Climate Induced Migration and Security Risk as a Threat for Conflict in Mexico

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Content

1. Definition
2. Objectives
3. Security Risks
4. Climate Threats
5. Environmental Induced Migration
6. Security threats
7. Conflictive Situation between Mexico and the USA
8. Conclusions

1. Definition of EIM

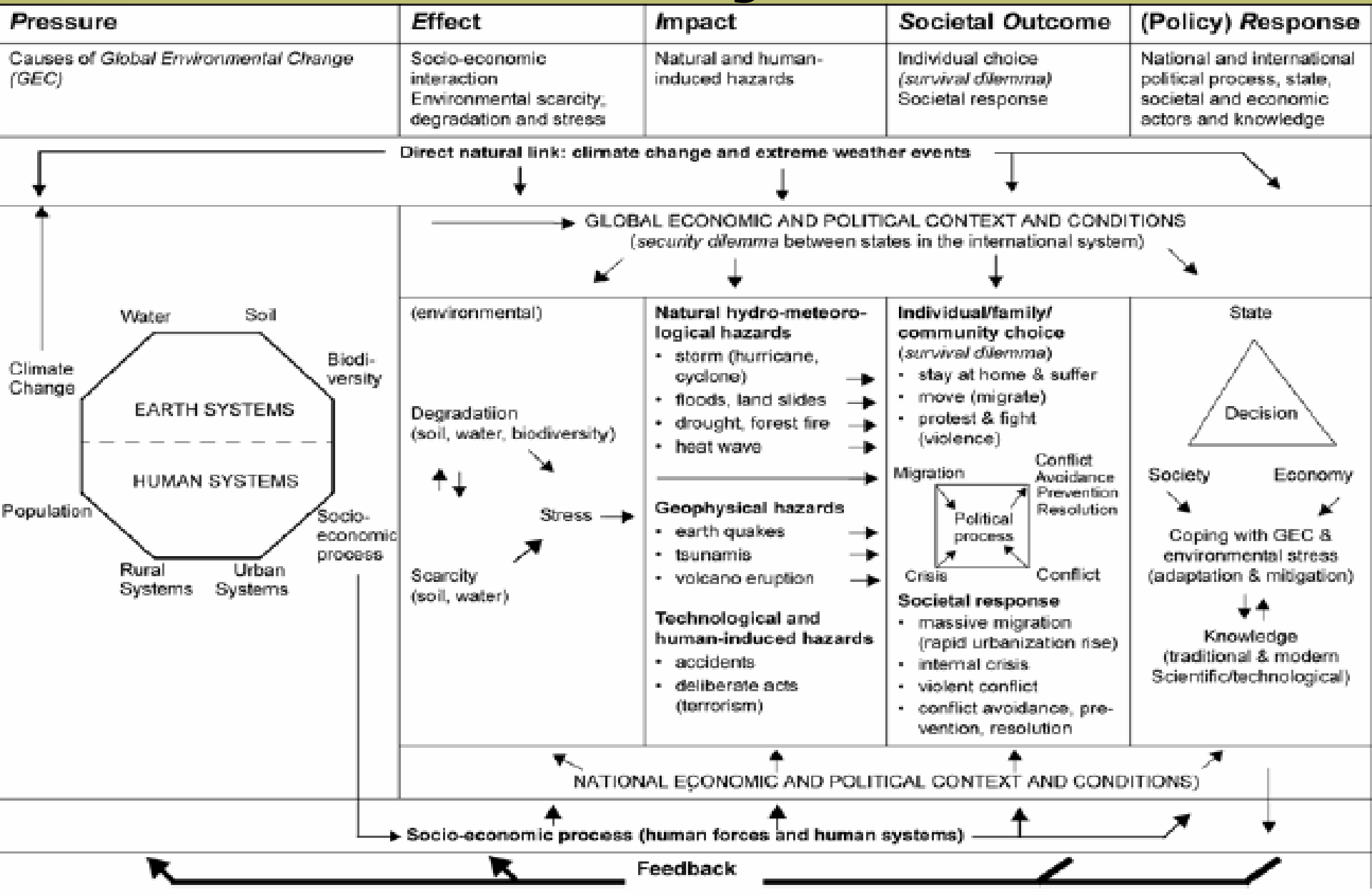
1. Climate or Environmental Induced Migration (EIM) is a complex phenomenon related to extreme climate events triggered by socioeconomic threats and personal aspiration, often are a result of survival strategies.
2. “Environmental migrants are persons or groups of persons who, for compelling reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their habitual homes, or choose to do so, either temporarily or permanently, and who move either within their country or abroad” (IOM, MC/INF/288 2007: 2).
3. EIM can be rural-rural, rural-urban and international.

2. Objectives

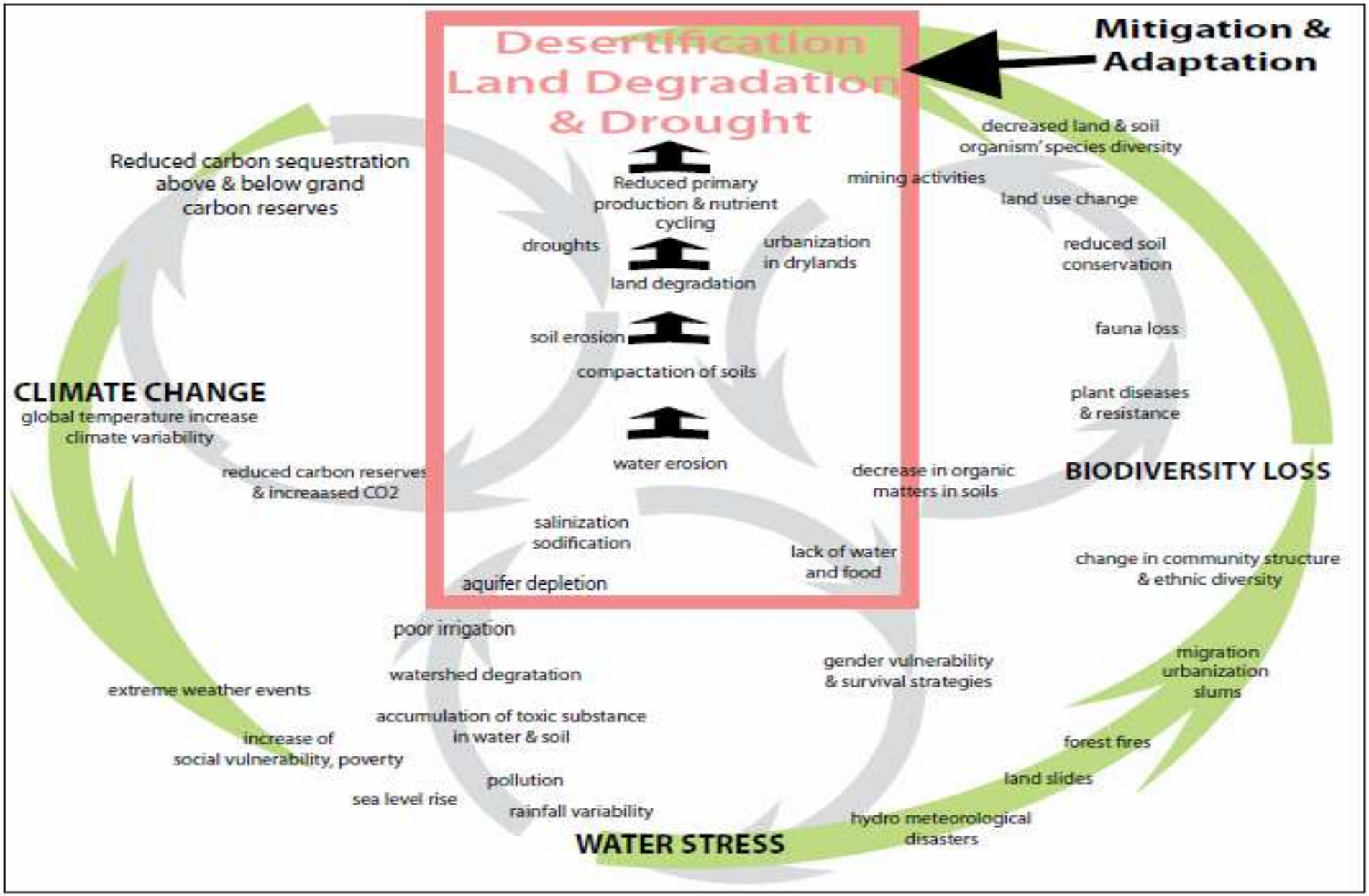
International migration and its geopolitical repercussions between Mexico and the USA:

- Climate induced or Environmental Induced Migration (EIM) represents a security risks for both countries: USA and Mexico.
- Latinos are the **first minority in the USA**, and half of them are illegal migrants, the majority Mexicans. They are exposed to all kinds of **threats and persecution.** The present crisis created 10% of unemployment.
- The **fans built** between both countries, the technological training of the Border Patrol, drones, etc. oblige migrants to cross in dangerous region (the desert of Arizona).
- Another option is to ally with the **transnational organized crime** (drug, arms, human and organs traffickers) transforming the border of Mexico in the most violent region, with repercussions in both countries due to prostitution (Klot & DeLargy 2007), public insecurity, crime, VIH-AIDS, money laundering and drug consumption.
- The present situation of insecurity related to a high **consumption of drugs in the USA** obliged both countries to combat collectively within the Mérida agreement this social cancer (Kochhar 2007).

