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Trends and developments in global natural disasters, 1947 to 1981

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TRENDS AND DEVELOPMENTS IN GLOBAL NATURAL DISASTERS, 1947 to 1981

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NATURAL HAZARD RESEARCH

Working Paper 45

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The "trends" of a decreasing number of disaster impacts and an increasing occurrence of large-area disasters have apparently reversed (as so many trends which are based on short time series are wont to do) through the decade of the 1970s. Floods remain the single most frequent disaster by type, followed by earthquakes and tornadoes; the three together comprise over 67% of all disasters.

The average number of major natural disasters annually is 30.3, which compares to 31.4 for the period 1947-1967, and 30.9 for 1947-1973. With some notable exceptions, deaths per disasters have been increasing at about the same rate as population growth rates in Europe, North America and a number of South and Central American countries, while in Asia and Africa the general trend has been for population growth rates to exceed the death rates from disasters. The single most deadly disaster by type is still the hurricane, though earthquakes now are a very close second having taken nearly as many lives worldwide (see Table 4).

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PREFACE

This paper is one in a series on research in progress in the field of human adjustments to natural hazards. It is intended that these papers be used as working documents by those directly involved in hazard research, as well as inform a larger circle of interested persons. The series was started with funds from the National Science Foundation to the University of Colorado and Clark University, but it is now on a self-supporting basis. Authorship of the papers is not necessarily confined to those working at these institutions.

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INTRODUCTION

This paper is the second update of the original survey report on global natural disasters by Sheehan and Hewitt (1969). Their survey covered the 21-year period 1947 to 1967. The first update of that report was done by Dworkin (1974) and extended the period of analysis through 1973. This report covers disaster events up through 1981; thus, the three reports give a continuous 35-year analysis of global natural disasters.*

The necessary qualifications attending the earlier reports--the uneven reportage of events leading to an obvious upward bias in reports for North America, the descriptive nature of much of the original data necessitating subjective interpretations by the author, the arbitrary threshold criteria for a "major" disaster, and the problems of defining a large area disaster--are all equally applicable to this paper. Therefore, as Sheehan and Hewitt stated, "In view of the obvious limitations of data...the work is unlikely to produce more than order-of-magnitude empirical generalisations" (Sheehan and Hewitt, p. 2).

The original operational criteria, the satisfaction of any single one by a given disaster event being sufficient for the inclusion of that event as a major disaster in the report, are:

1) At least $1 million in damage
2) At least 100 persons dead
3) At least 100 persons injured.

The only change to these criteria was to adjust #1 above for inflation:

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*This update relies on some data compiled by J. Regulska in 1980 for the period 1974-1979.

the $1 million (U.S.) dollar criteria in 1973 had become $2.8 million by 1981 (assuming an average inflation rate of 10%).*

The sources of data are essentially the same as those used in the previous reports, with the New York Times Index and the Encyclopedia Britannica Yearbook being the two most important. Where necessary, cross-reference was made to other encyclopedic yearbooks and miscellaneous materials on file in the Natural Hazards Research Applications and Information Center's library.

Before passing on to specific comments about recent trends in global disasters, a word first regarding the operational definition of the large-area disaster. In the previous two reports the method for large-area disaster determination is never explicitly stated, though such a disaster is defined as "those covering more than one 10° [longitude by latitude] square unit..." (Dworkin, p. 2). Given the use of the word "covering" in the previous definition, it follows that a large-area disaster is one in which the area affected in square miles is greater than the area enclosed by the 10° unit of the geographic grid. Two problems immediately arise: 1) the 10° x 10° unit changes in area from the equator to the poles, so that by 30° latitude an impact need only be about 86% as large as an impact at the equator to be classified as a large-area disaster, and by 60° latitude it need be only 50% as large; 2) almost never were the dimensions of a disaster given in the data sources.

Aside from these problems, it does not appear as though the two preceding papers followed this logic in classifying large area disaster;

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*This inflation adjustment resulted in the elimination of only three events from the study.

they could not have and still classified East Pakistan (Bangladesh) as being the site of a number of large-area disasters since Bangladesh is smaller than the defining unit.

In this paper a disaster had to affect an area greater than the area of an average grid unit to be classified as large-area. The average grid unit is the area of the average between the 10° square unit measured at the equator and the 10° square unit measured at 50° latitude.* The operational unit thus defined is well within the order-of-magnitude limits of accuracy accepted for this survey.

The last comment to be made before turning to the analysis is to mention that droughts have been excluded from the report. This is consistent with Dworkin's paper, though Sheehan and Hewitt did include drought in certain aspects of their analysis.

