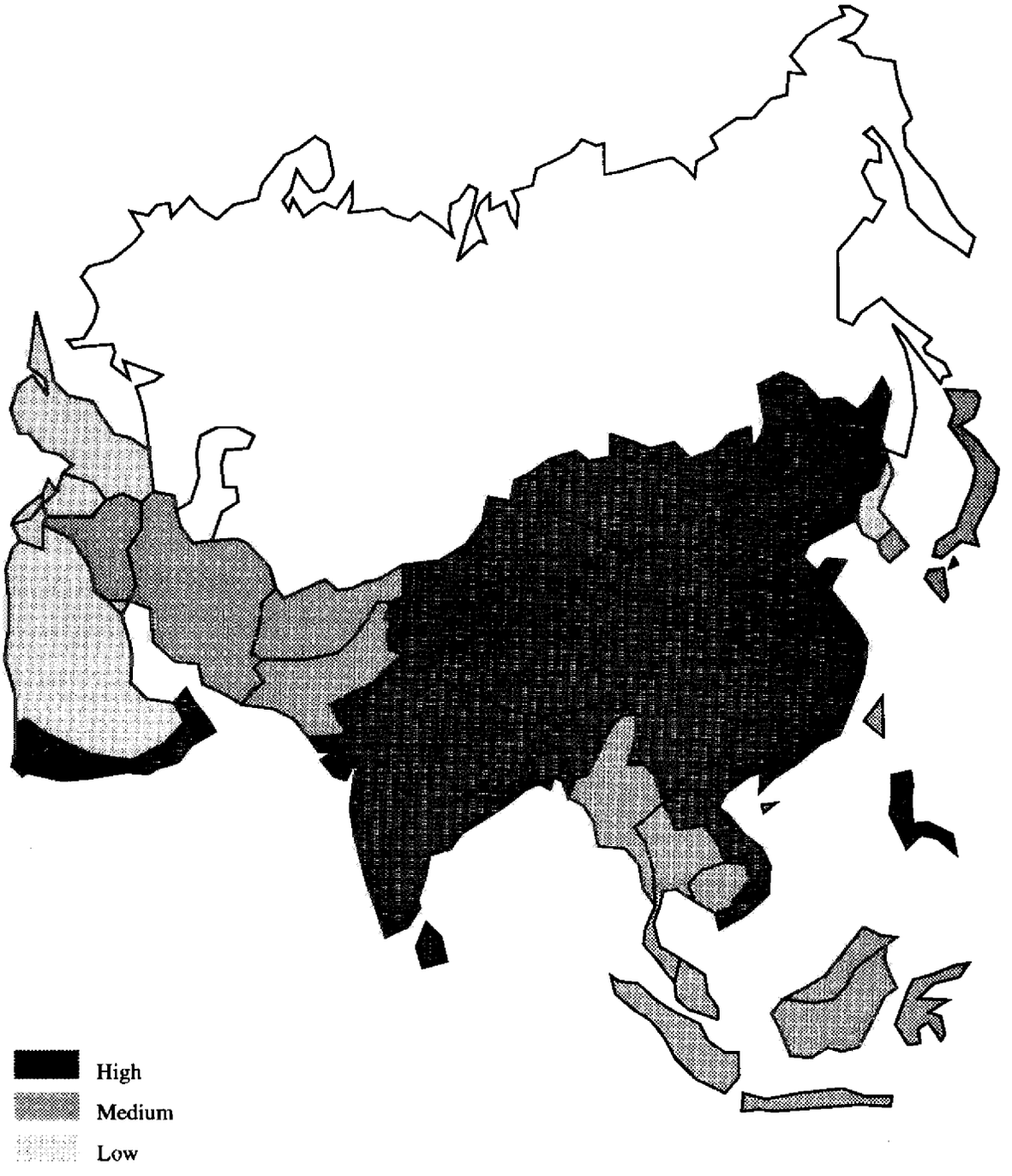
ASIA

Distribution of Disasters: Absolute Numbers for the Period 1900-1993

Country	No. of Disasters	Country	No. of Disasters
India	600	Yemen, P.D. Rep.	17
Philippines	489	Jordan	16
China, P.Rep.	417	Laos	16
Japan	277	Iraq	15
Bangladesh	258	Israel	14
Indonesia	245	Saudi Arabia	12
Hong Kong	235	Mongolia	11
Pakistan	124	Korea, Dem. Rep.	11
Iran	124	Cyprus	10
Vietnam	84	Cambodia	9
Korea, Rep. of	82	Syria	6
Burma	71	Maldives	4
Nepal	63	Kuwait	3
Thailand	59	Oman	3
China, Rep. of	59	United Arab Emir.	2
Sri Lanka	54	Bahrain	2
Afghanistan	53	Turks & Caicos	2
Malaysia	28	Macao	1
Lebanon	22	Singapore	1
Yemen Arab Rep.	17		

ASIA

Average number of persons affected by disasters per year
over the period 1960-1993 (standardised for population)



