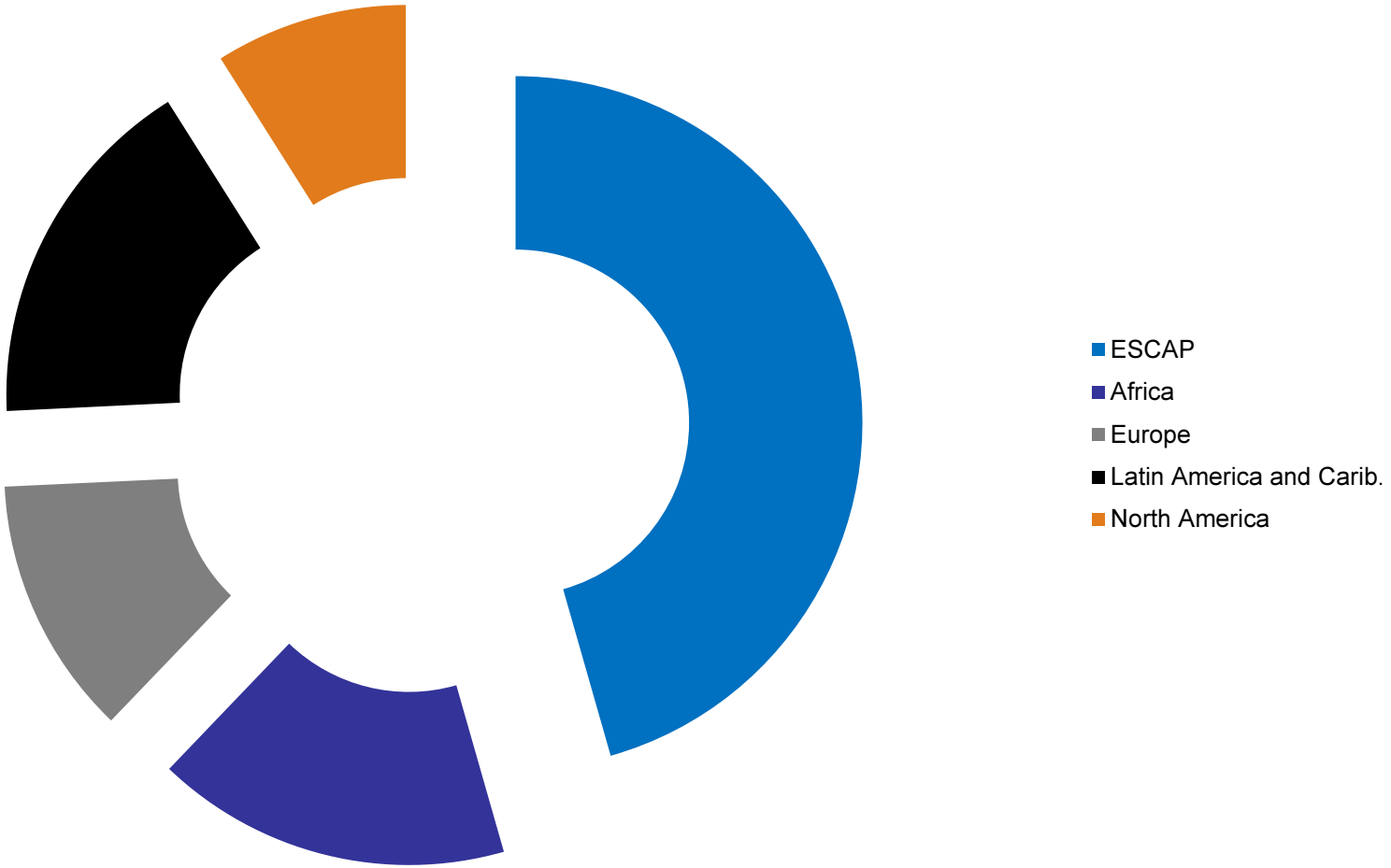
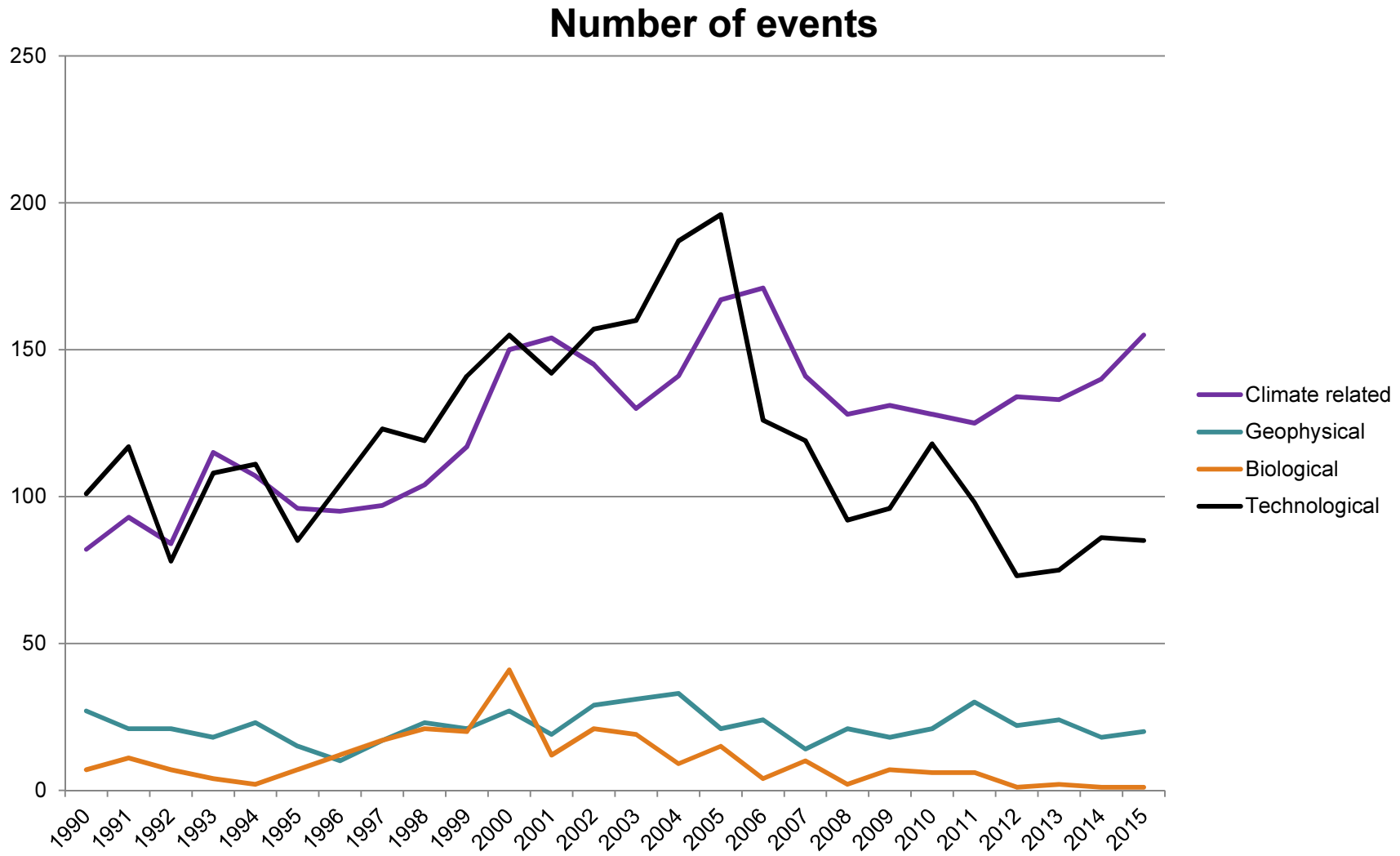
UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

