



# **General Environmental Indicators:**

## **South & Central America**

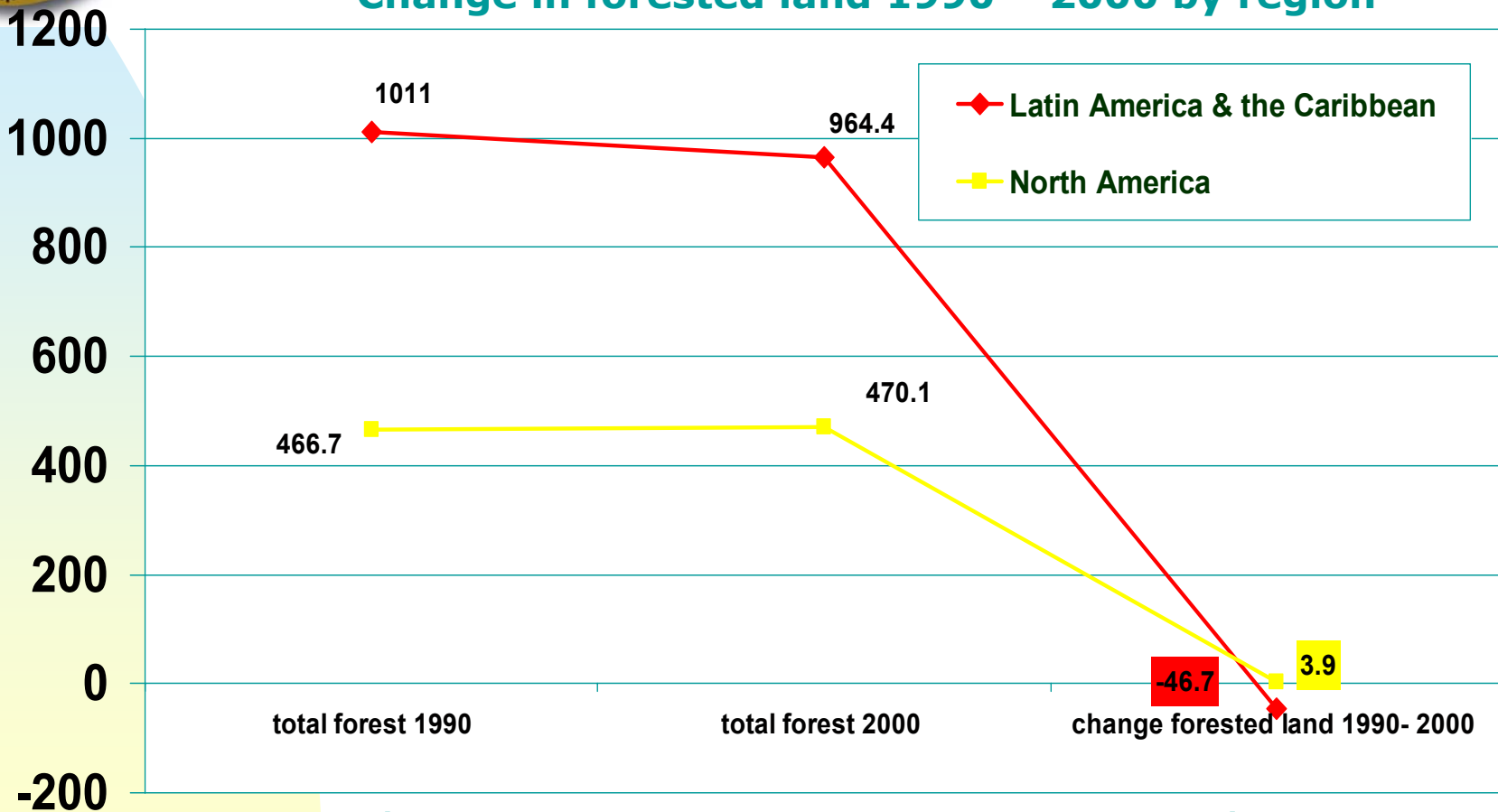
- **April 2007**



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# Deforestation

## Change in forested land 1990 – 2000 by region



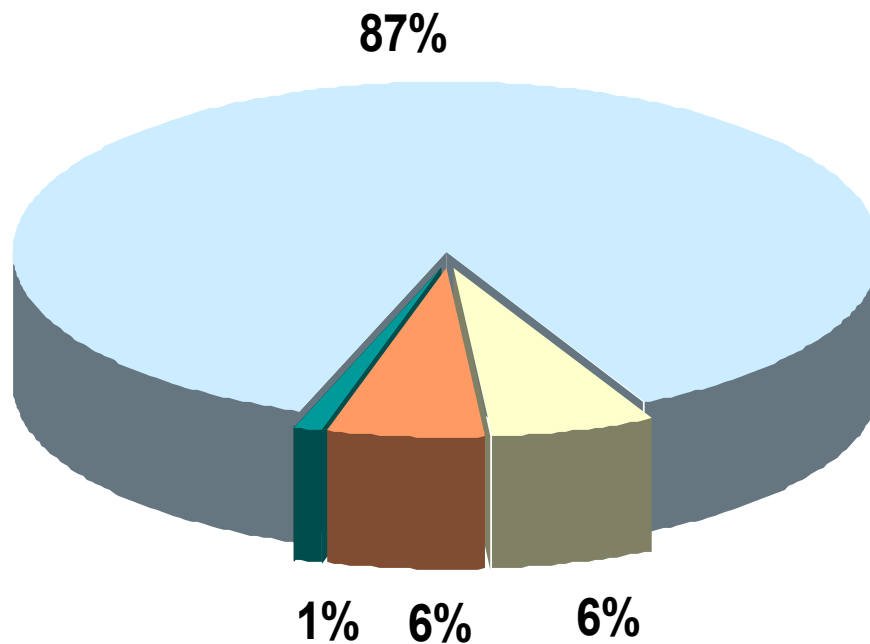
Total land Latin America 2017.8 millions hectares



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## Land degradation in South America

