



Federal Office of Civil Protection  
and Disaster Assistance



# Critical Infrastructure Protection for Disaster Reduction

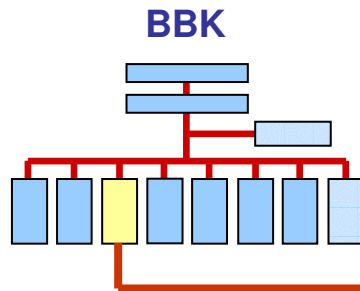
**Susanne Lenz**

Federal Office of Civil Protection and Disaster Assistance  
Centre for Critical Infrastructure Protection





# Centre for Critical Infrastructure Protection



## Centre for Critical Infrastructure Protection ACTIVITIES

Analyses on critical infrastructures  
(system, hazards, vulnerability, risk ...)

Sensitisation of public authorities  
and stakeholders

Self-protection concepts  
for CI facilities

International cooperation  
(know-how transfer)





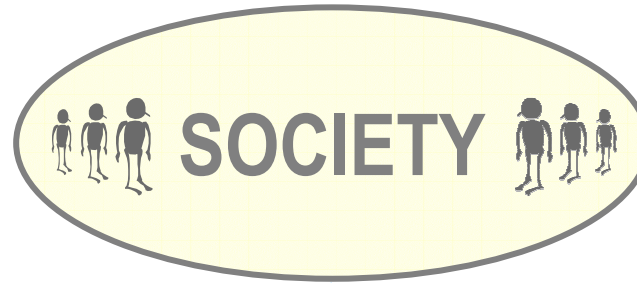
## Definition

**Critical infrastructures (CI)**  
are organisations and facilities  
of **major importance** to the community  
whose failure or impairment would cause  
a **sustained shortage of supplies**,  
**significant disruptions** to public order  
or other **dramatic consequences**.





## CI & Society



CI provide society with  
essential goods & services.

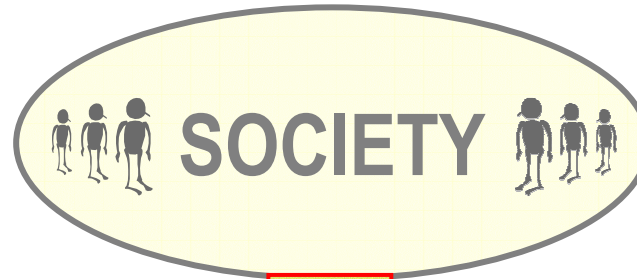
Essential  
Goods &  
Services

**CRITICAL  
INFRASTRUCTURES**





## CI & Society



**DEPENDENCY**

Essential  
Goods &  
Services

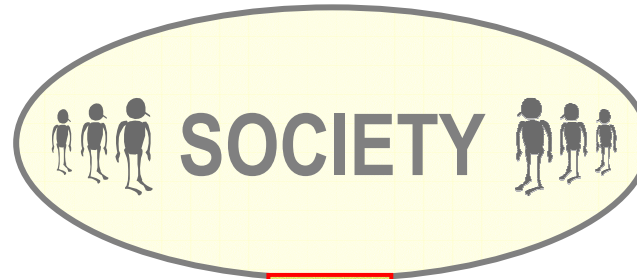
Society strongly depends  
on these goods & services  
and thus on CI.

**CRITICAL  
INFRASTRUCTURES**





## CI & Society



**DEPENDENCY**

Essential  
Goods &  
Services

**CRITICALITY  
of  
CRITICAL  
INFRASTRUCTURES**

Dependency of society  
determines CI criticality .





## CI Protection for disaster reduction

Due to the strong dependency of society on goods & services provided by CI, their failure may lead to disaster.

CI protection reduces the risk of failure and thus contributes to disaster reduction and prevention.

