

# **ARE CLIMATE RELATED DISASTERS ON THE RISE IN EUROPE?**

## **DATA TRENDS AND PERSPECTIVES FOR THE FUTURE**

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**UCL**  
Université  
catholique  
de Louvain

[www.emdat.be](http://www.emdat.be)

CRED – UC Louvain 2009



# What is EM-DAT?

- Emergency Events Database, created in 1988
- Maintained at CRED, Université Catholique de Louvain
- Project funded by OFDA/USAID
- Compile information on occurrence and effects of over 17500 natural and technological disasters from 1900 until present
- Objective: Provide evidence-base to humanitarian and development actors at national and international levels



# EM-DAT Criteria

**10 or more people reported killed**

and/or

**100 or more people reported**

**affected**

and/or

**Call for international assistance/  
declaration of a state of emergency**



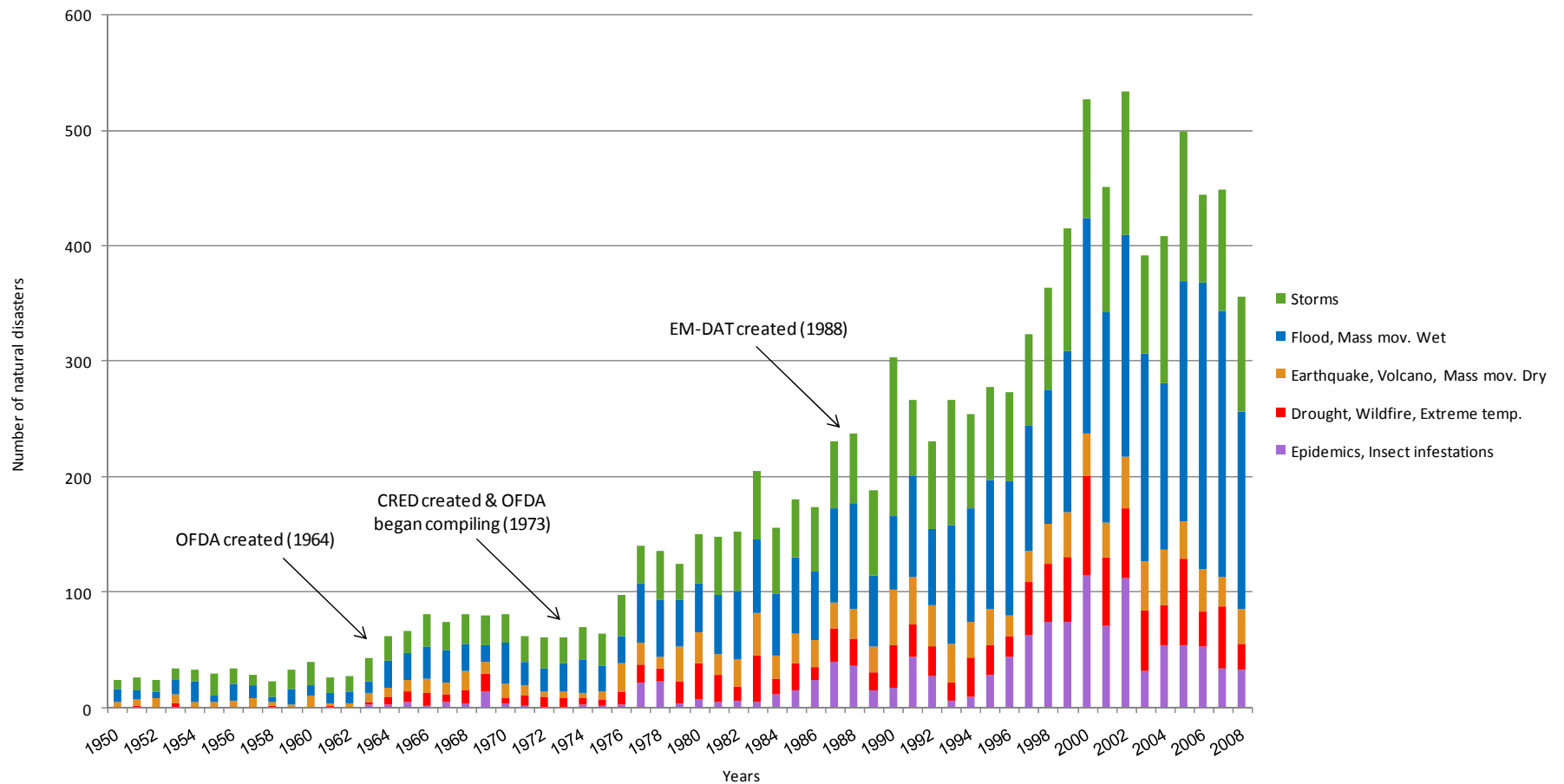
# EM-DAT Sources

**Database validated, updated daily and compiled from various sources according a priority list:**

- **United Nations**
- **Governmental sources**
- **US Government**
- **IFRC and NGO's**
- **Reinsurance Companies**
- **Insurance magazines**
- **Research Centres**
- **Media**



# Natural disasters in EM-DAT 1950-2008



Data recently cited by Al Gore in speech to American Association for the Advancement of Science, Chicago « This is creating weather-related disasters that are completely unprecedented »



