

Capacity Development to Support National Drought Management Policies

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Drought vulnerability and Risk Assessment



United Nations Convention
to Combat Desertification

Definitions

Vulnerability - Vulnerability is expressed by the conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards, including land degradation and desertification (ISDR)

Hazard - Is a potential damaging phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption and environmental degradation (ISDR)

Drought - Drought means the naturally occurring phenomenon that exists when precipitation has been significantly below normal recorded levels, causing serious hydrological imbalances that adversely affect land resource production systems” (UNCCD)

Disaster - Disaster is defined as a serious disruption of the functioning of a community or a society that involves widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope, using its own resources (UN-ISDR)

Risk - Risk entails the combination of the probability of an event and its negative consequences. Drought (Disaster) Risk refers to the potential loss of lives, reduced health status, livelihoods, assets and ecosystem services in connection with drought, which could occur to a particular community or a society over a specified time period in the future (UN-ISDR, 2009)

Risk Assessment

The process of identifying, quantifying, and ranking the vulnerabilities in a drought scenario.

- Assessing the threats from potential drought hazards to the population, infrastructure, environment, etc.
- Assessment of vulnerabilities (socio-economic and institutional analysis)
- Estimating the time of exposure (climate forecast)
- Defining the capacities and measures to be taken.

Cataloging available assets and capabilities (resources) in the event of a drought

Defining priorities in protecting resources

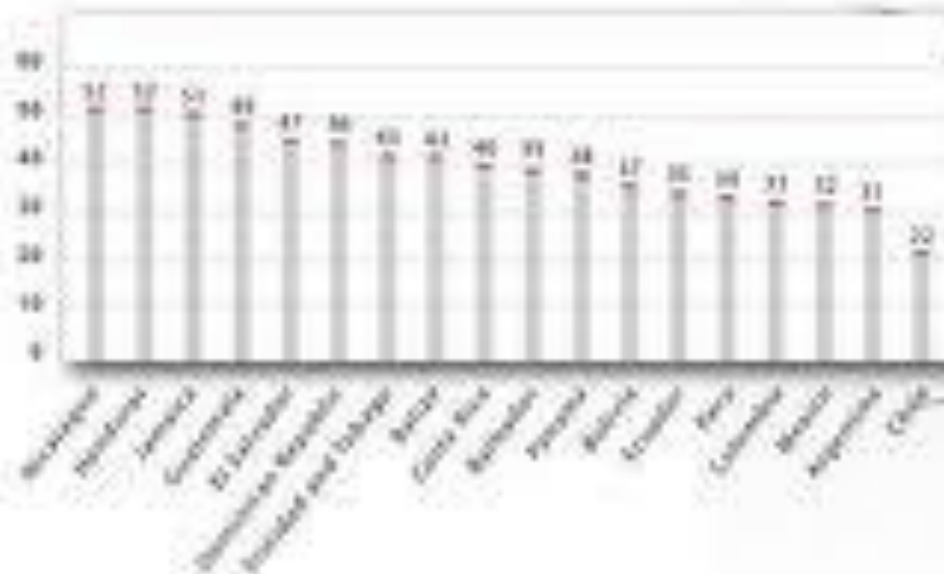
Mitigating or eliminating the most serious vulnerabilities for the most valuable resources

Prevalent Vulnerability Index (2007)

