

# Diagnose natural disasters syndrome:



## The case of Central America

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Vulnerability  
Briefing # 2  
March, 2006

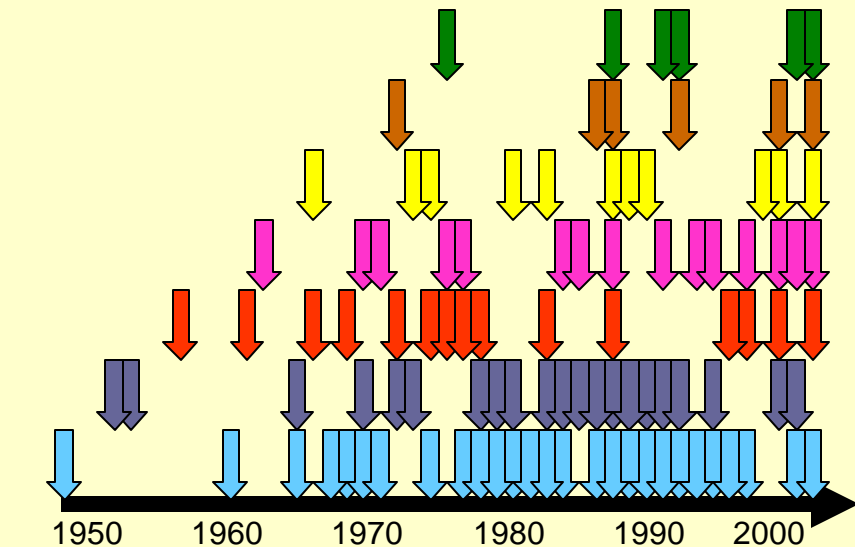
### Introduction:

In Central America, during the last 50 years, the experienced economic losses due to natural events are equivalent to 2% of the region's GDP per year. Given the biophysical traits of the region, the countries must be affected, every 3/4 years, by climate related events, like drought-fires and/or floods-landslide, with important effects on the development and livelihoods. In addition, as a result of climate change, extreme events like storms, droughts, and floods are expected to increase even more in the future.

The effects of natural disasters on the economy, the society and the environment should be analyzed not only with respect of their direct impacts, but also in relation to the closely linked indirect causes. For example, the underlying causes (e.g. land use, agricultural practices, watershed management and urbanization) of different types of impacts should also be considered.

Source: Winograd M., A. Farrow, 2000, Using information to improve decision-making: Climatic risk in Central America, CIAT-World Bank-UNEP Project, Washington.D.C.

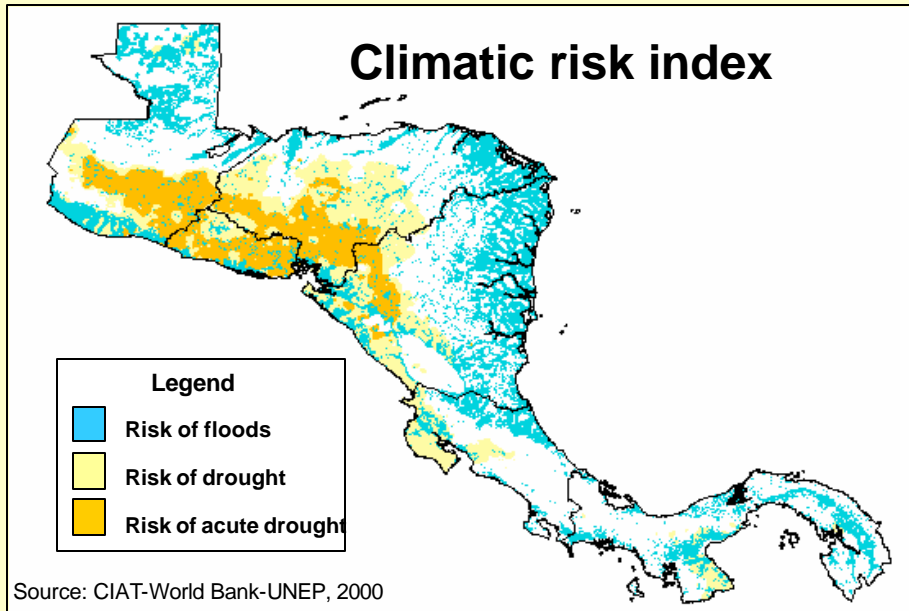
### Probability and magnitude of natural events in Central America:



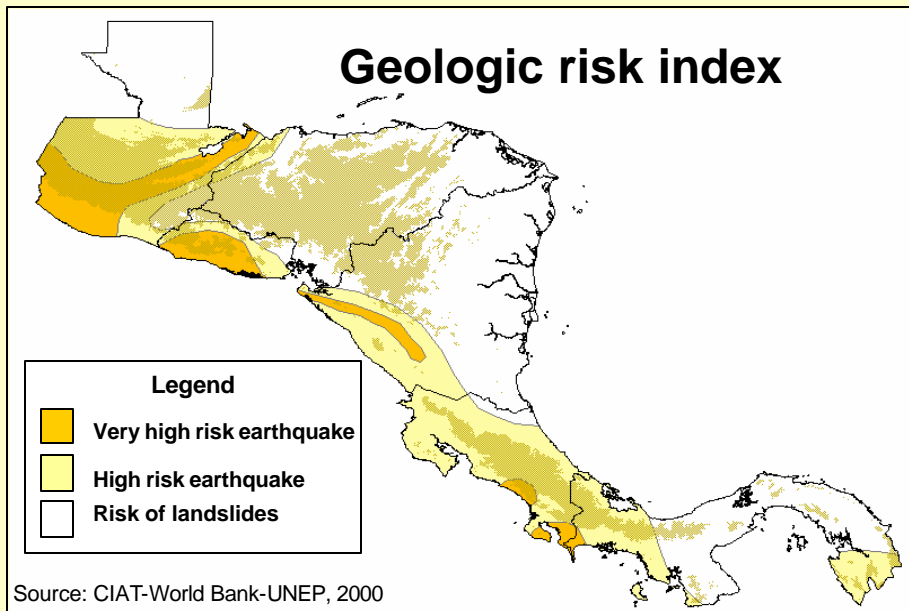
- Green arrow: Fires = 1 every 8-9 year.
- Brown arrow: Landslides = 1 every 8-9 year.
- Yellow arrow: Droughts = 1 every 4-5 year.
- Pink arrow: Volcanoes = 1 every 3-4 year.
- Red arrow: Hurricanes = 1 every 3-4 year.
- Dark blue arrow: Earthquakes = 1 every 2-3 year.
- Light blue arrow: Floods = 1 every 1-2 year.

Source: Centre for Research on the Epidemiology of Disasters (CRED), 2001.

# Diagnose the syndrome...

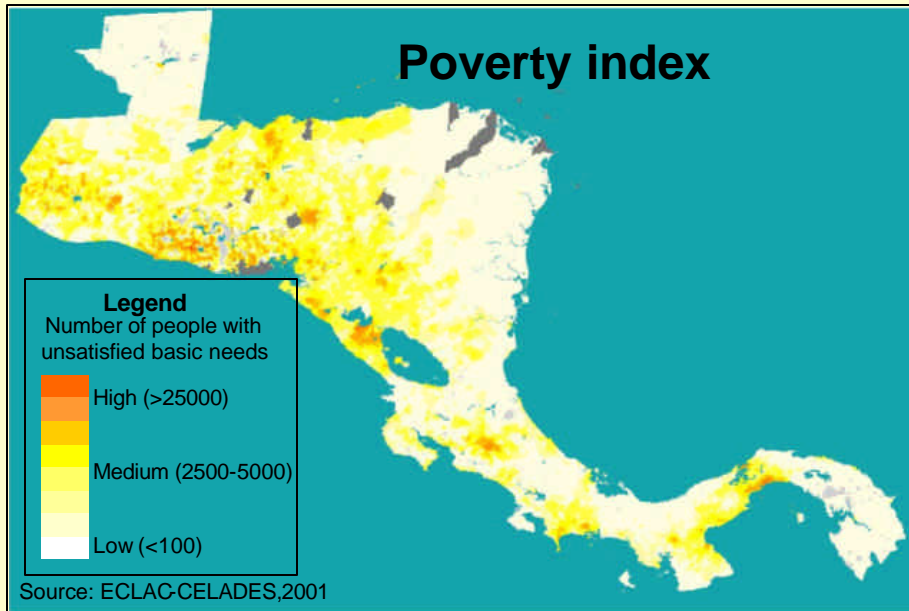


**Symptoms:**  
40% of the land area at risk of flooding.  
30% of the land area at risk of drought.  
15% of the land area at risk of flooding and acute drought.