3. Security Risks



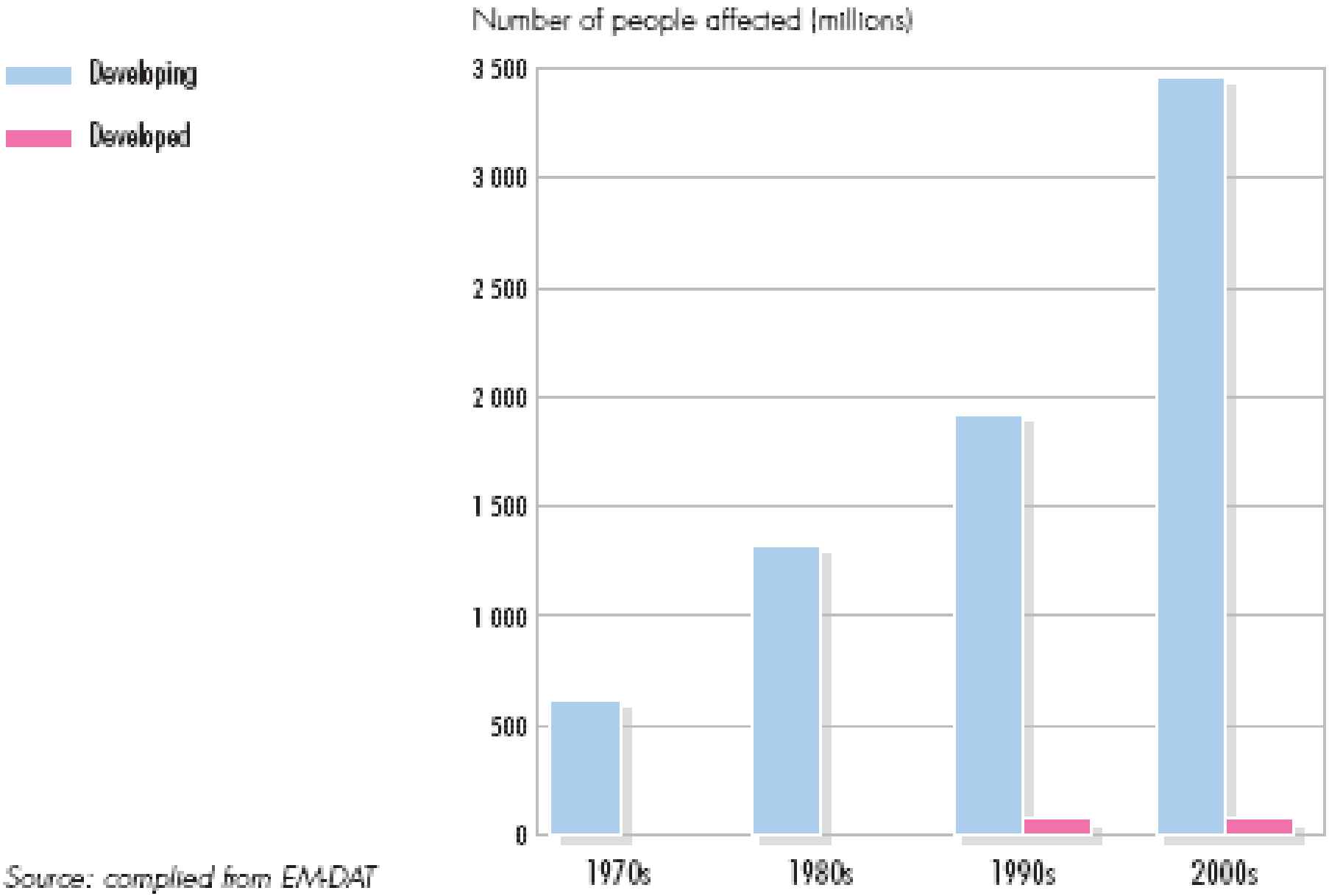
Complex Human & Natural Interrelation



Human, Gender, Environmental Security

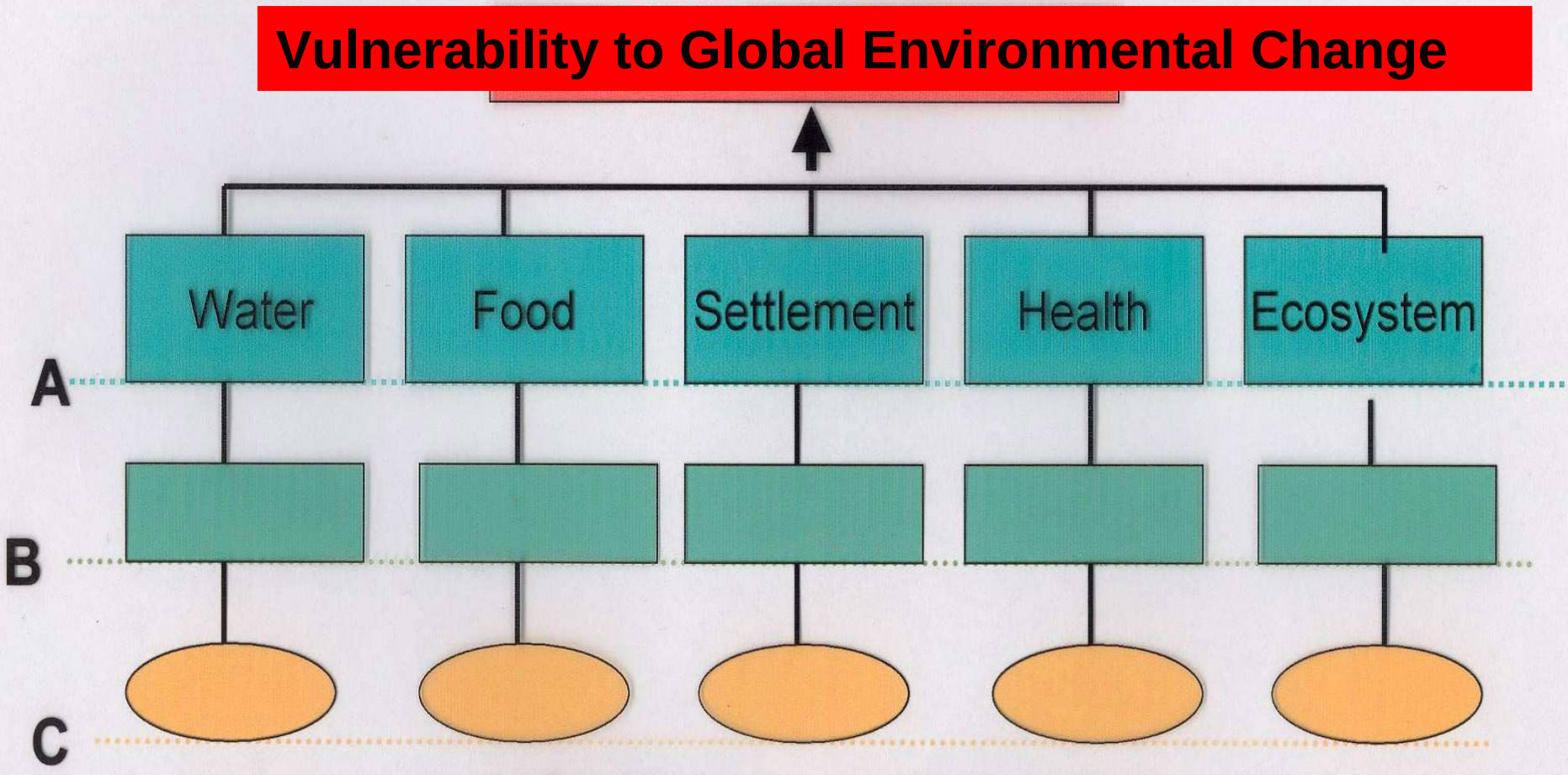
Determination Which security?	Reference object: Security of whom?	Value at risk: Security of what?	Source(s) of threat: Security from whom or what?
National security	The State	Territorial integrity	State, substate actors
Human security	Individual, humankind	Survival of humankind people	Nature, state, globalization
Environmental security	Ecosystems, rural and urban systems, water and food	Sustainability	Humankind, Nature
Gender security	Gender relations, indigenous people, minorities	Equity, identity, social relations, solidarity, tolerance	Patriarchy, totalitarian institutions (élites, governments, religious fundamentalism, dominant cultures), intolerance

Figure 8.5 Number of people affected by climate-related disasters in developing and developed countries



Source: compiled from EM-DAT

Assessing Vulnerability (R.T. Watson, et al. 1998. IPCC)



A: Sectoral level; B: Coping level; and C: Sensitivity level

Vulnerability = *f*(sensitivity, adaptability, exposure)

10 leading risk factors

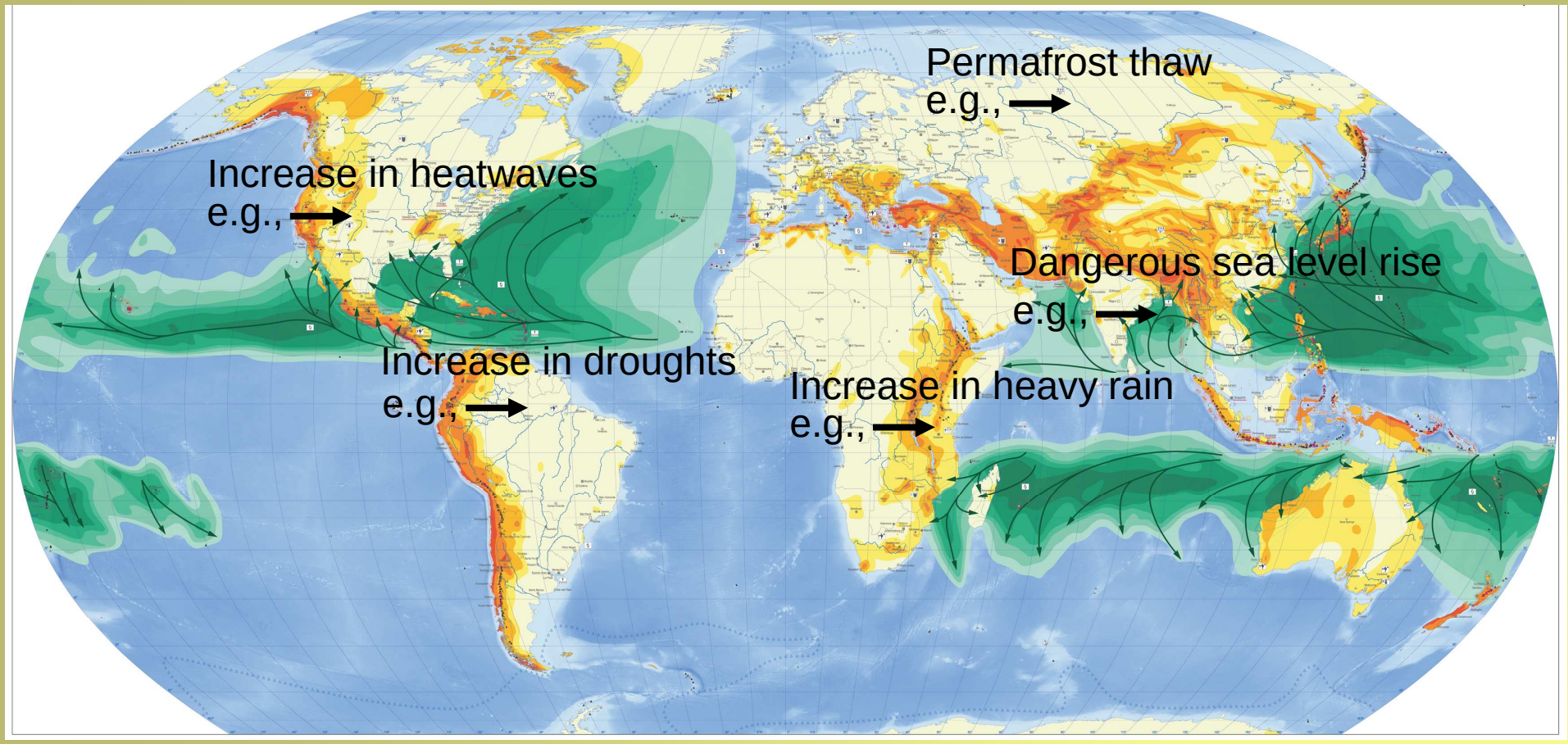
Table 7.1 Estimated attributable and avoidable burdens of 10 leading selected risk factors

Developing countries high mortality (per cent)		Developing countries low mortality (per cent)		Developed countries (per cent)	
Underweight	14.9	Alcohol	6.2	Tobacco	12.2
Unsafe sex	10.2	Blood pressure	5.0	Blood pressure	10.9
Unsafe water, sanitation and hygiene	5.5	Tobacco	4.0	Alcohol	9.2
Indoor smoke from solid fuel	3.6	Underweight	3.1	Cholesterol	7.6
Zinc deficiency	3.2	Overweight	2.4	Overweight	7.4
Iron deficiency	3.1	Cholesterol	2.1	Low fruit and vegetable intake	3.9
Vitamin A deficiency	3.0	Low fruit and vegetable intake	1.9	Physical inactivity	3.3
Blood pressure	2.5	Indoor smoke from solid fuel	1.9	Illicit drugs	1.8
Tobacco	2.0	Iron deficiency	1.8	Unsafe sex	0.8
Cholesterol	1.9	Unsafe water, sanitation and hygiene	1.8	Iron deficiency	0.7

Note: percentage causes of disease burden expressed in Disability Adjusted Life Years.