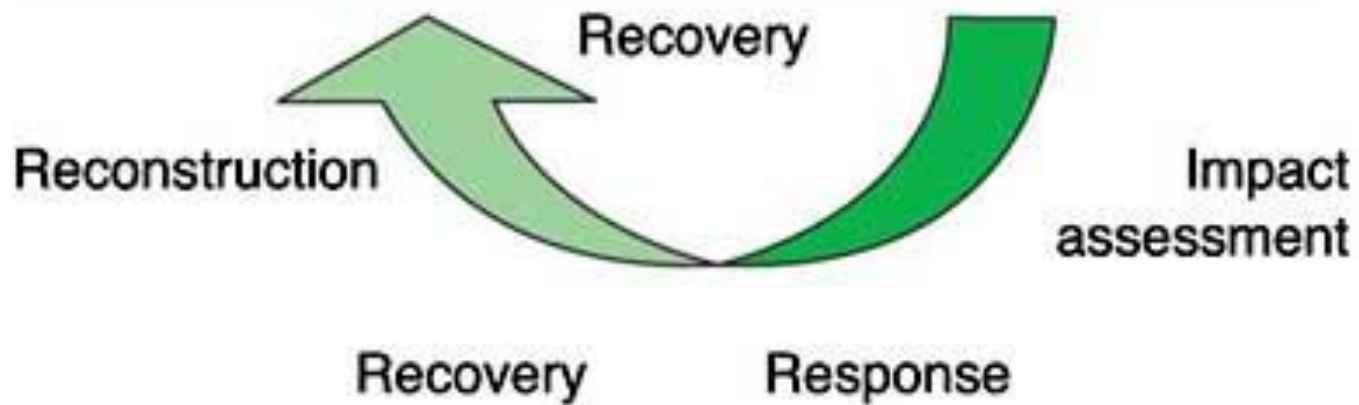
The Prevalent Vulnerability Index (PVI) gauges the fragility and exposure of human and economic activity in disaster-prone areas and the social and human capacity to absorb the impacts of disasters. The three composite indicators that make up this index consider factors such as demographic growth, population density, poverty and unemployment levels, soil degradation caused by human action, gender balance, social expenditures and insurance of infrastructure and housing. An index of 20 or less indicates low levels of vulnerability while an index between 20 and 40 indicates a medium level. An indicator between 40 and 80 shows high vulnerability.