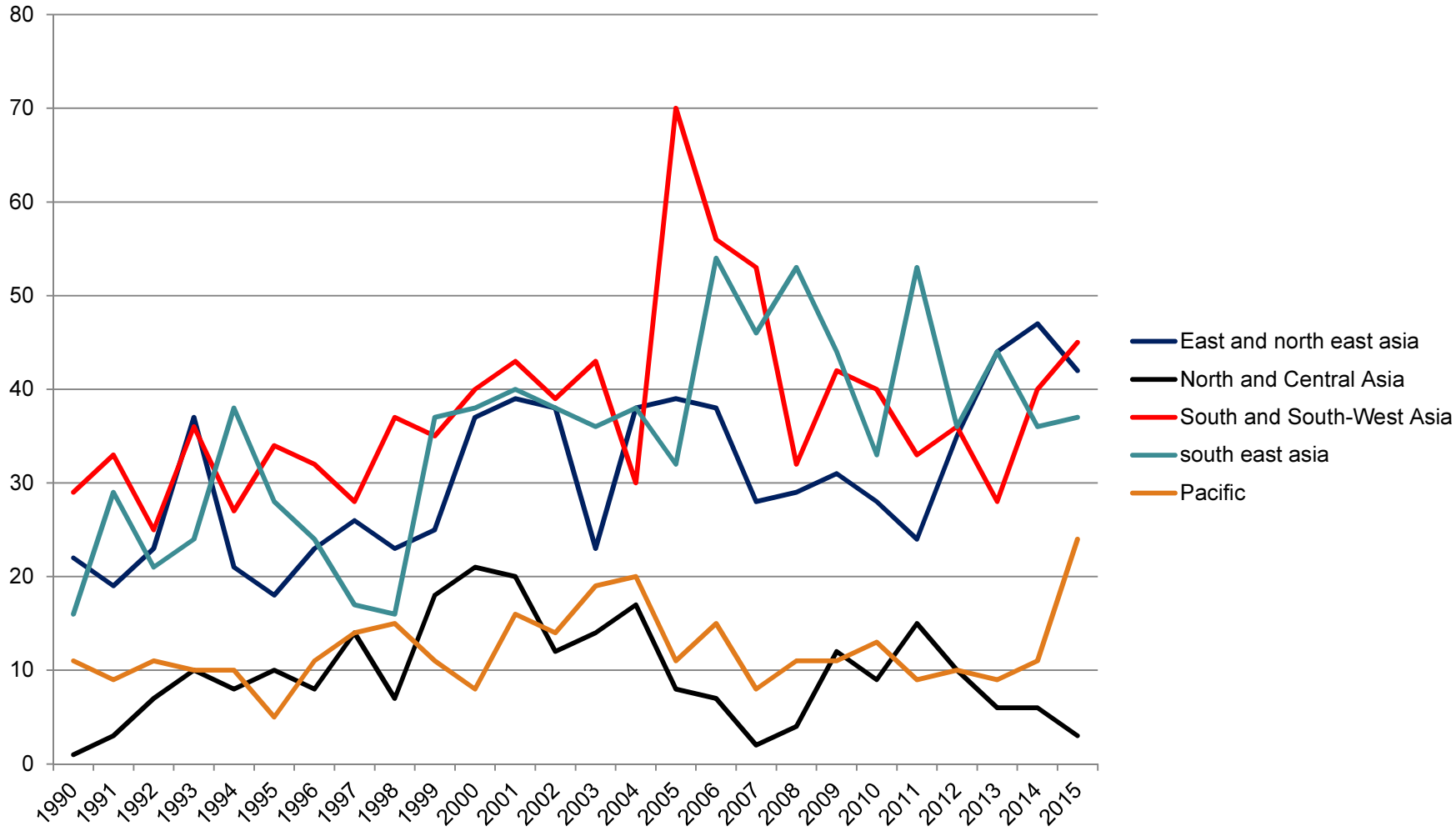
Climate change and disaster risk

Number of climate-change related disaster occurrences, 2011-2015

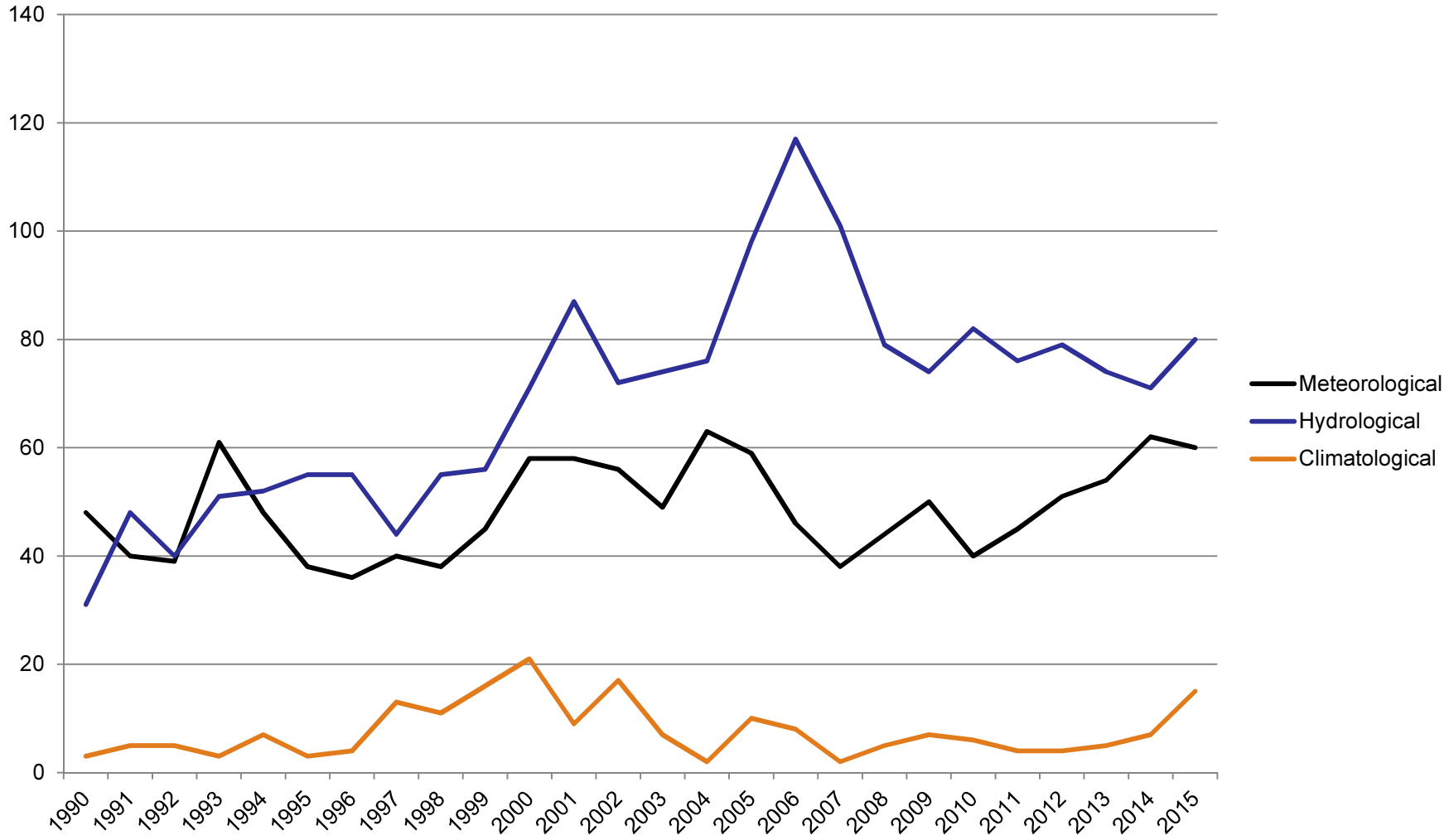



Number of events
250
200
150
100
50
0
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Climate related
Geophysical
Biological
Technological