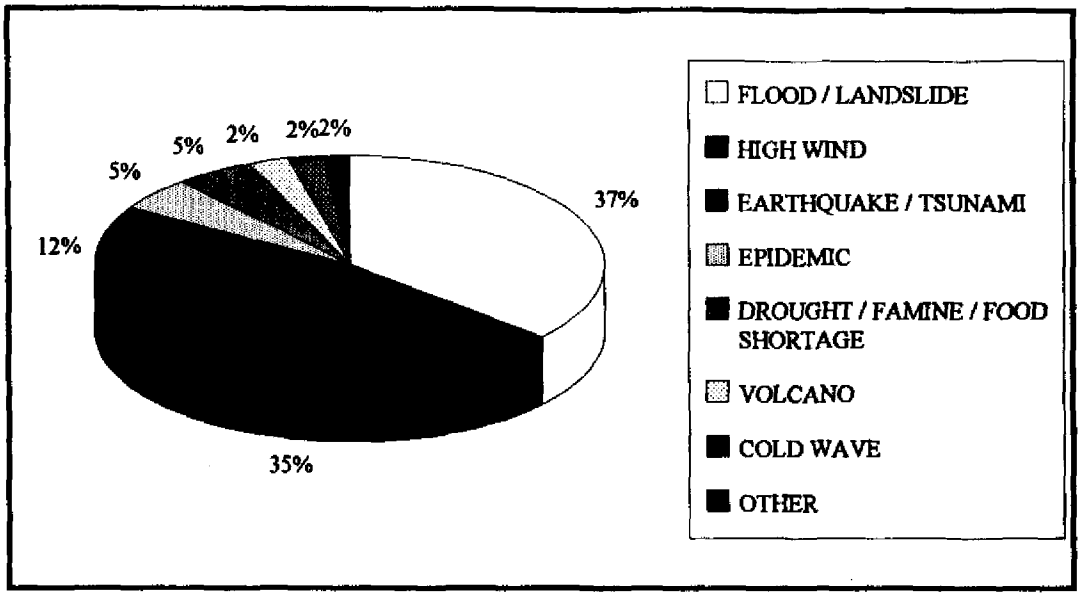
Comments

High frequency of disasters do not necessarily indicate high human impact. The human impact will be determined according to the capacity of the country to recuperate, i e. the prevailing socio-economic conditions when the disaster occurs. This is well illustrated by the disasters in Asia. While India and Philippines are the countries that suffer from high wind and flood disasters far more than most other countries, the human toll is the greatest in Bangladesh.

Manmade disasters represent a very high proportion of all disasters compared to other regions. This may be due to an increasing rate of industrialisation in many of the Asian countries without the necessary preparedness and safety measures.

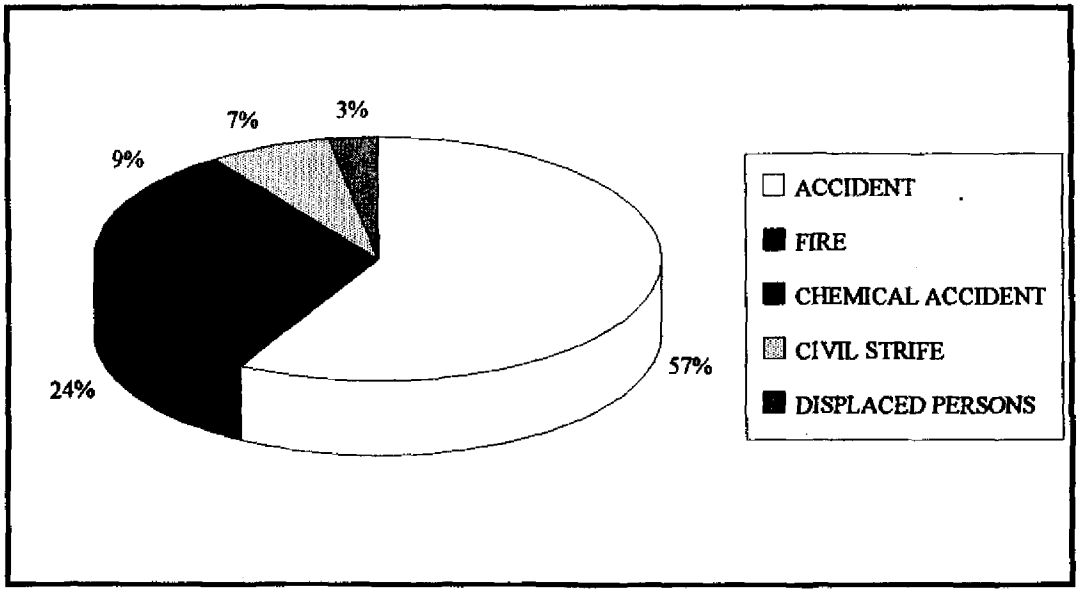
Figure 12 : Distribution of disasters by type in Asia from 1960 to 1993

A. Natural disasters: 2111



Source: EMDAT database, Centre for Research on Epidemiology of Disasters (CRED), Brussels

B. Man-made disasters: 1052



Source: EMDAT database, Centre for Research on Epidemiology of Disasters (CRED), Brussels

Comments

The distribution of mortality due to different types of disasters in Asia confirm, that earthquakes cause the most fatalities per event. Although fewer in number, they kill around half as much as high wind disasters and four times more than floods. With the exception of Bangladesh, where cyclones have had a devastating impact on a regular basis, earthquakes remain the event with the highest mortalities in Asia.

Floods are a recurring and damaging disaster in many of the Asian countries. India alone reported 55 floods that required emergency action. In May 1991, China suffered from unprecedented floods on the Yellow River. The event killed 1729 persons and over 2 million people affected. Due to effective preparedness in China, both at provincial and national levels, much of the potential damage was nevertheless contained.

Droughts affect more people than any other disaster. India remains at the head of the list in frequency of droughts requiring emergency action. At least four droughts have occurred in this country since 1973 that have affected between 120 million and 300 million persons. Cyclones and typhoons cause greatest economic damage, the estimates of which run into millions of US dollars per event, Bangladesh and Philippines being the most vulnerable in this case. Floods rank next in potential economic damage partly due to their geographic spread. Thus although mortality is generally low in flood disasters, for destruction of homes, harvests and other means of livelihood, remain high.