Adequate CI protection requires detailed analyses of:

- **the complex CI system**
- **the (inter-)dependencies between system components**
- **the risk of CI failure**

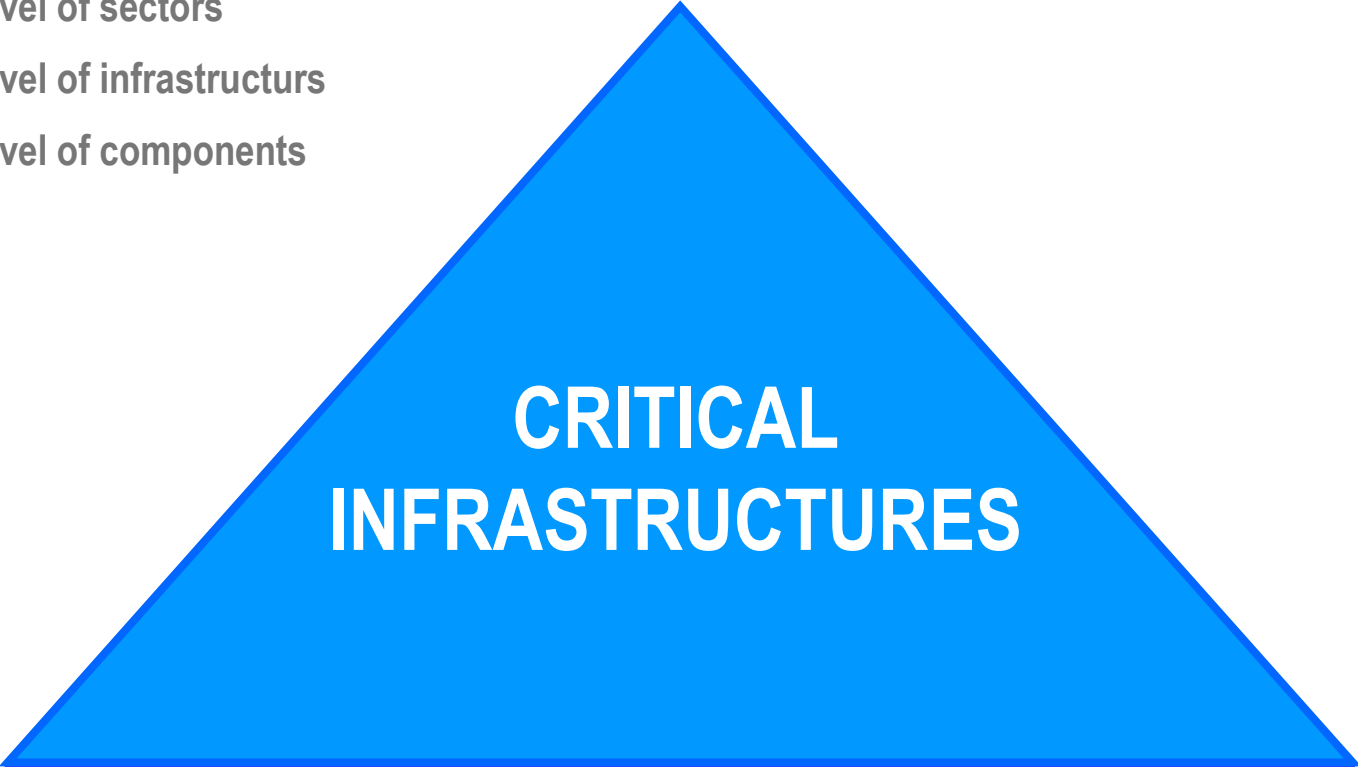




# CI System

The CI system is composed of manifold elements.  
These are organised in hierarchical levels:

- Level of sectors
- Level of infrastructures
- Level of components
- ...