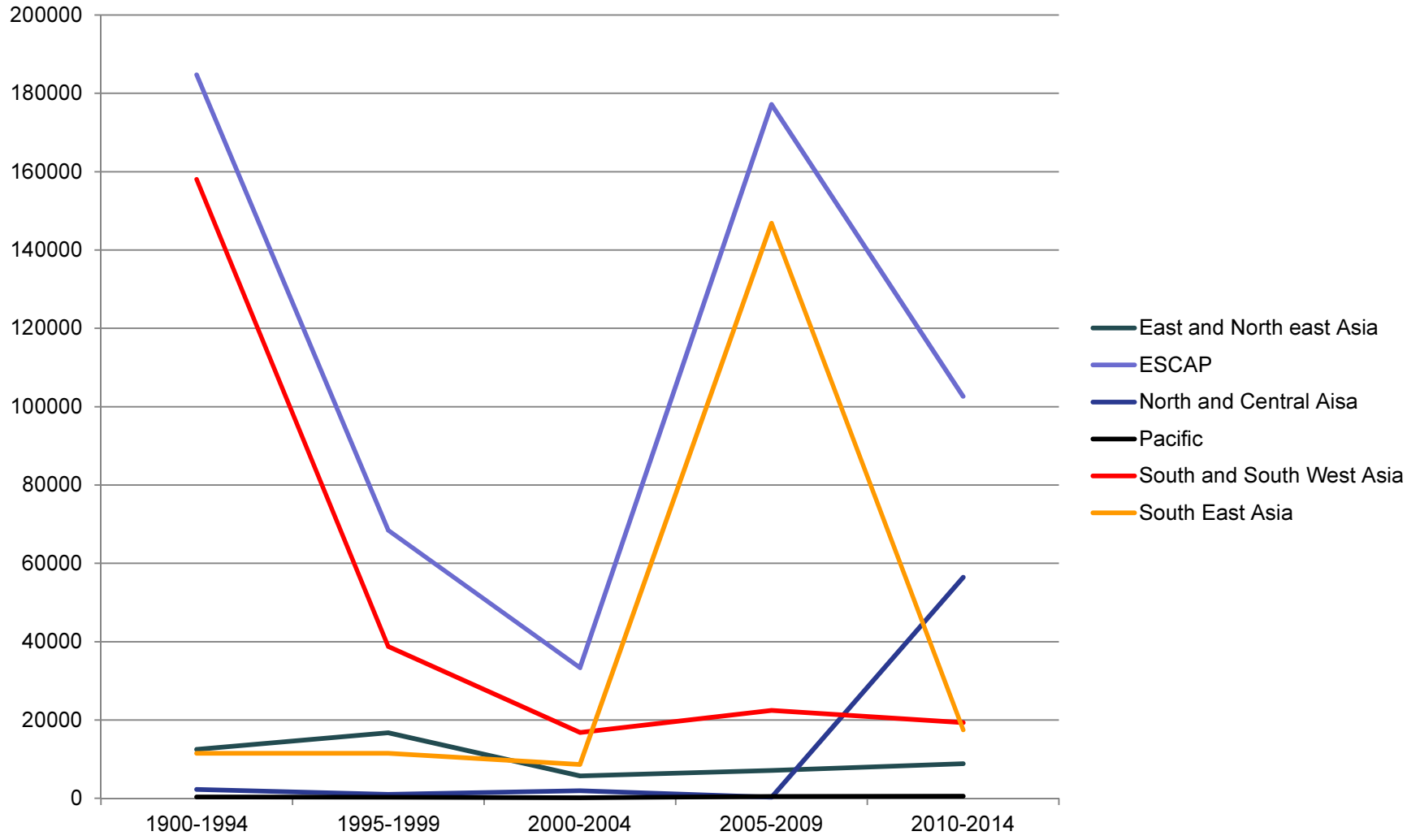
Climate-related disaster by subregions



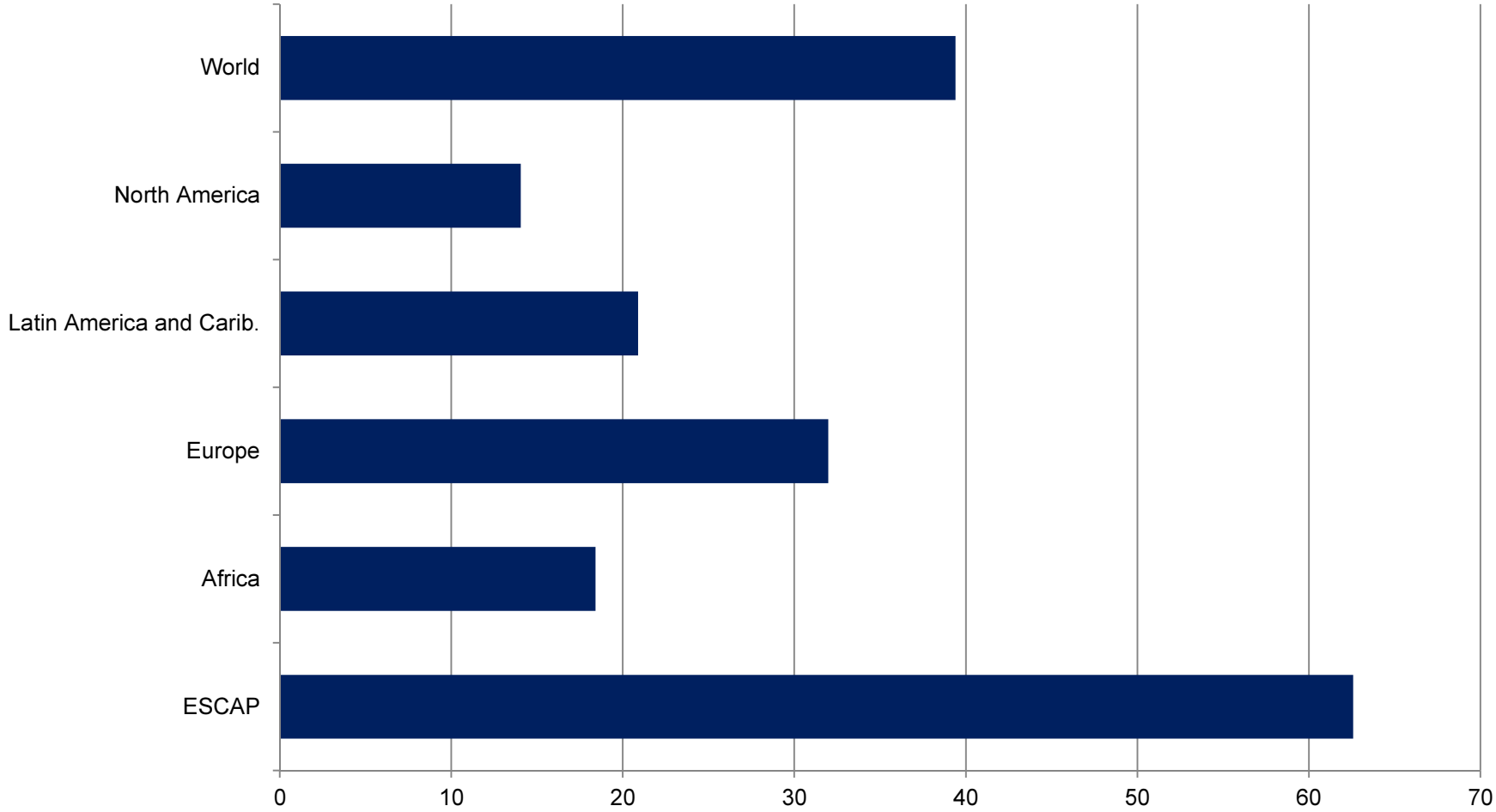
Number of Climate related disaster by type