**Symptoms:**  
45% of the land area at risk of landslides.  
30% of the land area at risk of earthquakes.

# Diagnose the syndrome...

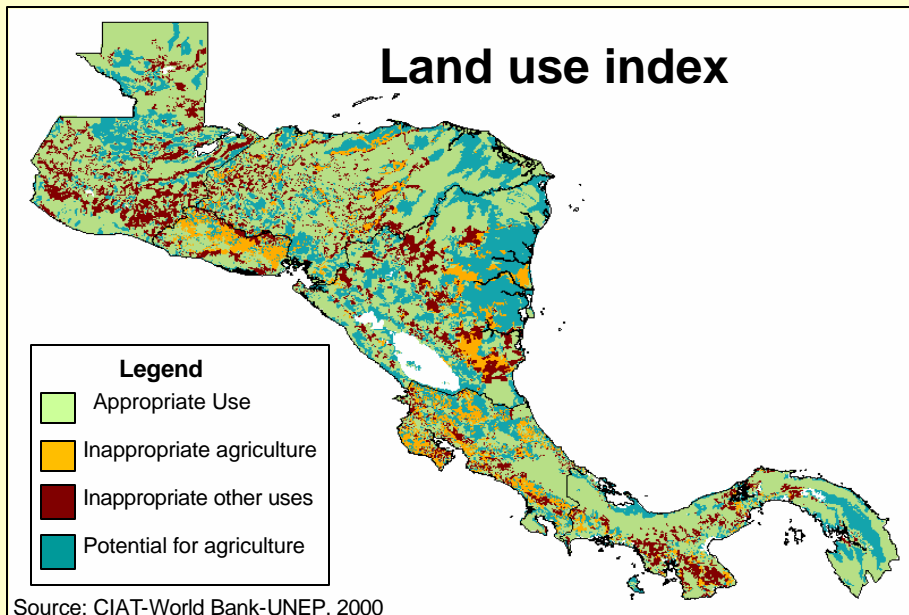


### Symptoms:

45% of population is poor.

30% of urban population is poor.

60% of rural population is poor.



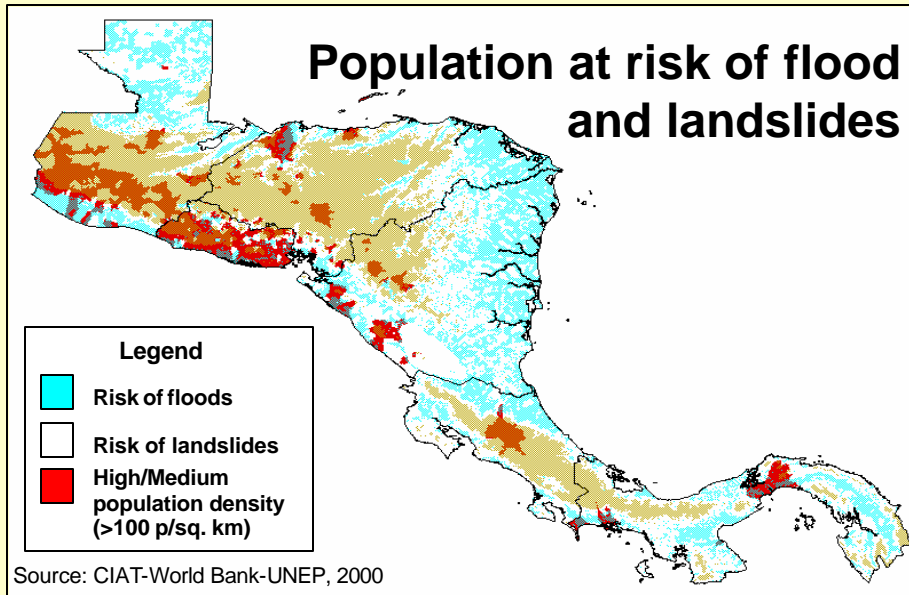
### Symptoms:

50% of the land under inappropriate uses.

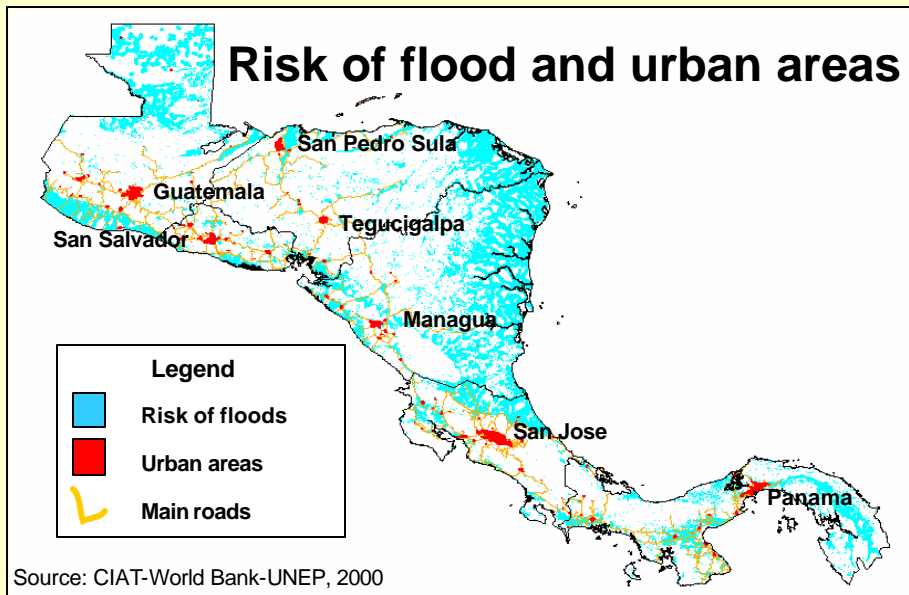
30% of the land is used for livestock but only half has a potential for pastures.