- None
- Light
- Medium
- Strong
- Extreme

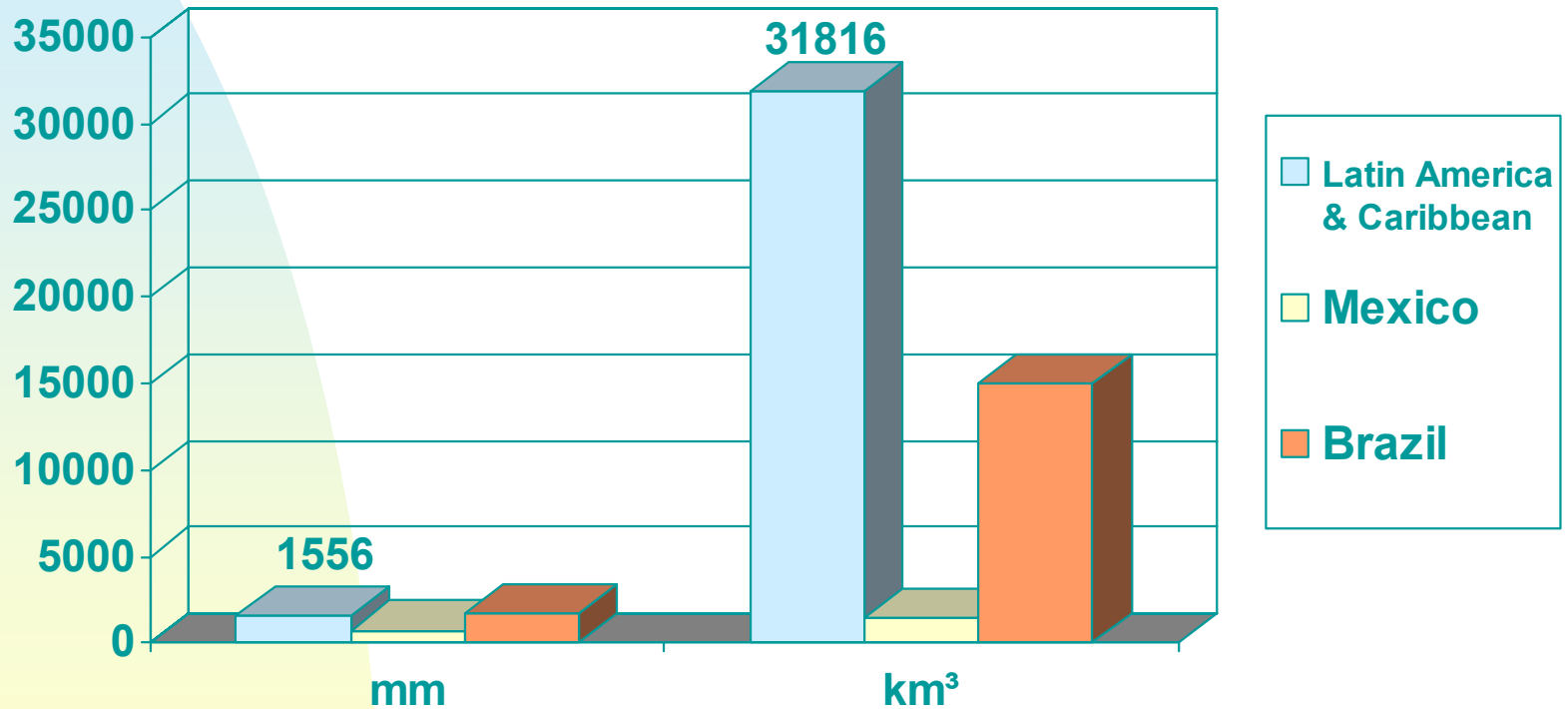




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# Fresh Water

## Regional distribution of internal renewable water resources

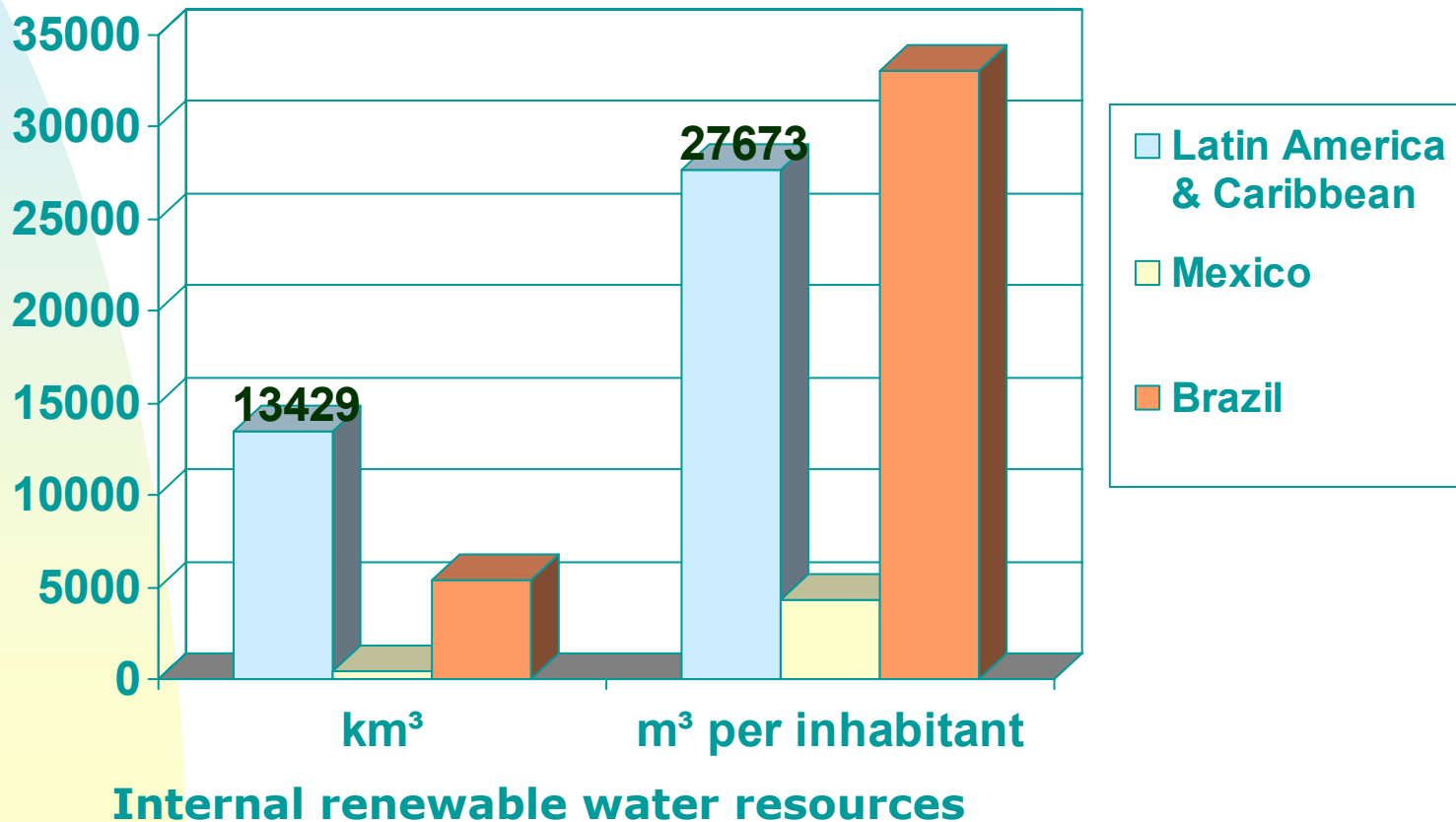


Annual precipitation



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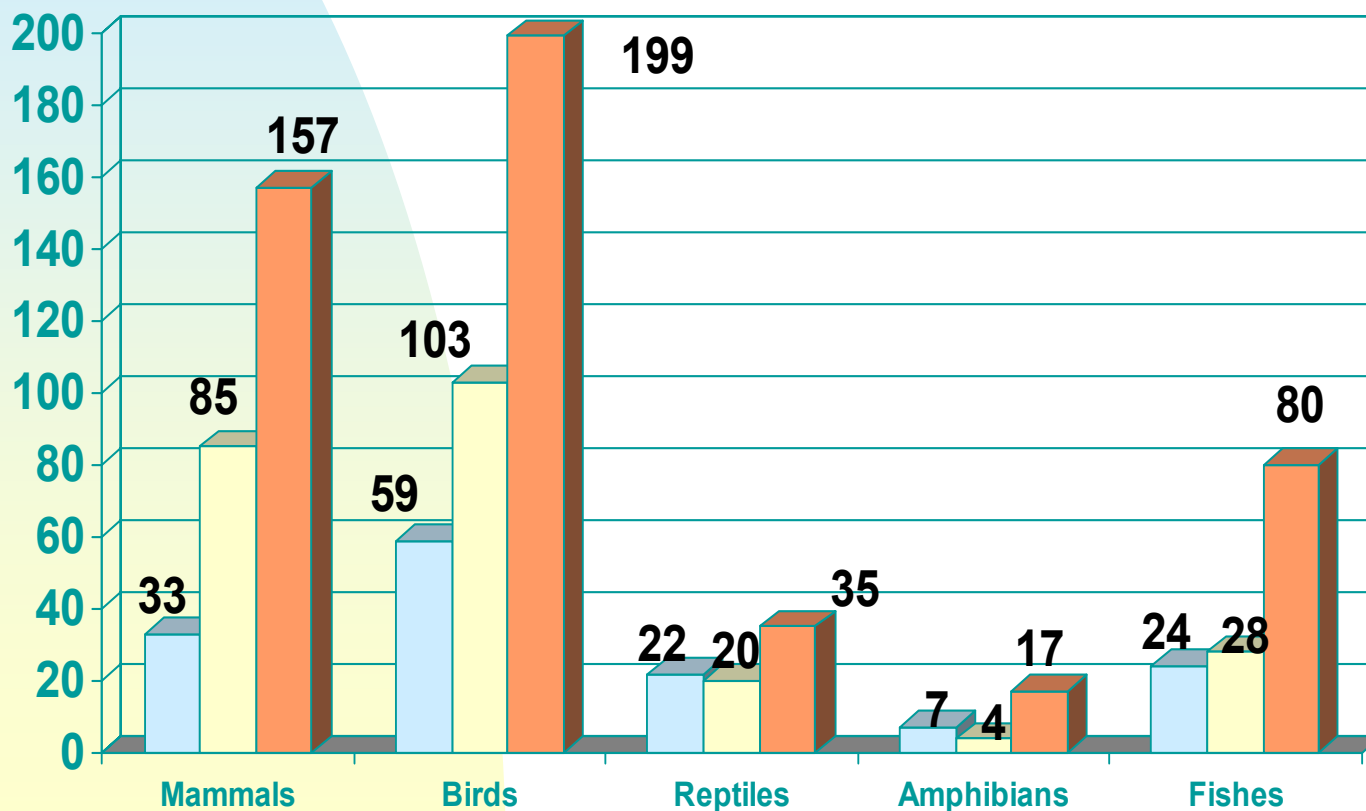
## Regional distribution of internal renewable water resources (continued)





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## Numbers of threatened vertebrates: Latin America and the Caribbean

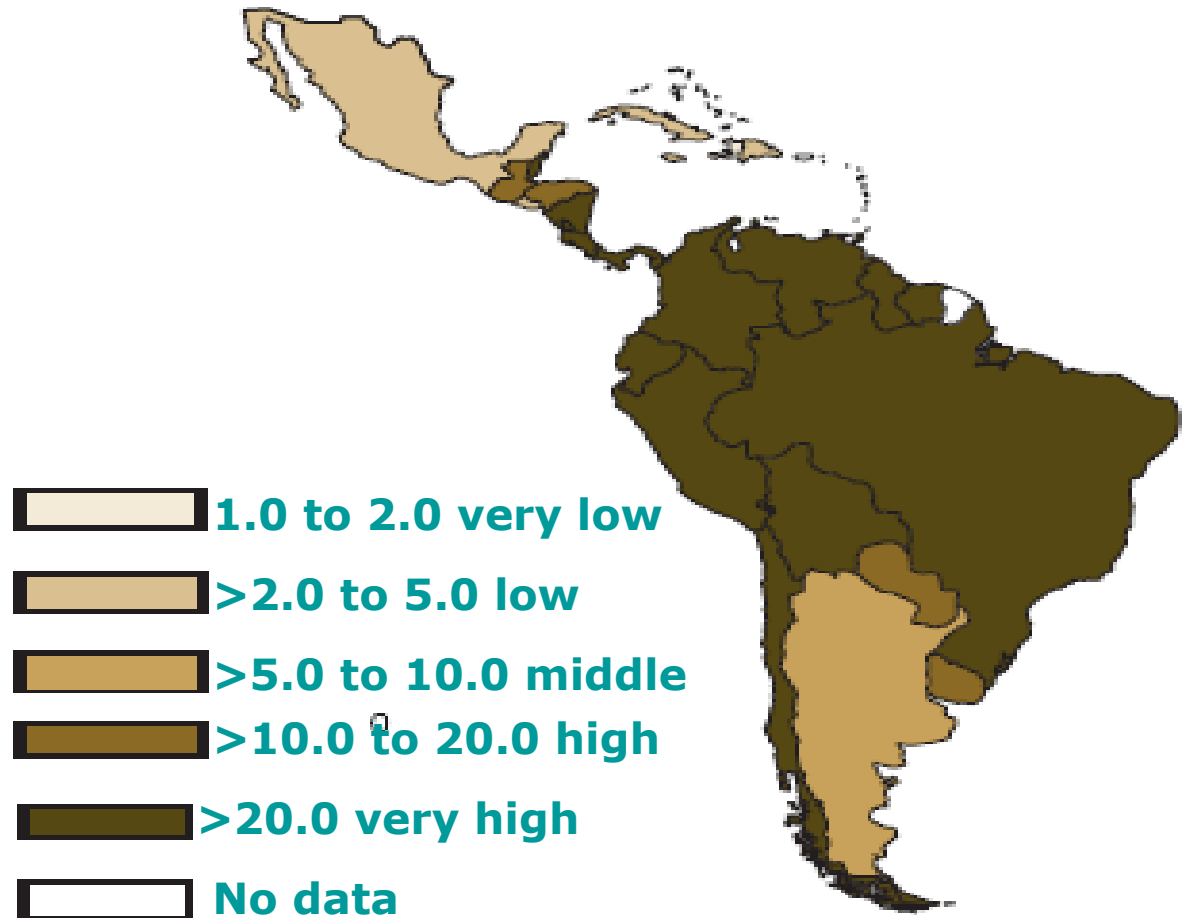


- Critically endangered
- Endangered
- Vulnerable



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## Total water availability in 2000 (1000m<sup>3</sup> per capita/year)