Source: WHO 2002

4. Climate Threats, Disasters and Impacts



Earthquakes

- Zone 0: MM V
- Zone 1: MM VI
- Zone 2: MM VII
- Zone 3: MM VIII
- Zone 4: MM IX

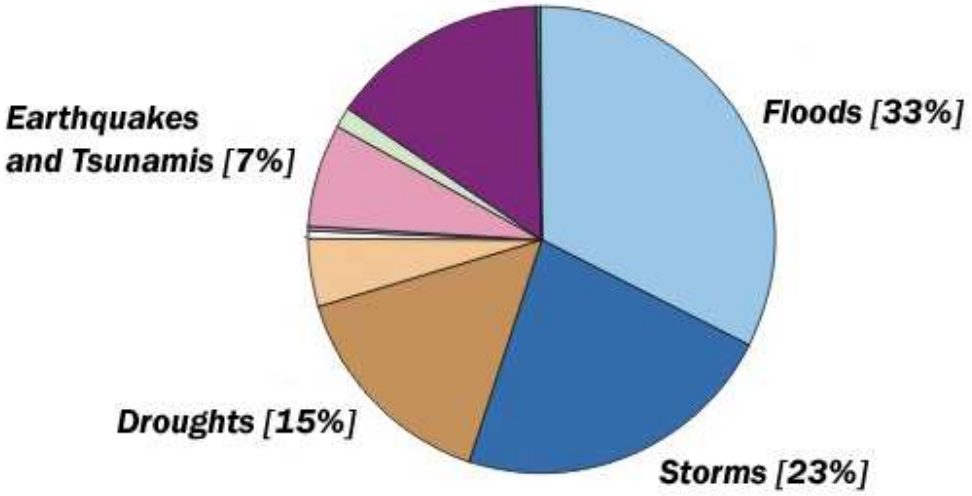
MM: modified Mercalli scale

Tropical Hurricanes

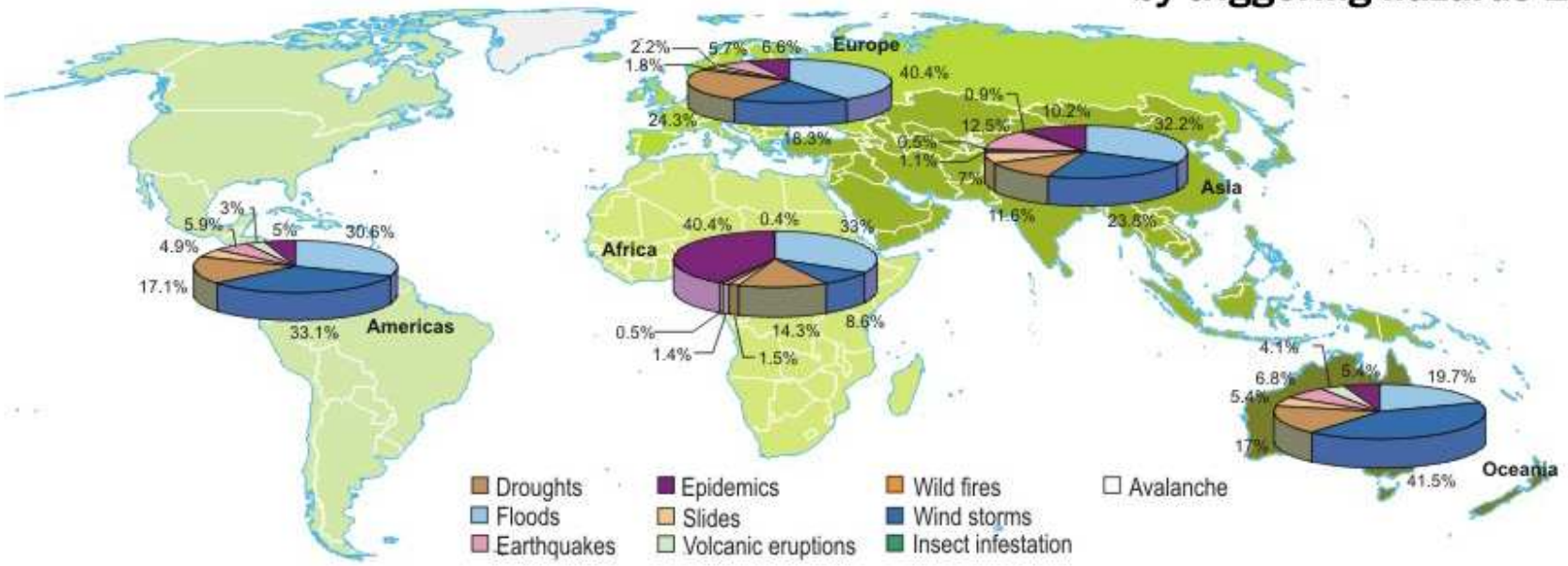
- Zone 0: 76–141 km/h
- Zone 1: 142–184 km/h
- Zone 2: 185–212 km/h
- Zone 3: 213–251 km/h
- Zone 4: 252–299 km/h
- Zone 5: ≥ 300 km/h

Münchener Rück
Munich Re Group

Distribution of disasters 1994-2003

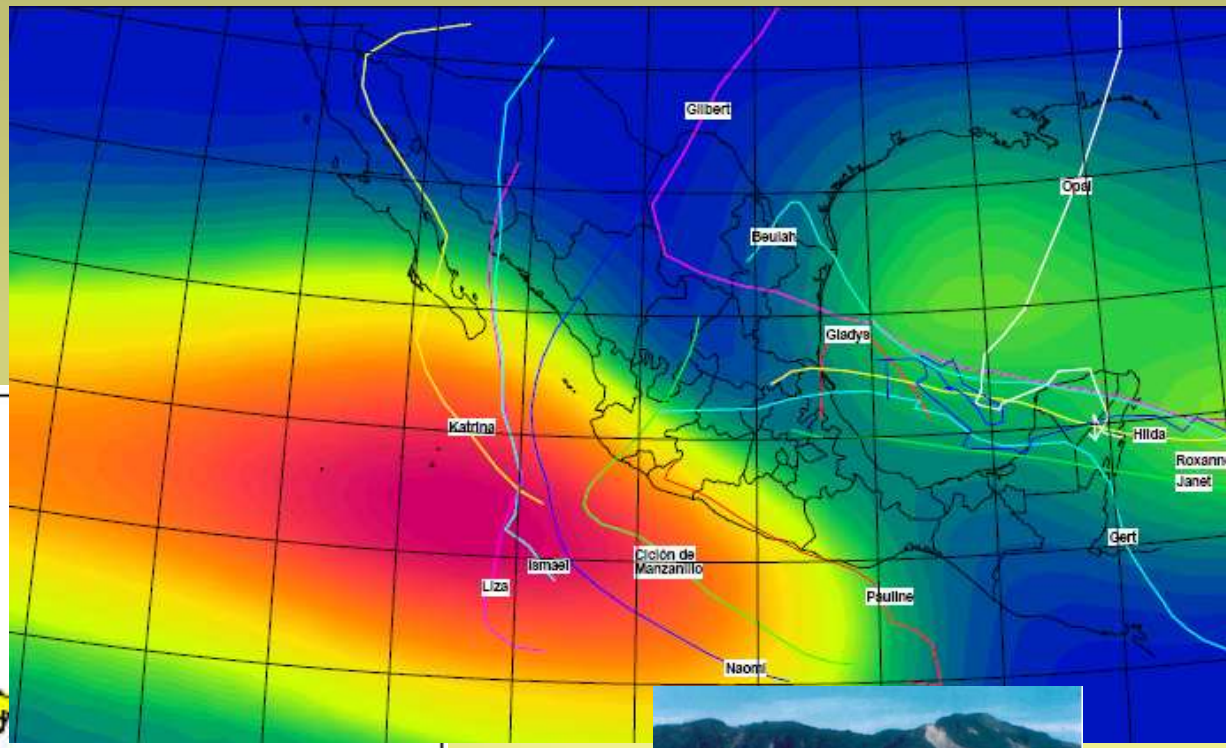


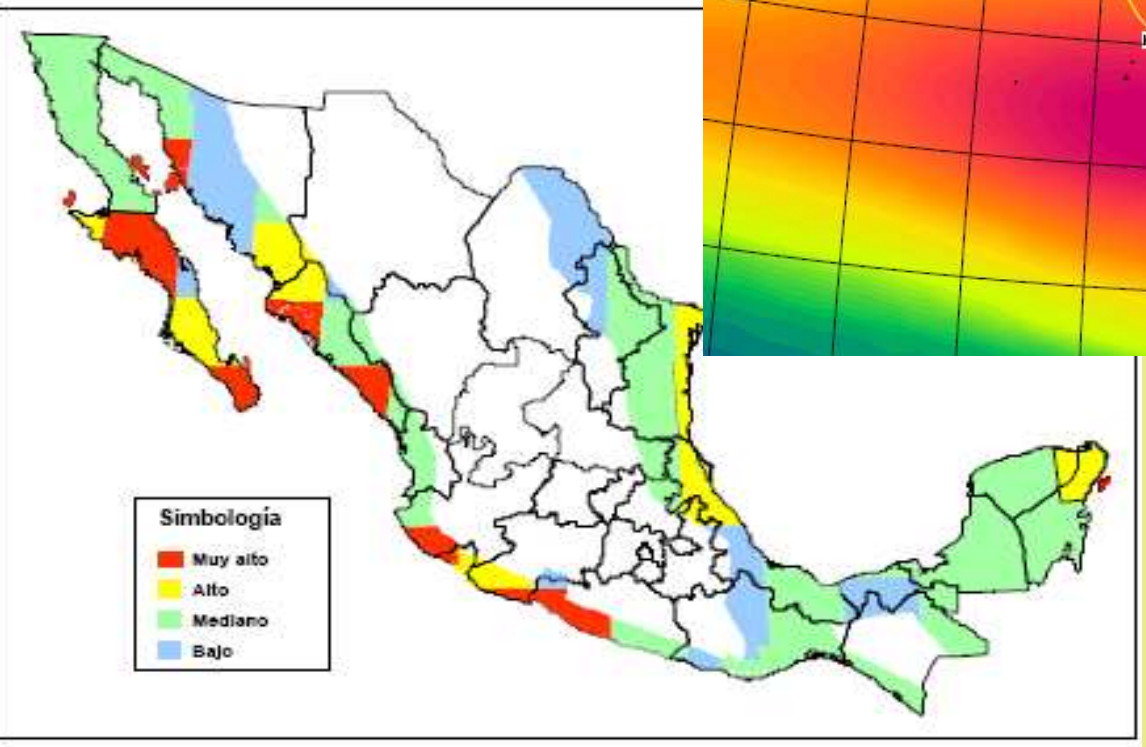
Regional distribution of disasters: by triggering hazards 1994-2003

