



**AFRICA PEACE RESEARCH AND EDUCATION ASSOCIATION**  
(The Africa wing of the International Peace Research Association, IPRA)



# What is the Hidden Agenda of the World Economic Forum with the Security Nexus?

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# 1. Research Question, WSF&B, Human security

How could human security of people be enhanced that are impacted by the nexus of water, soil, food and biodiversity (WSF&B), triggered by climate change impacts and sea water intrusion?



Human security is understood as freedom from fear, freedom from want (CHS 2003), freedom from hazard impacts (Bogardi/Brauch 2005) and freedom to live in dignity (Kofi Annan 2005)

The WSF&B nexus addresses the feedbacks between water and soil, land-use changes and food production and their impacts on biodiversity loss. Climate change with more frequent and severe droughts and extreme storms & flash floods have increased the costs for human lives, livelihoods & for the economy.

## 2. Which are the global and the regional changes?: From Holocene to Anthropocene

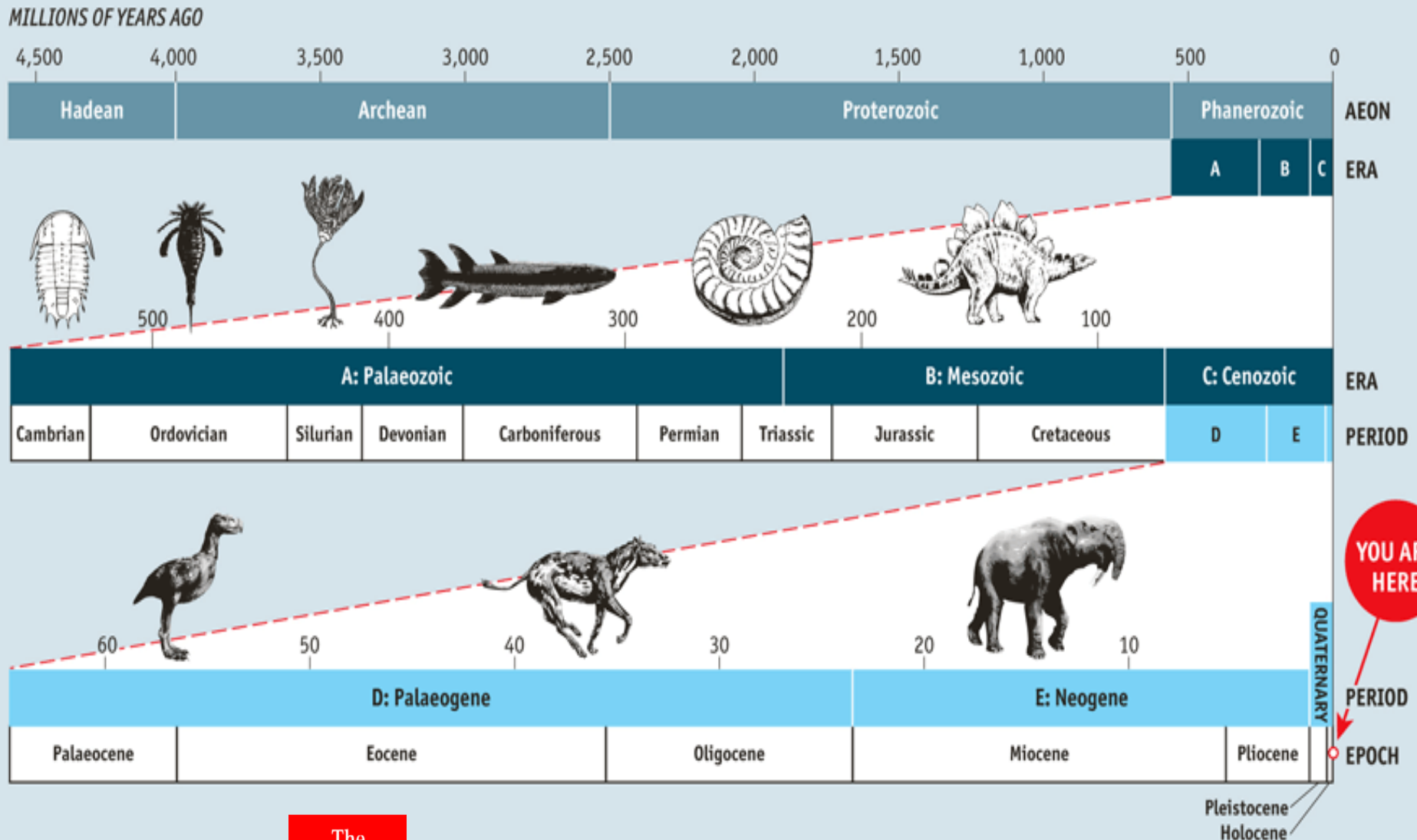
### **Global environmental change:**

- **Climate change:** transformation of threats from «them» to «us». We are the threat and we are the victims, but regionally different.
- **Water:** scarcity, degradation & stress
- **Soil:** degradation, loss of fertility, desertification
- **Loss of biodiversity:** increase of GHG
- **Population growth:** 9 billion in 2050
- **Urbanization:** today over 50% of world population
- **Industrial production:** pollution and GHG
- **Changes in agricultural production and food system**

# Contextual changes

- 1. 1960: also in Africa most countries are now independent, but occidental control through World Bank, IMF, WTO**
- 2. 1989: End of Cold War and changes in worldview**
- 3. Unipolar world: USA is superpower with military control, but without a vision for a new world order; China: emerging economic power**
- 4. New threats: climate change, terrorism (IPCC)**
- 5. Necessity for reconceptualization of security: widening, deepening and sectorialization**
- 6. Beck's theory of global Risk Society**
- 7. Crutzen's concept of Anthropocene**
- 8. Bolivia's concept of "living well"**
- 9. From MDG to SDG**