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# Biodiversity

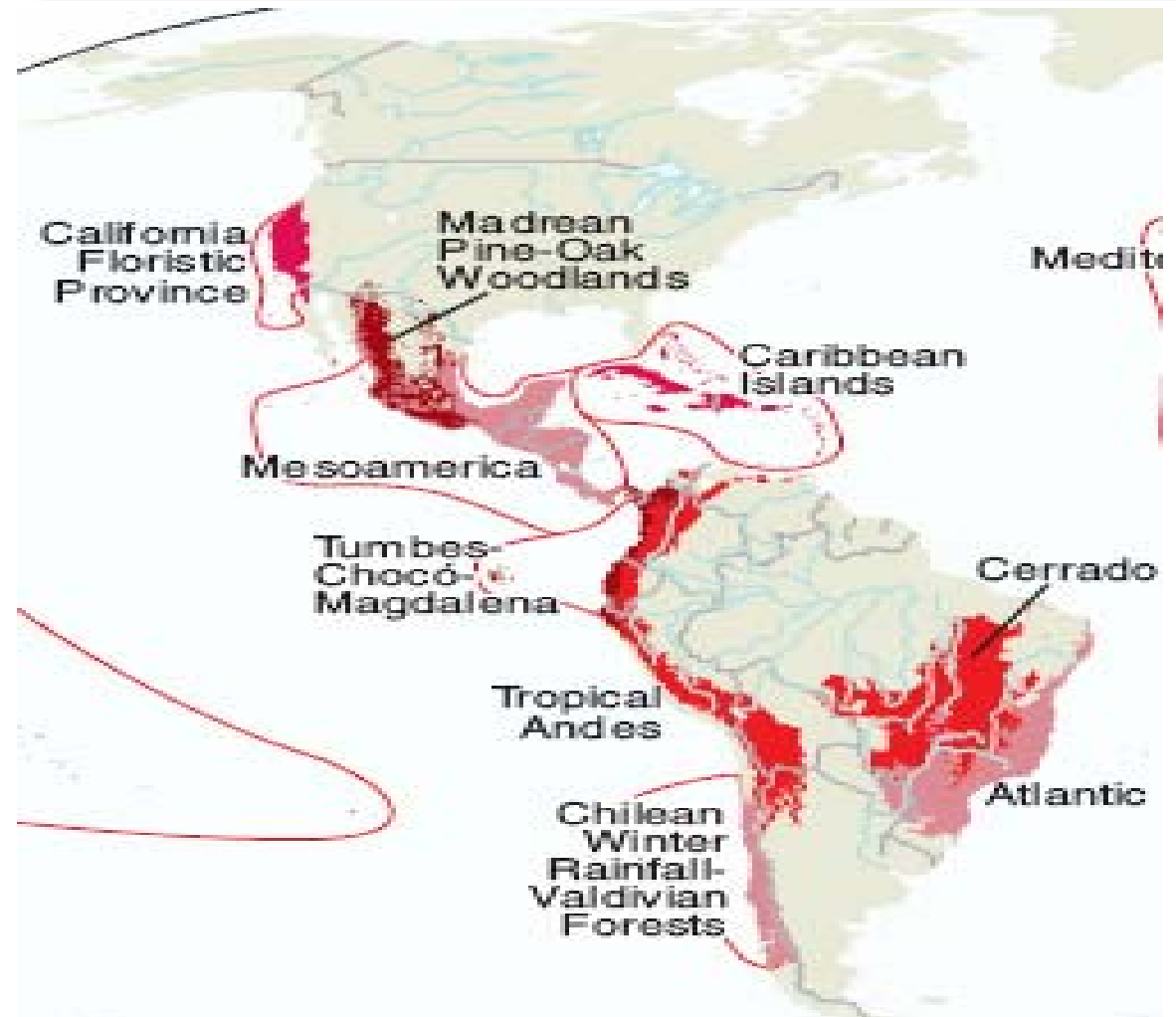
## Globally threatened vertebrate species by region

|                                | <i>Mammals</i> | <i>Birds</i> | <i>Reptiles</i> | <i>Amphibians</i> | <i>Fishes</i> | <i>Total</i> |
|--------------------------------|----------------|--------------|-----------------|-------------------|---------------|--------------|
| Africa                         | 294            | 217          | 47              | 17                | 148           | 723          |
| Asia and<br>the Pacific        | 526            | 523          | 106             | 67                | 247           | 1 469        |
| Europe                         | 82             | 54           | 31              | 10                | 83            | 260          |
| Latin America<br>and Caribbean | 275            | 361          | 77              | 28                | 132           | 873          |
| North America                  | 51             | 50           | 27              | 24                | 117           | 269          |



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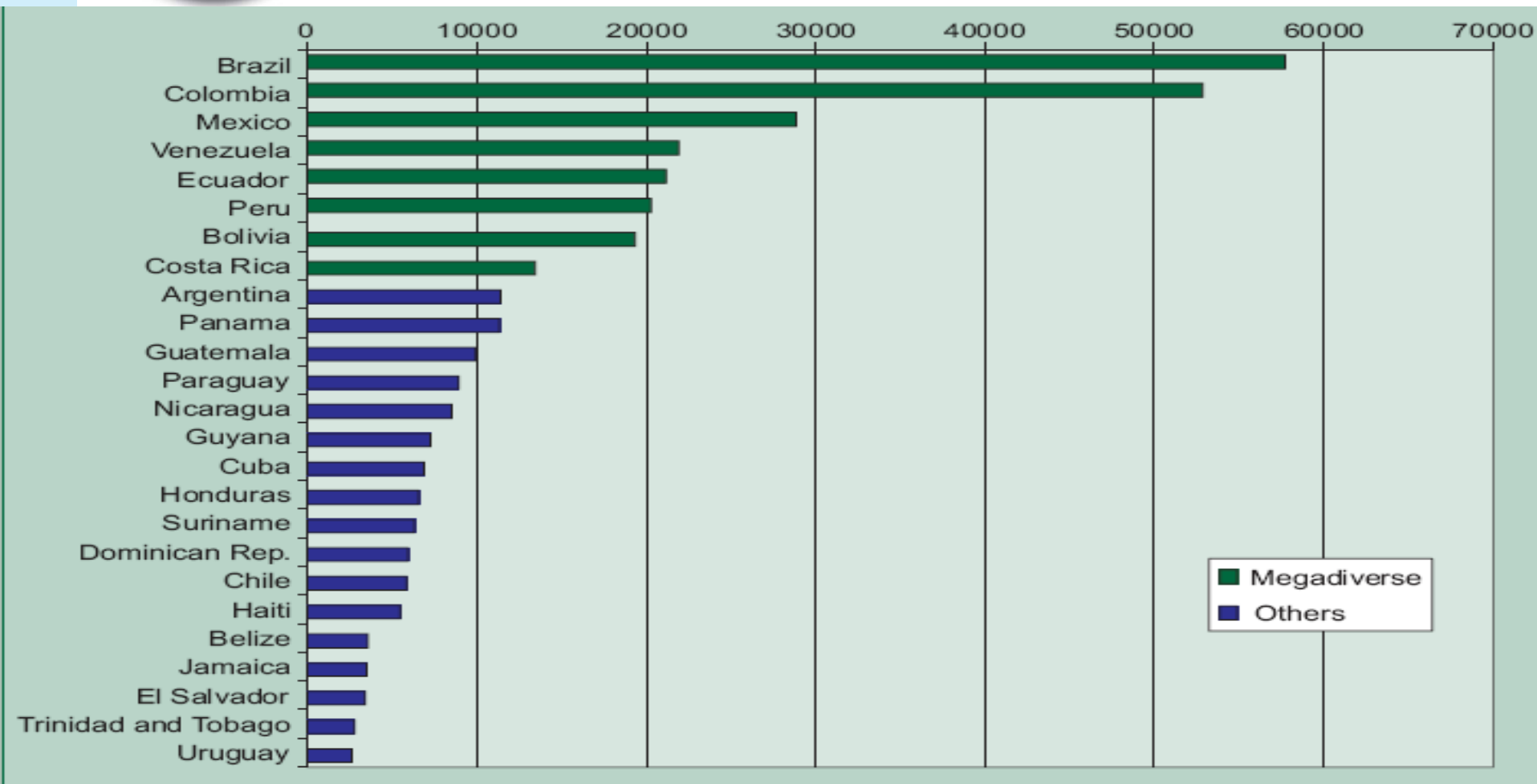
## Map of Biodiversity Hotspots










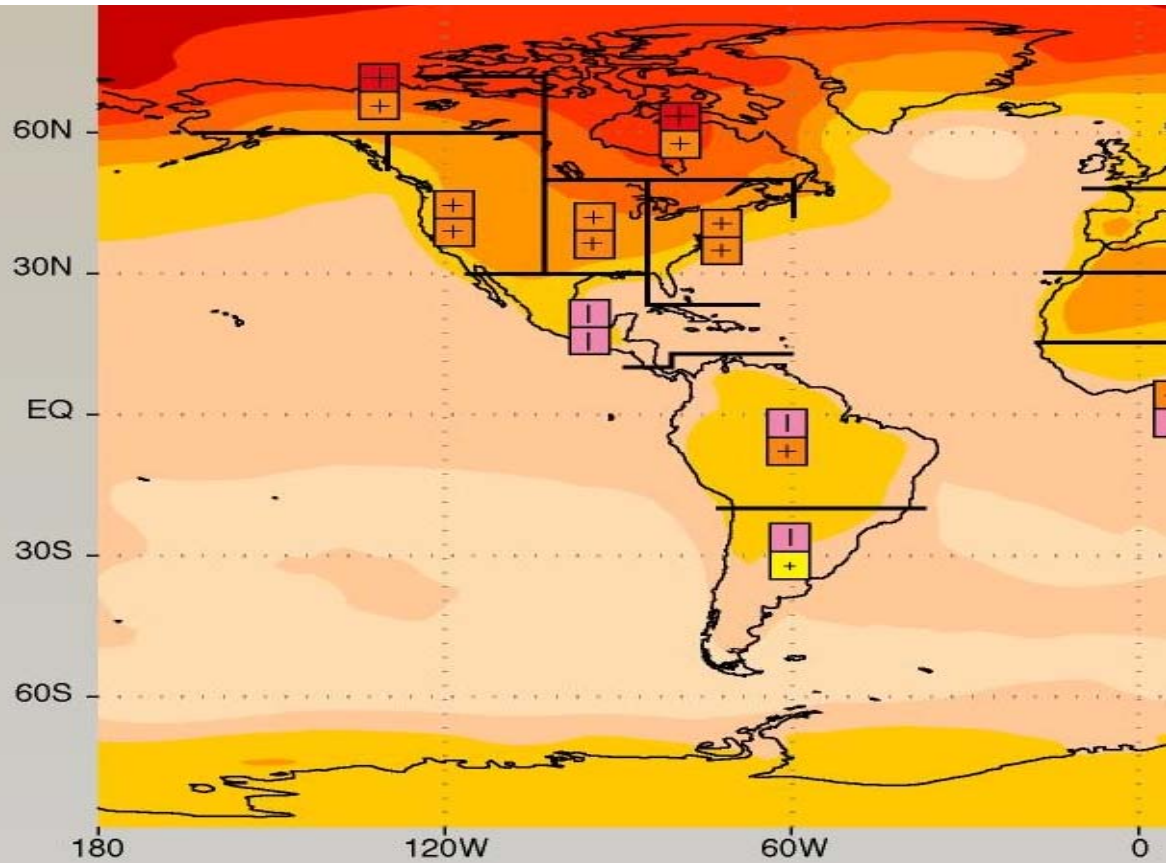
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## Biodiversity in Latin America and the Caribbean (number of flora and vertebrate fauna species)



# Climate change

-  Much greater than average warming
-  Greater than average warming
-  Less than average warming
-  Inconsistent magnitude of warming
-  Cooling