**CRITICAL  
INFRASTRUCTURES**

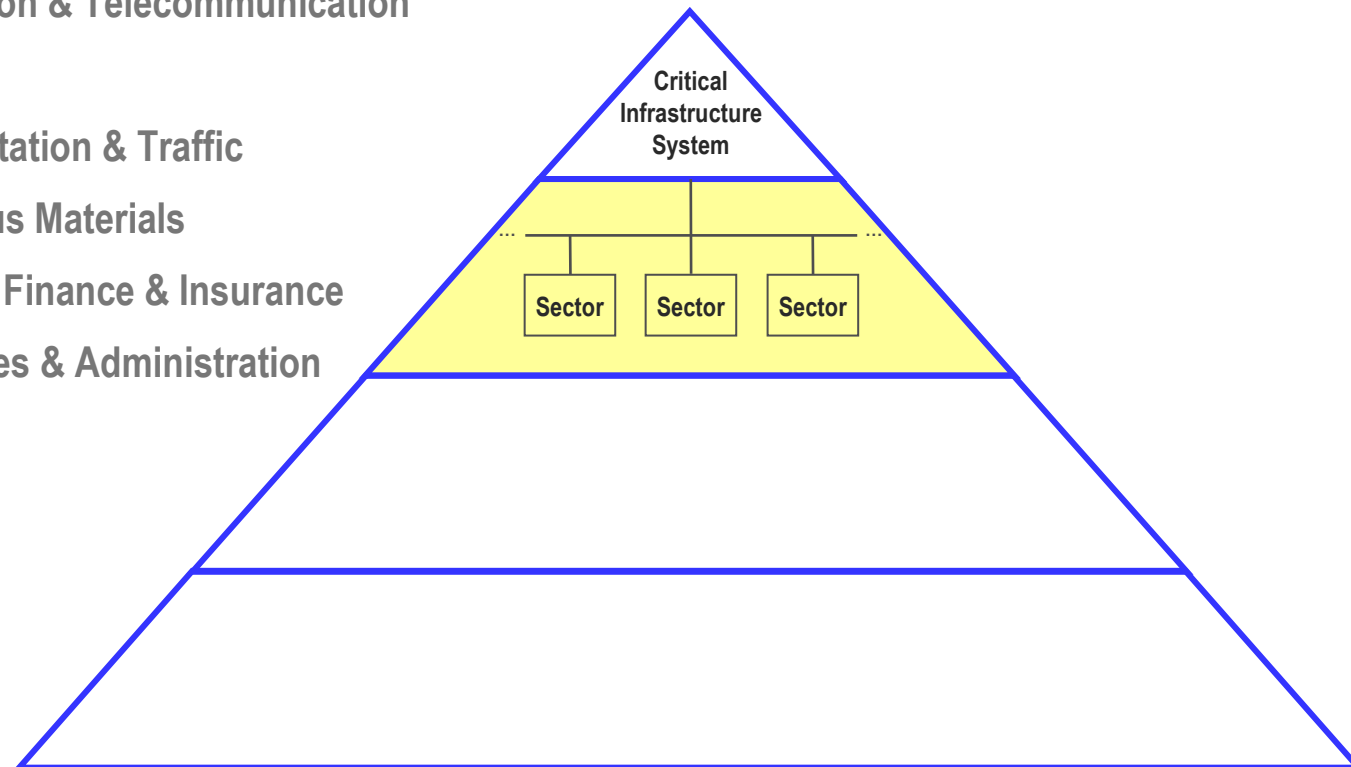




# CI System

## Level of Sectors:

- Energy
- Information & Telecommunication
- Supply
- Transportation & Traffic
- Hazardous Materials
- Banking, Finance & Insurance
- Authorities & Administration
- Others