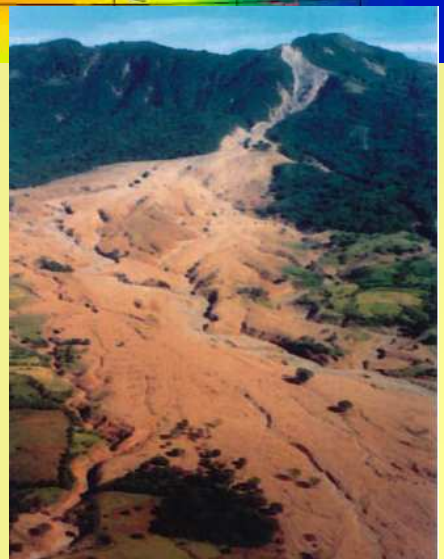


Mexico highly vulnerable to CC

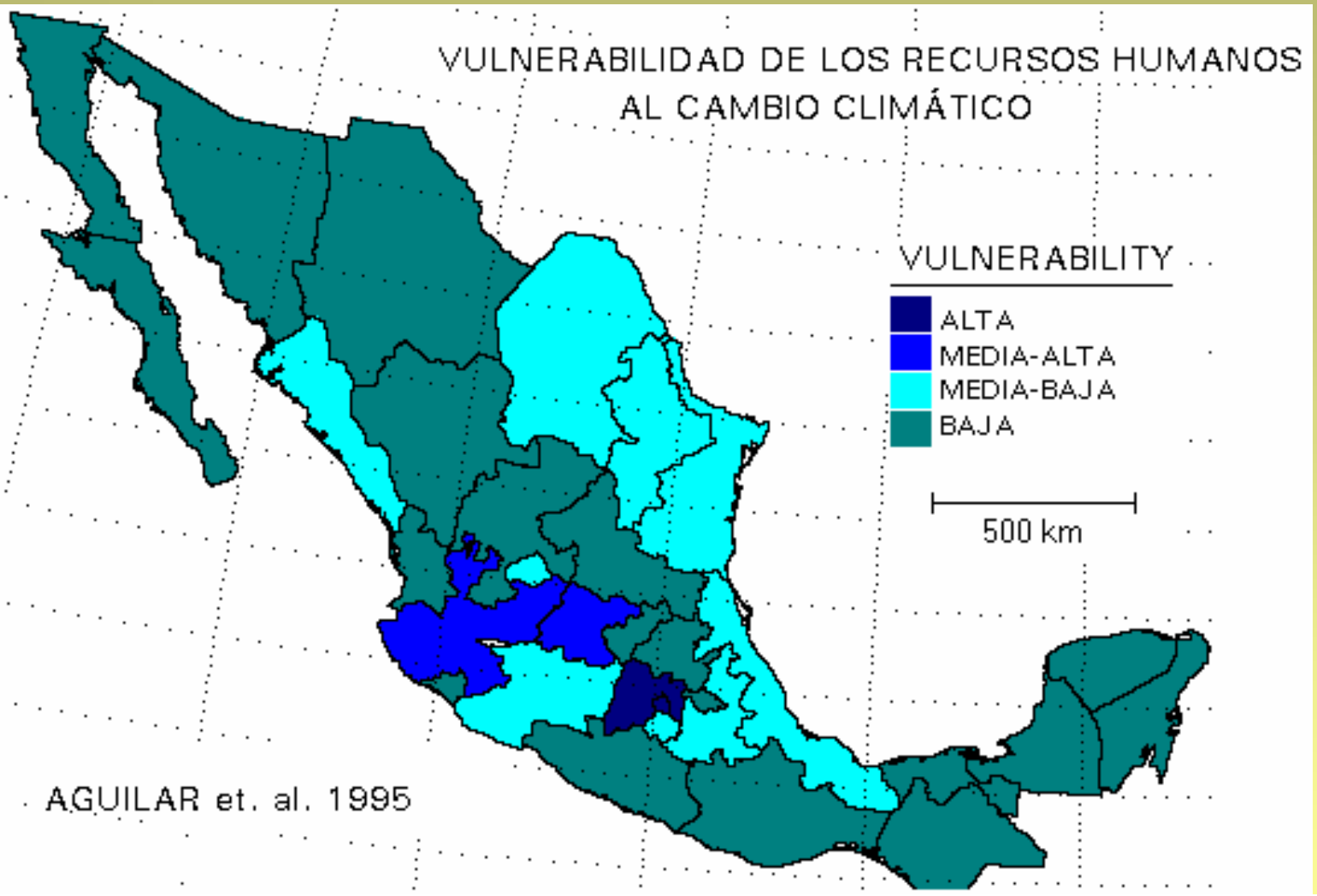
Source: CENAPRED, 2001





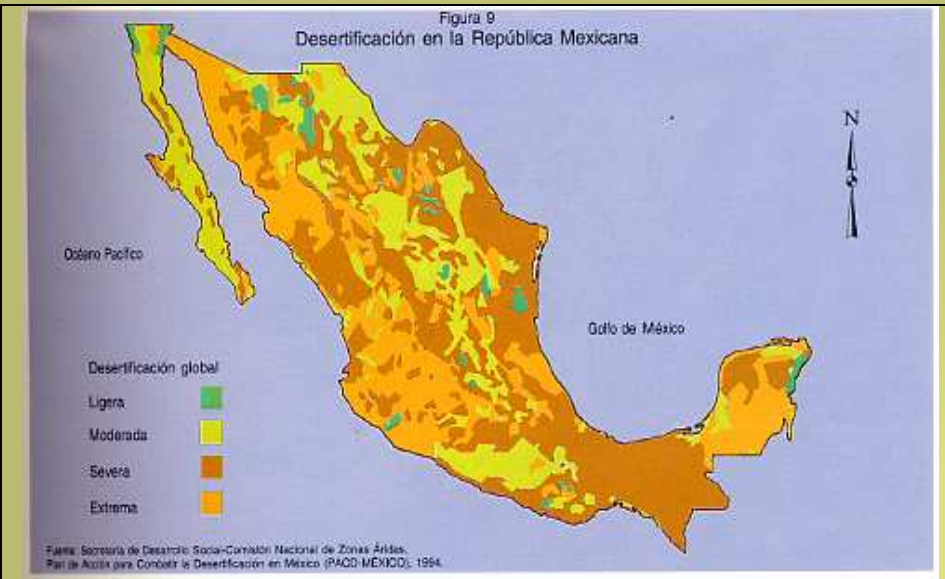


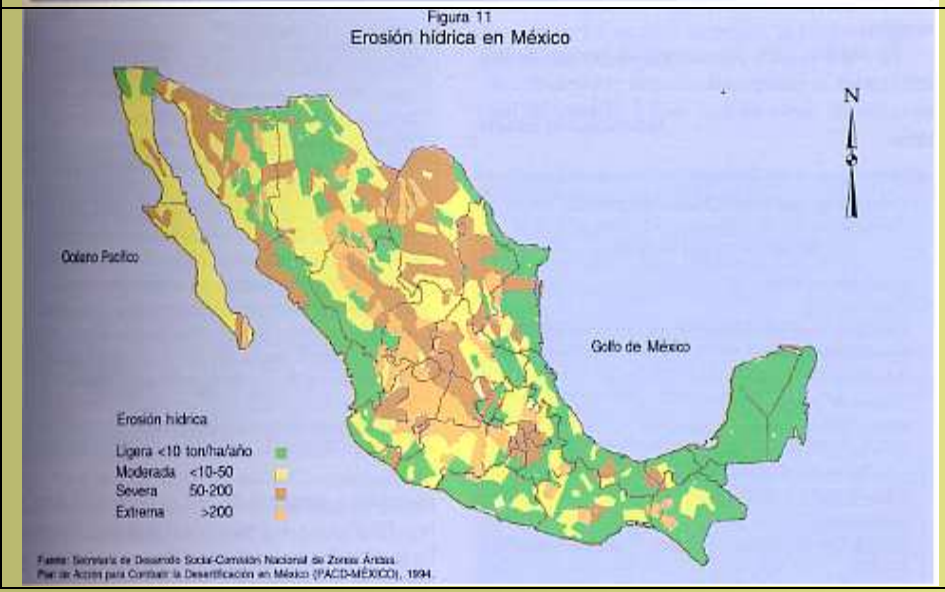
Vulnerability of Human Settlement



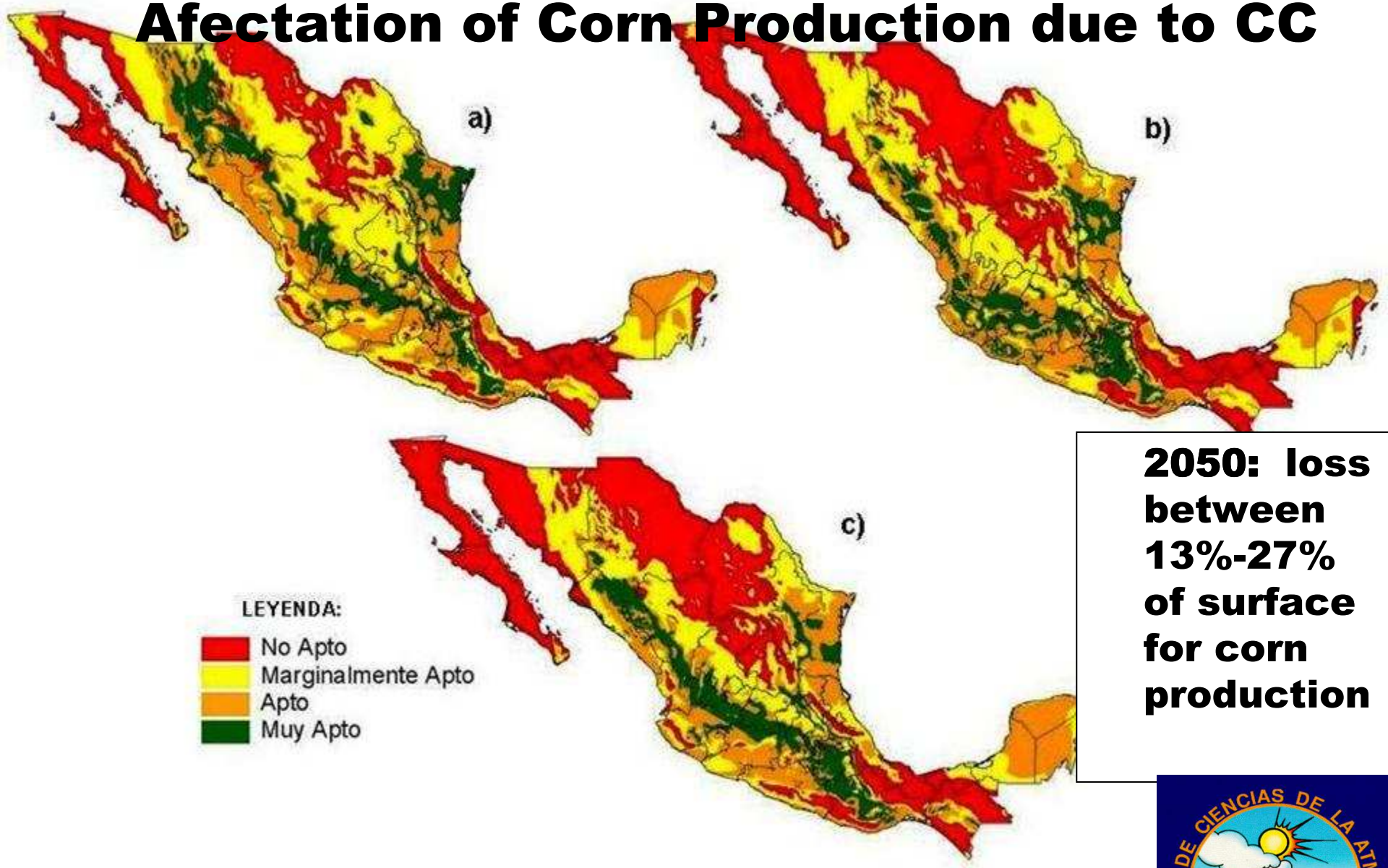
Vulnerability related to population density, growth, morbidity, water consumption/ scarcity / pollution and the impact of CC

DLDD in Mexico





Afectation of Corn Production due to CC



2050: loss between 13%-27% of surface for corn production

Monterroso, A. G, Rosales, 2006.