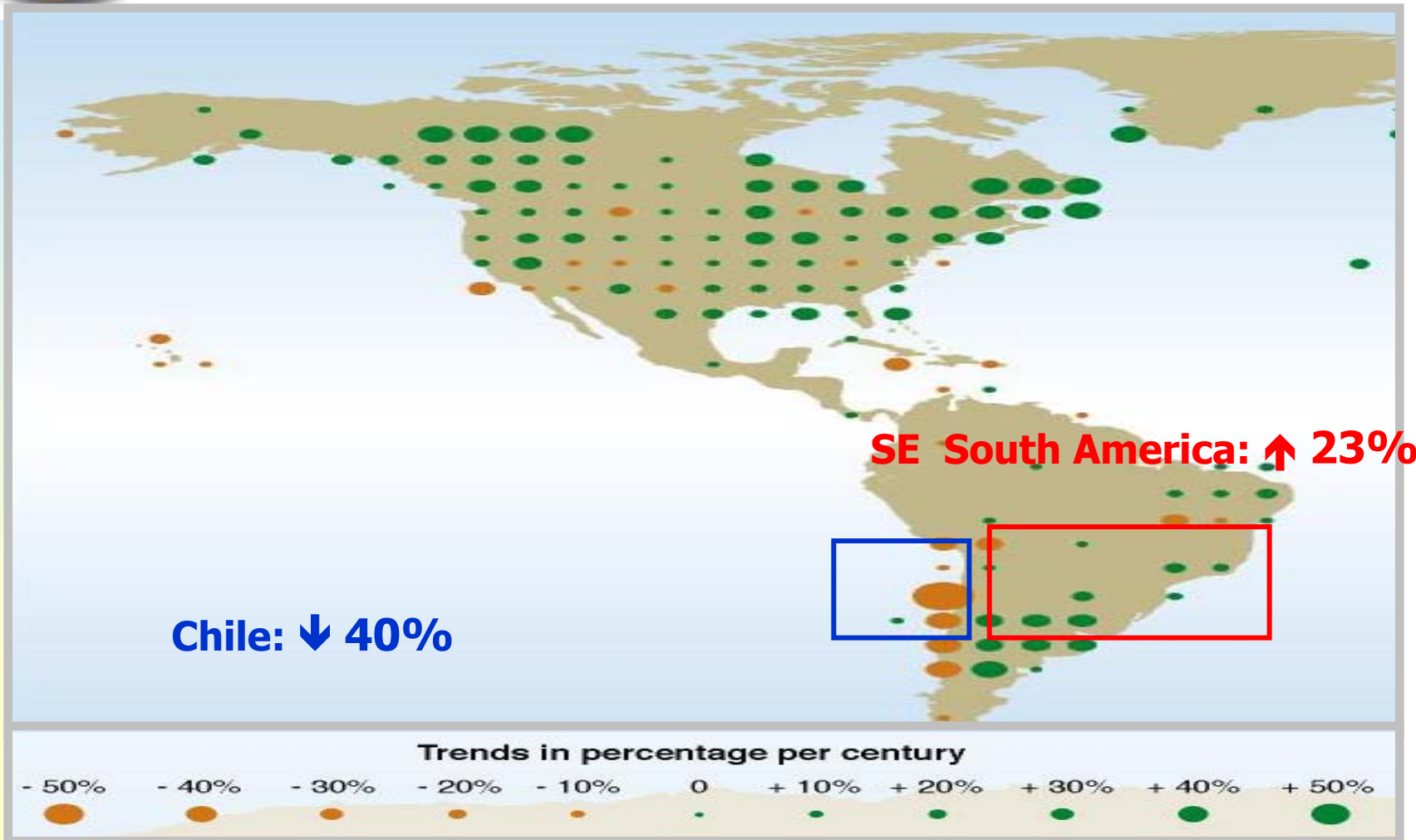
Change in global mean temperature (°C)





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## Annual precipitation trends 1900-2000





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# Trans Boundary Water Resources Management Proposed and under Execution Projects

## Technical Cooperation

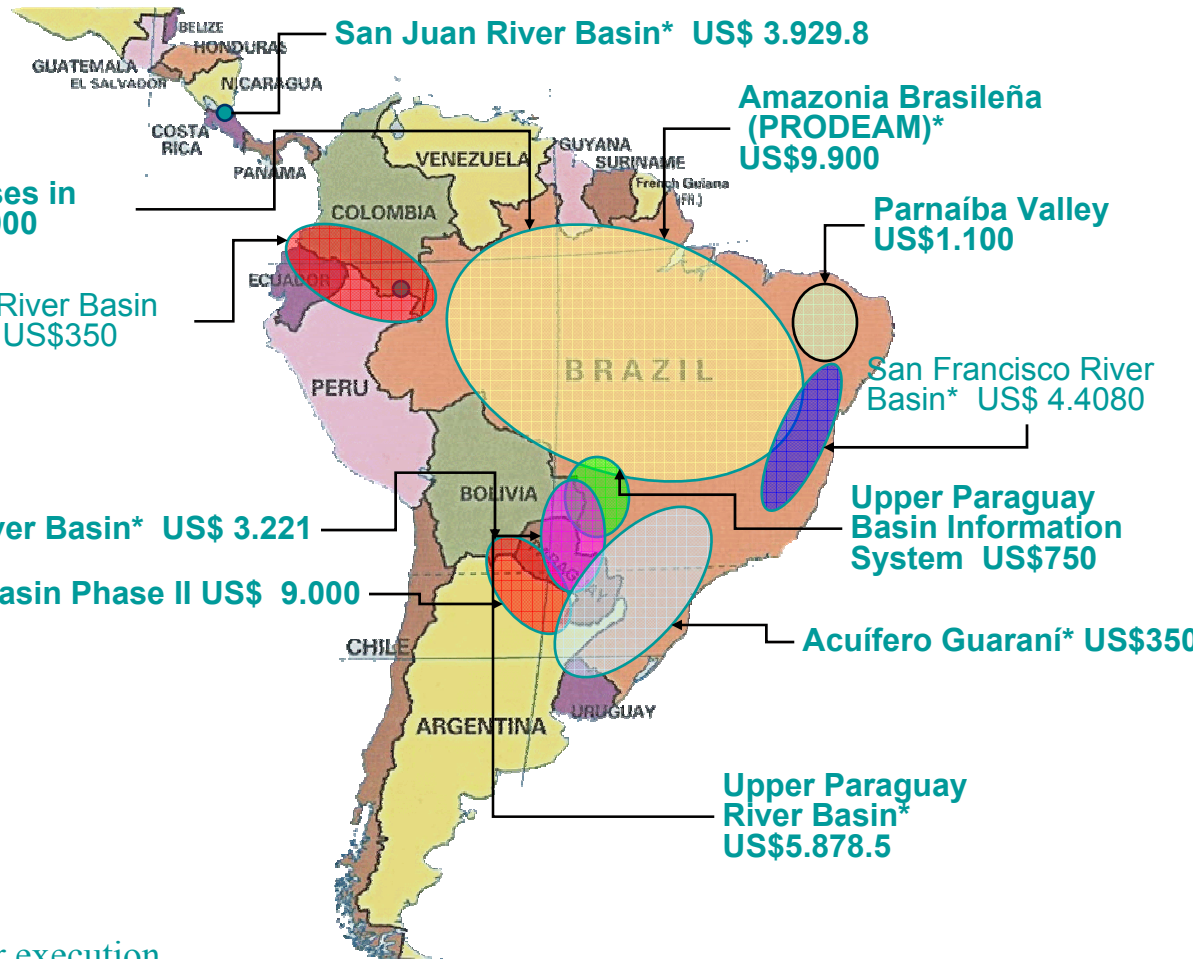
Water Resources in  
Brazil\* US\$ 9.900

Putumayo River Basin  
(Block B) \* US\$350

Bermejo River Basin\* US\$ 3.221

Bermejo River Basin Phase II US\$ 9.000

\* Under execution

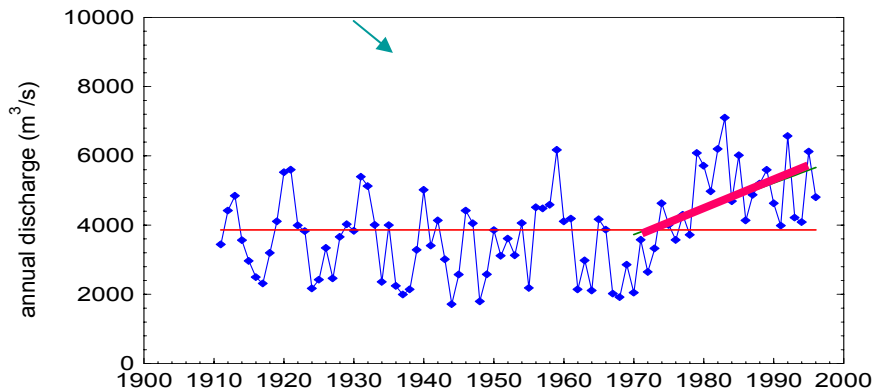




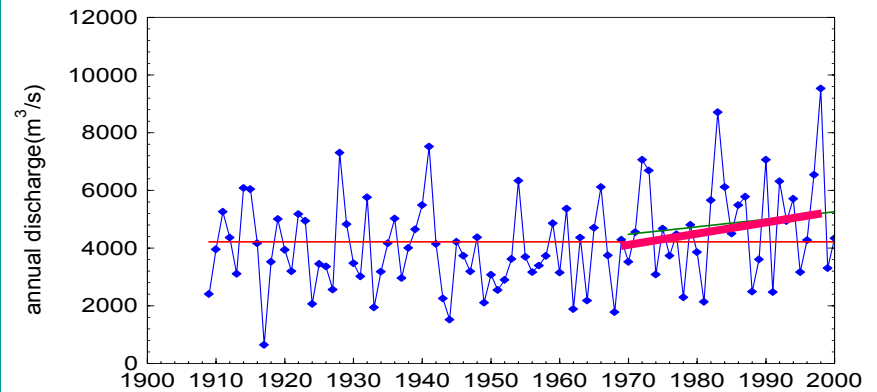
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## Changes in river discharges Rio de la Plata basin