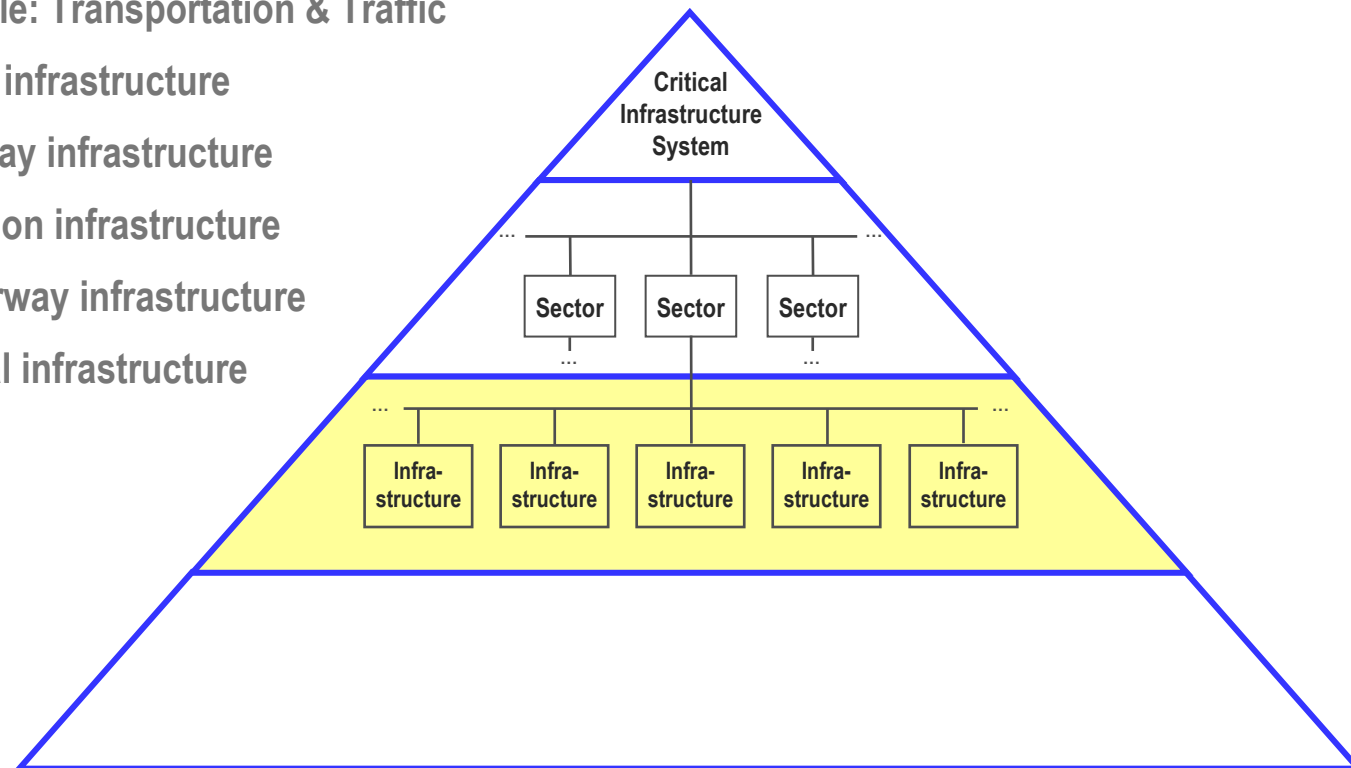


# CI System

## Level of Infrastructures:

Example: Transportation & Traffic

- Road infrastructure
- Railway infrastructure
- Aviation infrastructure
- Waterway infrastructure
- Postal infrastructure