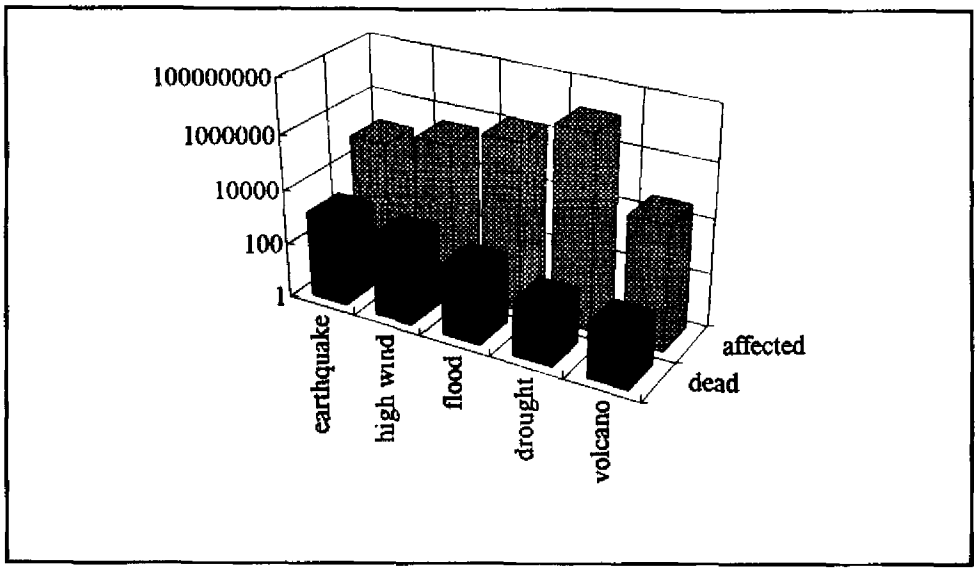
Regional Conclusion

High wind disasters (cyclones, typhoons and storms) are the greatest risk in Asia representing 35 % of all disasters, the secong ranking cause of mortality, the third ranking cause of affected population and the top ranking disaster for economic losses.

These data should be viewed in the context of the socio-economic development of a country. For example countries with low Human Development Indices (HDI), such as Bangladesh (0.189), 147th country among 173 or India (0.309), 134th country among 173 are likely to have greater difficulty in recuperating from any disaster than countries with higher HDI such as China (0.566) or Philippines (0.603) or Indonesia (0.515).

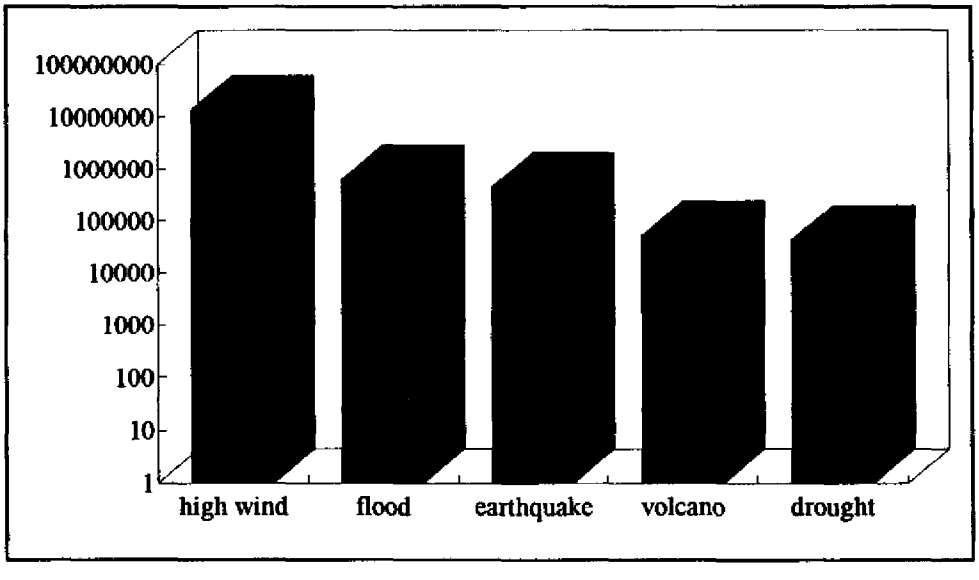
It is clear from the losses incurred from disasters in Asia, that investment in early warning systems and community response mechanisms to these systems can be cost effective for a country at high risk.

Figure 13 : Average number of persons dead and affected by category of disaster in Asia from 1960 to 1993



Source: EMDAT database, Centre for Research on Epidemiology of Disasters (CRED) Brussels

Figure 14 : Average estimated damage in thousand US$ by category of disaster in Asia from 1960 to 1993 (,000 US $)



Source: EMDAT database, Centre for Research on Epidemiology of Disasters (CRED), Brussels