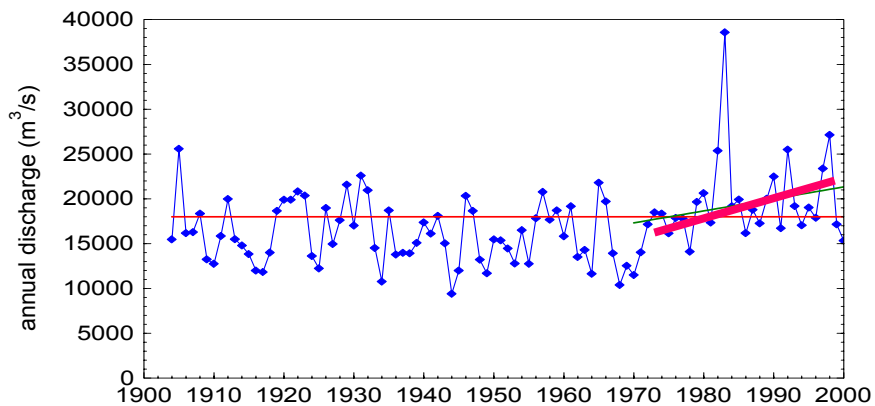
### Paraguay River - Puerto Bermejo



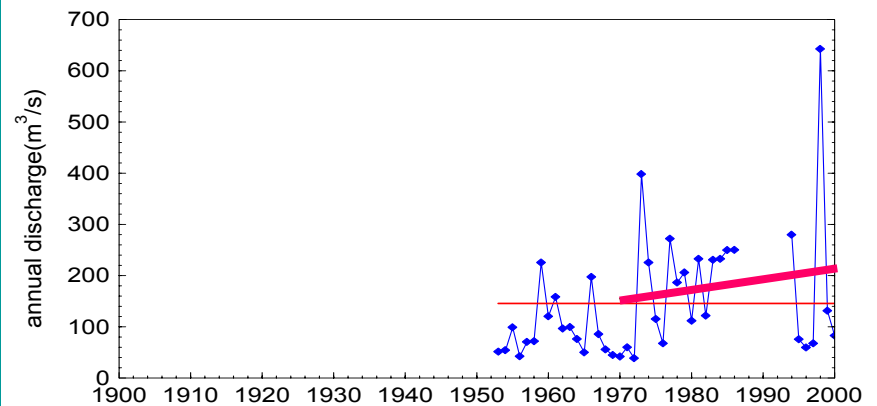
### Uruguay River- Paso de los Libres



### Paraná River - Corrientes



### Salado River - RP 70



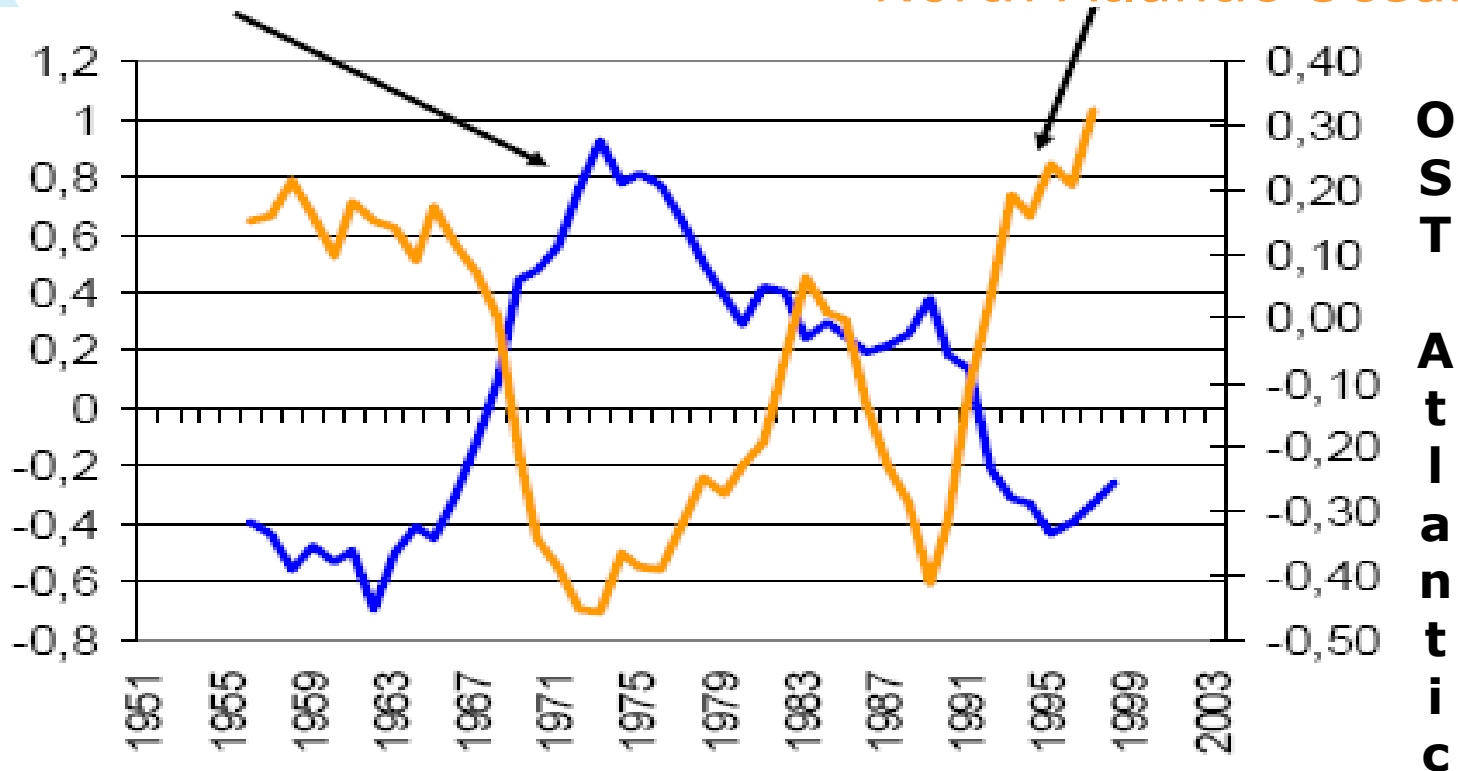


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Minimum volume

Temperature of  
North Atlantic Ocean

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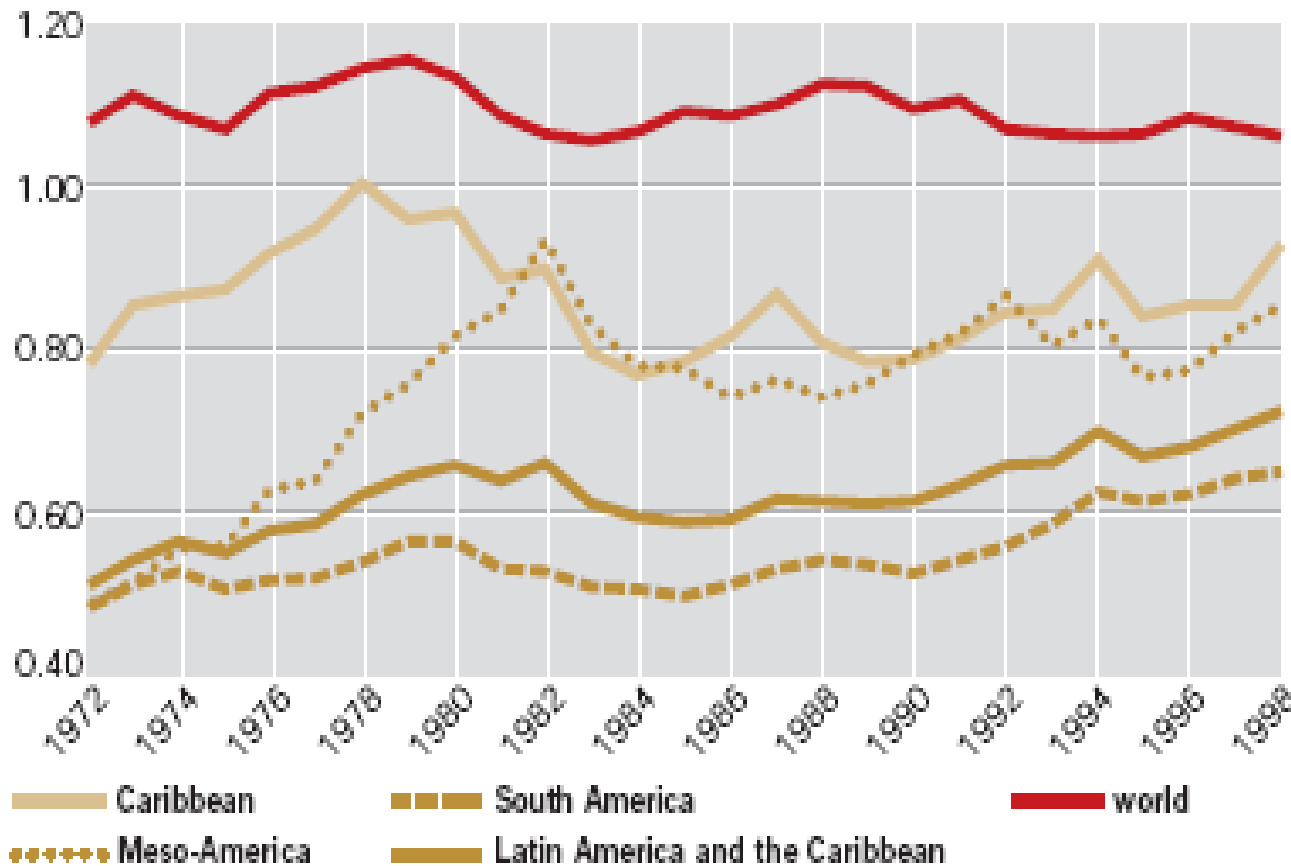
Ocean Surface Temperature (OST)



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## Air Pollution: CO<sub>2</sub> emissions (tons carbon per capita/year)

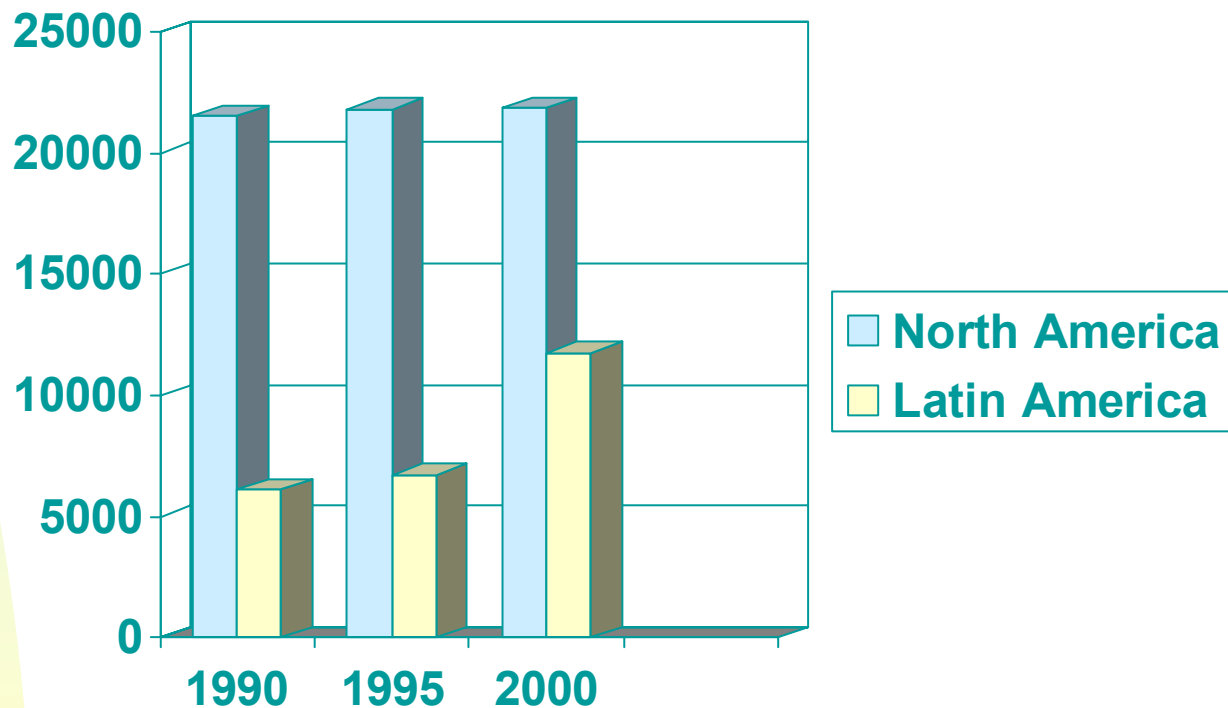
Average industrial carbon emission in Latin America & the Caribbean in 1998 was 0.73 tons/year, compared to the global average of 1.06 tons