# Earth history, Holocene and Anthropocene

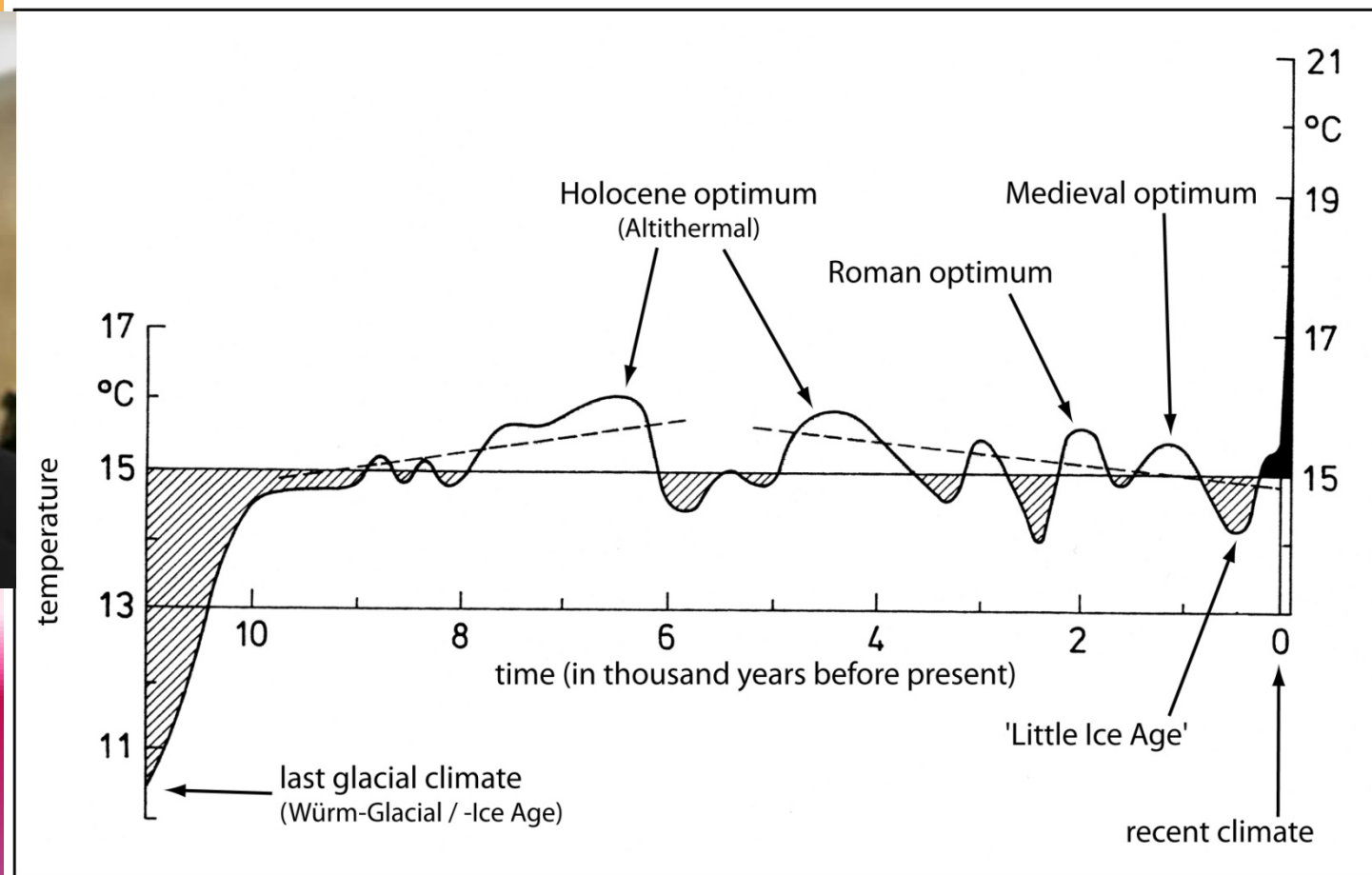




# From the **Holocene** (12,000 años a.e.) to the **Anthropocene** (1950 inicio 1784 AD)



**Paul Crutzen,**  
**Nobel Laureate**  
**(1995)**



In geology: **Holocene** is an era of world history which started after the big glaciation (10-12,000 years ago). **Anthropocene** starts with the Industrial Revolution (1784, J. Watt and the invention of the steam machine), but especially after 1950, when cheap fossils (oil, gas, carbon) increased the emissions of greenhouse gases.

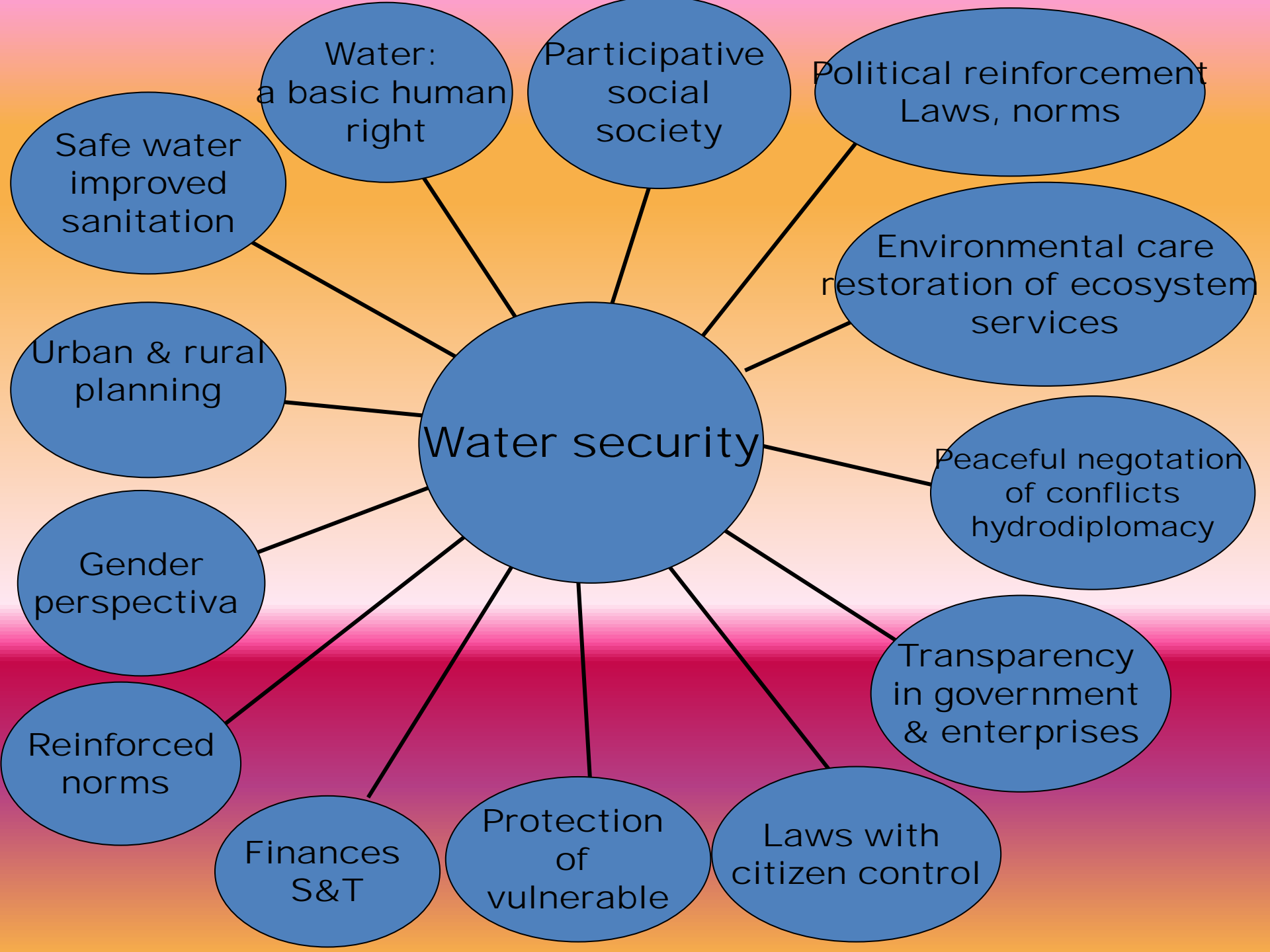


Water security



# Includes water security

- Water is vital for the life and health of people and ecosystems
- One common goal: *to provide water security in the 21st Century (Ministerial Declaration The Hague:*
  - This means ensuring that freshwater, coastal and related ecosystems are protected and improved;
  - sustainable development and political stability are promoted;
  - every person has access to enough safe water at an affordable cost to lead a healthy and productive life
  - the vulnerable are protected from the risks of water-related hazard
- Water resources are under threat from pollution, overexploitation, land-use changes, unsustainable use, climate change and other anthropogenic forces.
- Links between threats and poverty: the poor who are hit first and hardest (slum dwellers without basic services).
- One simple conclusion: business as usual is not an option.