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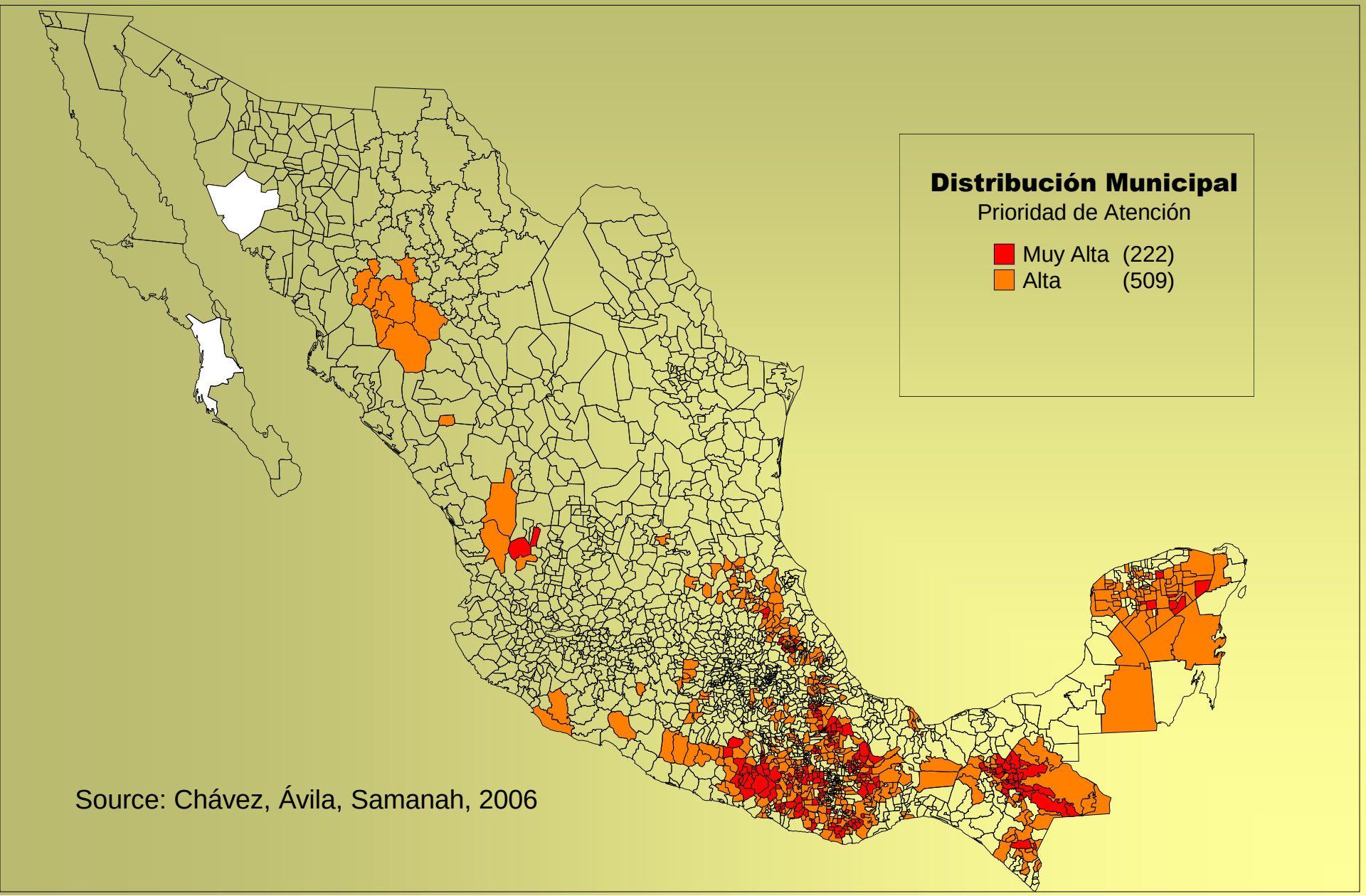
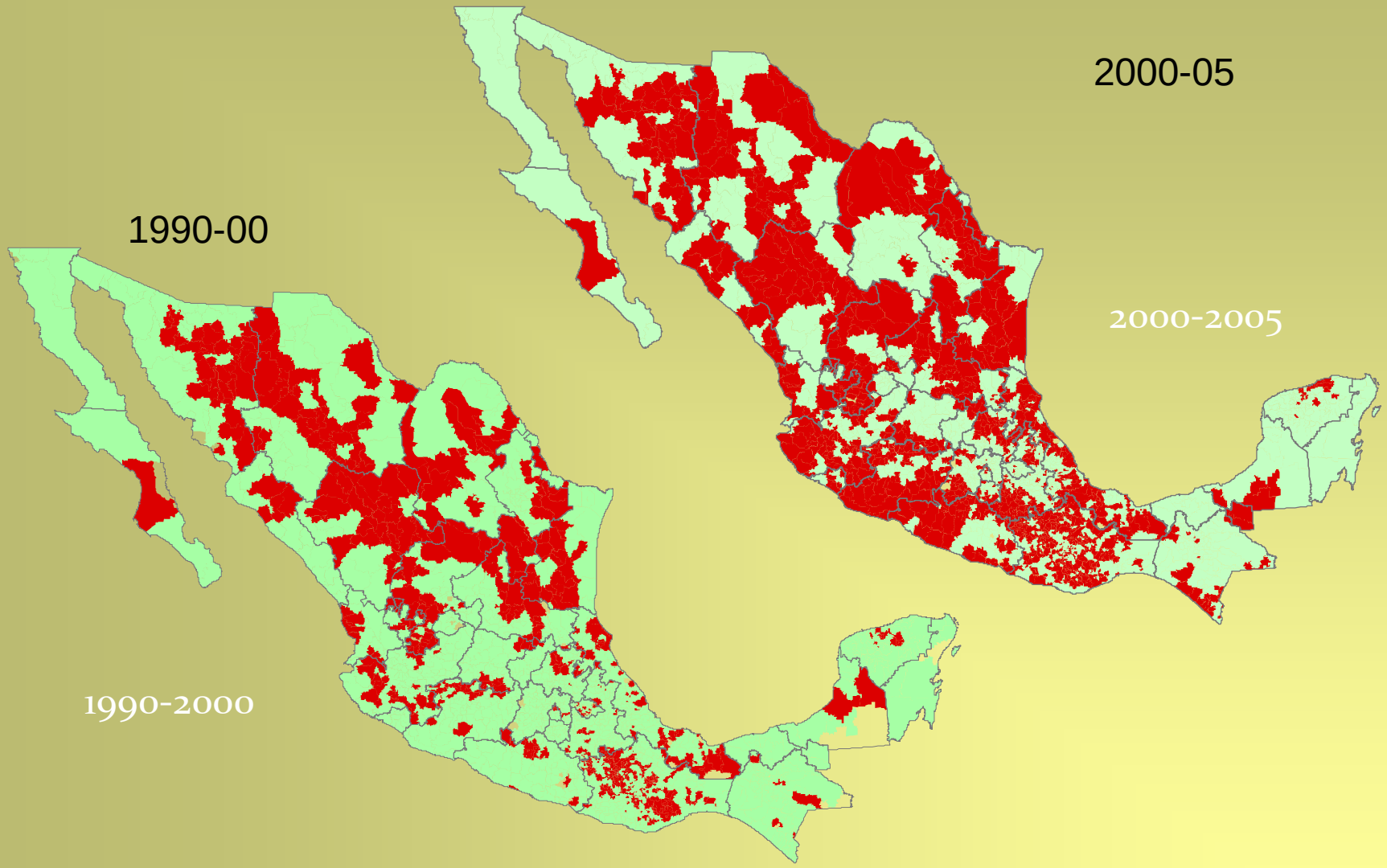
Poverty and High Marginality



Source: Chávez, Ávila, Samanah, 2006

Loss of Population in Mexico



Municipios que pierden población
Municipios que ganan población

FUENTE: Censos Generales de Población y Vivienda, 199 y 2000. INEGI
II Conteo General de Población y Vivienda, 2005. INEGI

5. Enviornmental Induced Migration

CC and Migration

- The impacts of climatic change already affect Mexico, where **half of the land is dry-subhumid, semiarid, arid and hyperarid.** Drought, changes in precipitation, **floods in coastal areas, plagues and crop illnesses**, together with **salinization** of soil and aquifers resulted in declining crop yields what led to unsustainable livelihoods. This process affected primarily peasants depending on **rain-fed subsistence crops** representing almost 78% of all rural producers. Their productive activities cannot guarantee the reproduction of their very poor livelihoods.

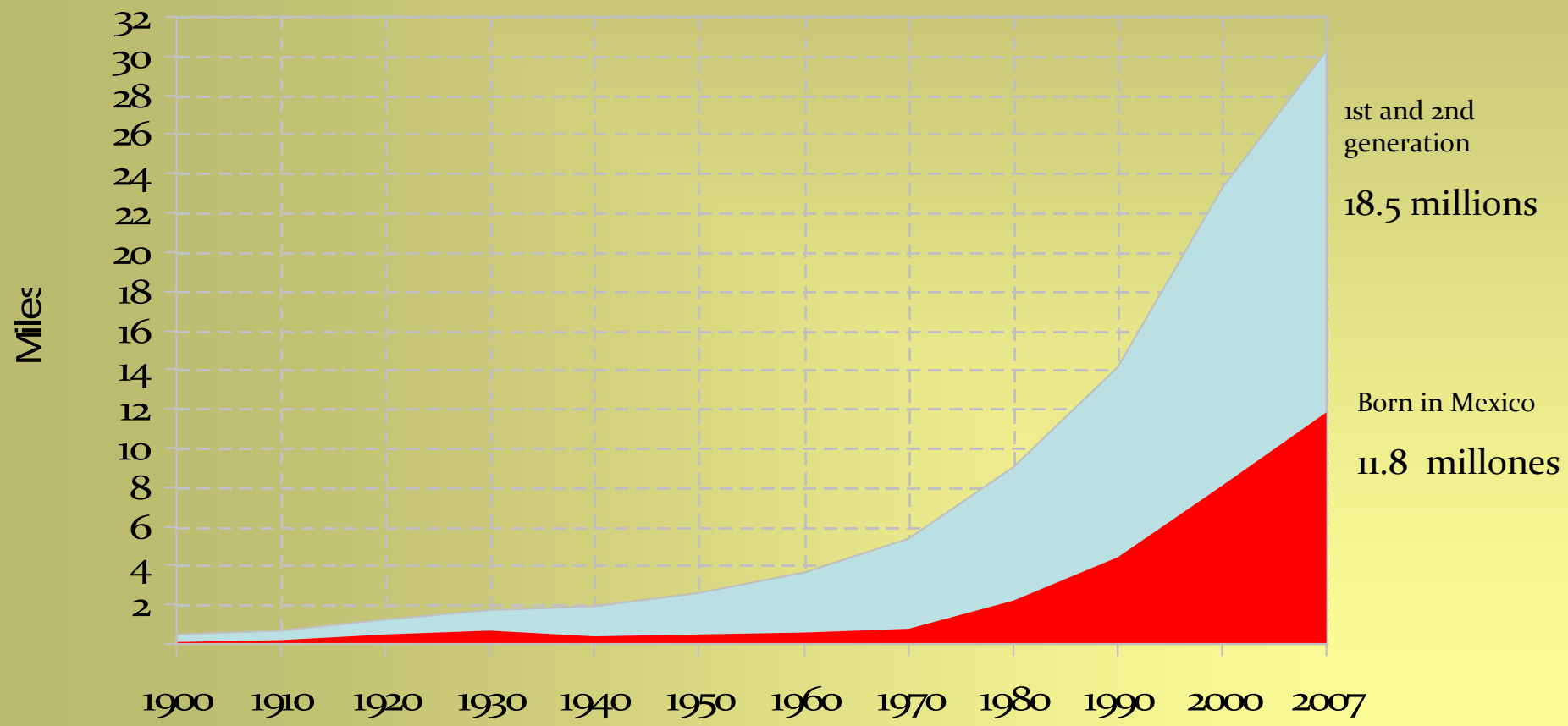
Migration from Mexico to the USA

- The **abysmal socioeconomic differences,** environmental threats and public insecurity between both countries.
- Since 1986, the legal status of Latin migrants in the USA has changed and now **most cross illegally**.
- Since NAFTA (1994), the number of Mexican migrants has increased since Despite the fence, a sophisticated electronic observation system including drones, now **annually 450,000 to 500,000** Mexicans cross the border.
- Legal and physical obstacles have created **new conflicts** and the rejection of an immigration law in 2007 by the US Congress has increased the vulnerability of the Latin migrants.
- Often migration is linked to **organized crime** (drug dealers, human trafficking, pornography, illegal purchase of human organs).
- Migration is a **result of the neoliberal model with low growth rates** (below 2%), a corrupt privatization process with a high concentration of wealth, an inefficient education system and low investments in infrastructure, and a lacking policy to create jobs that pushed trained young people into illegal activities (500,000 are linked to drug gangs; AFI 2008; Mexican Congress 2008). But also the demand for a cheap labor, drugs and pornography in the USA are drivers for illegal migration.

Native Mexican Population resident in the USA: Migration 1994-2007

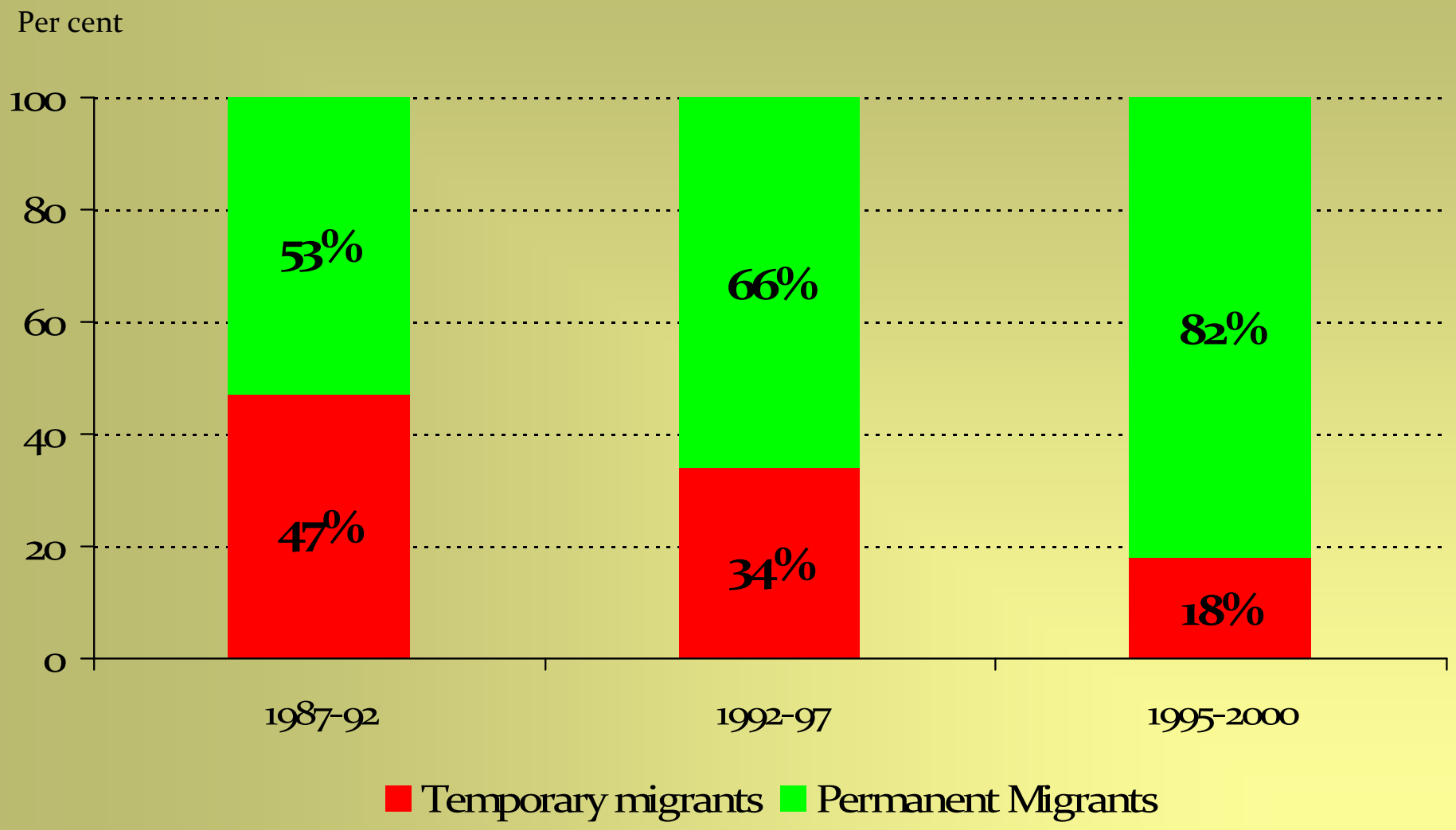
Source: Estimations CONAPO based on *Current Population Survey* 1994-2007, elaborated by F. Lozano, CRIM, 2009