Prevalent Vulnerability Index

Scale: 0-80



RISK MANAGEMENT



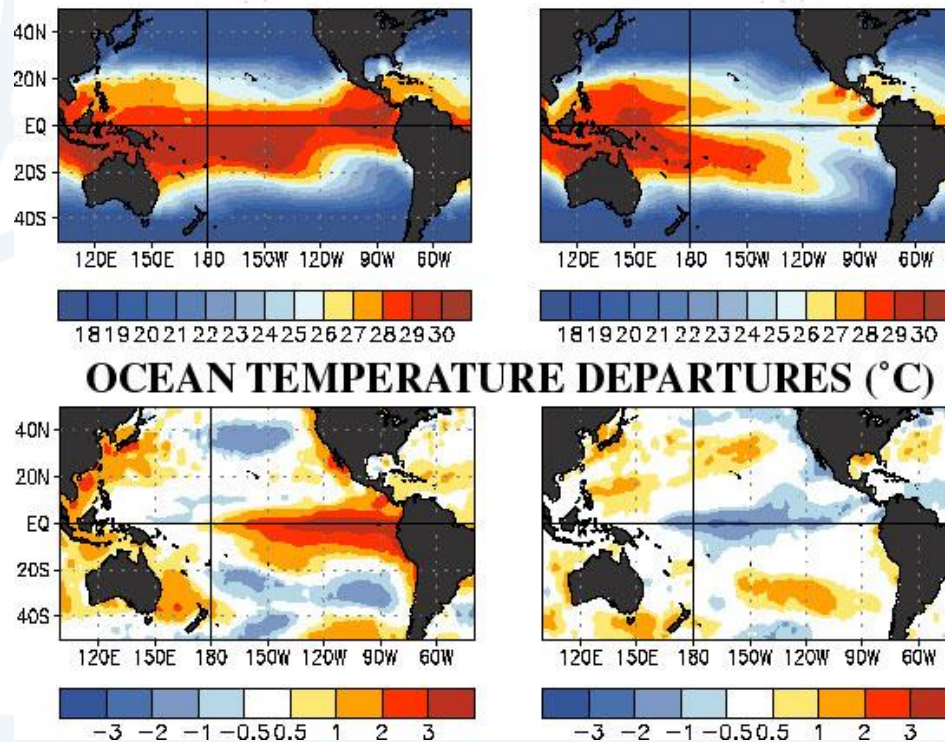
CRISIS MANAGEMENT

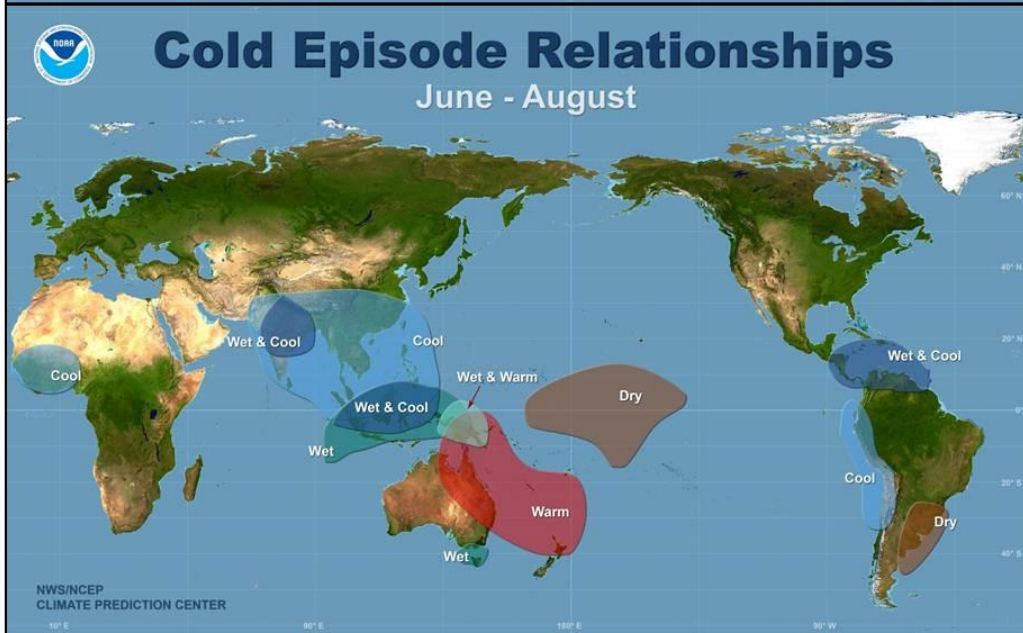
The climate in South America

The weather in the LA region is determined by the El Niño/La Niña phenomena.

OCEAN TEMPERATURES (°C)

EL NIÑO LA NIÑA





High Resolution Images can be found at:
<http://www.cpc.ncep.noaa.gov/products/precip/CWlink/ENSO/ENSO-Global-Impacts/>



High Resolution Images can be found at:
<http://www.zpc.noaa.gov/products/precip/ENSO/ENSO-Global-impacts/>