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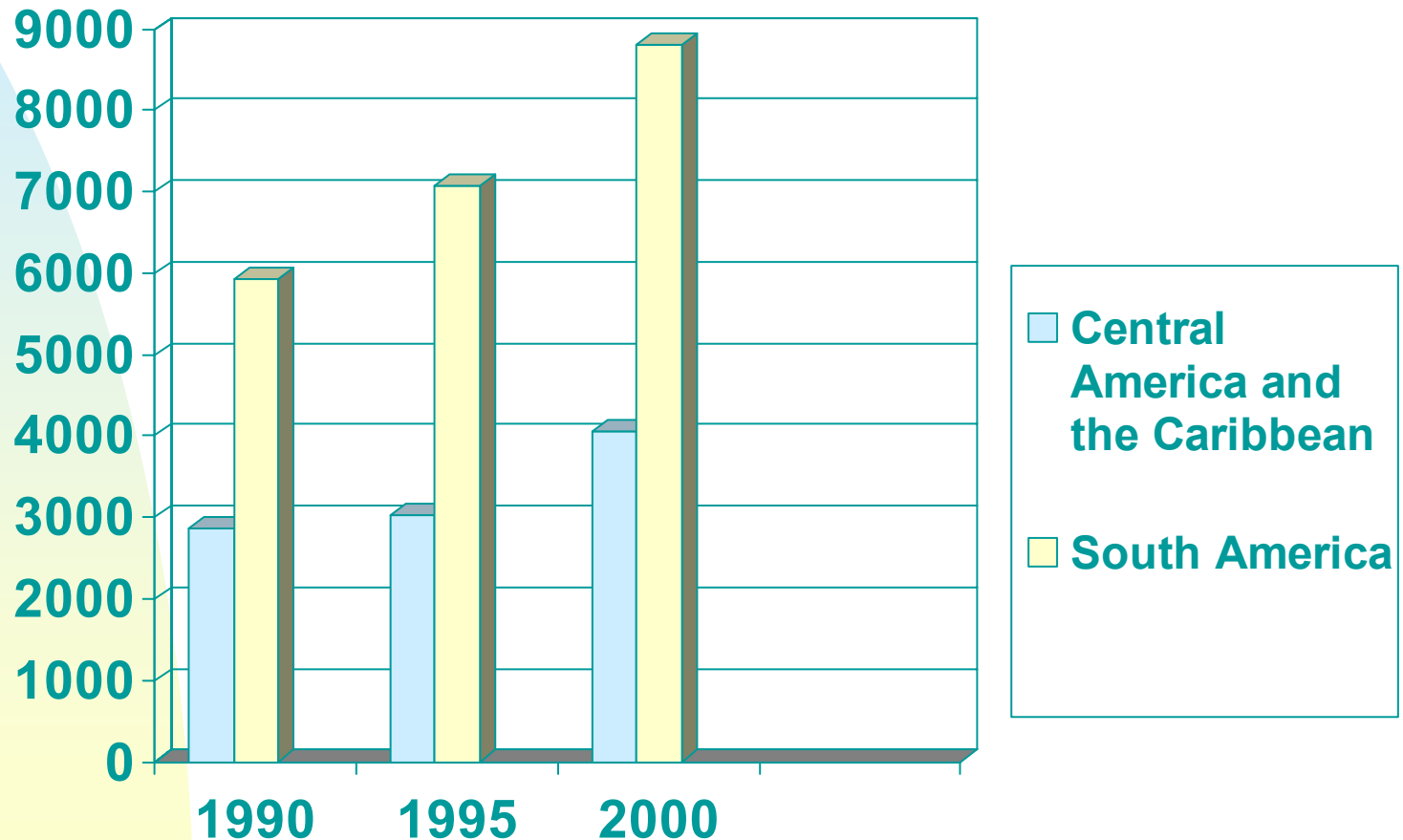
# Air Pollution: NO<sub>2</sub> Emissions (metric tons)





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# Air Pollution: Sox emissions (thousand metric tons)





# Chemicals

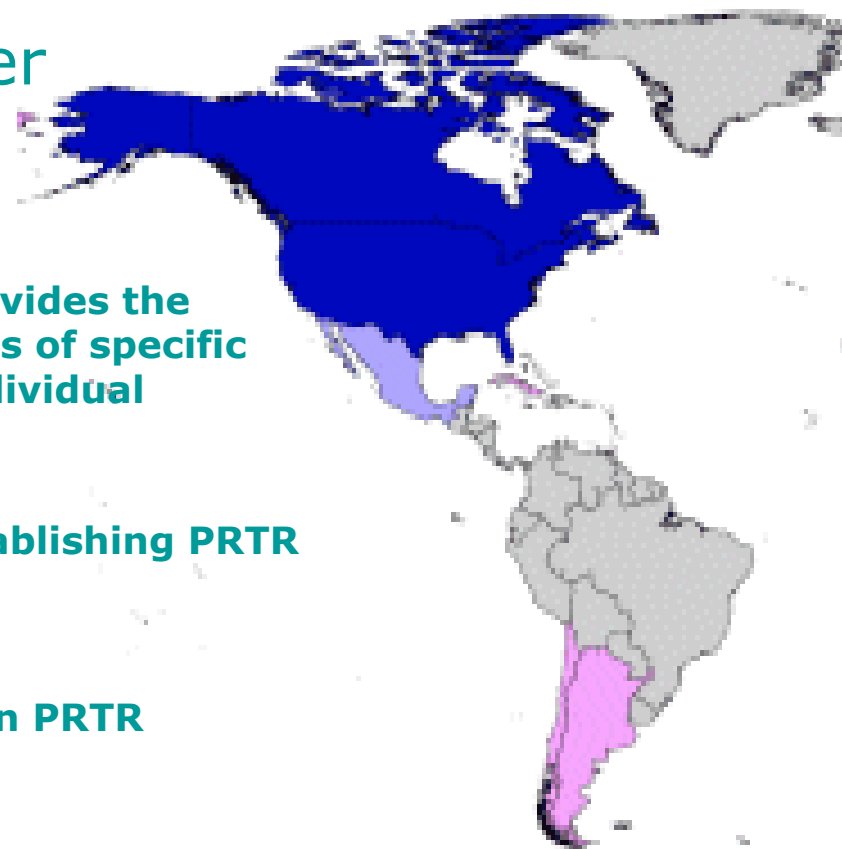
## Pollutant Release and Transfer Register (PRTR)

**Country has operating PRTR that provides the public with access to data on releases of specific substances to air, water and land individual facilities**

**Country has taken steps toward establishing PRTR**

**Country has demonstrated interest in PRTR**

**No activity**





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# Chemicals

## Principal pollutants and industries that produce them

### Textile

- ❖ Sodium hypochlorite
- ❖ Solids in suspension
- ❖ Sulfuric anhydride
- ❖ Organic material
- ❖ Textile mud

### Iron Industry

- ❖ Metal dust
- ❖ Salty dregs
- ❖ Nitrogen oxide
- ❖ Sulfur dioxide
- ❖ Particles in suspension
- ❖ Metal ashes
- ❖ Lead
- ❖ Barium

### Pharmaceutical Industry

- ❖ Benzene organic composed
- ❖ Cyanides
- ❖ Disinfectants
- ❖ Scents



## Principal pollutants and industries that produce them (continued)

### Agronutritional

- ❖ Oil
- ❖ Conservatives
- ❖ Organic material
- ❖ Fats

### Beverages

- ❖ Ammoniac
- ❖ Carbonic anhydride
- ❖ Heavy metals
- ❖ Carbonic anhydride

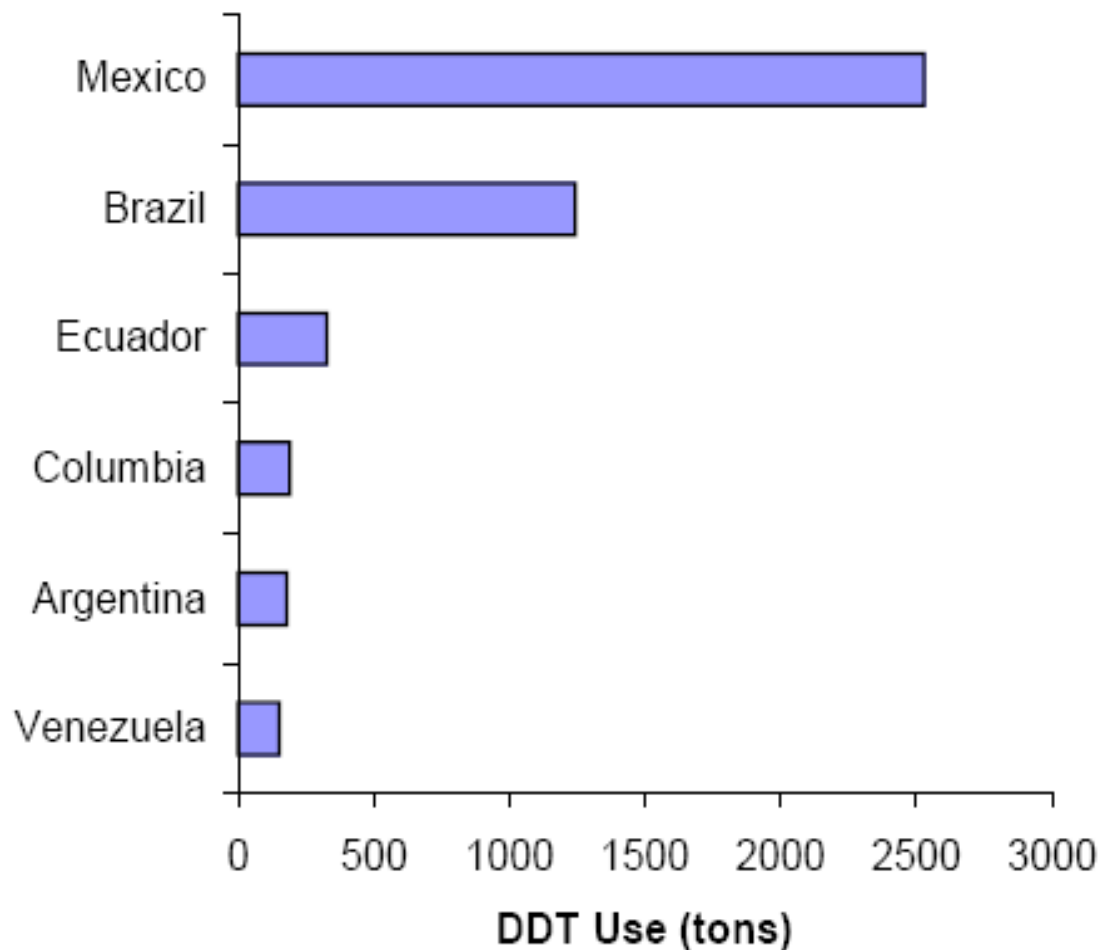
### Oils and soap

- ❖ Fat acids
- ❖ Oil emulsions
- ❖ Phosphorus
- ❖ Nitrogen



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## DDT use in malaria prevention programs in some Latin American countries 1993-1994