# Natural disasters in 20 years 1989-2008

**WORLD : 6248**

**EUROPE: 953**

**EU Countries: 658**



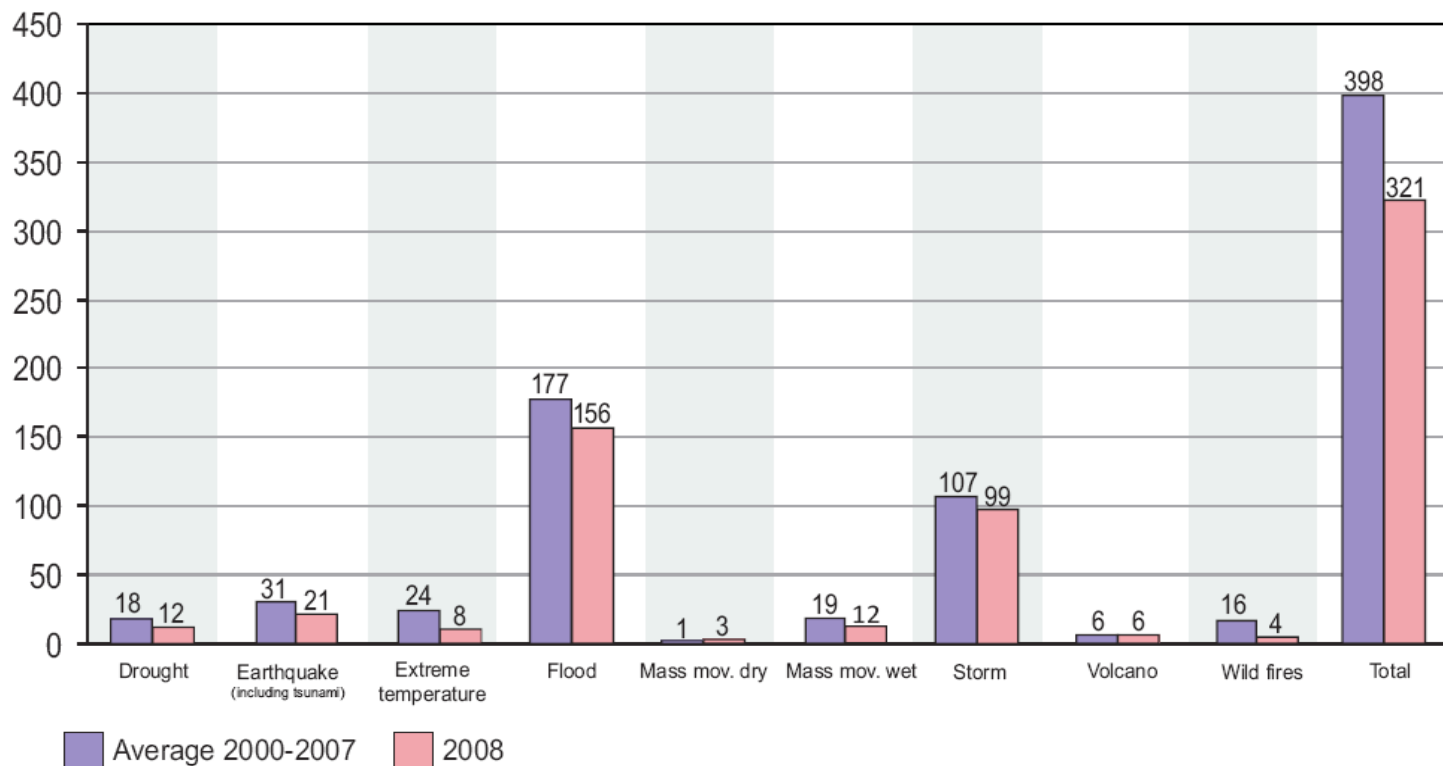
# GLOBAL FIGURES - 2008

- Occurrence: 321 country level disasters\*
- Total Deaths: 235,816
- Total Affected: 211,6 million
- Estimated Damages: 181 billion US\$

\* Epidemics and Insect Infestation excluded



# NATURAL DISASTER OCCURRENCE BY DISASTER TYPE (Av.2000-2007/2008)





# Where do disaster occur and how many? 1989-2008

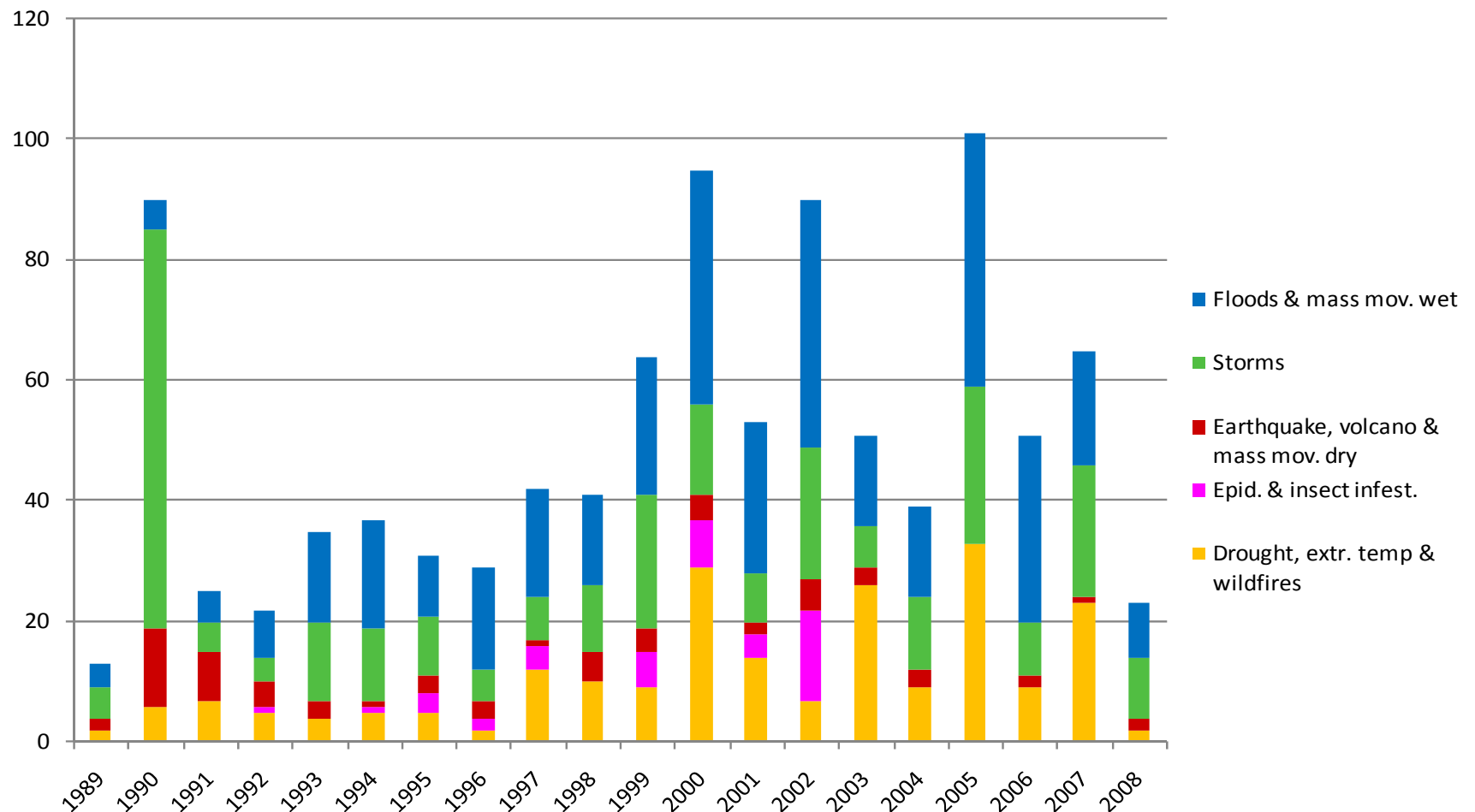
|              | Occurrence   | Killed           | Affected (million) | Econ damage (US\$ billion) |
|--------------|--------------|------------------|--------------------|----------------------------|
| Africa       | 874          | 23,735           | 233                | 18                         |
| Americas     | 1,628        | 87,145           | 108                | 727                        |
| Asia         | 2,521        | 1,011,721        | 3,858              | 907                        |
| Europe       | 953          | 88,671           | 29                 | 270                        |
| Oceania      | 272          | 3,560            | 18                 | 23                         |
| <b>Total</b> | <b>6,248</b> | <b>1,214,832</b> | <b>4,247</b>       | <b>1,946</b>               |