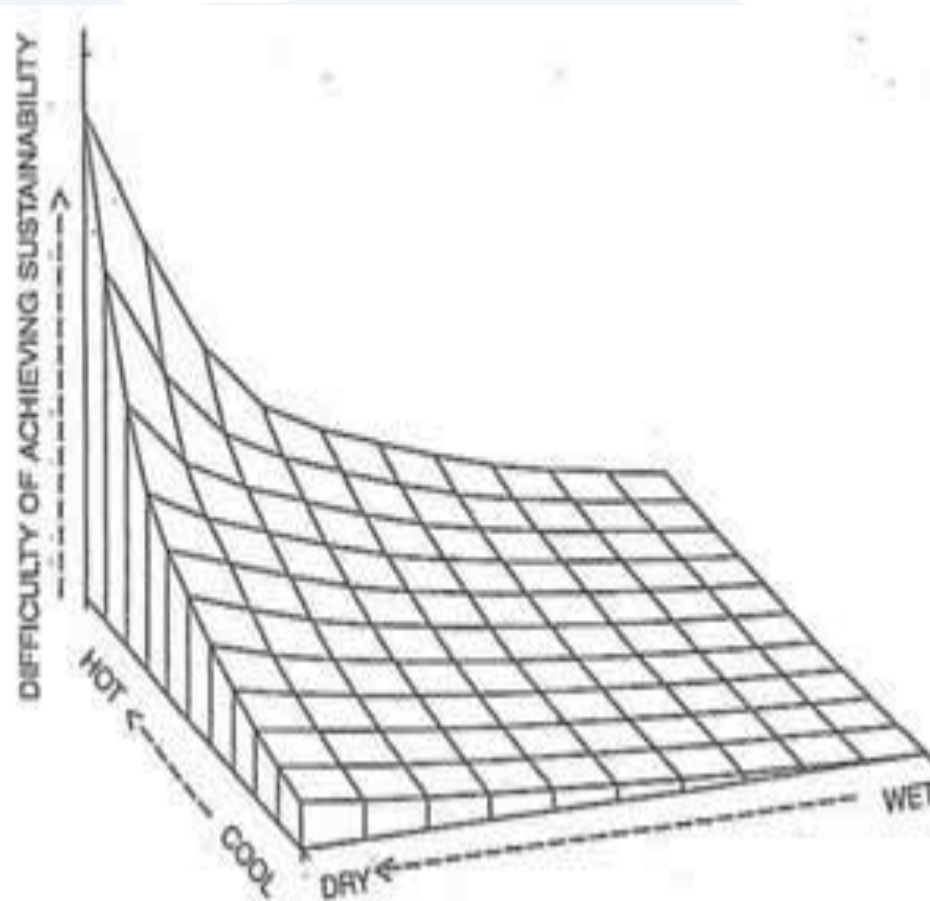


Figura 1. Modelo de Stewart, B., R. Lal, and S. El-Swaify.



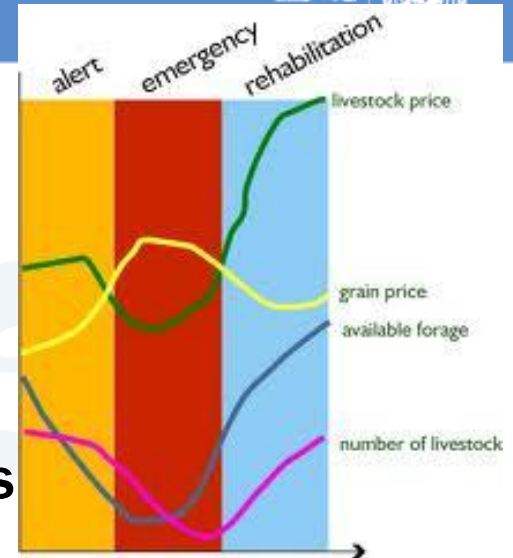
Where does drought has the most secondary and tertiary impact?

Environmental

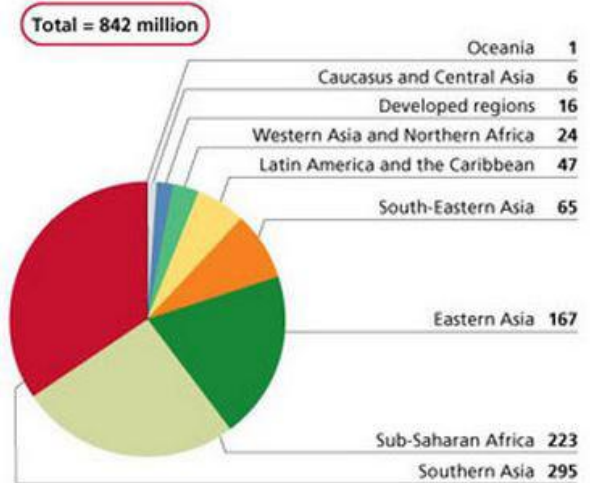
- Land degradation, desertification, dust storms
- Water scarcity

Socio-Economic

- Agriculture and food security
- Unemployment and market asymmetries
- Poverty
- Forced human migration
- Malnutrition, poor health and diseases prevalence
- Conflicts over use of resources



Undernourishment in 2011–13, by region (millions)