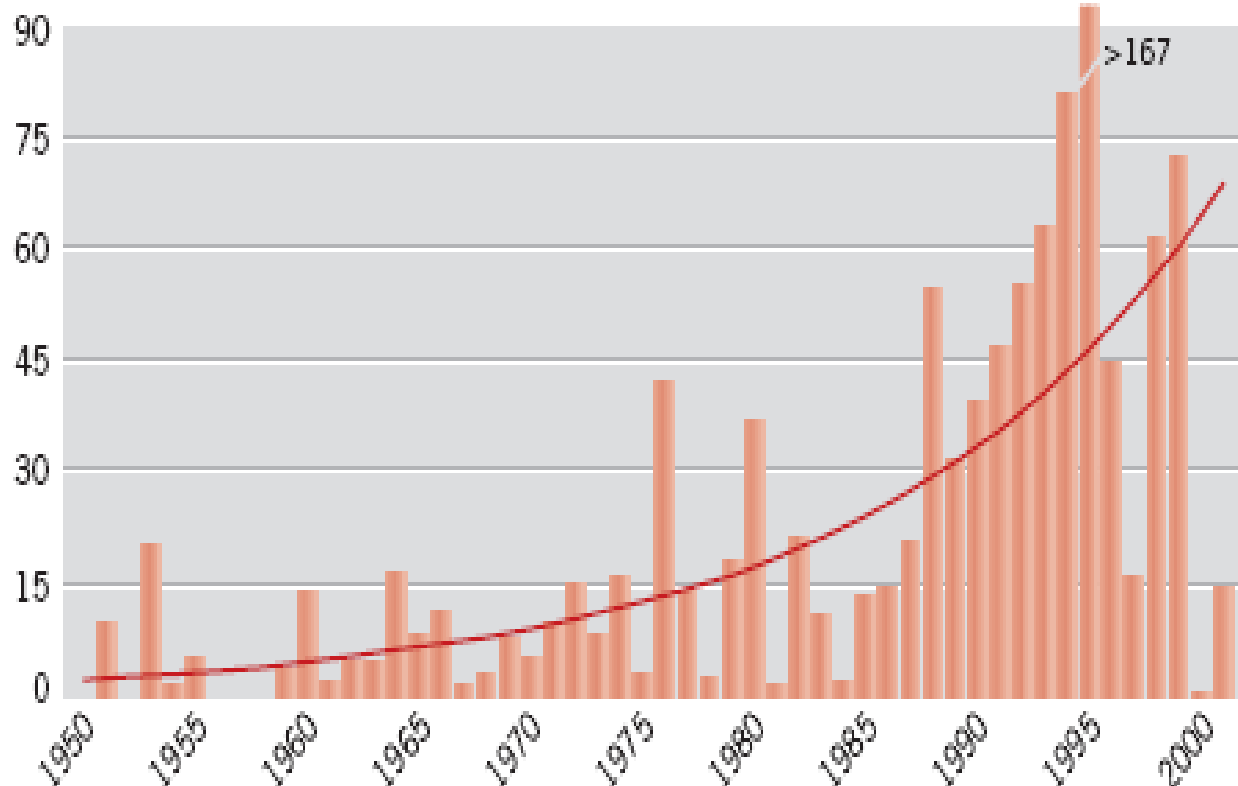
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# Natural Disasters

**In comparison with the 1960s, economic losses during the 1990s increased by a factor of almost nine.**

**The costliest disaster was hurricane Katrina (2005) which cost US\$ 125 Billions.**

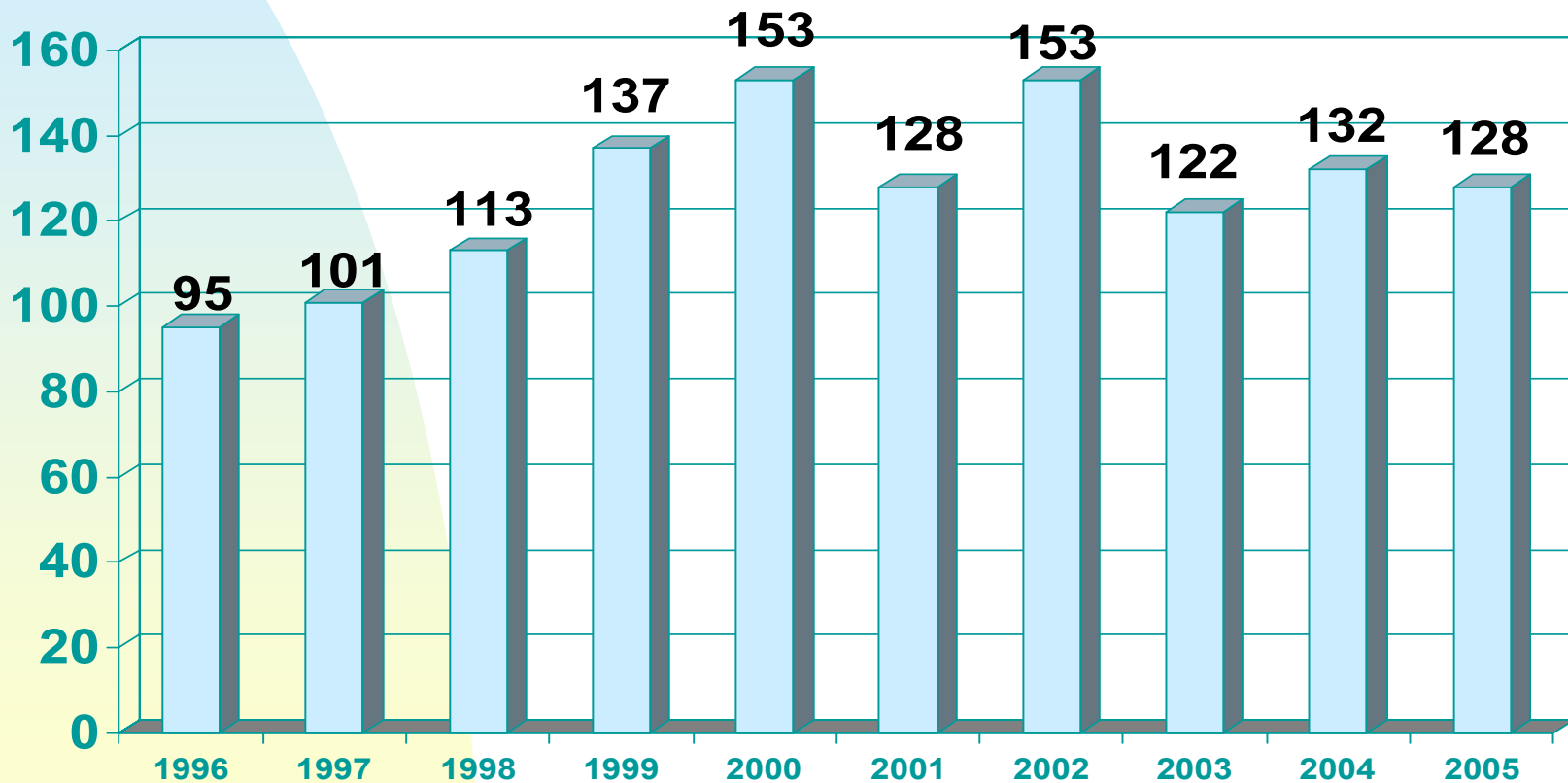
**Economic costs of global great natural disasters (US\$ billion), 1950–2000**





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## Reported disasters, by year in the American hemisphere



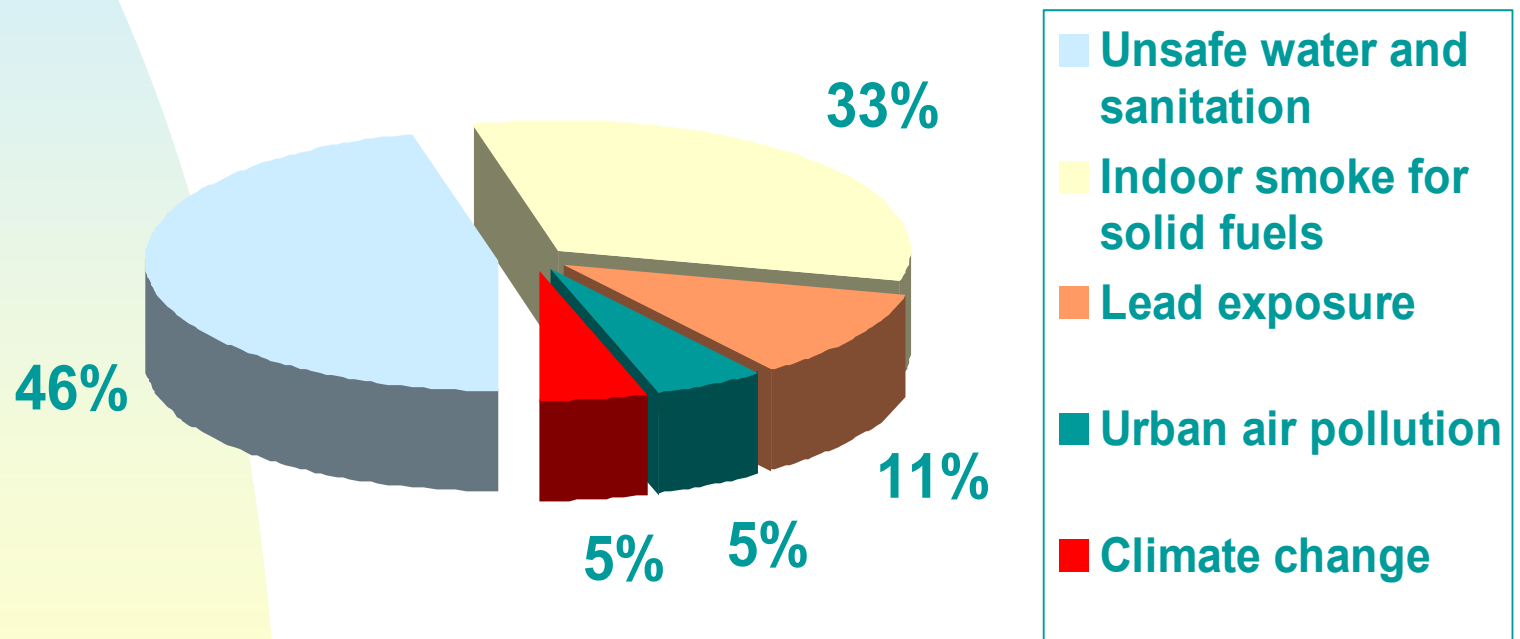
World disasters report 2006 by "The International Federation Of Red Cross and Red Crescent Societies"