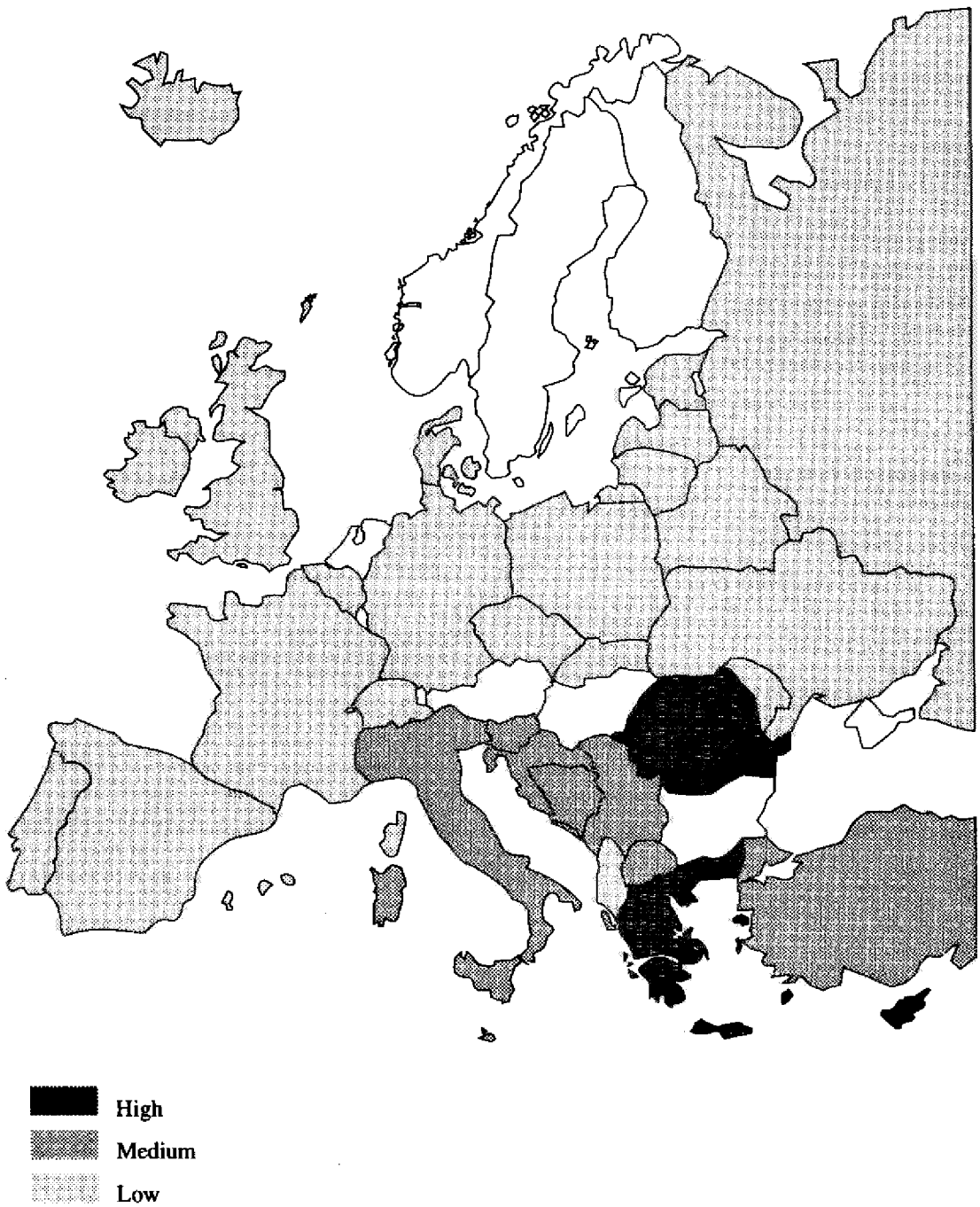
EUROPE

Distribution of Disasters: Absolute Numbers for the Period 1900-1993

Country	No. of Disasters	Country	No. of Disasters
France	149	German Dem. Rep.	12
Soviet Union	143	Ireland	11
Italy	103	Georgia	10
Belgium	101	Tajikistan	9
United Kingdom	101	Ukrainian SSR	7
Germany, F. Rep.	92	Hungary	7
Spain	72	Iceland	7
Yougoslavia	55	Luxembourg	6
Greece	53	Azerbaidjan	5
Switzerland	42	Azores	5
Russian Federat.	34	Canary Island	4
Austria	32	Armenia	3
Romania	30	Finland	3
Portugal	27	Lithuania	3
Netherlands	23	Uzbekistan	3
Danemark	18	Kyrgyzstan	2
Czchoslovakia	17	Montenegro	1
Albania	16	Macedonia	1
Poland	16	Malta	1
Bulgaria	15	Belarus	1
Sweden	15	Kazakhstan	1
Norway	14		

EUROPE

Average number of persons affected by disasters per year
over the period 1960-1993 (standardised for population)



Comments

The distribution of disasters by type in Europe reveal that more than half of the natural disasters are accounted for by high wind disasters (storms) and earthquakes. Among the high wind disasters, nearly a quarter of all reported events in the European region occur in France and U.K. partly due to their extended coastal exposures.

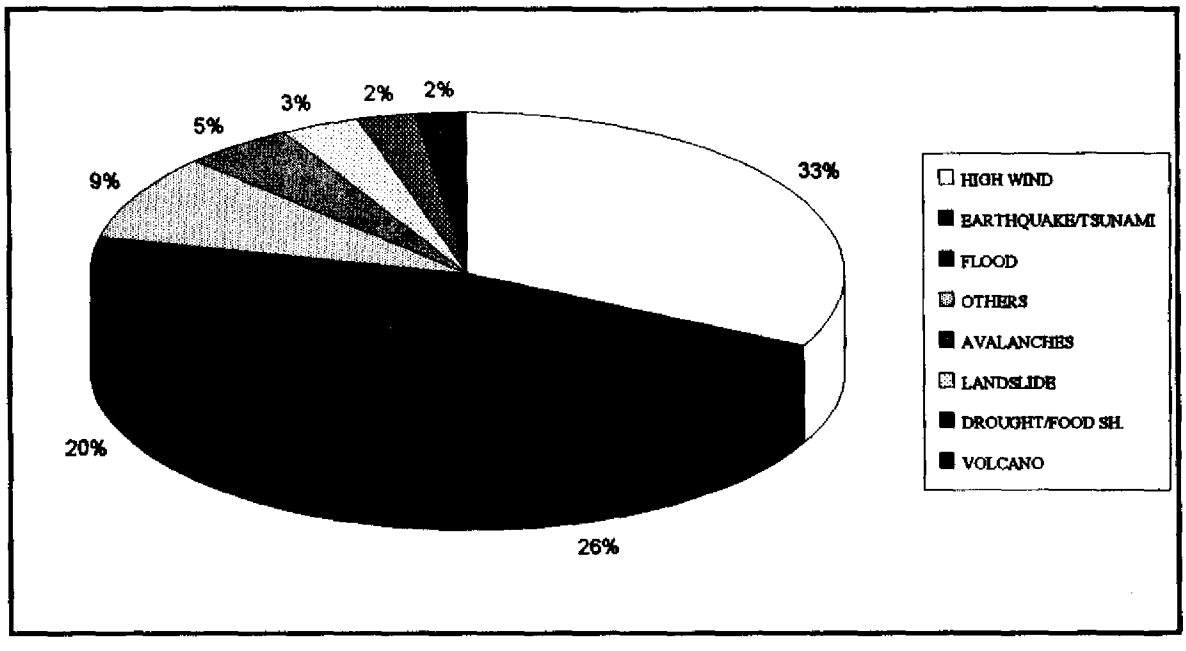
Regarding earthquakes, the pattern of countries with the highest numbers of major events are as expected. The four highest ranking countries with earthquakes that have entailed deaths are ex-Soviet Union, Turkey, Greece, Italy and Yugoslavia. These five countries account for nearly 75% of the cases.

The next largest category is floods, with Soviet Union, Spain, France and Italy accounting for most of the cases. While most of the floods have not had large human losses, one flood in Spain (1973) killed 500 persons and several in ex-Soviet Union entailed losses of over 1000 human lives.

Nearly half of the man-made disasters are accidents. Fires (of which 23% are forest/grassland fire) occur with fairly high frequency especially in Germany (18%), France (15%) and UK (11%) Seventy eight technological accidents are recorded. At this point in time, adequate criteria for entering events in these categories urgently need to be discussed and elaborated to standardise the type of cases included.