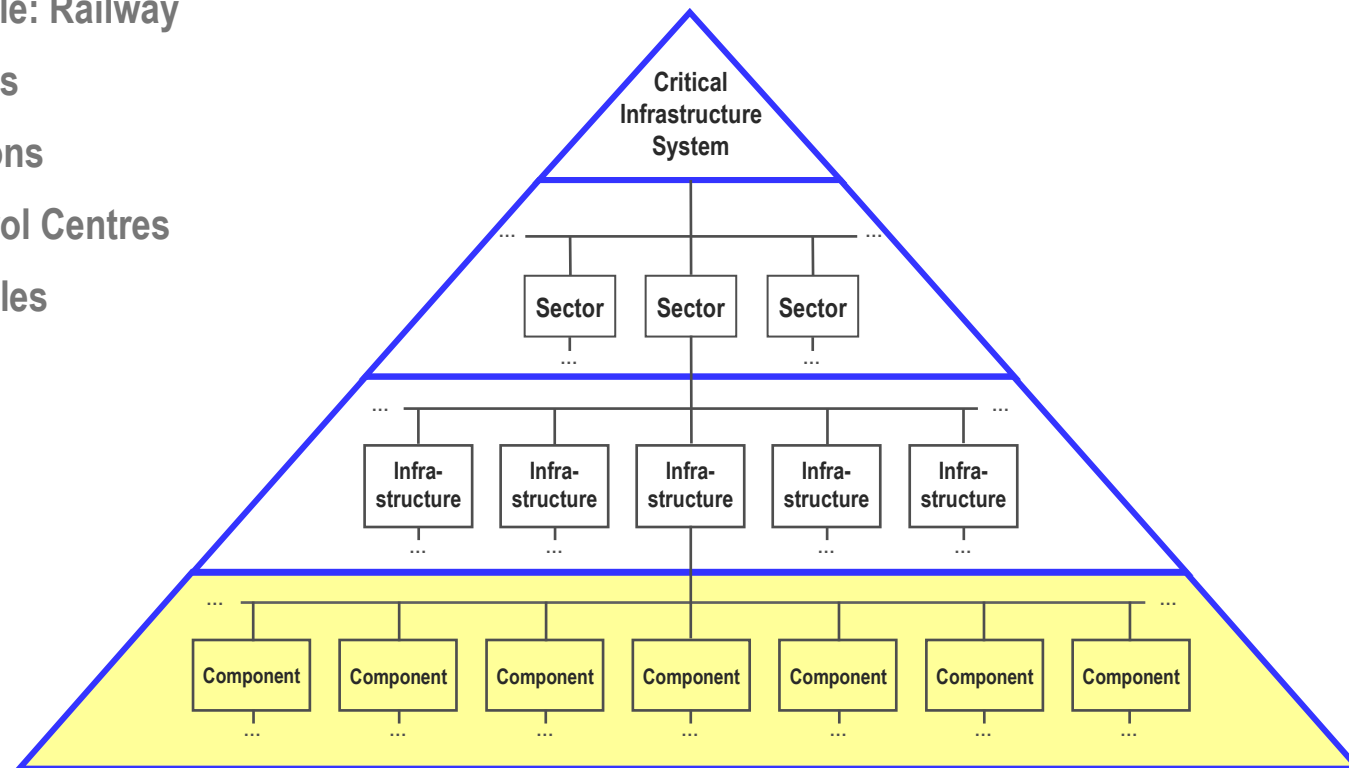


# CI System

## Level of Components:

Example: Railway

- Tracks
- Stations
- Control Centres
- Vehicles
- ...