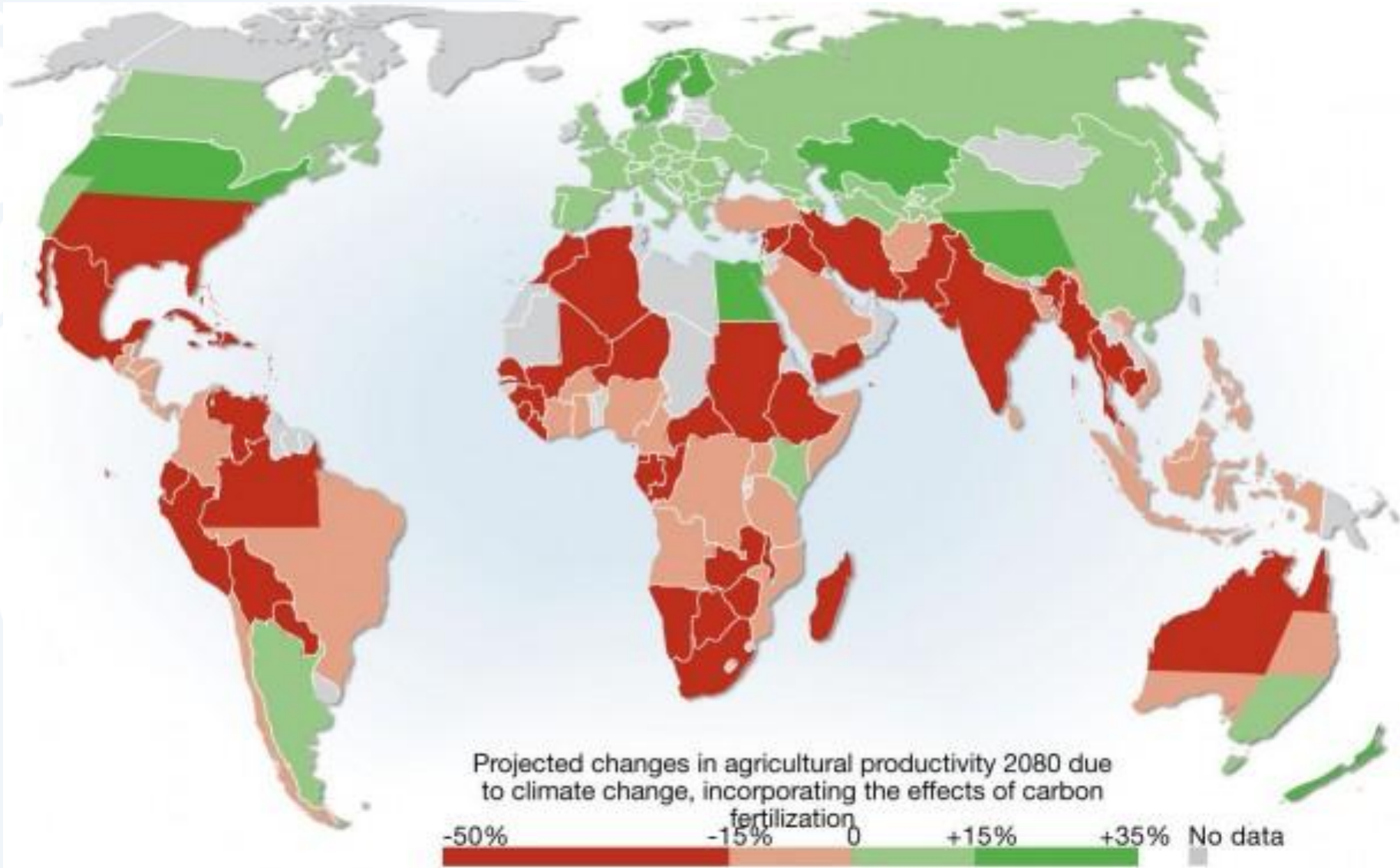
Note: All figures are rounded.

Source: FAO.

Can the situation be worse?

