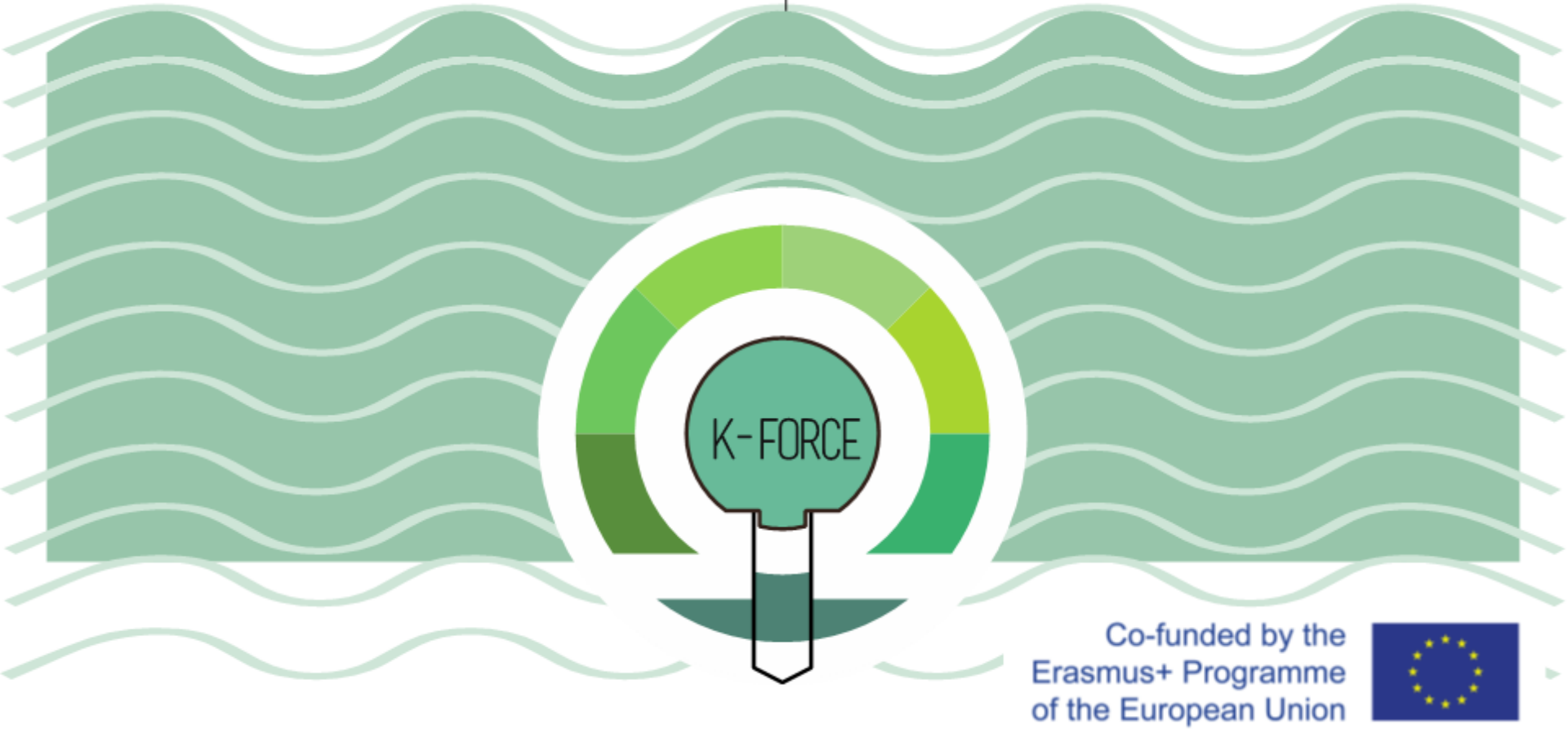

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Thank you
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ljiljana.popovic@uns.ac.rs

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