15% of the land is used for agriculture but twice as much has agricultural potential.

# Diagnose the syndrome...

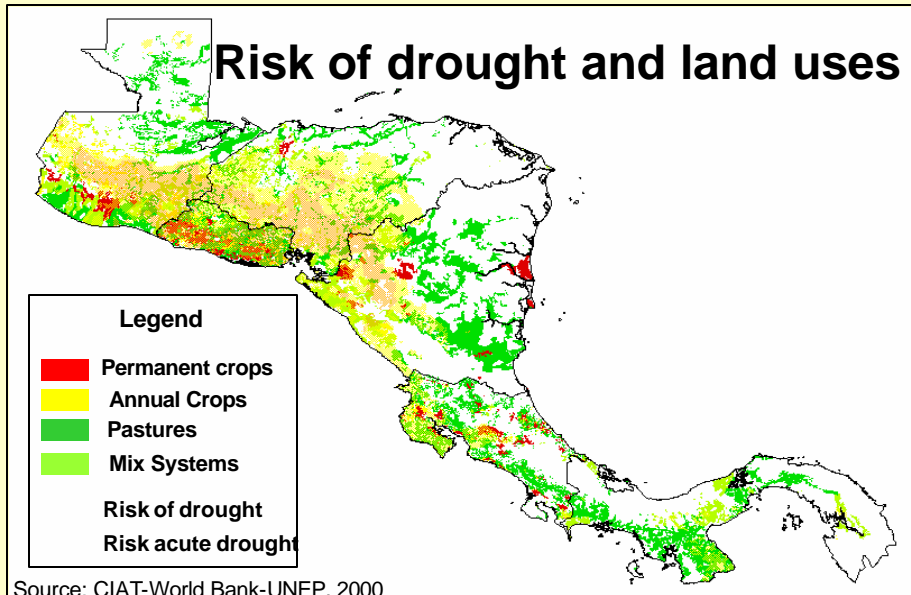


**Symptoms:**  
70% of population in areas at risk of landslides.  
25% of population in areas at risk of flood.



**Symptoms:**  
Some of the most important urban areas in coastal and flood-risk areas.  
40% of the road infrastructure is in flood-risk areas.

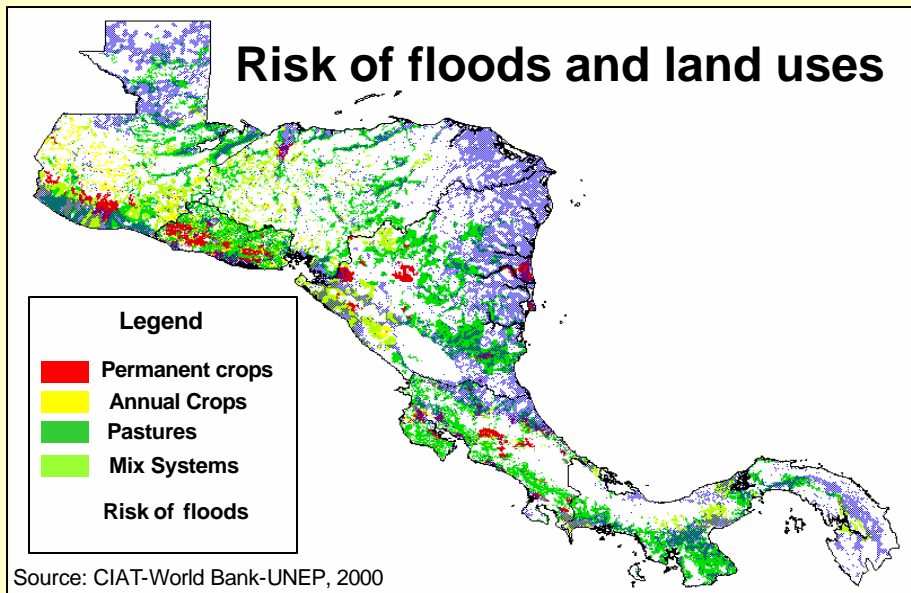
# Diagnose the syndrome...