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# Environmental Health

## The Disability – Adjustment Life Year (DALY)

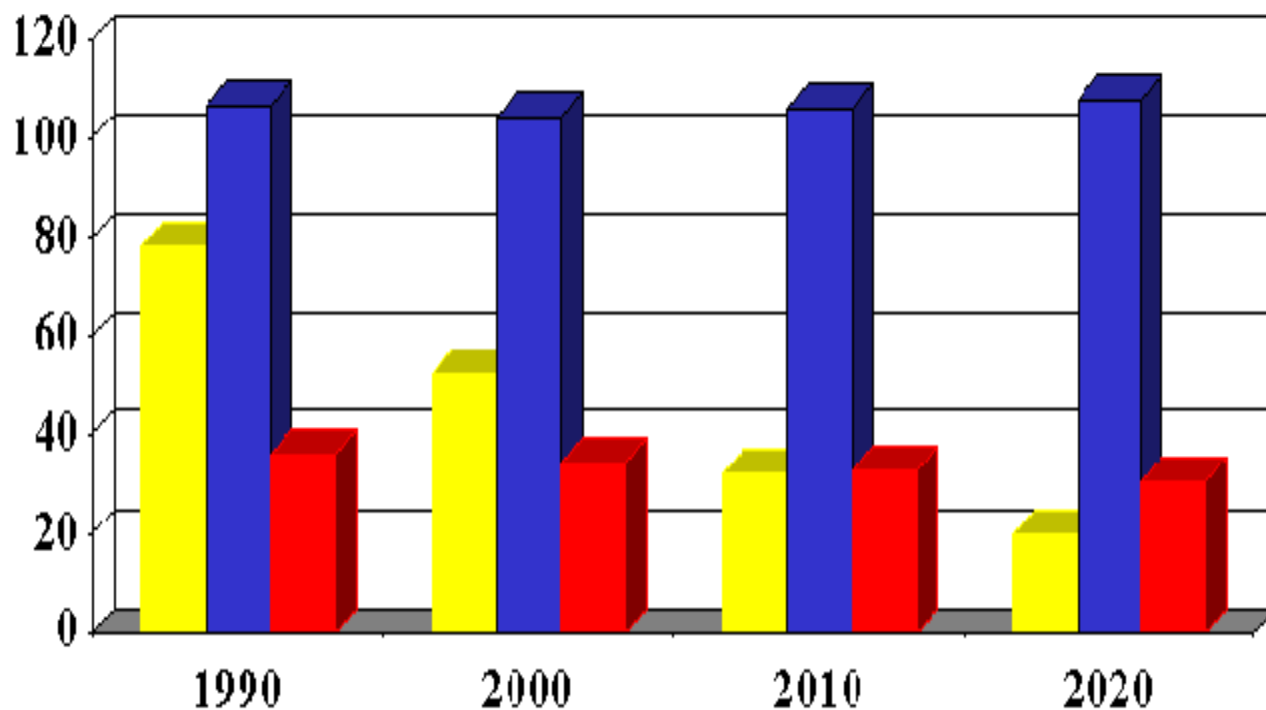


**Is a statistical measure of the human cost of sickness in terms of number of healthy years lost due to illness and disability**



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## Disability Adjusted Life Years (DALY's) for Latin America and the Caribbean

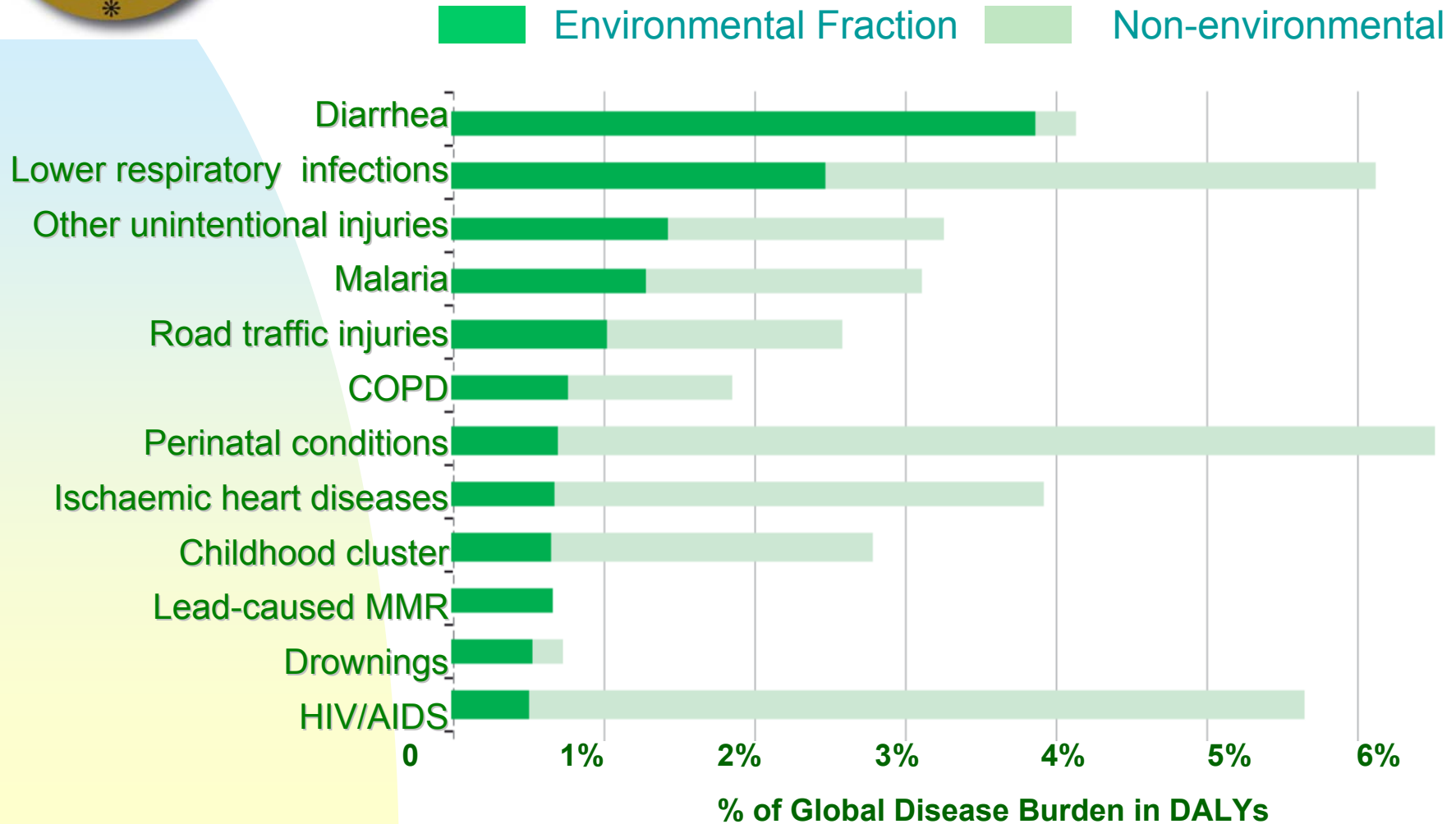


- Communicable Diseases, Malnutrition & Reproductive Health
- Non-Communicable Diseases
- Injuries



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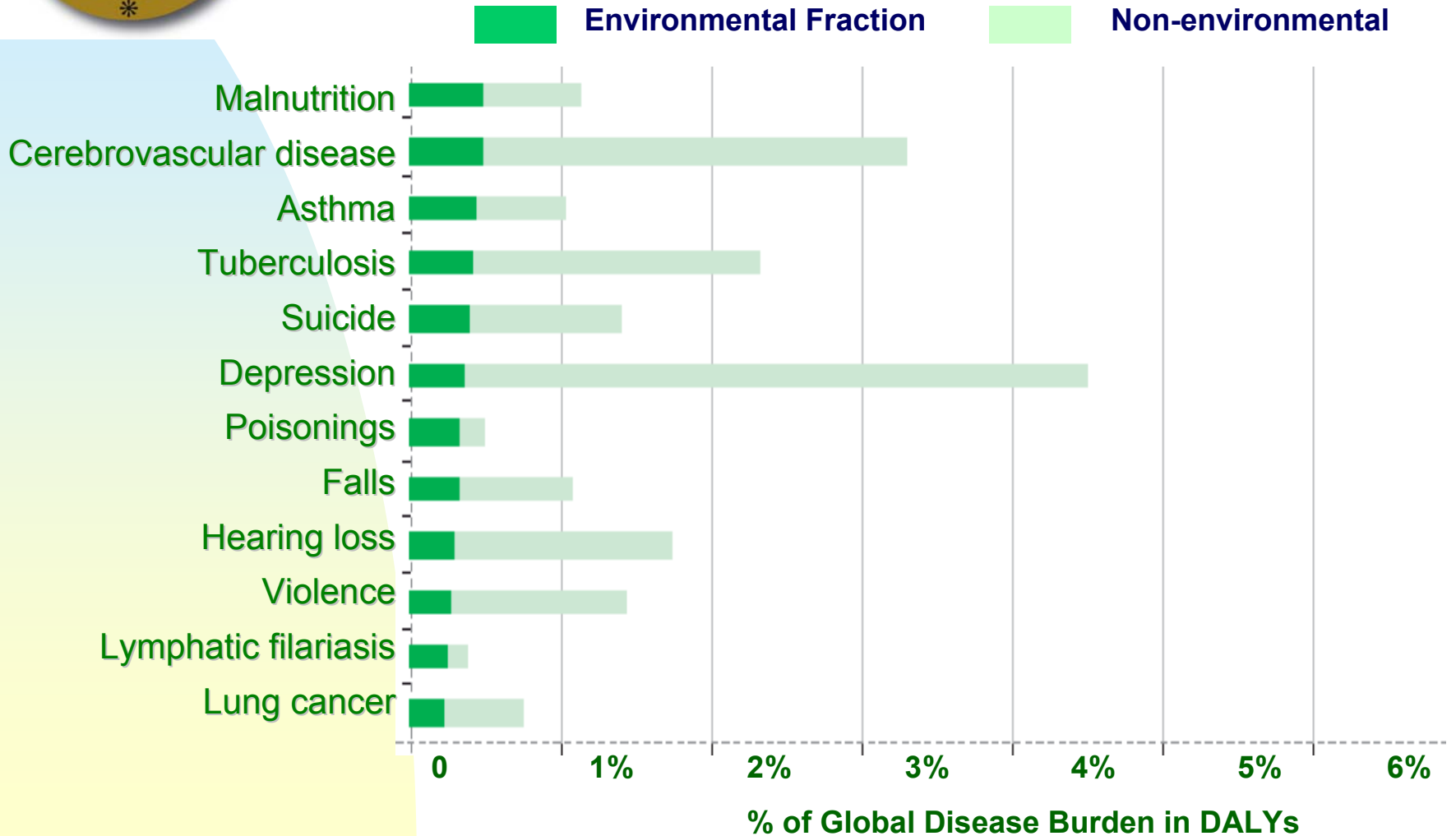
## Diseases with Largest Environmental Contributions





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## Diseases with largest environmental contributions



# Interaction between Health and Environment



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Intermediate  
Determinants

Health  
Outcomes

Structural Determinants