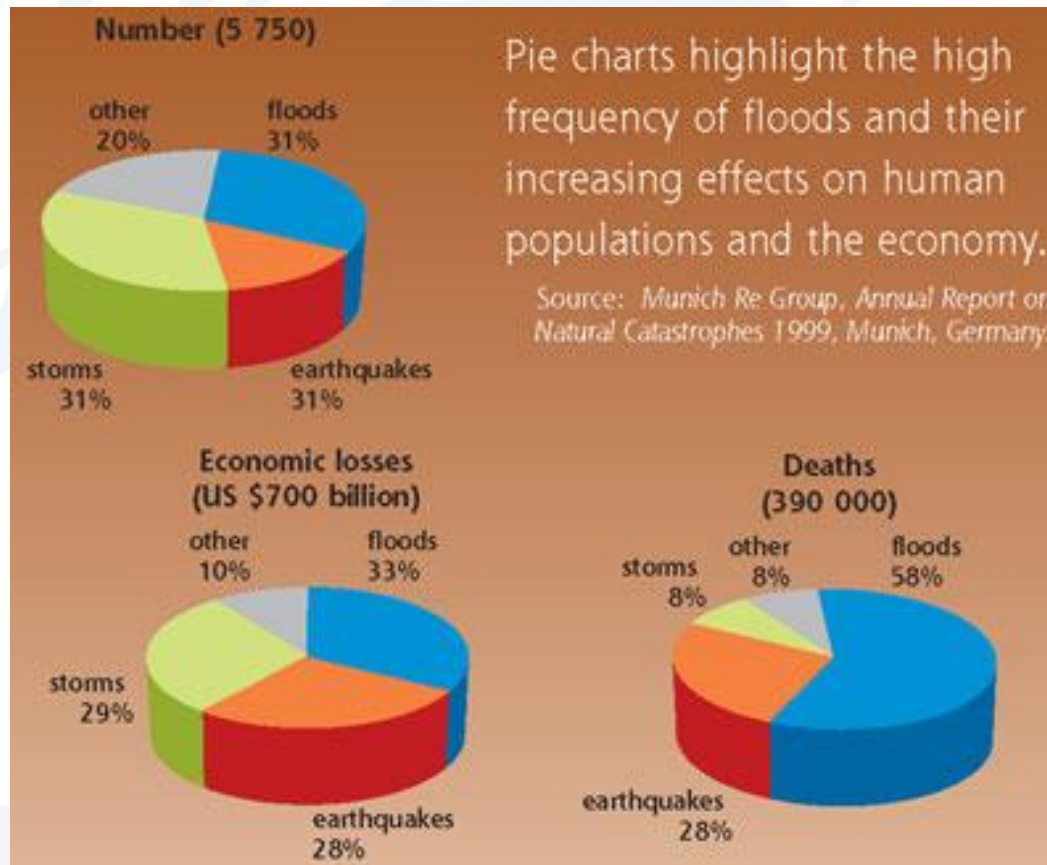
Climate Change will not affect equally the regions and countries. Some regions and countries could be economically benefitted. Others not.

- **Droughts will increase in some LAC countries, northeast Brazil in particular. Salinization and more desertification are likely to happen.**
- **High winds associated with tropical cyclones in Central America and the Caribbean.**
- **Decreases in soil moisture are projected to cause savanna to gradually replace tropical forest in eastern Amazonia.**