## Symptoms:

50% of permanent crops, annual crops and mix systems at risk of droughts.

25% of pastures at risk of droughts.

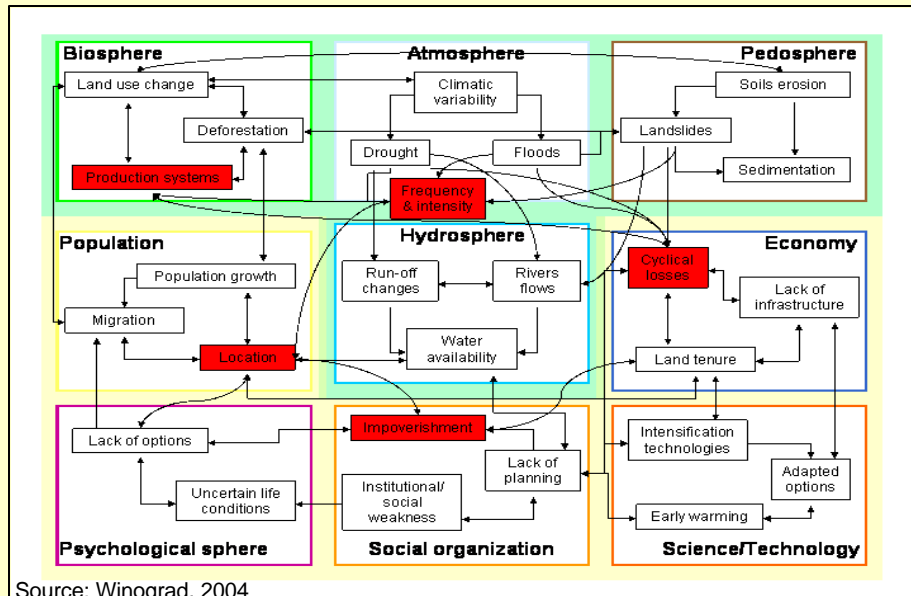


## Symptoms:

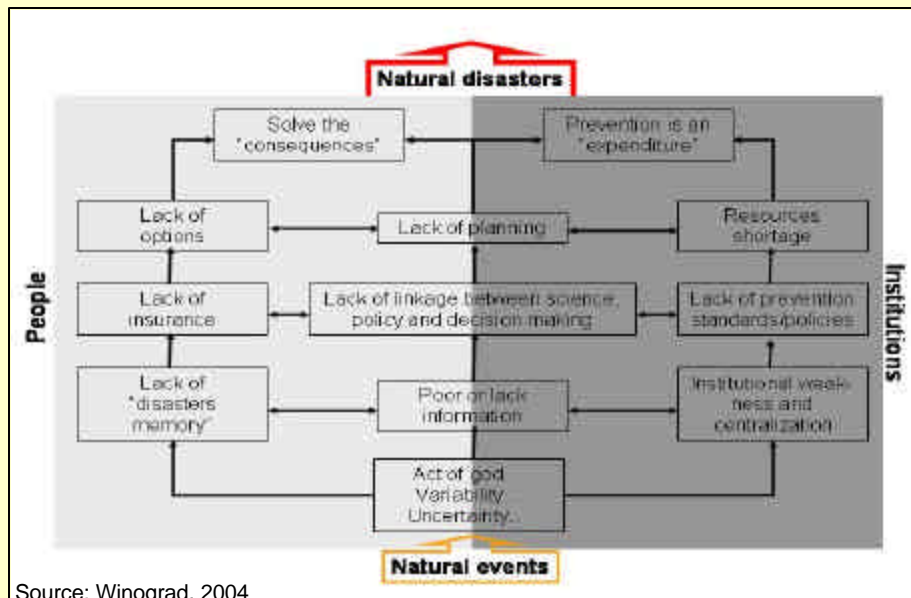
30% of permanent crops at risk of flooding.

20% of annual crops and pastures at risk of flooding.

# Define typologies of patterns and interactions...



From diagnosis step, it is possible to generate a network of interrelations for the “Natural Disasters” syndrome and generating functional pattern.



It could be useful to analyze in detail, the symptoms for some elements. For example the network of interrelations for the social organization element that shows the patterns that conduct from natural events to natural disasters.