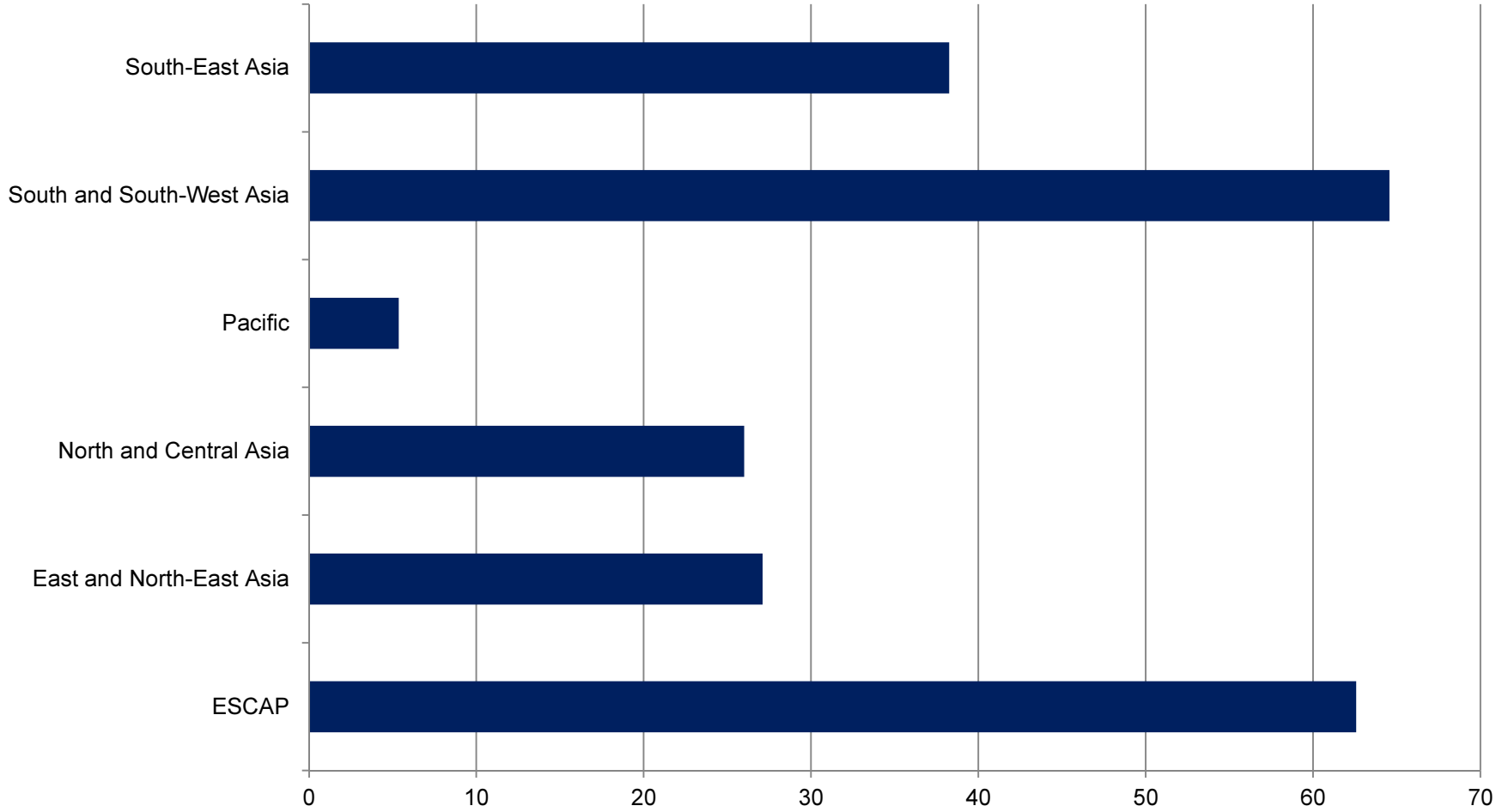
Number of death



Deaths per occurrences of climate change-related disasters, 2011-15



Deaths per occurrnce of climate change-related disasters, 2011-5



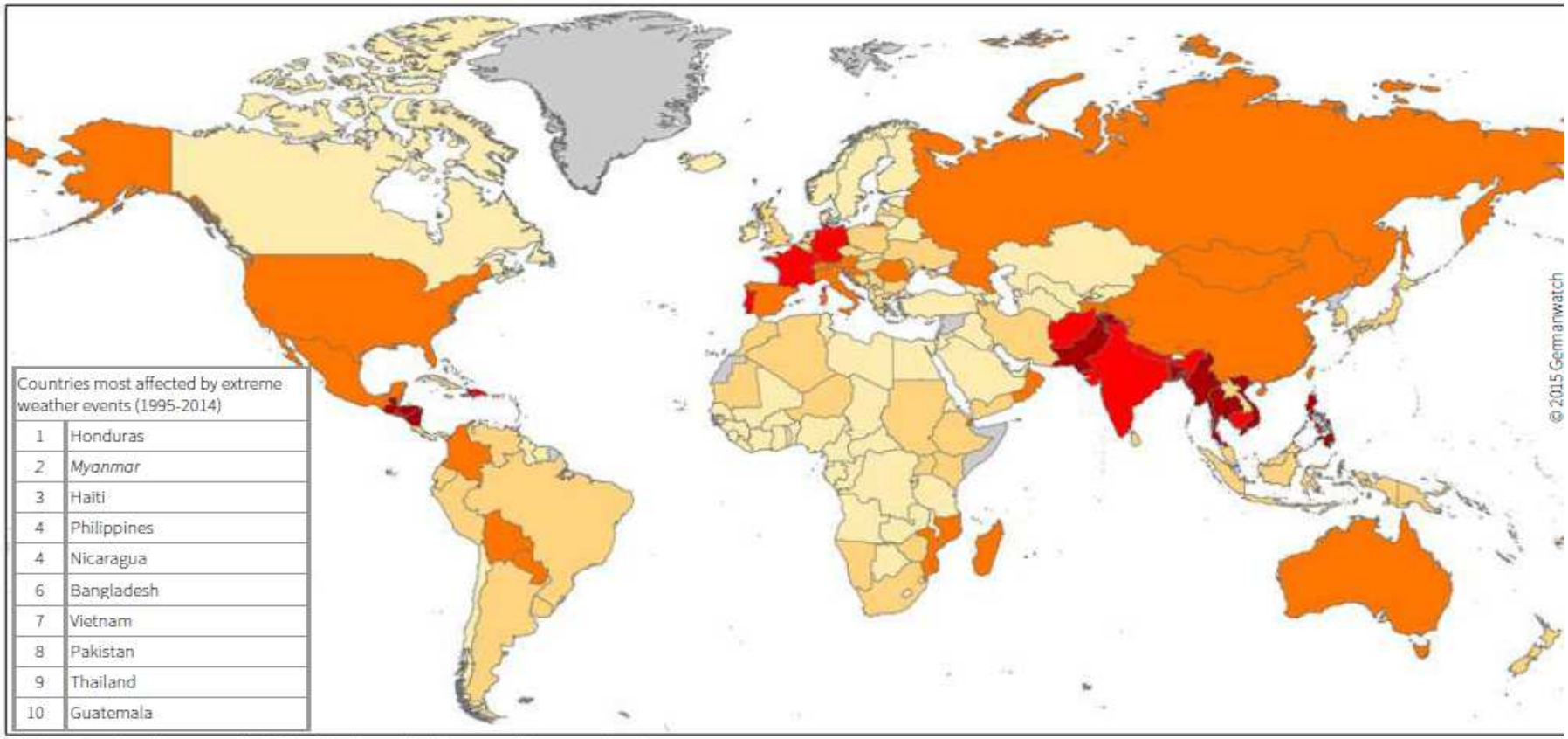
Global Climate Risk Index (CRI)

- Germanwatch
- Data source: Munich Re NatCatSERVICE
- The index is the weighted average of:
  - Number of death (1/6)
  - Number of deaths per 100,000 inhabitants (1/3)
  - Sum of losses in US$ in PPP (1/6)
  - Losses per unit of GDP (1/3)

Data source: Global Climate Risk Index 2016

Table 1: The Long-Term Climate Risk Index (CRI): the 10 countries most affected from 1995 to 2014 (annual averages)

CRI 1995–2014 (1994–2013)	**Country**	**CRI score**	Death toll	Deaths per 100 000 inhabitants	Total losses in million US$ PPP	Losses per unit GDP in %	Number of events (total 1995–2014)
1 (1)	Honduras	11.33	302.75	4.41	570.35	2.23	73
2 (2)	Myanmar	14.17	7 137.20	14.75	1 140.29	0.74	41
3 (3)	Haiti	17.83	252.65	2.76	223.29	1.55	63
4 (5)	Philippines	19.00	927.00	1.10	2 757.30	0.68	337
4 (4)	Nicaragua	19.00	162.30	2.97	227.18	1.23	51
6 (6)	Bangladesh	22.67	725.75	0.52	2 438.33	0.86	222
7 (7)	Vietnam	27.17	361.30	0.44	2 205.98	0.70	225
8 (10)	Pakistan	31.17	487.40	0.32	3 931.40	0.70	143
9 (11)	Thailand	32.33	164.20	0.25	7 480.76	1.05	217
10 (9)	Guatemala	32.50	83.35	0.66	407.76	0.50	88



Countries most affected by extreme weather events (1995-2014)	
1	Honduras
2	*Myanmar*
3	Haiti
4	Philippines
4	Nicaragua
6	Bangladesh
7	Vietnam
8	Pakistan
9	Thailand
10	Guatemala