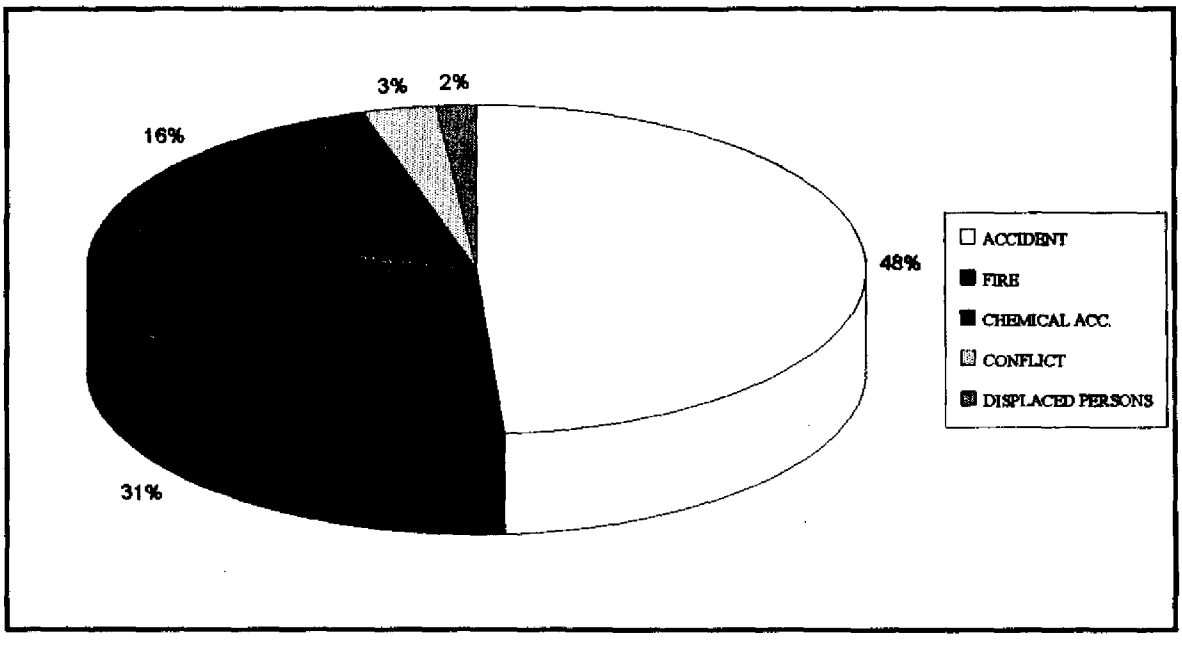
Figure 16 : Distribution of disasters by type in Europe from 1960 to 1993

A. Natural disasters: 696



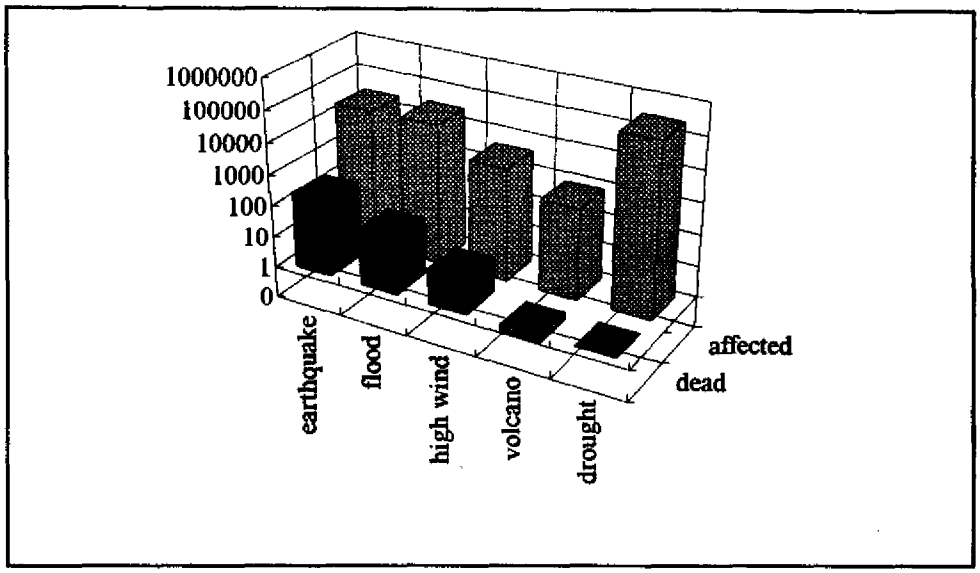
Source: EMDAT database, Centre for Research on Epidemiology of Disasters (CRED), Brussels

B. Man-made disasters: 546



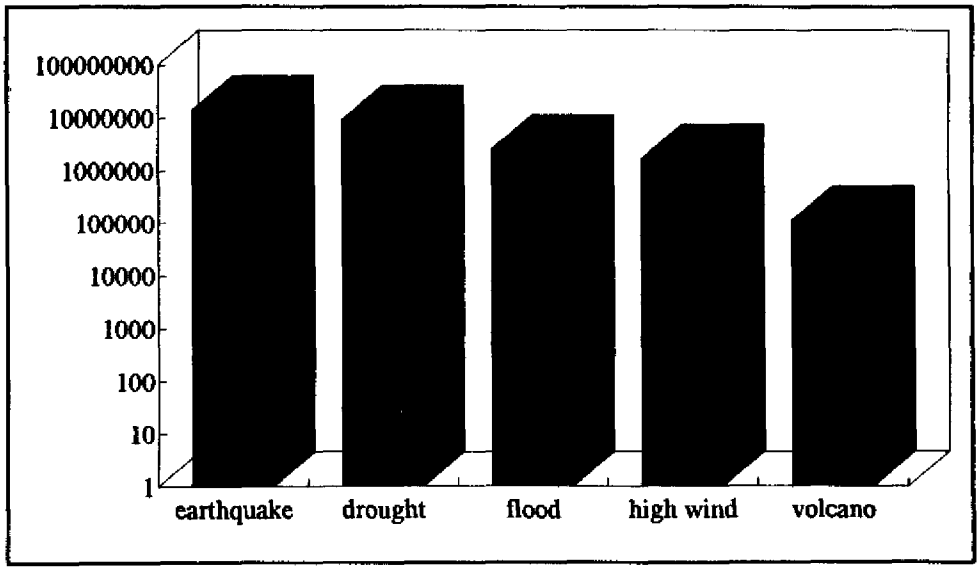
Source: Database, Centre for Research on Epidemiology of Disasters (CRED), Brussels