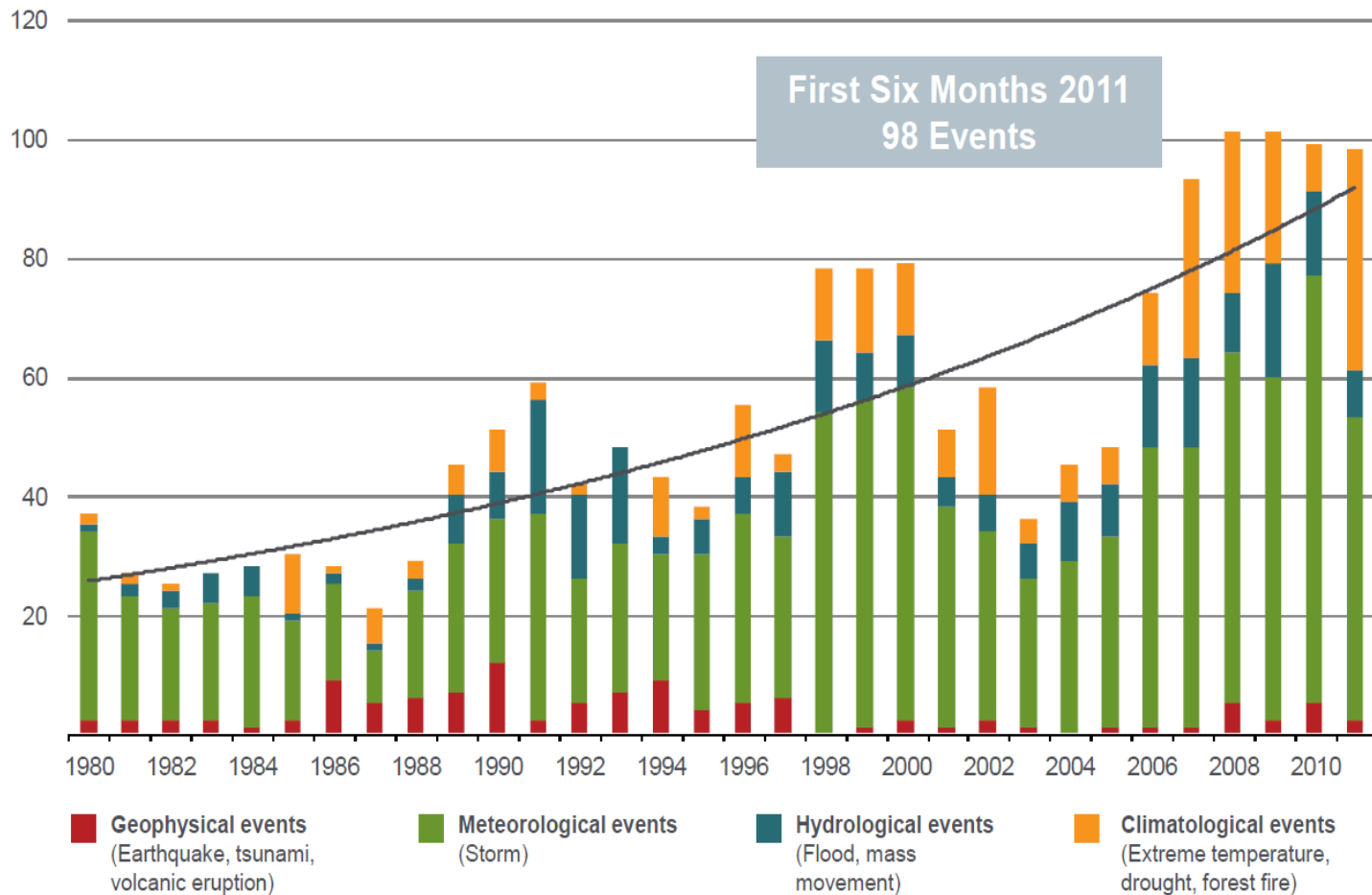
What should /could be done?

Improving the perception Knowledge Management



What should /could be done?

Improving the perception Knowledge Management



What should /could be done?

Policy development and governance for drought management (national perspective)

- **National Coordinating Mechanisms**
 - Institutional tools for improving decision-making (national authority, budget, etc)
- **Preparedness**
 - To establish a preparedness system to cope the effects of drought and other natural disasters
- **Investments, Innovation and Technology Transfer**
 - Investments in infra-structure
 - Innovative ways for economic development (China and Israel experiences)
 - Capacity building and Financial Cooperation

What should /could be done?

Measures on drought management at local level

- **Strengthening the infra-structure at farm level (communication, hydrological infra-structure, access to the local markets)**
- **Diversifying and improving productive activities to reduce the risk**
- **Traditional and new technologies to improve standards of living (irrigation, rainwater harvesting)**
- **Innovation for drylands development**

The role of the UNCCD and Partners

NAP as a tool to contribute to National Policies on combating desertification and mitigate the effects of draught

UNCCD Secretariat to develop an Advocacy Policy Framework (APF) on drought and support countries to address the key drought issues

UN Agencies (WMO, FAO, UNCCD and others) cooperating to support countries to improve decision-making process and National Policies on Drought Management (decision 9/COP 11)

UN and International Agencies to promote the establishment of an Investment Framework to cope drought and desertification at country level.

Thank you!