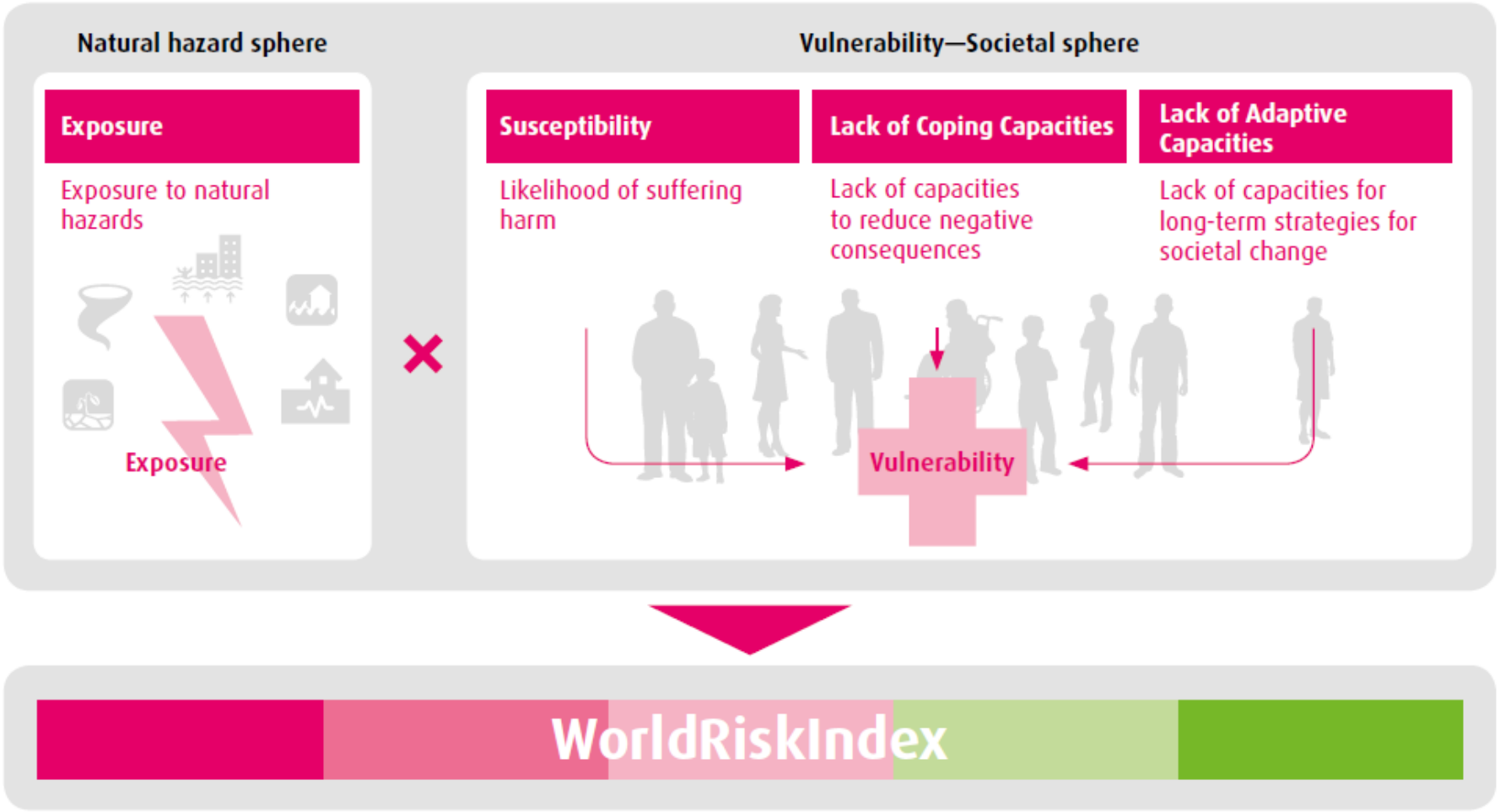
Cursive: Countries where more than 90% of the losses/deaths occurred in one year/event