# Water security

Water:  
a basic human  
right

Participative  
social  
society

Political reinforcement  
Laws, norms

Environmental care  
restoration of ecosystem  
services

Peaceful negotiation  
of conflicts  
hydrodiplomacy

Transparency  
in government  
& enterprises

Laws with  
citizen control

Protection  
of  
vulnerable

Finances  
S&T

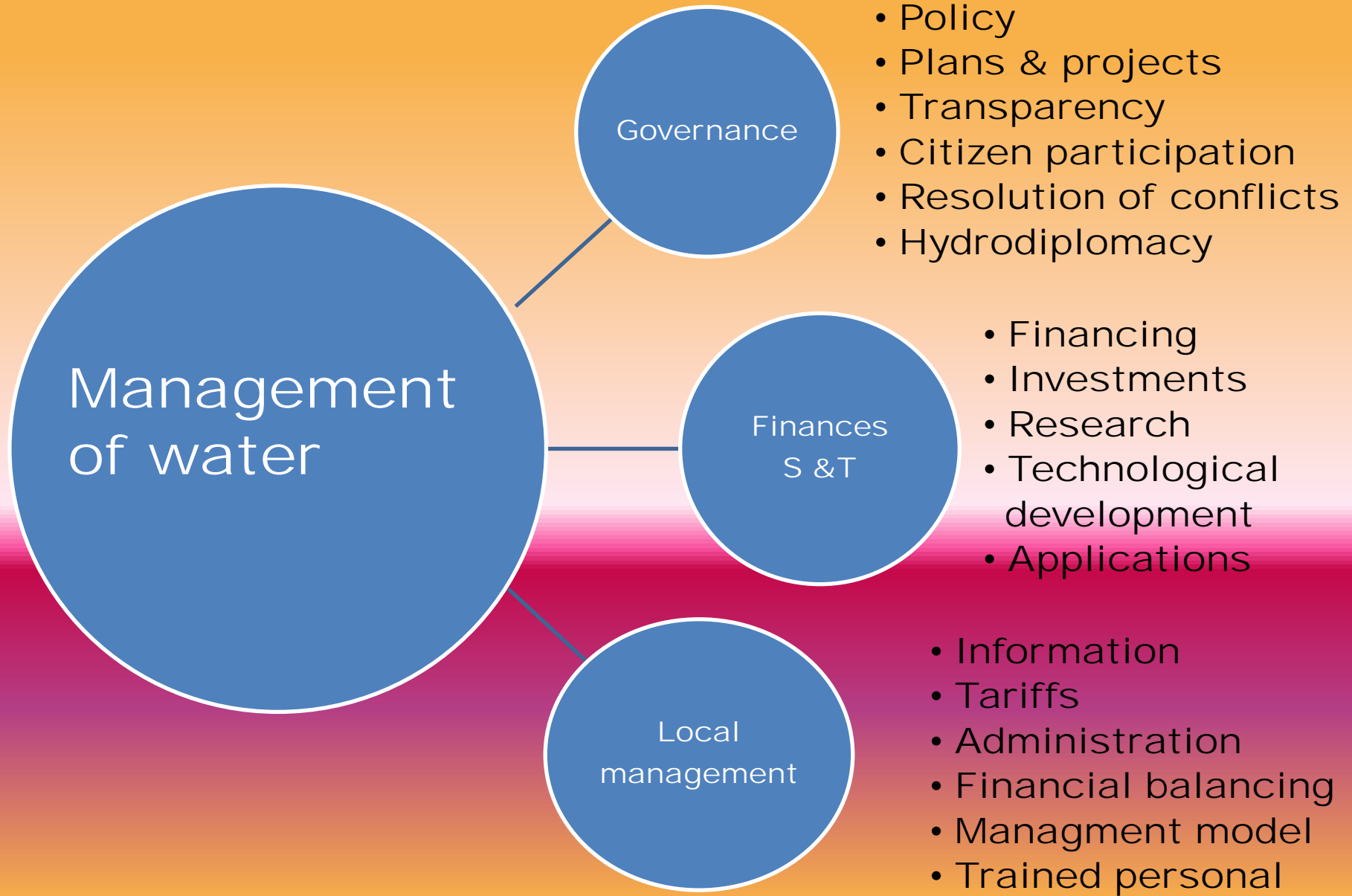
Reinforced  
norms

Gender  
perspectiva

Urban & rural  
planning

Safe water  
improved  
sanitation

# Obstacles to water security



## Central-North

1,650  
 $\text{m}^3/\text{hab}/\text{year}$

Renewable  
water

32%

Population

77%

GDP

79%

Precipitation average  
3,982  
 $\text{m}^3/\text{hab}/\text{year}$

## South-Southeast

11,768  