Mexican's Residents in the USA



Source: Estimations CONAPO based on *Current Population Survey* 1994-2007, elaborated by F. Lozano, CRIM, 2009

Permanent and Temporary Migration



Source: ENADID92, ENADID97 and Censo 2000, elaborated by F. Lozano, CRIM, 2009

NAFTA and Migration

- Since NAFTA (1994) the **annual import of corn increased from 0.47 to 16 million tons**, the price dropped until 2004 by –64% due to US subsidies, while the tortilla price increased by +279% (SAGARPA 2008).
- A **combination of climatic and socio-economic factors** (rising costs of agricultural inputs, declining prices for food crops, price hikes of the basic food basket) and political neglect (uncontrolled import of subsidized maize without customs, lack of governmental support for rural production) resulted in a survival dilemma (Brauch 2008; Oswald 1991, 2008) for poor families in rural areas forcing them to migrate to urban centers, to USA or to plant illegal crops.
- Since the 1970s, **urban slums** experience a persistent socioeconomic crisis, failure of economic, education and social policies. Lacking jobs draw in 2008 half a million of young people into drug trafficking (Oswald 2006; Schteingart 2006).

6. Security Threats

- 439,079 undocumented people were detained in 2005 in the border between Mexico and USA; in 2008 only 281,207.
- During 2005: 488,760 pounds of marihuana were confiscated; in 2008 519,880 pounds.
- Decommission is not control of drugs or eradication of trafficking, therefore much more drug is crossing the border. The business is lucrative for drug and human trafficker. If they stop more migrants or drug than crossing, the business would be inefficient for both drug dealers and human traffickers.

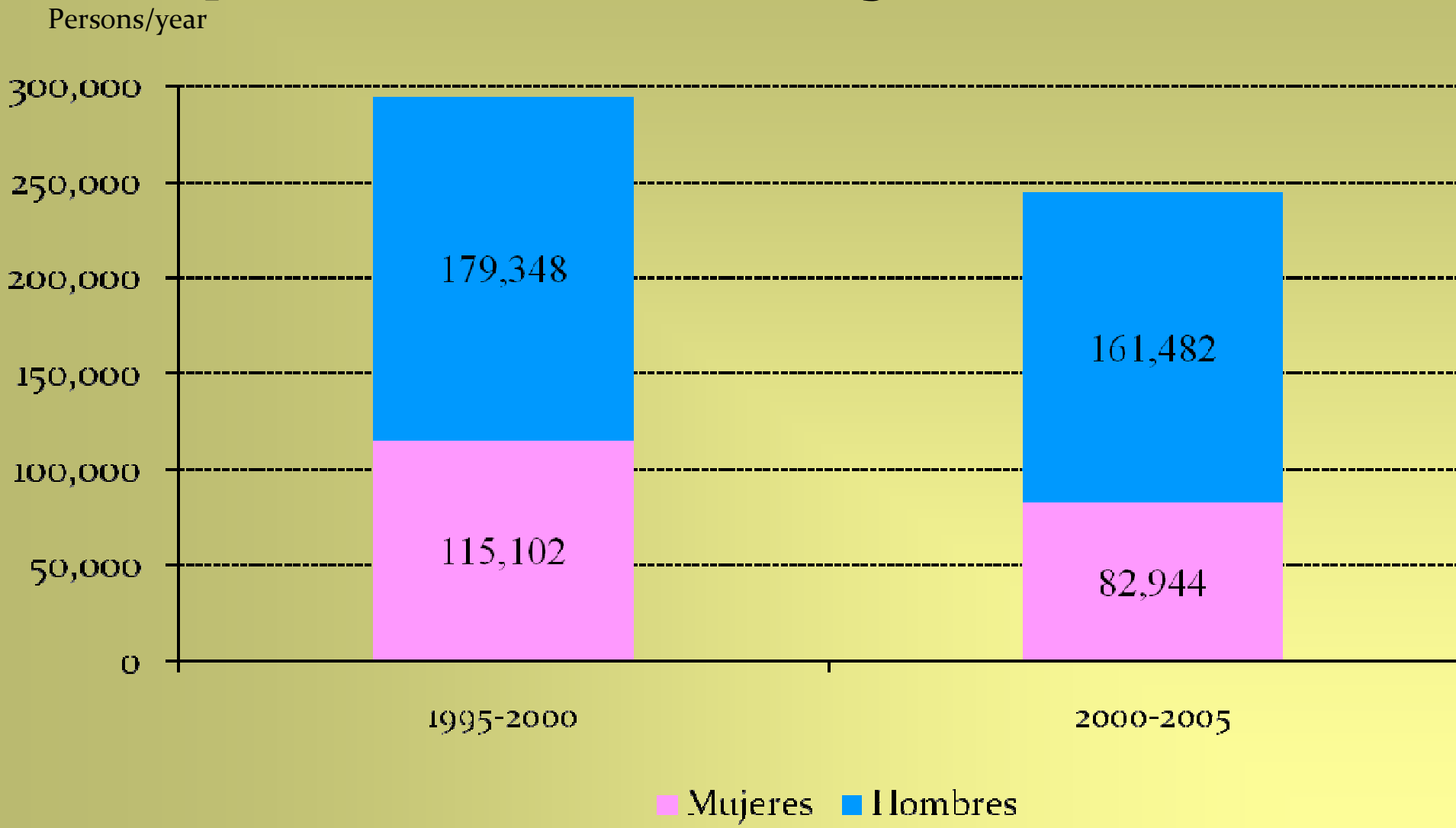
Gender Insecurity

1. During migration from Mexico to the USA, between **70 to 80%** of women are raped and an important group finishes up in prostitution (Catholic Church, 2008) with high risks of HIV-AIDS (Klot/DeLargy, 2007).
2. More than 500 feminicides only in one border town: Juárez (2008: 57); 2000 people killed from January to October, 2009.
3. EIM is related to trafficking of humans (also children), human organs, drugs and arms, and prostitution and child abuse.

Children's Insecurity

1. In the USA **17% of undocumented Latinos** are children.
2. Jan-Sept. 2008, more that **90,000 children were deported**, mostly without their parents; often expelled on the other side of the country, where they tried to enter with family.
3. Children joining their parents in the USA, when they are deported, they are returned **to** the Mexican side of the border. There exist in this region **123,500 kids** surviving by begging, prostitution and illegal activities (drugs, smuggling; Chamber of Deputies in Mexico, 2008).
4. For each **three** adults that are deported, there is **one** Mexican child abandoned within the USA, trying to survive in adverse conditions.
5. In any of the mentioned cases, the practices conflict with the **International Conventions on the Rights of the Child**, that were signed and ratified by both countries.

Return of Migrants by Sex and period: 1995-2000 y 2000-2005



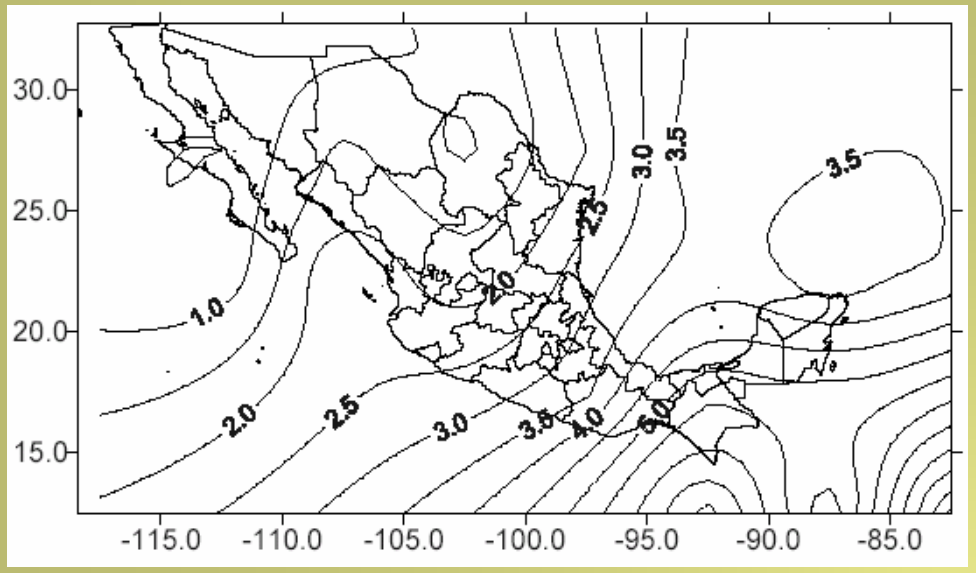
Source: ENADID92, ENADID97 and Censo 2000, elaborated by F. Lozano, CRIM, 2009

Enviornmental Impacts of CC (2050)

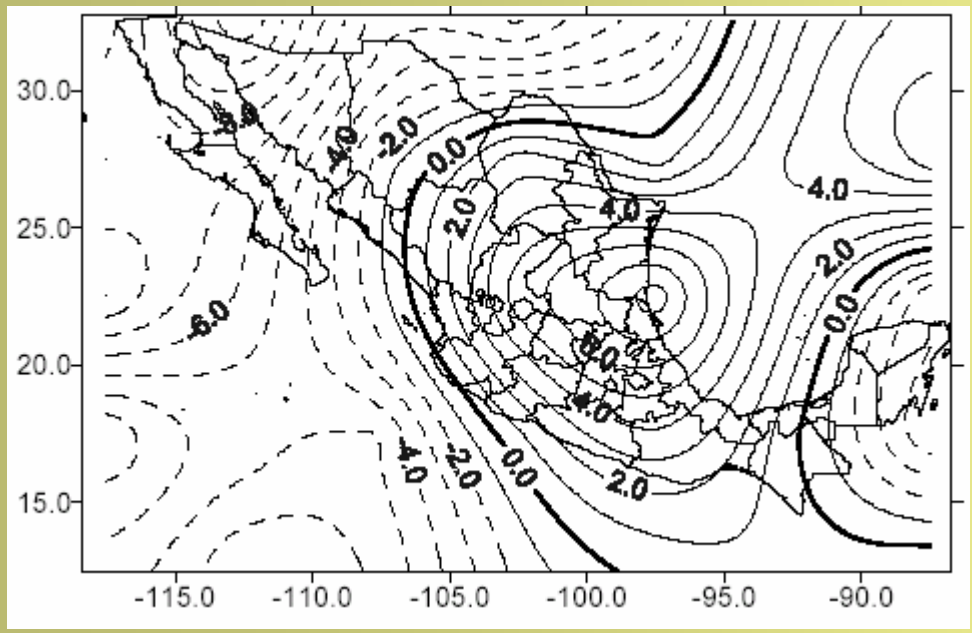
50% of natural coverage could be affected by CC.