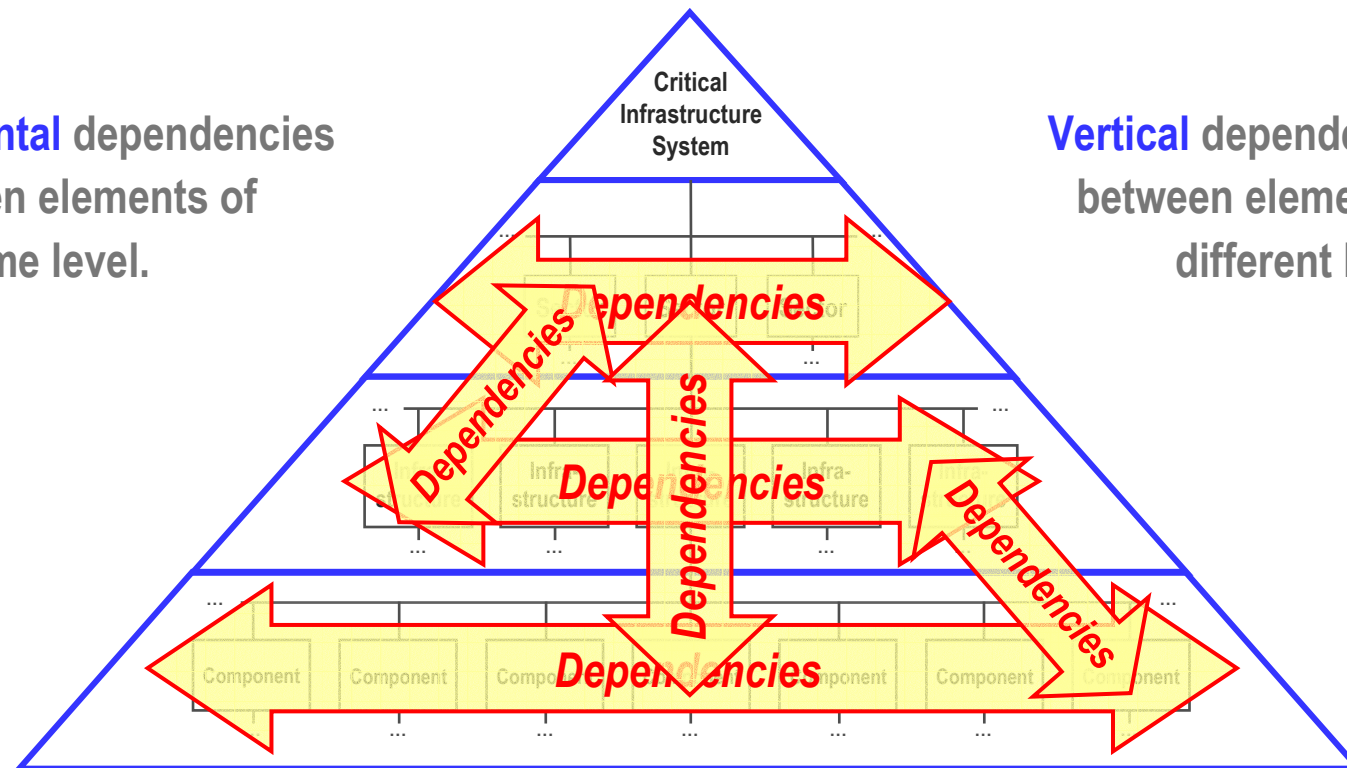


# Dependencies

The CI system is characterised by manifold dependencies & interdependencies.