 $\text{m}^3/\text{hab}/\text{year}$

Renewable  
water

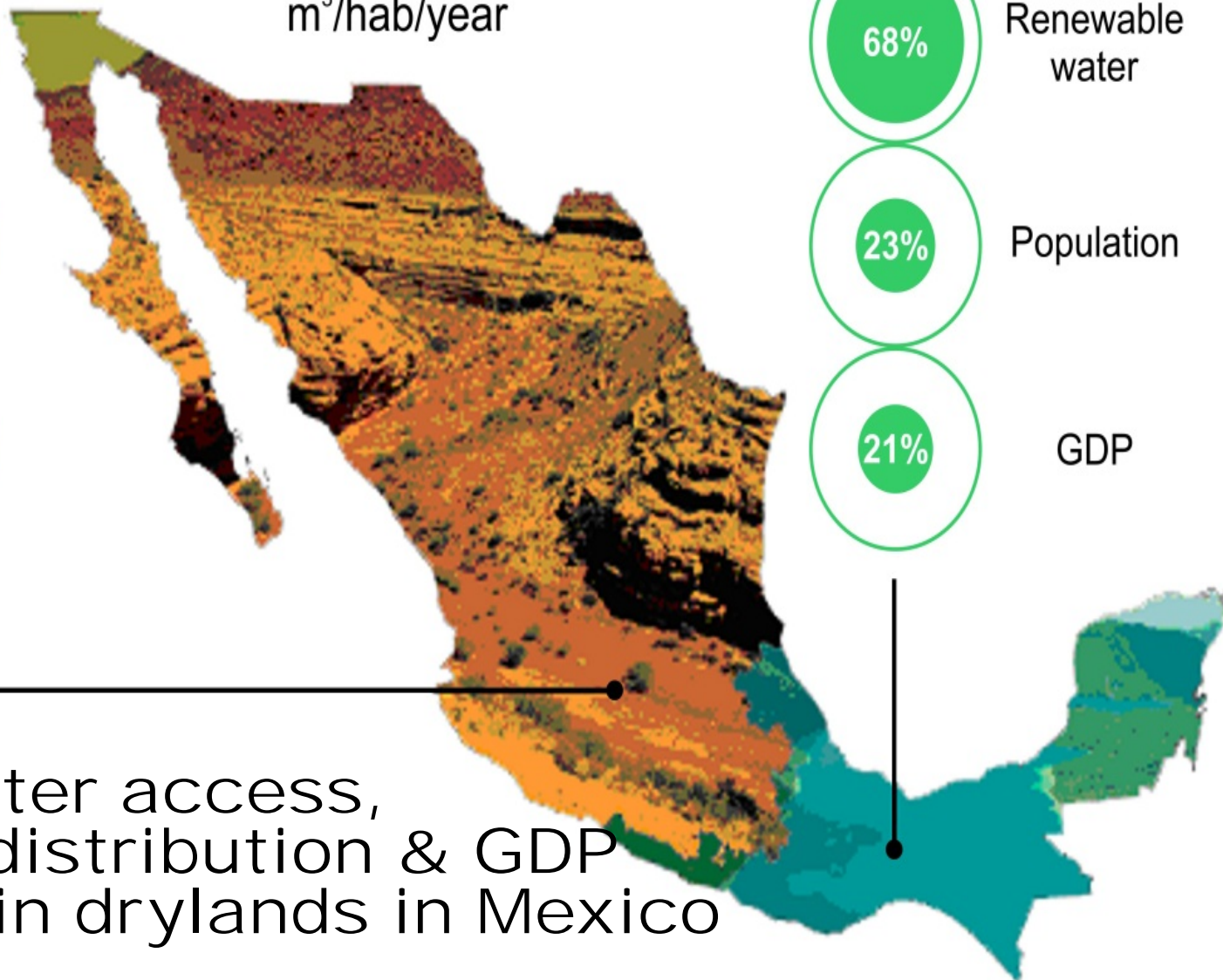
68%

Population

23%

GDP

21%



Unequal water access,  
population distribution & GDP  
production in drylands in Mexico

United States of America






Overexploitation  
of aquifers,  
intrusion of salt  
water & saliniza-  
tion of soils

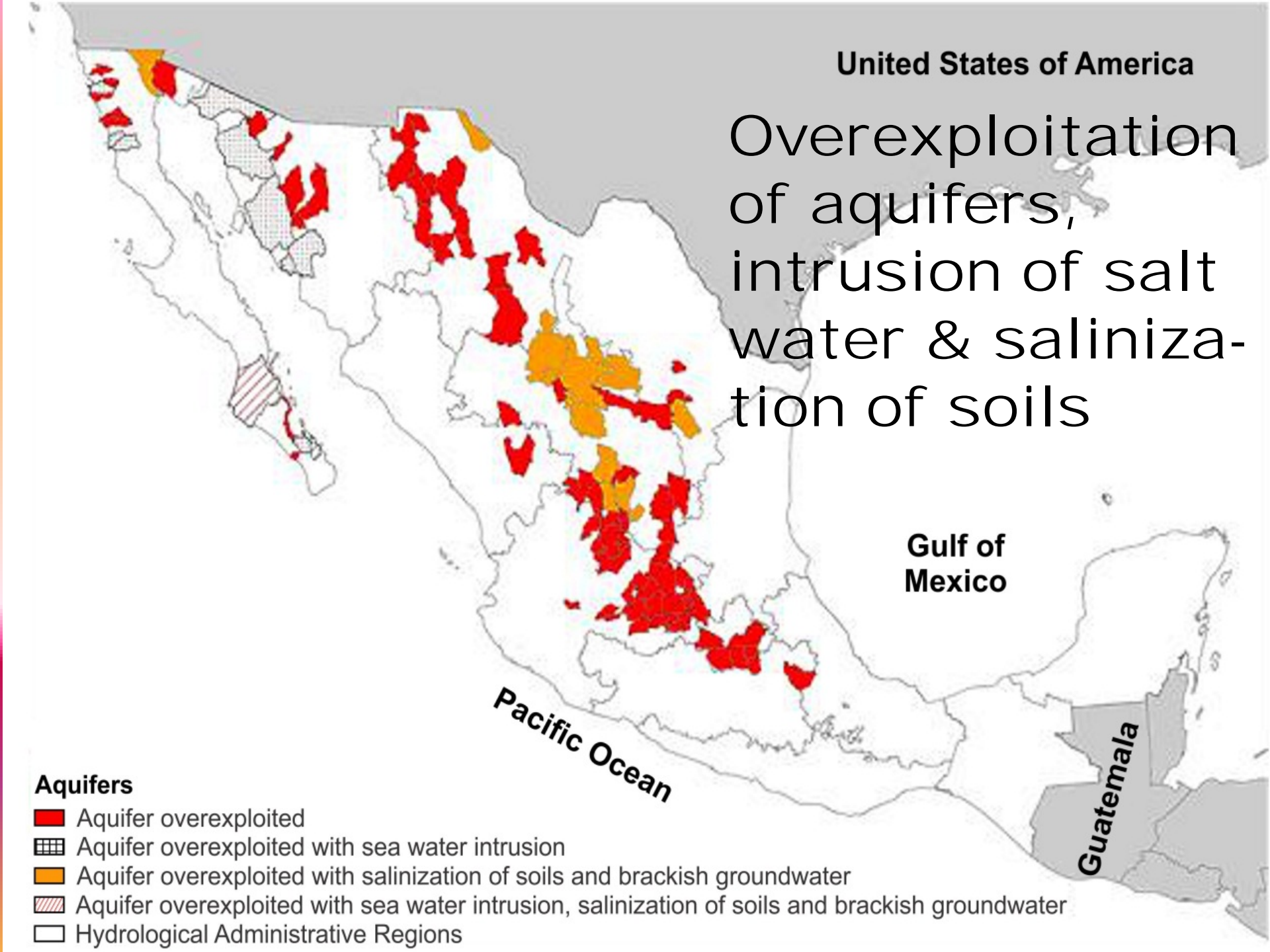
Gulf of Mexico

Pacific Ocean

Guatemala

**Aquifers**

-  Aquifer overexploited
-  Aquifer overexploited with sea water intrusion
-  Aquifer overexploited with salinization of soils and brackish groundwater
-  Aquifer overexploited with sea water intrusion, salinization of soils and brackish groundwater
-  Hydrological Administrative Regions