Template forests, low dry tropical forest, xerophyte bushes & template savannas will be highly affected

Potential changes in precipitation due to CC in 2050 in Mexico



Medium scenario (1961 – 1990) of annual precipitation (day)



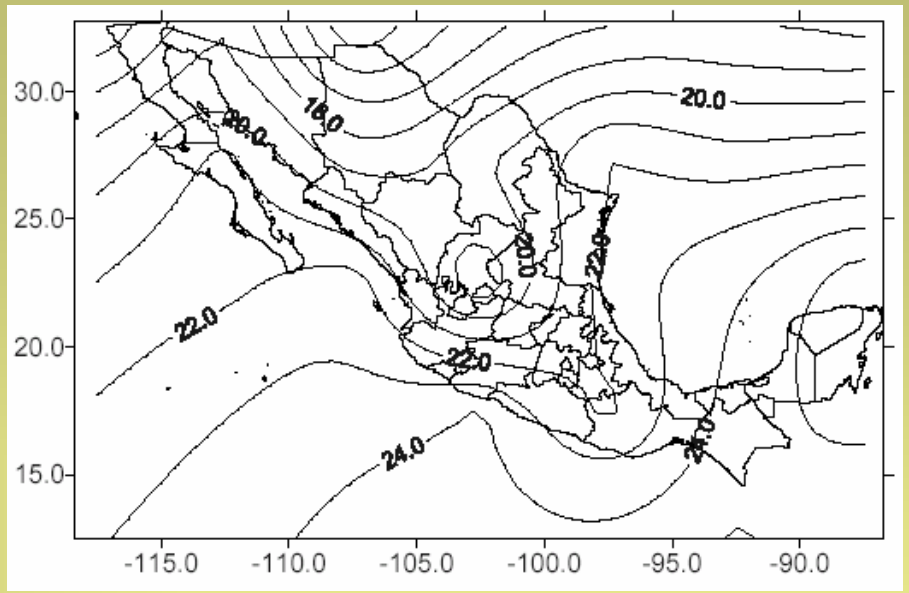
Changes in yearly average of precipitation (%) with medium affectation (ECHAM4 Model)

--- less precipitation

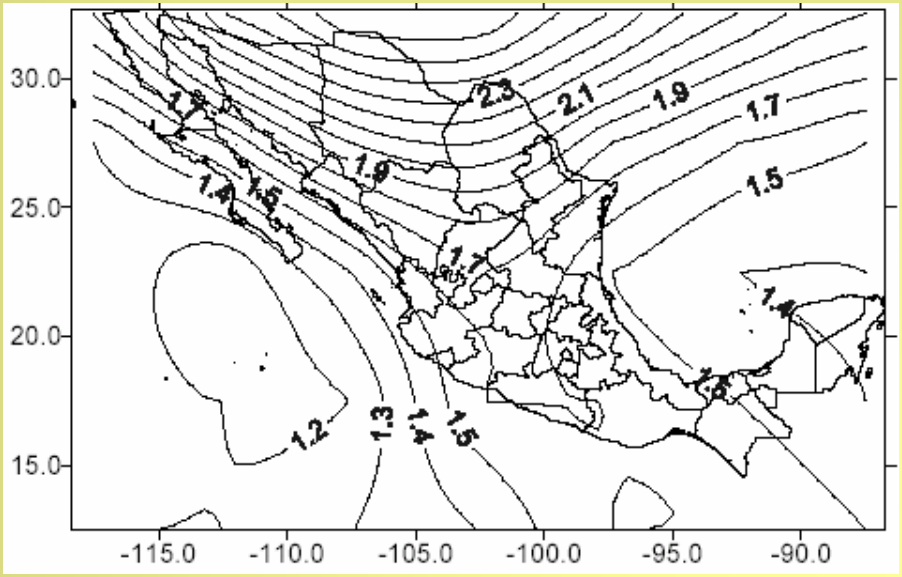
Conde C., 2006

2050: Change in Average Temperature

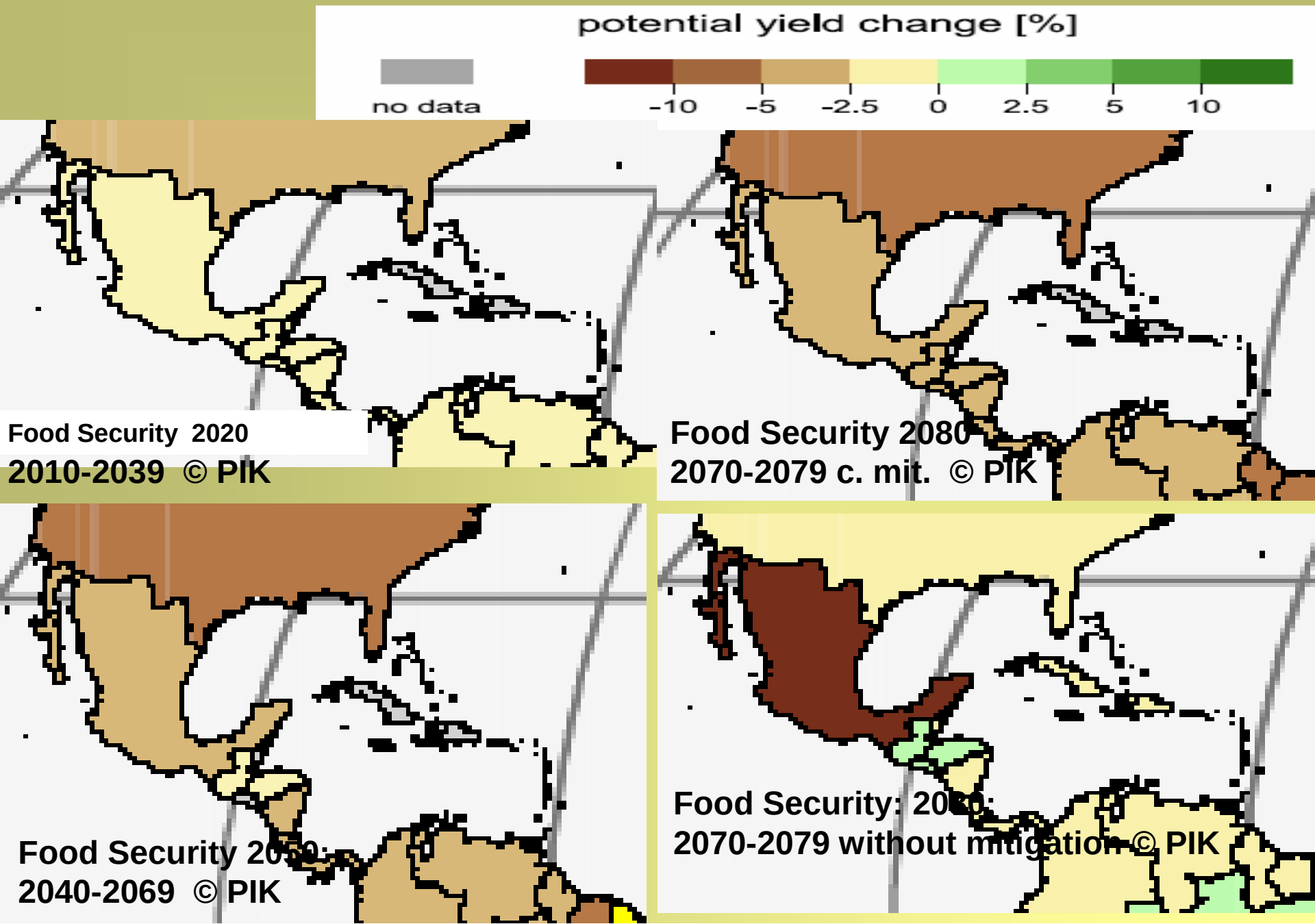
Scenario based on data 1961 – 1990 of average temperature/ year



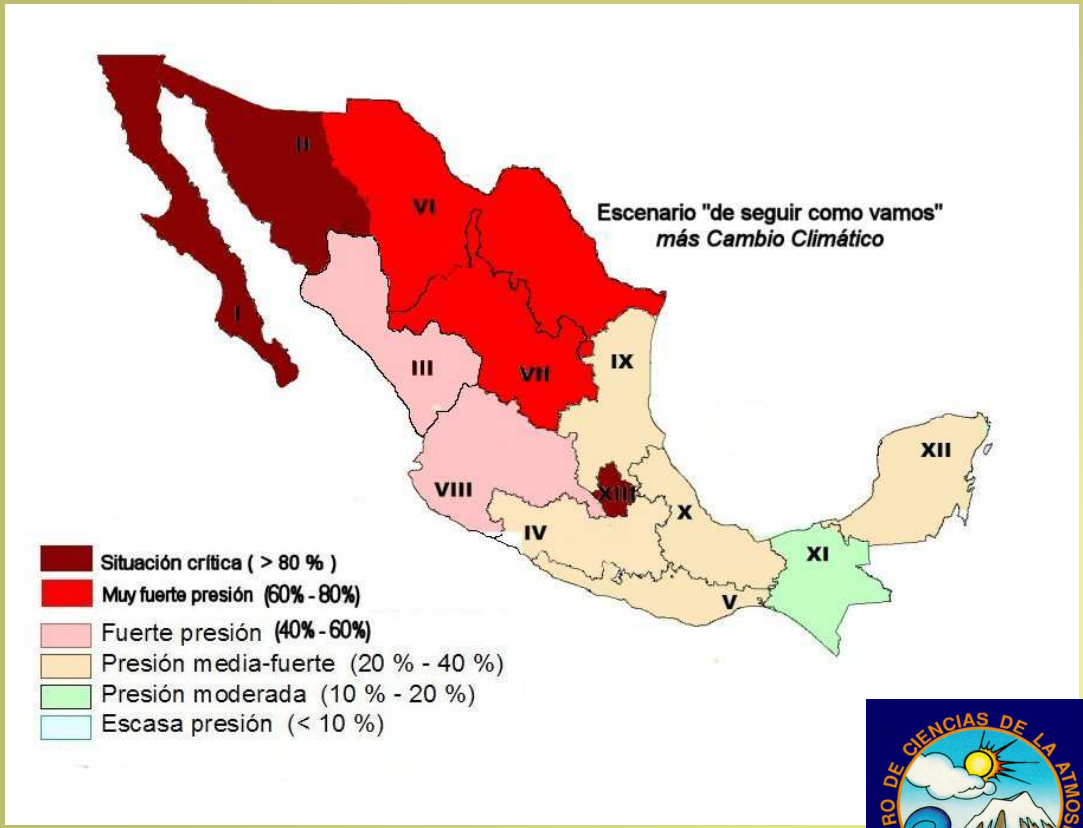
Changes of average temperature/year (ºC) with Model ECHAM4 medium impact



Conde C., 2006


potential yield change [%]
no data
-10
-5
-2.5
0
2.5
5
10
Food Security 2020
2010-2039 © PIK
Food Security 2080
2070-2079 c. mit. © PIK
Food Security 2050:
2040-2069 © PIK
Food Security: 2080:
2070-2079 without mitigation © PIK

Regional Impact of CC in 2030 in Mexico related to Water



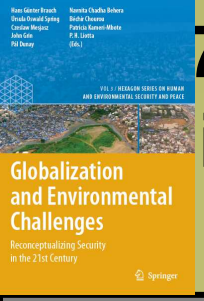
Baja California, Sonora & Center critical situation

Sinaloa & Lerma Basin high pressure on the resources.

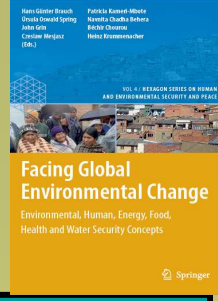
Yucatán Península, Vercruz, Oaxaca, Guerrero medium pressure.

How Many May Migrate Due to CC?

1. Between **3.25 and 6.75** millions of small peasants will be pushed out of their land and become EIM due to loss of corn production, desertification and livelihood loss.
2. An additional **41 million people** are at very high and high risks due to natural hazards (SEGOB 2009).