|              | Occurrence  | Killed      | Affected (million) | Econ damage (US\$ billion) |
|--------------|-------------|-------------|--------------------|----------------------------|
| Africa       | 14.0%       | 2.0%        | 5.5%               | 0.9%                       |
| Americas     | 26.1%       | 7.2%        | 2.5%               | 37.4%                      |
| Asia         | 40.3%       | 83.3%       | 90.9%              | 46.6%                      |
| Europe       | 15.3%       | 7.3%        | 0.7%               | 13.9%                      |
| Oceania      | 4.4%        | 0.3%        | 0.4%               | 1.2%                       |
| <b>Total</b> | <b>100%</b> | <b>100%</b> | <b>100%</b>        | <b>100%</b>                |

- Human impact essentially concentrated in Asia: 83% killed; 91% affected
- Europe and Africa report a similar amount of disasters
- Asia: estimation of damage costs per capita= 225 US\$
- Europe: estimation of damage costs per capita= 325 US\$



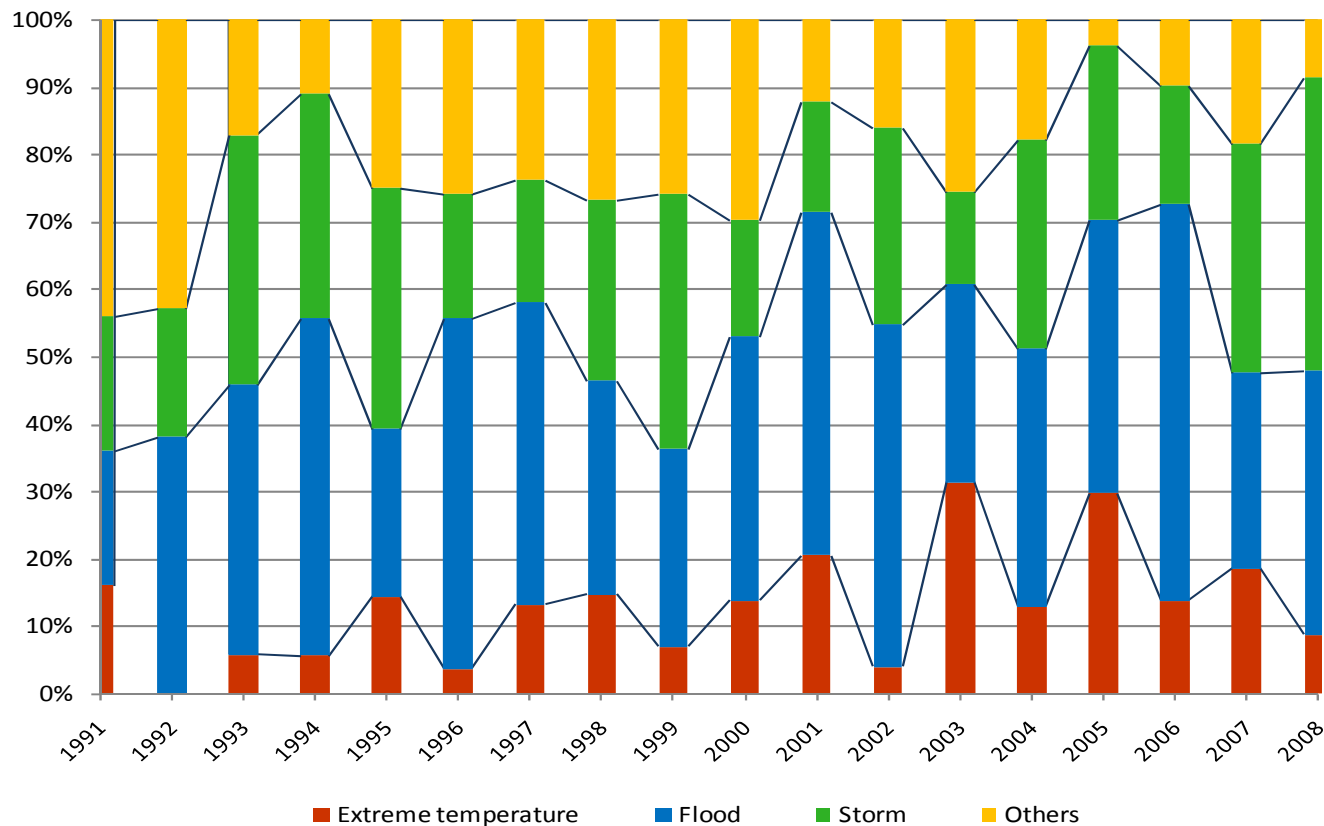
# Disasters in Europe\*: What kinds occur most frequently?