Figure 17 : Average number of persons dead and affected by category of disaster in Europe from 1960 to 1993



Source: EMDAT database, Centre for Research on Epidemiology of Disasters (CRED), Brussels

Figure 18 : Average estimated damage by category of disaster in Europe from 1960 to 1993 (,000 US $)



Source: EMDAT database, Centre for Research on Epidemiology of Disasters (CRED), Brussels

Comments

Losses in human life may be explained by developmental factors that make communities more vulnerable to disasters. Housing quality, land use patterns and urbanisation, availability and accessibility of health or life-saving facilities would all play a role in the expected mortality from an acute disaster. As expected, therefore, mortality distributions are often skewed towards the poorer countries in the region. For example, Turkey accounts for the largest losses of human life taking into account all disasters over the period 1960 - 1989. With regard to numbers of persons affected, population densities, for example, would determine to a large extent the magnitude of this effect in different countries. Countries like Belgium or the Netherlands run the risk of having large numbers of persons affected for any disasters due to the highly concentrated population distributions all over the country. The average number affected per disaster increased substantially betweEn 1960 - 69 and the following decade. However, we can offer no adequate explanation for the drop in the latest decade until further in-depth analyses is carried out.

Finally, with regard to financial impact, the richer areas of a country would register elevated financial damages due to high property values and material possessions. The increase in financial damages, particularly in EC countries is largely a reflection of increasing real estate values and expanding urbanisation.

Regional Conclusion

Natural and man-made disasters are not an rare or unusual phenomenon in the European region Although risks vary between countries due to a variety of reasons, almost all the countries are exposed to catastrophic events from time to time The management and preparedness for these disasters are important issues of discussion and, in particular, potential areas where inter-country collaboration and scientific research to ameliorate existing programmes and policy.

The research undertaken at CRED on the European data indicate certain priority areas for further consideration:

(i) a regional approach to disaster preparedness planning is key to efficient management of disasters. The comments section of the database reveal that disasters (e.g. storms, river or air pollution accidents, floods) often occur across borders Shared preparedness programmes and mutually supportive response plans are, clearly the rational approach, both in economic and operational terms.

(ii) a central database and information gathering system as support to planning, preparedness and policy development is a basic requirement for a coherent disaster programme.

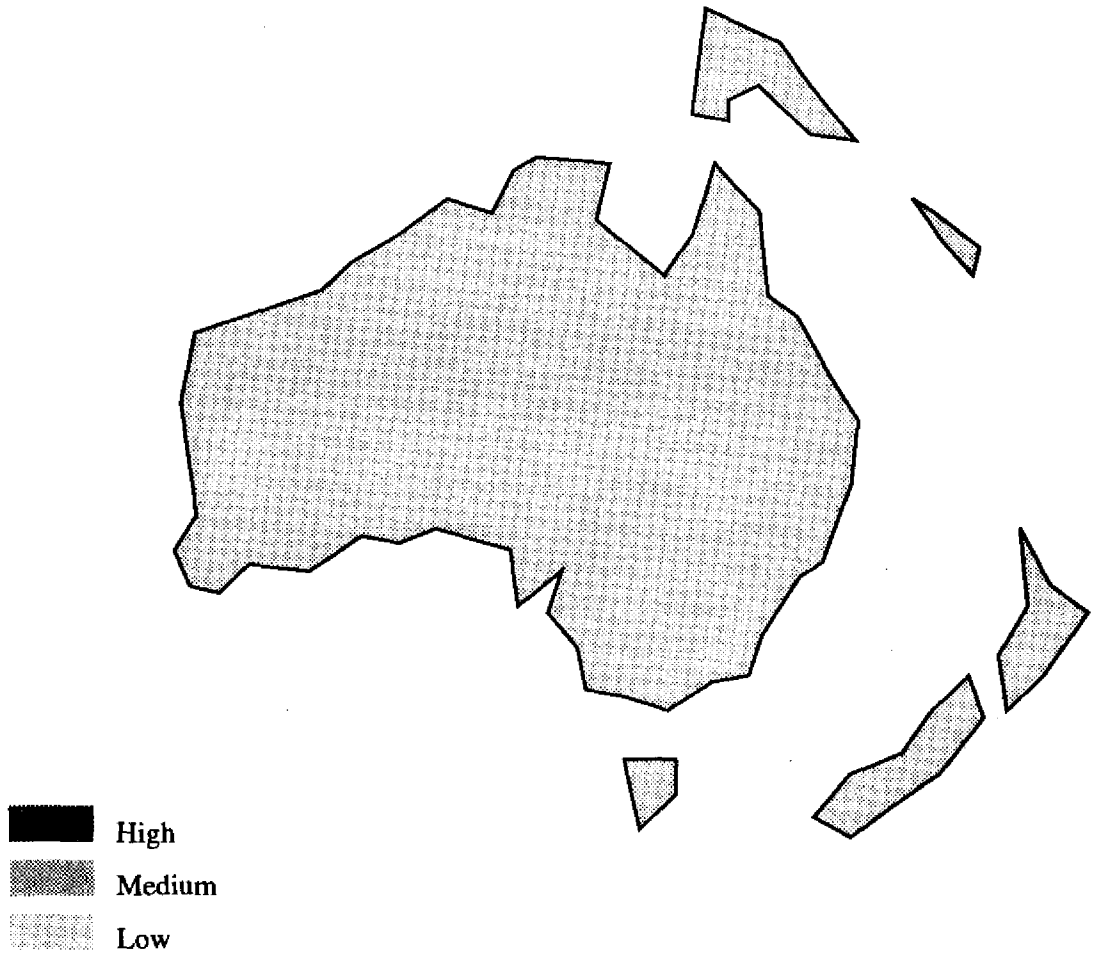
(iii) a generic model of hazard mapping, in terms of potential human impact, may be a cost-effective exercise worth reflection

(iv) it is generally recognised that low levels of community preparedness significantly increases the potential impact of disasters, when they happen. An examination (or case studies) of successful community preparedness programmes against disasters in Europe or other economically comparable countries could serve profitably to develop model programmes for high risk areas

In the perspective of future monitoring of disasters in Europe, the relative weights and biases of different sources was also examined It was observed, for example, fires, accidents and high wind disasters have higher reporting by insurance companies, whereas for almost all others, USAID-OFDA and DHA-UNDRO provide much of the data This may be due to the fact that these types of disasters tend to affect agricultural lands, which are typically be insured against natural disasters and for high values in European countries. In terms of coverage, the large institutional sources, namely, USAID-OFDA, DHA and re-insurances, generally speaking, accounted for about 60 - 65 percent of the data.