# Food security vs. Food sovereignty



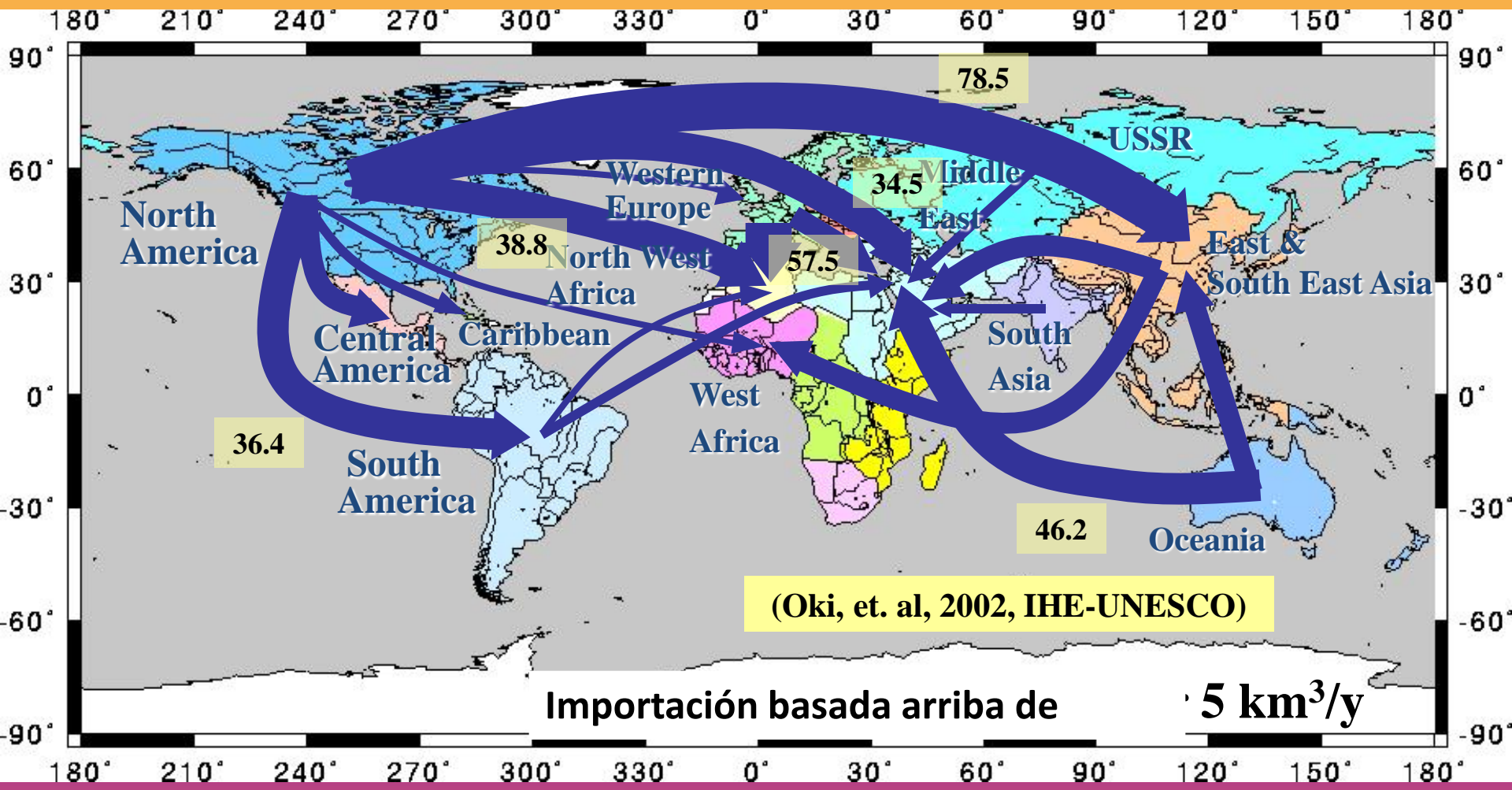
# Food security and food sovereignty

**“Food security** exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food, which meets their dietary needs and food preferences for an active and healthy life” (FAO, 2008).

**“Food sovereignty** is the right of people, communities, and countries to define their **own** agricultural, pastoral, labour, fishing, food and land **policies** which are **ecologically, socially, economically, and culturally** appropriate to their unique circumstances. It includes the **right to food and to produce food**, which means that all people have the right to safe, nutritious and culturally appropriate food and to food-producing resources and the ability to sustain themselves and their societies” (Via Campesina, 2004).



# Virtual water (trade) for grains

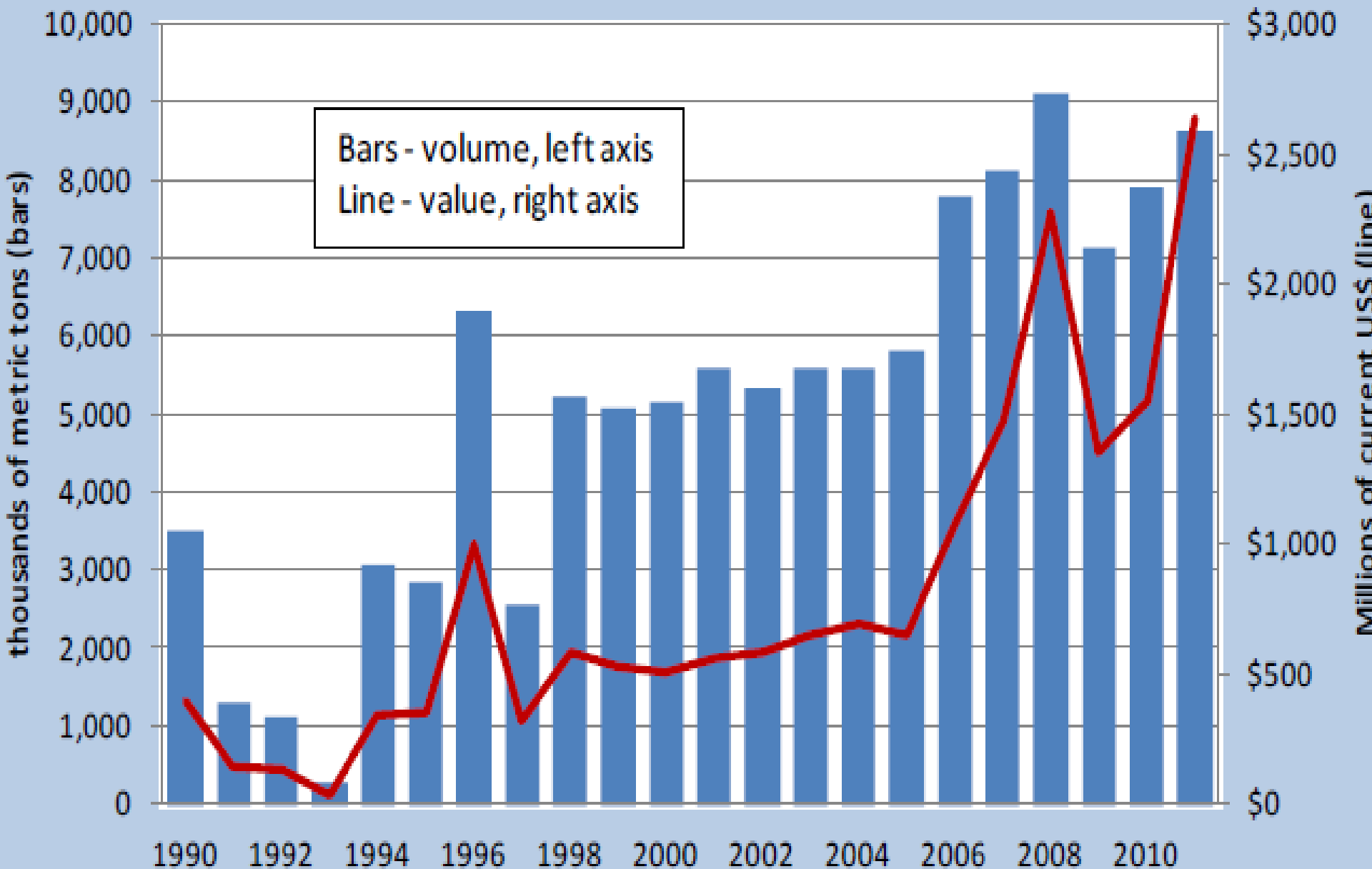


(Oki, et. al, 2002, IHE-UNESCO)



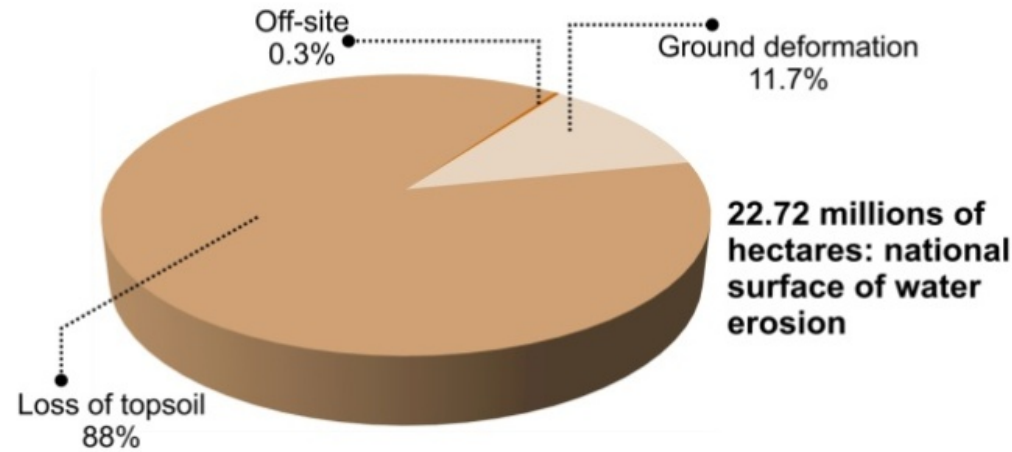
(Based on Statistics from FAO etc., for 2000)