\*See countries included in the Press Pack



# Floods, storms and extreme temperatures: % share in Europe

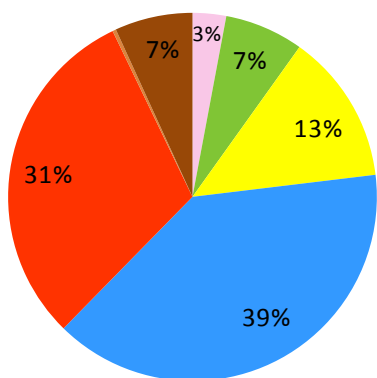


- 5 times more floods in last 4 years compared to first 4 years
- 10-fold increase in number of extreme temperature events (last 4-years vs first 4-years)
- Floods are taking a large share

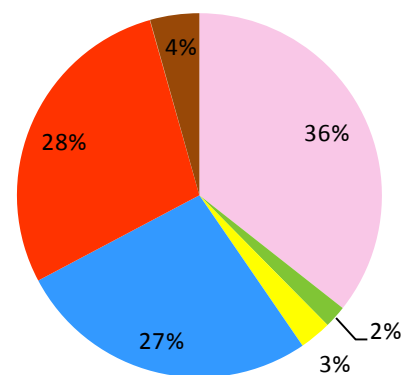


# Natural disasters in Europe: shares of the pie 1989-2008

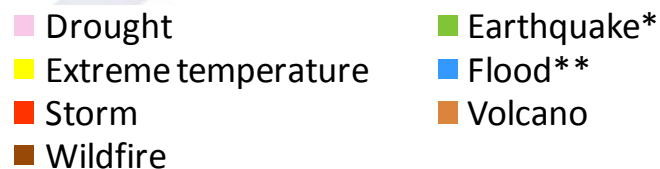
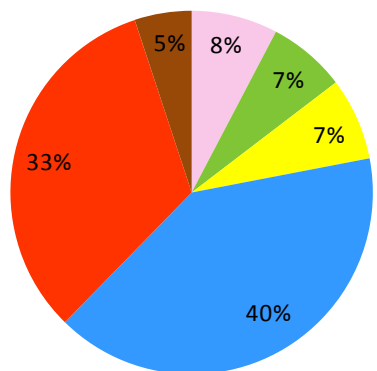
Disaster occurrence