OCEANIA

Average number of persons affected by disasters per year over the period 1960-1993 (standardised for population)



Distribution of Disasters: Absolute Numbers for the Period 1900-1993

Country	No. of Disasters	Country	No. of Disasters
Australia	222	Western Samoa	8
New Zealand	108	Samoa	6
Tonga	54	Tokelau	5
Fiji	46	Tuvalu	5
Papua New Guena	40	Guam	5
Vanuatu	33	Wallis & Futuna	5
Solomon Islands	26	Niue	4
New Caledonia	16	French Polynesia	4
Cook Islands	9	Kiribati	2

Comments

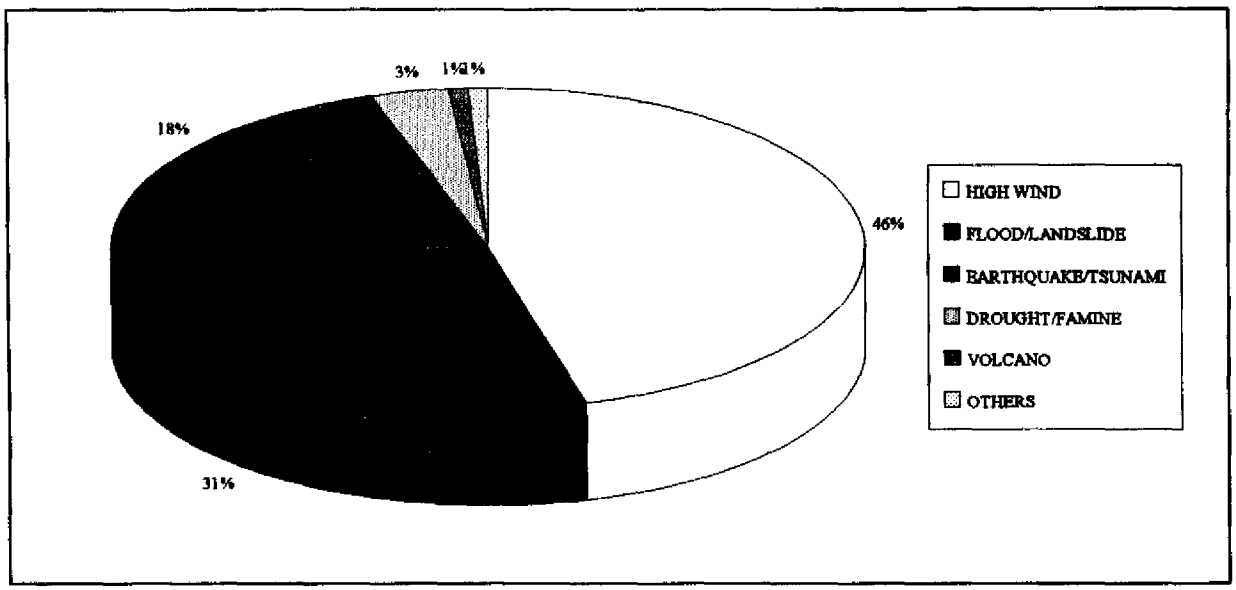
Oceania is the only region where more than half of the data are provided by official Goverment sources, in particular Australia, New Zealand and Tonga. National registration systems are in place and the data are regularly updated and dessiminated to research centres like CRED.

The single largest group in manmade disasters in this region are fire (forest/grassland fire as well as building fire) which represent nearly 60 percent of the total in this category. Nearly all of them occur in Australia, the most important in the recent years being the one in January 1994 causing enormous economic losses. Previously fires in Australia have caused damage worth 20 million US$ in 1967, 400 million US$ in 1983 and 215 million US$ in 1985.

As in most other regions, floods and high winds represent more than three quarters of the natural disasters. Again Australia has the highest frequency for high winds and New Zealand tops the list for floods. However, should land area be taken into account, in view of potential exposure, both these countries rank towards the bottom of all the countries in this region. The countries, heading the list in this case, are Tokelau, Tuvalu and Tonga.

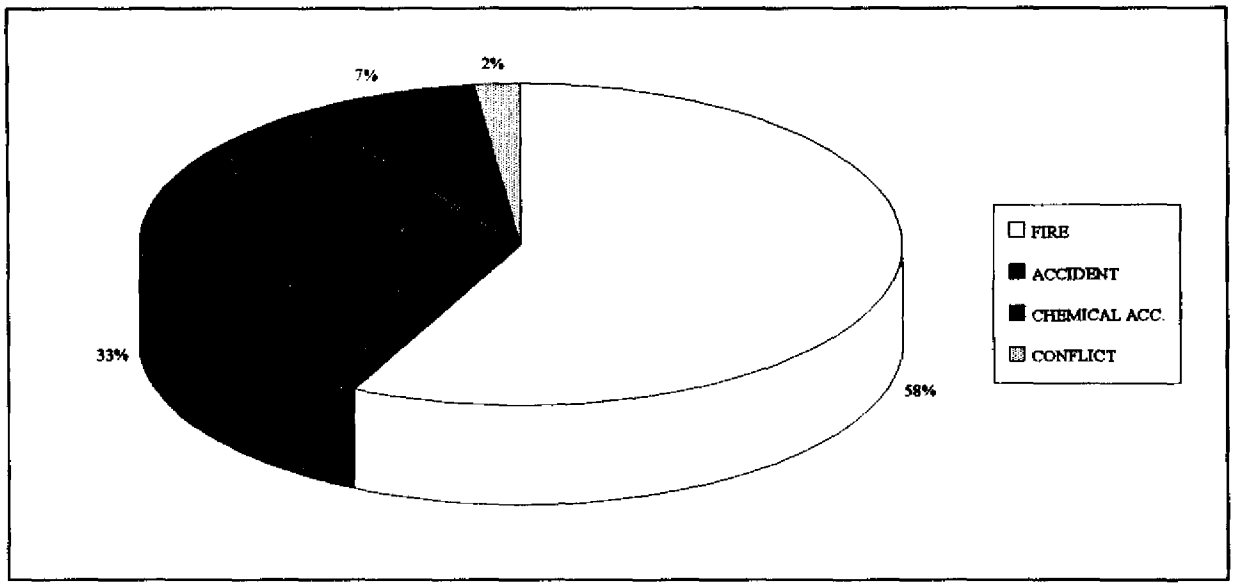
Figure 20 : Distribution of disasters by type in Oceania from 1960 to 1993

