

# Risk Analysis

## Extreme environments

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# Risk = fn (Hazard and Frequency )

## Vulnerability = Exposure to Risk +Resilience

### 1. Qualification of an Hazard

Catastrophic (A): High death toll, disability persons and High Loss of assets. Need for high scale operational means. Complex situation with problems.

Major Hazard(B): Number of death toll is significant, need for medical care and treatment. Loss of assets and related problems. People to be care dfor

Moderate (C) : Loss of assets, minor health problems, need for care. Manageable with existing local means

Minor (D) : Very low impact of the hazard on normal life. Need for immediate help. Can be managed by the victims themselves.

Insignificant (E) : Not much consequence for the population. No intervention needed.

### 2. Likelihood of the hazard happening

Almost certain (1): Expected to occur in all circumstances and will have an impact

Likely (2): Will probably occur

Possible (3) : The hazard could occur at some times

Unlikely (4) : Is not likely to occur in normal circumstances

Rare (5) :May occur in exceptional circumstances

## Risk Analysis- Intensity

Impact of the Hazard	Likelihood of the Hazard				
	Rare (1)	Unlikely(2)	Possible (3)	Likely (4)	Almost certain (5)
Catastrophic(A)	M	M	H	D	D
Major (B)	L	M	M	H	D
Moderate (C)	L	M	M	M	H
Minor (D)	L	L	M	M	M
Insignificant (E)	VL	VL	L	L	M

D Disaster  
 H High Risk  
 M Moderate Risk  
 L Low Risk  
 VL Very Low Risk

# Analysis of Resilience- Indicators

Factors affecting resilience	Indictors	Negative variables	Protecting or facilitating factors
Individual	Reactivity	Intensity of the trauma	Self esteem, hope
	Independence		Optimism
Family environment	Social intercourse	The suddenness of the disaster	Endurance to stress
	Initiatives	Mental health conditions before the disaster	Sociability
Community environment	Creativity	Lack of social intercourse (culture, professional etc.)	Emotional capacity
	Rapid Decision		Positive attitude before problems
	Capable of accepting situations		

Based on an analysis of these factors we define the vulnerability of the affected population : High resilience, Moderate resilience, resilience, low resilience, total inability

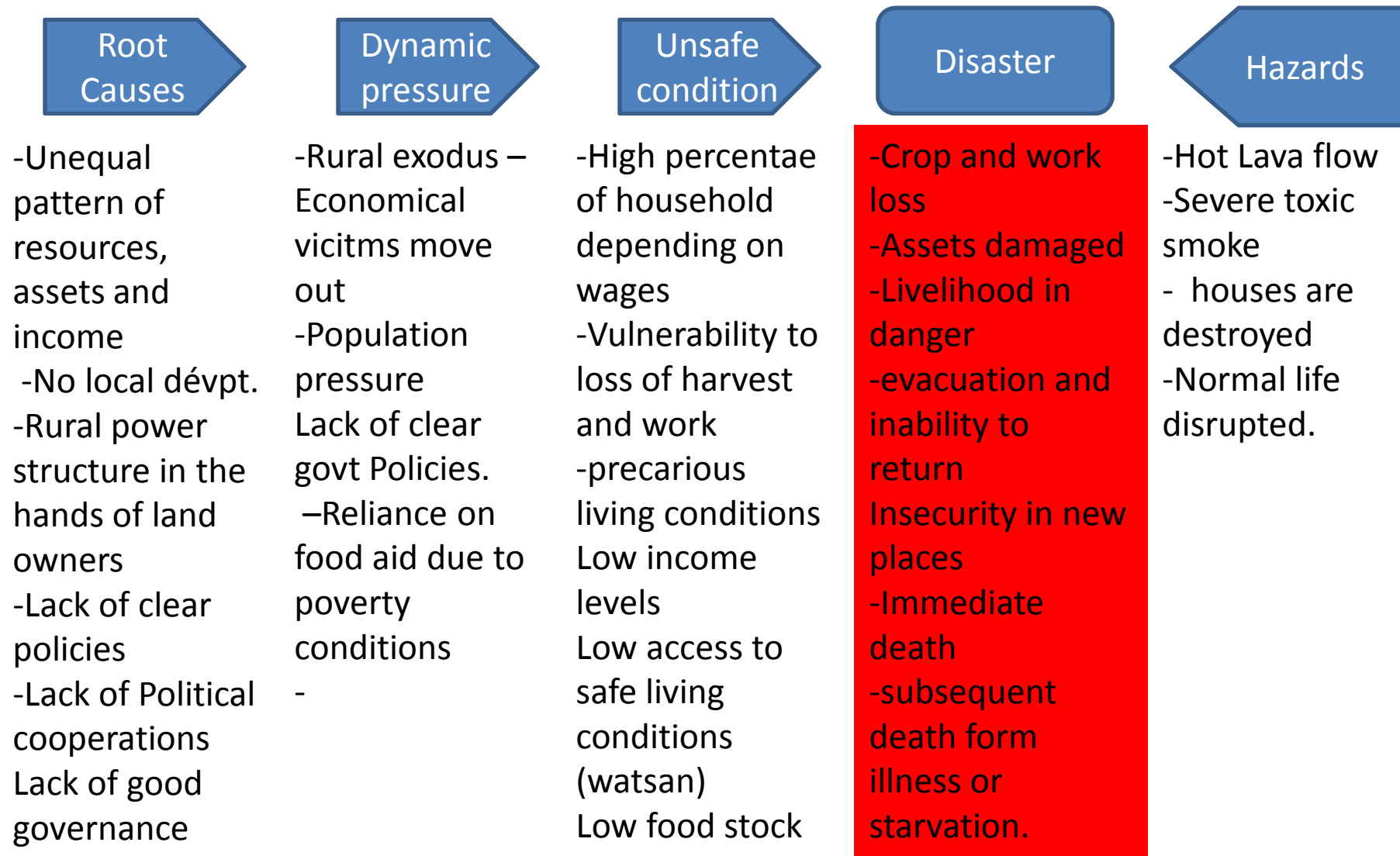
### Vulnerability Analysis

Impact	Resistance to withstand the impact of the disaster				
	H.R	M/R	R	LR	Incapable
Disaster	MV	MV	V	HV	HV
High Intensity	L.V	MV	MV	V	HV
Moderate Inten.	L.V	MV	MV	MV	V
Low intensity	L.V	L.V	MV	MV	V
Very Low	N-V	N-V	L.V	L.V	MV

HV Highly Vulnerable    
 V Vulnerable    
 MV Moderate Vulnerability  
LV Low Vulnerability    
 N-V Not vulnerable

# Analysis of a Disaster

## Merapi volcano- Indonesia



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