No. affected people



Economic damages



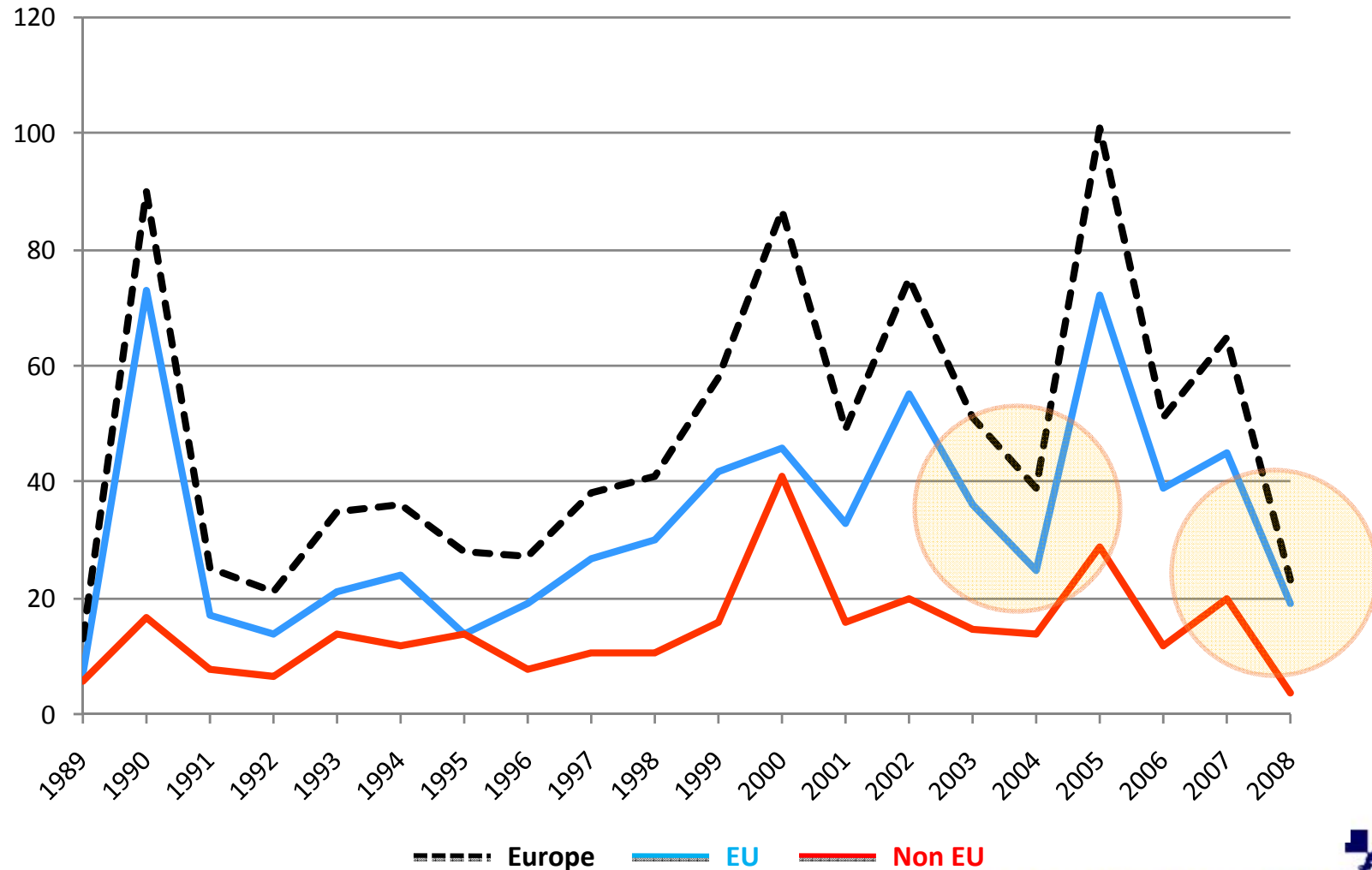
- Floods and storms are the major sources of natural perils
- Drought affected the largest number of people



\* Includes dry mass movements  
\*\* Includes wet mass movements



# How do disasters in EU compare to non EU countries?



# Which disasters affect people the most? 1989-2008

|               | Total victims | Disaster share |              |
|---------------|---------------|----------------|--------------|
| <b>Europe</b> | 29508730      | droughts 36%   | storms 28%   |
| EU            | 13941881      | droughts 43%   | storms 37%   |
| non EU        | 15566849      | floods 36%     | droughts 29% |