A. Natural disasters:484



Source: EMDAT database, Centre for Research on Epidemiology of Disasters (CRED), Brussels

B. Man-made disasters: 54



Source: EMDAT database, Centre for Research on Epidemiology of Disasters (CRED), Brussels

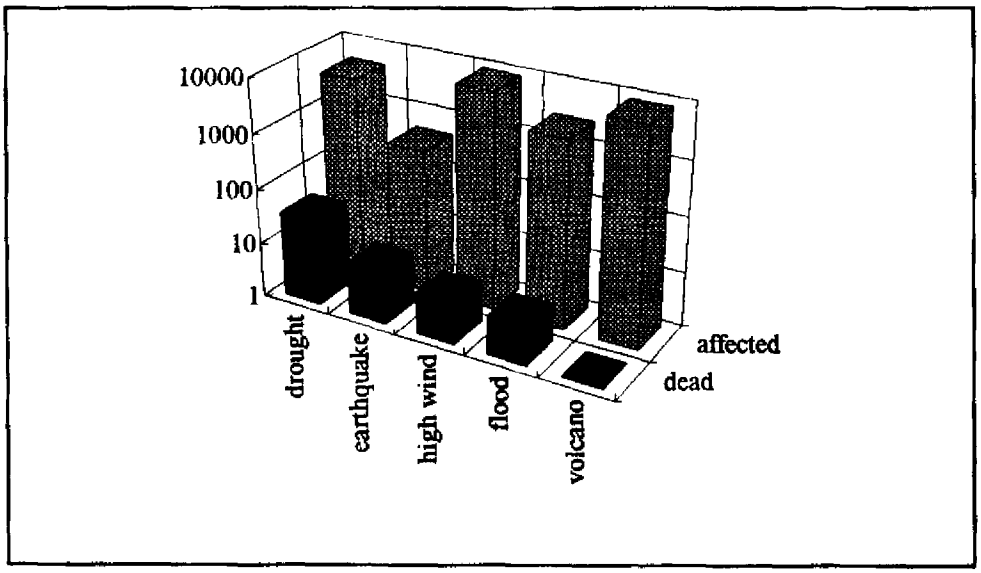
Comments

Although the absolute numbers of dead are smaller in magnitude than in the other regions, most of the countries and their population in this region are proportionally smaller. It should not be forgotten that the early warning systems and preparedness plans of the countries are well developed contributing to these low levels of human impact. With regard to affected population, droughts in Papua New Guinea and Fiji have affected a large segment of their population in 1981 and 1983. In addition, in 1983, Papua New Guinea, suffered from an important eruption of the Rabaul volcano affecting 25,000 persons. Unfortunately, the economic damage data is biased since only two of the 16 droughts have information on economic losses. No data was available for the volcanic eruoption.

Regional Conclusion

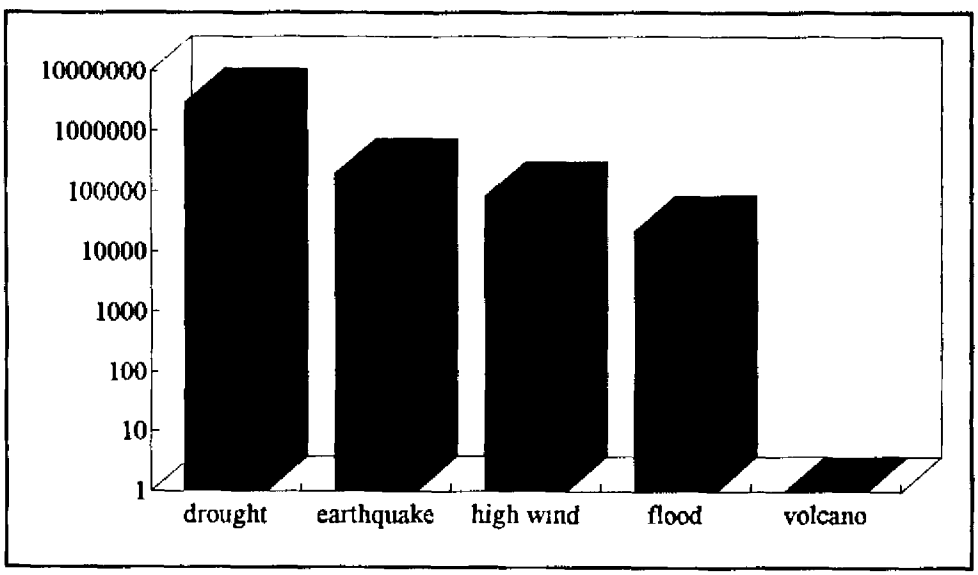
The criteria for entry into the database excludes many of the events in these small countries since, first, most events do not kill more than 10 persons due to low population densities and second, they rarely request international assistance.

Figure 21 : Average number of persons dead and affected by category of disaster in Oceania from 1960 to 1993



Source EMDAT database, Centre for Research on Epidemiology of Disasters (CRED), Brussels

Figure 22 : Average estimated damage by category of disaster in Oceania from 1960 to 1993 (,000 US$)



Source: EMDAT database, Centre for Research on Epidemiology of Disasters (CRED), Brussels