# Mexico: Rising Maize Import Volume and Cost 1990-2011

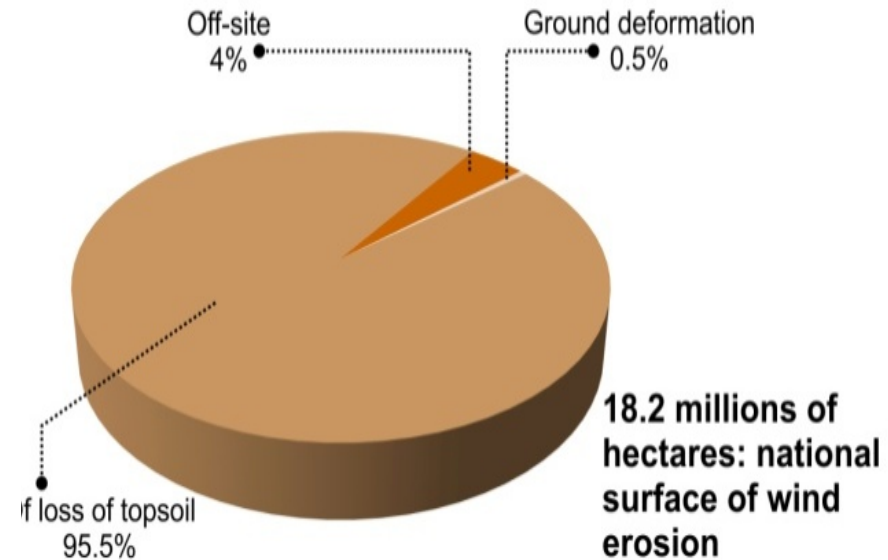


# Soil management at risk

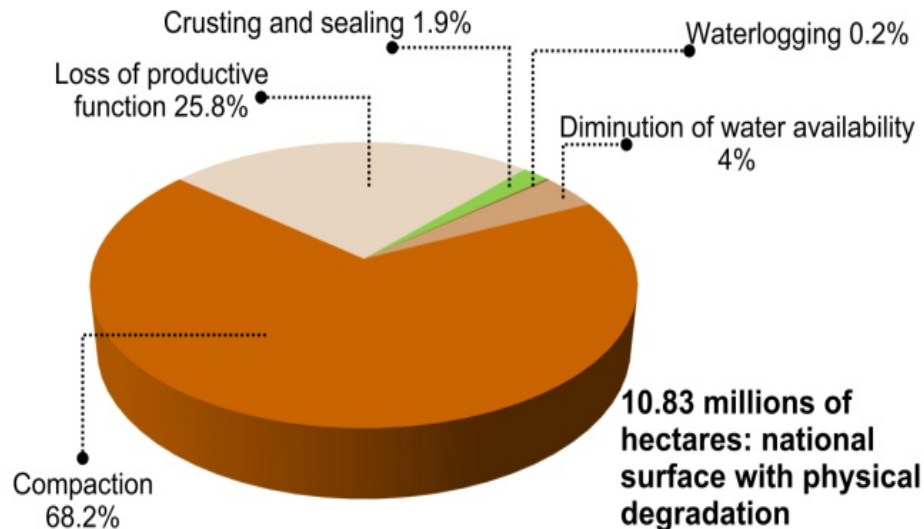
## Water erosion



## Wind erosion



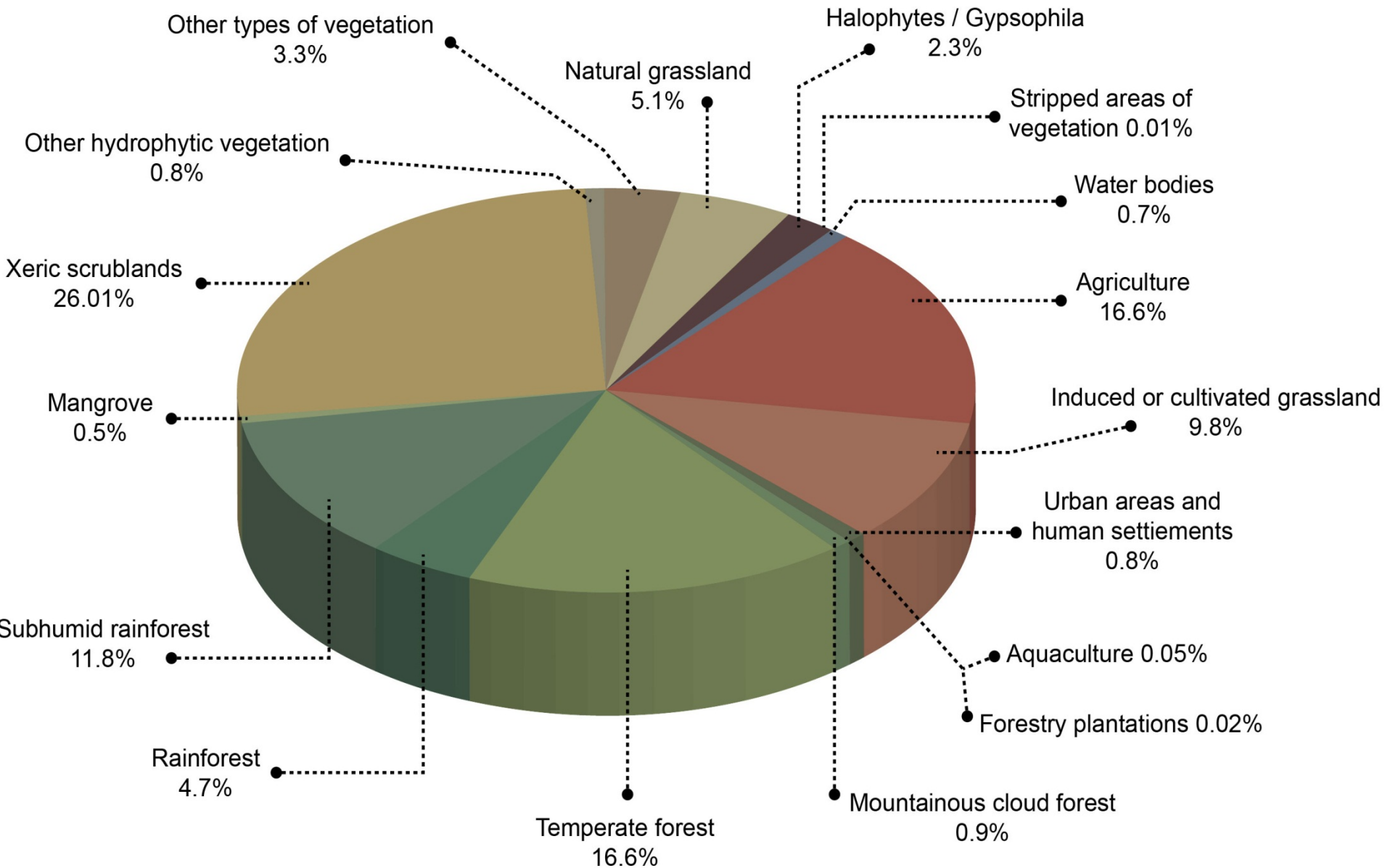
## Physical degradation



## Chemical degradation



# Land use changes & biodiversity



# Energy security



# Energy Security

Definition of energy security: European Union defines security of energy supply as “ensuring that future essential energy needs are satisfied by means of a sharing of internal energy resources and strategic reserves under acceptable economic conditions and by making use of diversified and stable externally accessible sources”. As such, the concept of security of supply includes “physical security, economic security and continuity of supply” (EC, 1995:22). ”