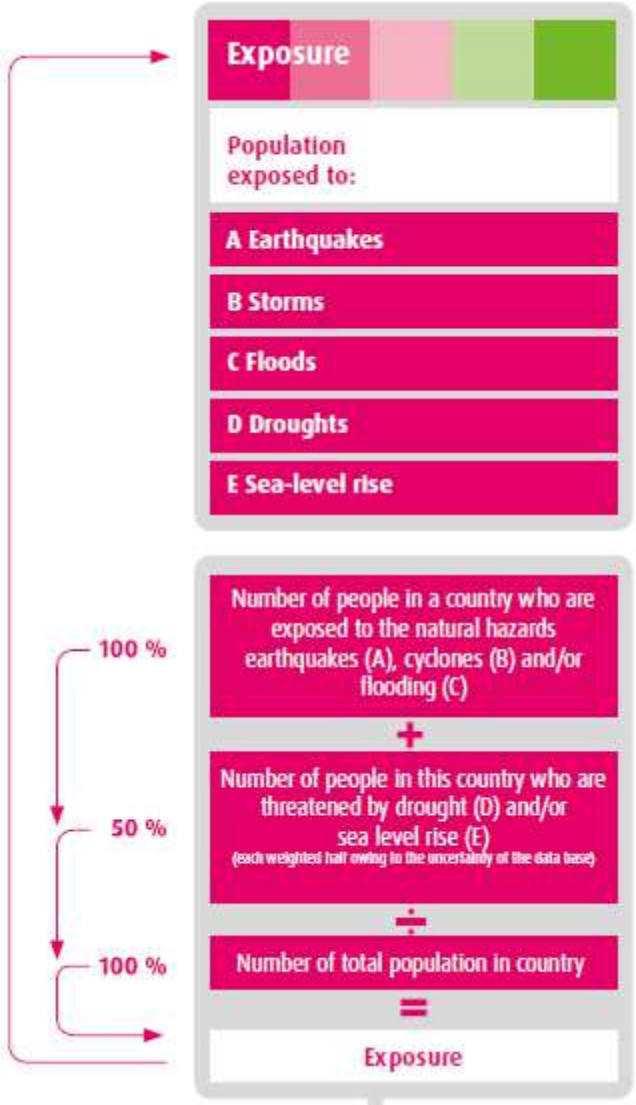
Climate Risk Index: Ranking 1995 – 2014

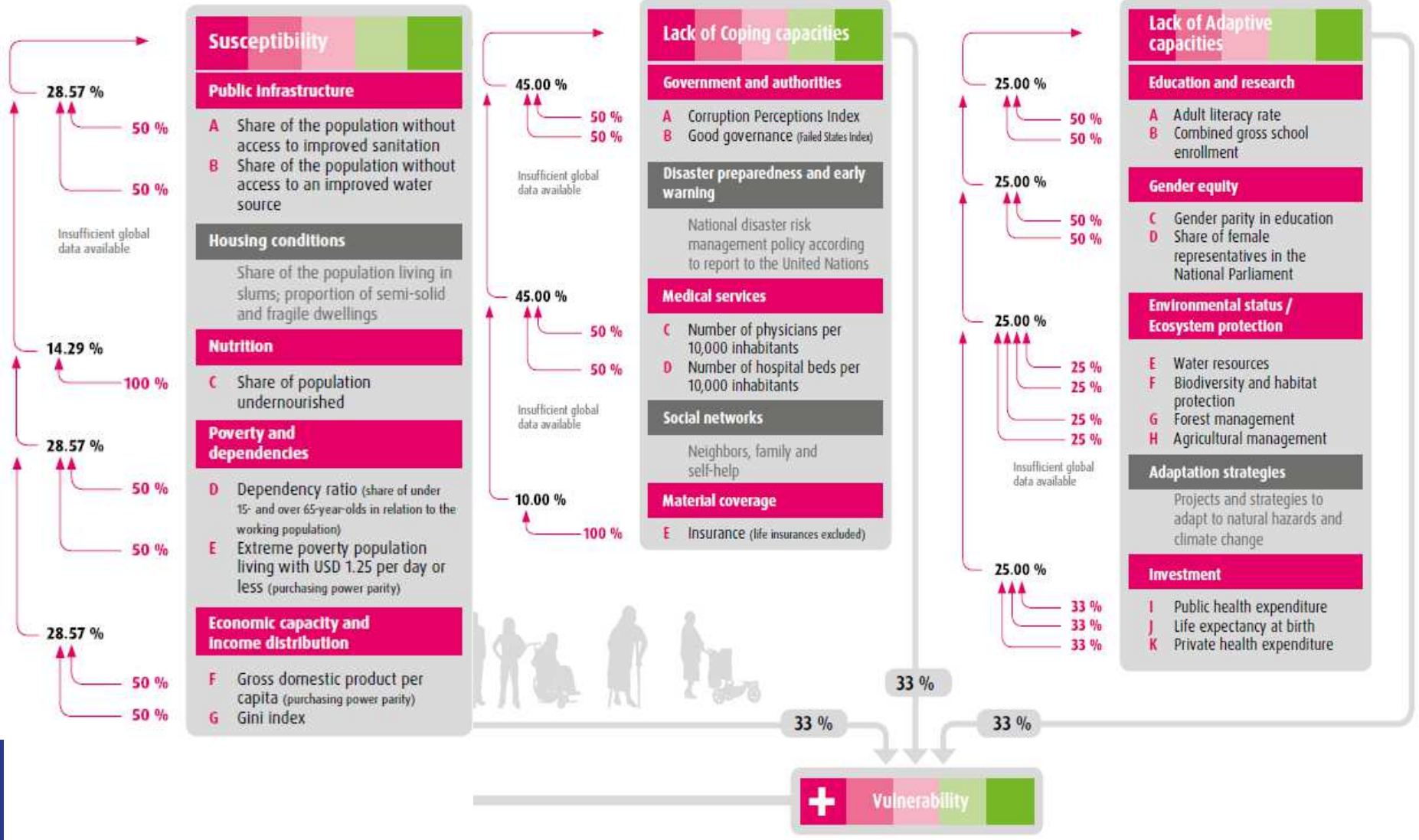
1 - 10 | 11 - 20 | 21 - 50 | 51 - 100 | > 100 | No data

Figure 1: World Map of the Global Climate Risk Index 1995–2014

Source: Germanwatch and Munich Re NatCatSERVICE


Natural hazard sphere
Vulnerability—Societal sphere
Exposure
Exposure to natural hazards
Exposure
Susceptibility
Likelihood of suffering harm
Lack of Coping Capacities
Lack of capacities to reduce negative consequences
Lack of Adaptive Capacities
Lack of capacities for long-term strategies for societal change
Vulnerability
WorldRiskIndex


Exposure
Population exposed to:
A Earthquakes
B Storms
C Floods
D Droughts
E Sea-level rise
100 %
50 %
100 %
Number of people in a country who are exposed to the natural hazards earthquakes (A), cyclones (B) and/or flooding (C)
+
Number of people in this country who are threatened by drought (D) and/or sea level rise (E)
(each weighted half owing to the uncertainty of the data base)
÷
Number of total population in country
=
Exposure


Susceptibility
Public infrastructure
A Share of the population without access to improved sanitation
B Share of the population without access to an improved water source
Housing conditions
Share of the population living in slums; proportion of semi-solid and fragile dwellings
Nutrition
C Share of population undernourished
Poverty and dependencies
D Dependency ratio (share of under 15- and over 65-year-olds in relation to the working population)
E Extreme poverty population living with USD 1.25 per day or less (purchasing power parity)
Economic capacity and income distribution
F Gross domestic product per capita (purchasing power parity)
G Gini index
28.57 %
50 %
50 %
Insufficient global data available
14.29 %
100 %