7.Conflictive Situation: Widening, Deepening & Sectorialization of Security Threats, Challenges, Vulnerabilities & Risks



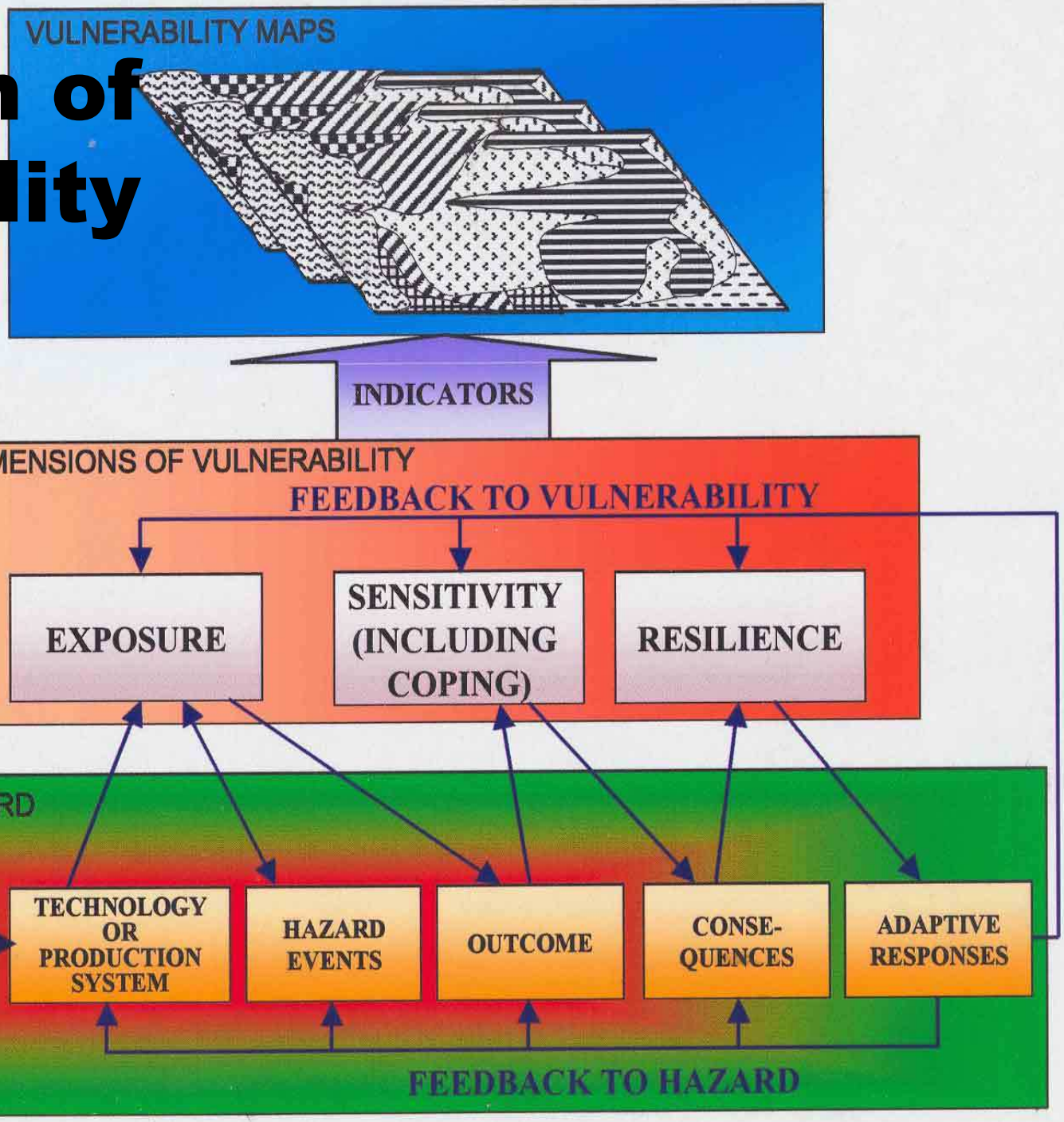
Security dimension⇒ ⇓ Level of interaction	Mili-tary	Politi-cal	Economic	Environ-mental ⇓	Societal
Human individual Human security ⇒	Land mines	Failed state	Food & Health security	Cause & victim	Food & Health security .
Societal, community security	Border control	Public security	Water, Food & Health sec.		⇓⇑
National security	During Cold War shrinking (in USA since 2001 ⇑ & since 2009 ⇓)		Energy security	⇓⇑	Energy Food, Water & Health security
International and Regional security			Water security	⇓⇑	Water security
Global and planetary security ⇒	Terro-rism	Intern. migration	Financial crisis	CC; GEC; biodiversi-ty loss	Health security

Strategies of Adaptation

- Definition of resources:
  - **Economic**: financing, infrastructure, poverty alleviation, ethical business, international aid and compensation, participative budget, sustainable job creation, environmental services
  - **Social**: peasant organizations, research, science and technology, experts, NGO, Consultation Councils for Government, Public Private Partnership, sustainable livelihood, education and youth attention
  - **Environmental:** Strategy of holistic sustainable development, recuperation and protection of ecosystems, environmental protection, urban reorganization, combat to desertification, water integral management, waste recycling, alternative energy, prevention, Political: Transparency, state of law, governance, democratic participation in planning, execution and evaluation, food and health security, early warning, sustainable reconstruction
- Integration of National Plan of Development with **Sectorial** Plans, **State** and **Municipal** Plans
- Prevention and permanent monitoring
- Rigorous evaluation and modification

Reduction of Vulnerability

Kasperson, 2006



Resilience

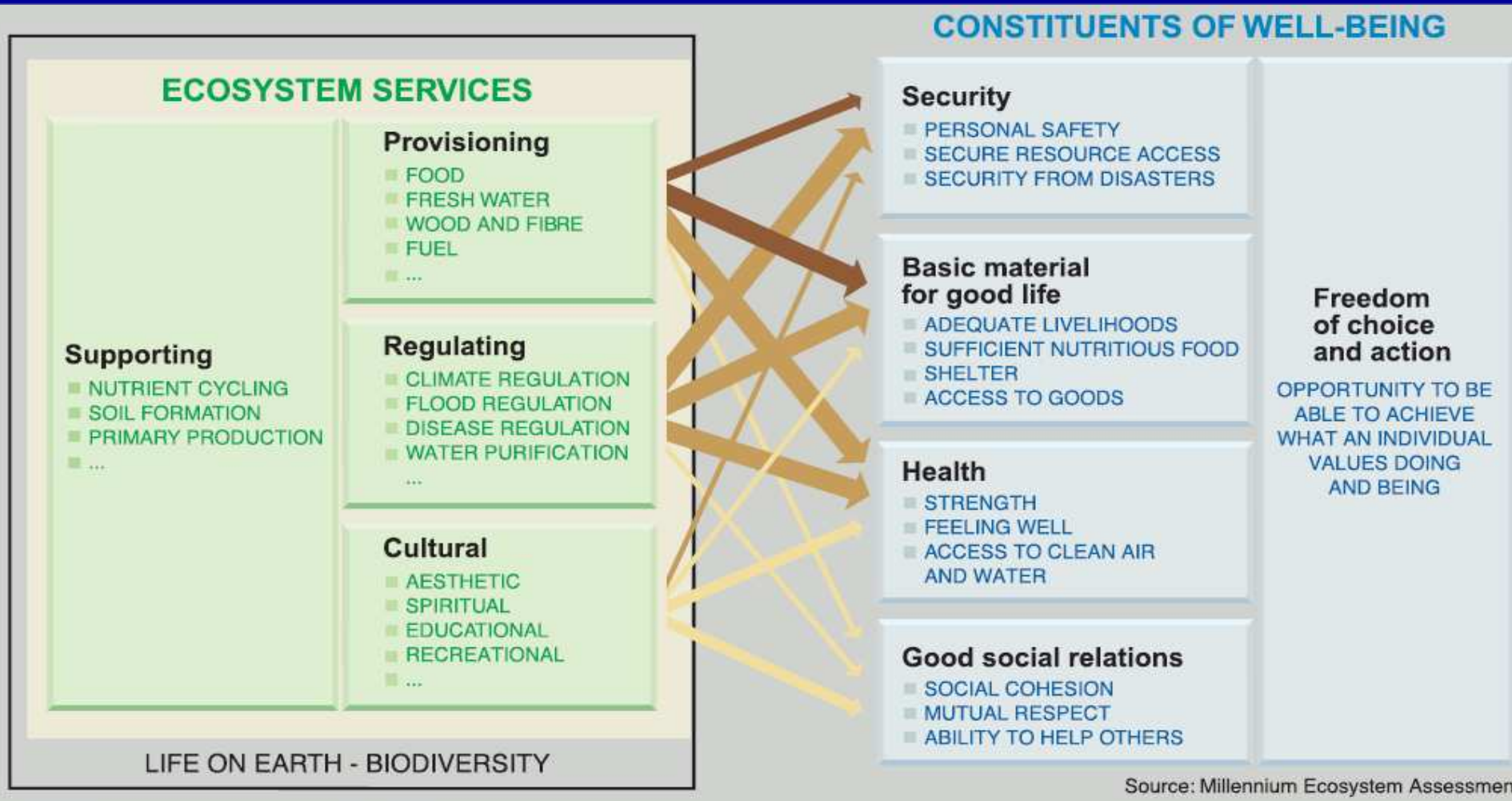
- Resilience means in Latin *resilio*, referring to “return from a leap, jump, rebound”, and in common acceptation “elasticity”. In physic it represents the capacity of a material to recover the same form after having been exposed to extreme pressures.
- The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change (IPCC WG2 2007: 880).
- Resilience refers to the capacity of a social-ecological system both to withstand perturbations from, for instance, climate or economic shocks and to rebuild and renew itself afterwards (Stockholm Resilience Centre 2007b).
- In the social field it refers to the “human capacity which permits persons after having passed through adverse situations to be not only safe but also **transformed through this experience**”. Gloria Laengle (2004) “the capacity of human being to **overcome difficulties** and at the same time **learning** from the errors”. Ángela Quintero (2005) refers to “the **capacity** of a family **to adapt** and reconstruct from the adverse situation”. Helena Combariza (2005) defines “human resilience is the capacity of an individual or social system **to live well and develop** positively, irrespective of the difficult conditions and even being reinforced and **transformed**".
- Brooks and Adger (2005:168) “In practical terms, adaptive capacity is the ability to design and implement effective adaptation strategies, or to react to evolving hazards and stresses so as to reduce the likelihood of the occurrence and/or the magnitude of harmful outcomes resulting from climate-related hazards. The adaptation process requires the **capacity to learn from previous experiences to cope with current climate**, and to apply these lessons to cope with future climate, including surprises.

Conclusions

1. Environmental and social problems increased the **complexity of international migration** and illegal immigration in the USA. Environmental and socioeconomic migration are linked and ‘forced’ migration is a complex, multi-causal and interactive process, often with nonlinear outcomes that can destroy family and community life and increase social vulnerability of women.
2. **Women often are left behind to deal alone** with fieldwork, care for children and the extended family. Insecure land and water rights have also generated complex emergencies within communities and new conflicts. Due to public insecurity and organized crime entire villages are fleeing from physical violence.
3. **The war against organized crime has forced to cooperation** has forced both governments to exchange intelligence, combat illegal arms/drugs trade and coordinate policy against these powerful gangs.

4. The improved surveillance of the US border patrols has **forced migrants to rely on organized crime**. The declining social cohesion, disintegration of networks related to migration, the loss of livelihoods, the illegal crossing controlled by transnational crime gangs have resulted in a low intensity war in the border.
5. **Increased vulnerability** of migrants has **increased corruption** on both sides, but has also created **geo-political conflicts between the USA and Mexico**.
5. **Cooperation on development activities** to improve livelihoods and environmental services in remote rural areas, creation of **jobs for young people** and a **strong social and environmental policy in Mexico** would better counter rising criminal behaviour and open a potential for a peaceful living together of both countries: **Prevention is more efficient than persecution**.

Ecosystem Services and Well-being



Source: Millennium Ecosystem Assessmen

ARROW'S COLOR
Potential for mediation by socioeconomic factors

- Low
- Medium
- High

ARROW'S WIDTH
Intensity of linkages between ecosystem services and human well-being

- Weak
- Medium
- Strong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