**Horizontal** dependencies  
between elements of  
the same level.

**Vertical** dependencies  
between elements of  
different levels.

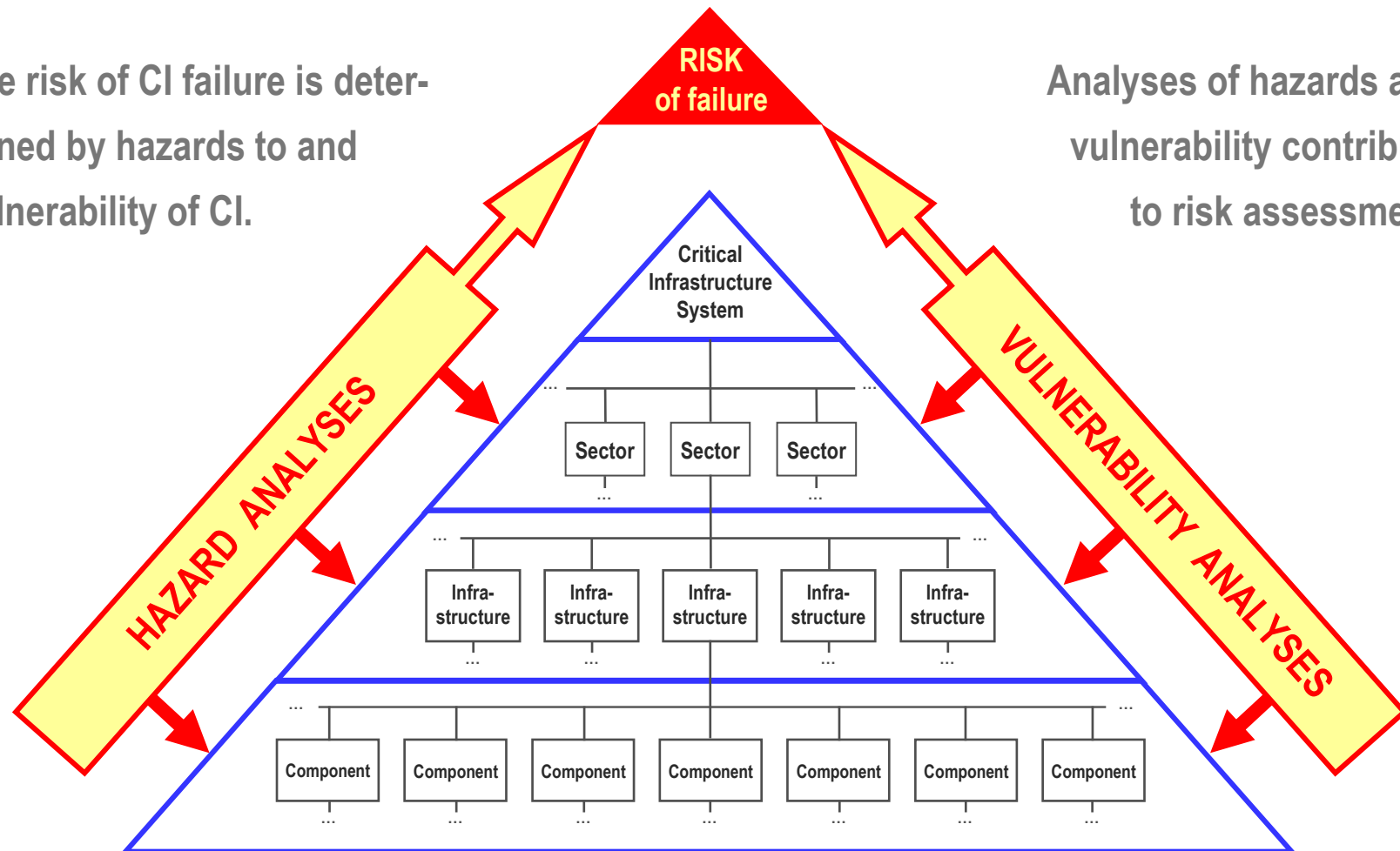




# Risk of failure

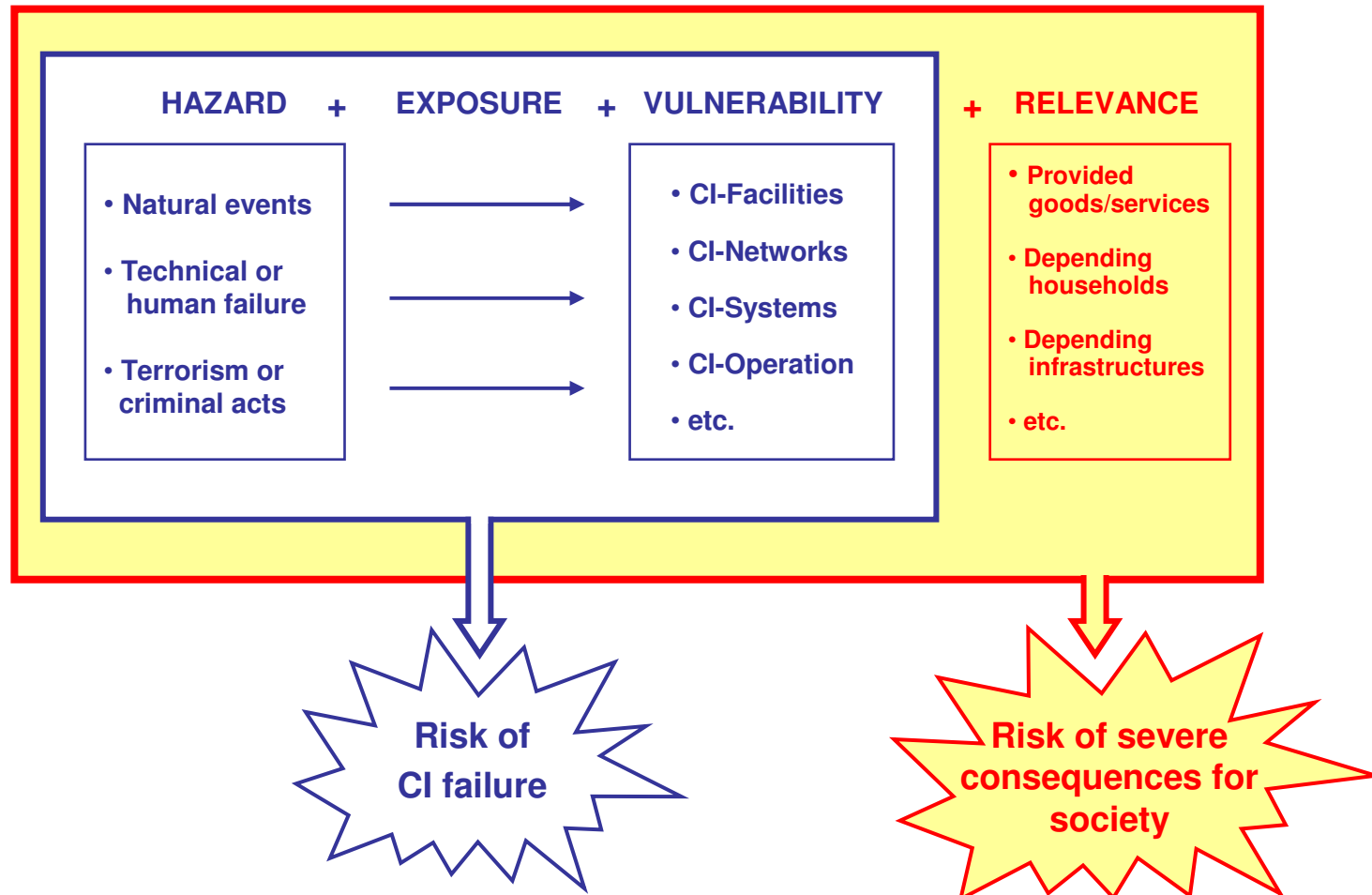
The risk of CI failure is determined by hazards to and vulnerability of CI.