**Signifies:** Satisfies electric demand and its increase;

- **Threats to physical integrity of the installations (terrorism, climate change)**
- **Avoid restrictions of primary energetic offer through policy means;**
- **Avoid extreme volatility in the energetic market**

How to achieve it?: **Diversify offer and basket of energetics;**

- **Increase locally primary offer of energetics (renewables);**
- **Energy efficiency and reduction by final consumers**



# Energy security

- **Energy security was reconceptualised** due to climate change and global environmental change. It is related to environmental, economic, societal, human and gender security.
- **Energy security:** depends on **oil prices** and certain control of OPEC (political security): In 1975 **72% of oil imports came from OPEC countries; in 2011: 45%**.
- **Energy security is interdependent:** producers and consumers want stable prices: large-time agreements
- **Resilience:** energetic efficiency: fro factor 2 to 15.
- **Geopolitics:** China requires important quantities of energy with agreements worldwide. USA and EU are diversifying their energy sources: biofuel, fracking, renewable energies.

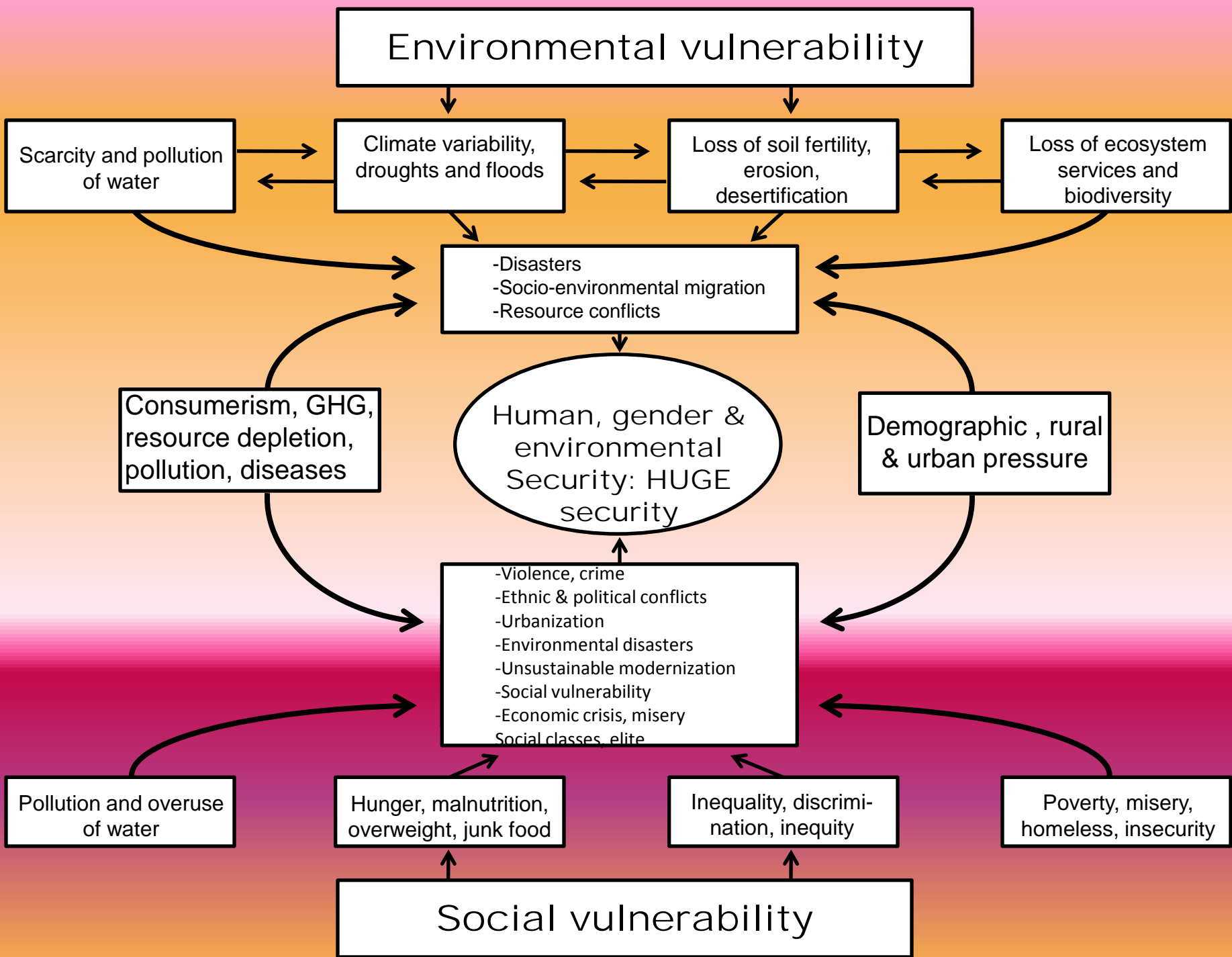


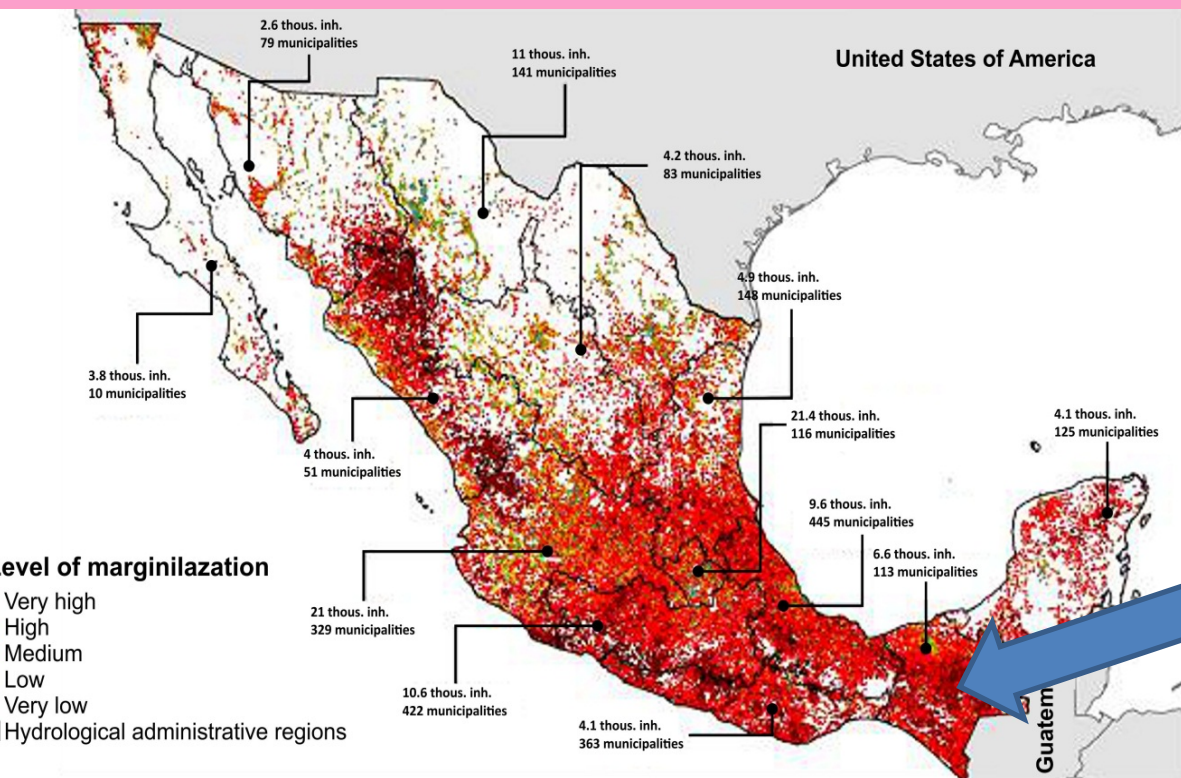
# World oil business



# Societal outcomes

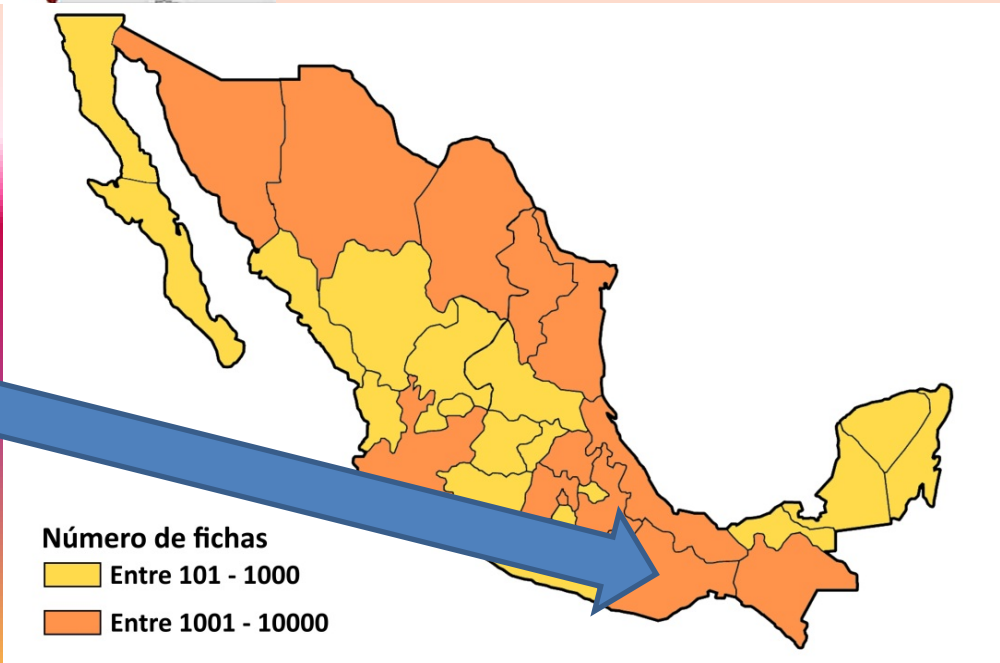




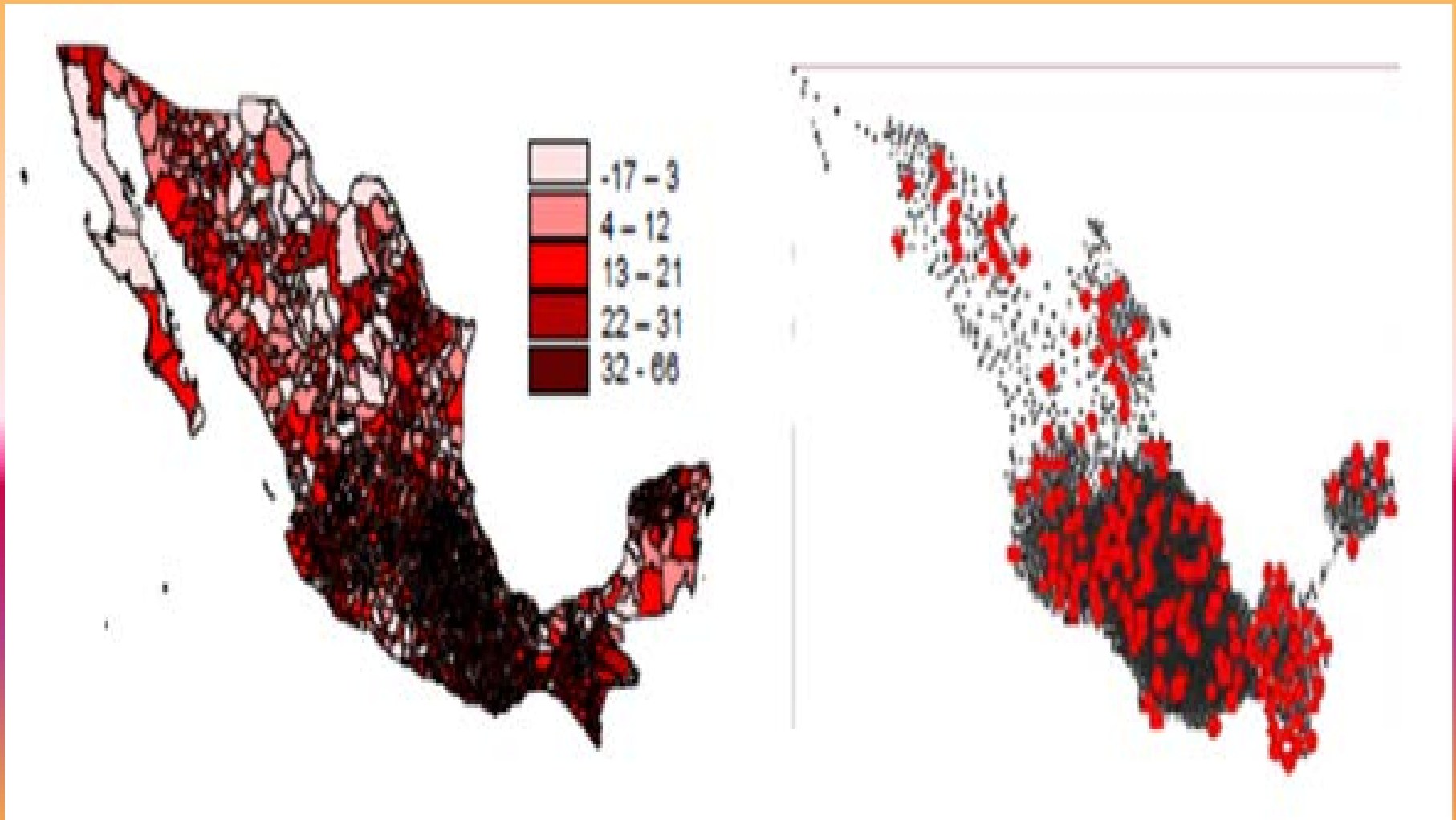


Extreme poverty

Extreme hazards & disasters



Dual vulnerability in Mexico: poor (less than 2 US\$/day) income (right) disasters (left): with more than 500,000US\$ dammmages





# Conclusion