# Ranking Europe for disasters and their impact

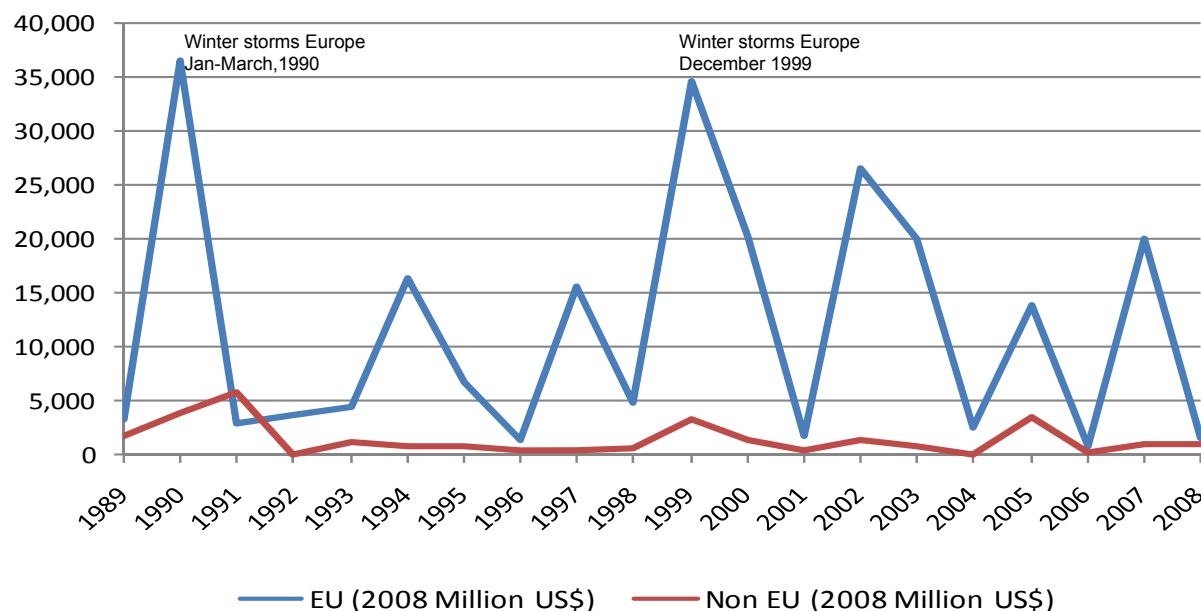
## Top 10 countries in 1989-2008

| Incidence                   | Victims           | Econ damage (1000 US\$)      |
|-----------------------------|-------------------|------------------------------|
| Russia                      | <b>Spain</b>      | Italy                        |
| <b>France</b>               | Russia            | <b>Germany</b>               |
| Romania                     | Albania           | United Kingdom               |
| Italy                       | <b>France</b>     | <b>France</b>                |
| United Kingdom              | Moldova Rep       | <b>Spain</b>                 |
| <b>Germany</b>              | Ukraine           | Greece                       |
| <b>Spain</b>                | Macedonia FRY     | Switzerland                  |
| Greece                      | United Kingdom    | Soviet Union                 |
| Bulgaria                    | Lithuania         | Denmark                      |
| Austria                     | <b>Germany</b>    | Austria                      |
| <b>Highest</b> 120 (Russia) | 6,044,944 (Spain) | 34,155 US\$ Million (Italy)  |
| <b>Lowest</b> 28 (Austria)  | 578,699 (Germany) | 4,922 US\$ Million (Austria) |

- High concentration in few countries (France, Spain, Germany)
- Russia most hit (wide geographical area)
- Italy the worst hit in terms of economic damages



# Where are the economic costs from disasters in Europe: comparing EU vs non EU



- EU countries account for the majority of the reported damages
- Difference in vulnerability patterns
  - EU particularly vulnerable in terms of economic damages
  - Non EU more vulnerable in terms of human impacts
- Total costs 1989-2008
 

|         |                      |
|---------|----------------------|
| Europe: | 269,967 US\$ million |
| EU:     | 240,386 US\$ million |
| non EU: | 29,581 US\$ million  |





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