Analyses of hazards and vulnerability contribute to risk assessment.



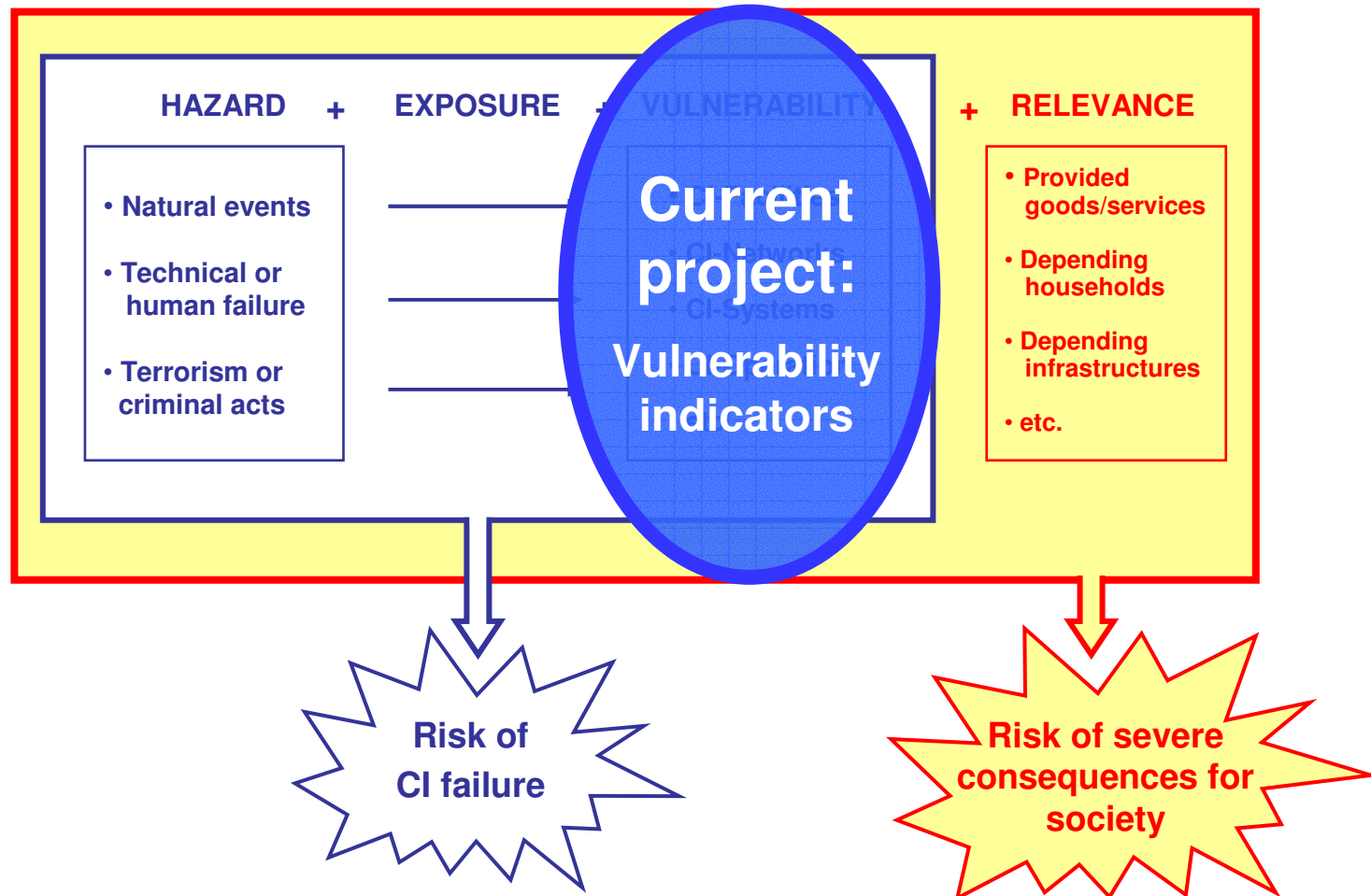


# Holistic risk assessment approach





# Holistic risk assessment approach





**Thank you**  
for your kind attention

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