28.57 %
50 %
50 %
28.57 %
50 %
50 %
Lack of Coping capacities
Government and authorities
A Corruption Perceptions Index
B Good governance (Failed States Index)
Disaster preparedness and early warning
National disaster risk management policy according to report to the United Nations
Medical services
C Number of physicians per 10,000 inhabitants
D Number of hospital beds per 10,000 inhabitants
Social networks
Neighbors, family and self-help
Material coverage
E Insurance (life insurances excluded)
45.00 %
50 %
50 %
Insufficient global data available
45.00 %
50 %
50 %
Insufficient global data available
10.00 %
100 %
Lack of Adaptive capacities
Education and research
A Adult literacy rate
B Combined gross school enrollment
Gender equity
C Gender parity in education
D Share of female representatives in the National Parliament
Environmental status / Ecosystem protection
E Water resources
F Biodiversity and habitat protection
G Forest management
H Agricultural management
Adaptation strategies
Projects and strategies to adapt to natural hazards and climate change
Investment
I Public health expenditure
J Life expectancy at birth
K Private health expenditure
25.00 %
50 %
50 %
25.00 %
50 %
50 %
25.00 %
25 %
25 %
25 %
25 %
Insufficient global data available
25.00 %
33 %
33 %
33 %
33 %
33 %
Vulnerability

Limitations of WorldRiskIndex

- The scope of the analysis is no longer visible
- The global WorldRiskIndex is dependent on data availability and quality.
- Different region may have different disaster risk even within one country (e.g. China and India)

Recommended Next Steps

- Further study (e.g. collect current practices) of related current practices and data availability in member countries related to disaster risk index?
- Continue research on “climate-related disasters”?