TRENDS

The total loss of life during the 35-year period 1947-1981 was 1,208,008 persons, giving an average of 34,514 deaths per year. This is a significant increase in deaths per year from the 1947-1967 period average of 21,041 persons per year.** Table 1 shows the change in average deaths per year by each of the three reports in this series.

The explanation for the dramatic increase in deaths per year from the Sheehan and Hewitt report to the Dworkin report is primarily a

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*The vast majority of all reported disasters occur below 50° latitude.

**The figure given by Sheehan and Hewitt (p. 5) is actually 22,093, but they calculated their average by dividing total deaths by 20 years when, in fact, their period of analysis was 21 years--1947 to 1967 inclusive.

TABLE 1

AVERAGE DEATHS PER YEAR

Report	Period	Years	Total Deaths	Deaths/Year[1]	Deaths/Year
Sheehan & Hewitt	1947-1967	21	441,855	21,041	21,041[2]
Dworkin	1947-1973	27	828,815	64,493	30,697
Thompson	1947-1981	35	1,207,962	47,398	34,514

[1]This column calculates the deaths per year for the incremental period added to the original 21 years of analysis. For example, the deaths per year for the Dworkin report applies to the time period 1968 to 1973, or six years.

[2]See footnote ** on page 3 for discussion of this number.

result of deaths due to hurricanes (see Dworkin, Appendix 3), while the increase in this report can be attributed in large part to the Tangshan, China, earthquake in 1976, which claimed 242,000 lives--more than seven times the average annual total for the world.

Table 2 gives the breakdown of annual statistics for the period 1974 to 1981. Of note in Table 2 is the peak in disaster impacts from 1978 to 1980. To find a greater three-year period of impact intensity requires going back 25 years to the period 1953 to 1955. The primary cause of the 1979 peak is a significant increase in earthquake activity, especially in Asia. There were 12 major earthquakes (as well as two earthquake-generated tsunamis) in 1979, which is well above the annual average of 5.8 for the period 1974-1981. The year 1980, on the other hand, was not distinguished by an increase in occurrence of any single disaster agent.

TABLE 2

ANNUAL DISASTERS

Year	Deaths	Number of Disasters	Number of Large-Area Disasters
1947	-	30	3
1948	-	45	3
1949	-	31	2
1950	-	35	3
1951	-	33	4
1952	-	28	9
1953	-	45	5
1954	-	35	4
1955	-	33	3
1956	-	28	6
1957	-	34	2
1958	-	25	6
1959	-	31	10
1960	-	34	9
1961	-	25	4
1962	-	24	1
1963	-	32	4
1964	-	28	8
1965	-	26	7
1966	-	29	3
1967	-	30	2
1968	-	38	10
1969	-	25	8
1970	-	24	8
1971	-	26	5
1972	-	33	9
1973	-	29	10
1974	17,693	27	5
1975	13,303	21	5
1976	277,061	26	4
1977	26,853	29	5
1978	19,429	32	3
1979	6,159	35	6
1980	10,793	34	7
1981[1]	7,896	30	4

[1]Data for 1981 are taken exclusively from the New York Times Index.

Figure 1 is an updated continuation of two graphs given in Dworkin's paper; however, a two-year left to right translation adjustment has been made so that the graphs begin with 1949 and end with 1979.* A third weighted nine-year moving average has also been calculated and a good agreement can be seen between the two averaging techniques.** The number of major disasters declined steadily after 1953 until about 1965, increased slightly during the late 1960's, and then continued to decline until the mid-1970's, at which point the number of disasters began a significant upward trend. Large-area disasters increase slowly from the late 1940's until the 1970's, at which time they decrease sharply, levelling off through the latter part of the decade.

Dworkin's conclusion that, "while the number of major natural disasters has been dropping over the last twenty-years, the number of disasters covering large areas has been increasing during the same time period" appears to have reversed completely on both counts during the decade of the 1970's. However, the influence of perhaps nonidentical methods could have influenced the findings on large-area disasters.

The total number of disasters for the 35-year period was 1,062, giving an average of 30.3 disasters per year. Table 3 ranks the number of

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*This adjustment technically conforms the graphs to the correct procedure for plotting a moving average. The point value which is calculated for an n-year moving average is assigned to the $(n + 1)/2$ year, so, for example, the value calculated for a five-year moving average for the period 1947-1951 would be assigned to 1949, not 1947.

**The weights are based on a normal frequency distribution and are as follows: 0.01, 0.05, 0.12, 0.20, 0.24, 0.20, 0.12, 0.05, 0.01.

FIGURE 1

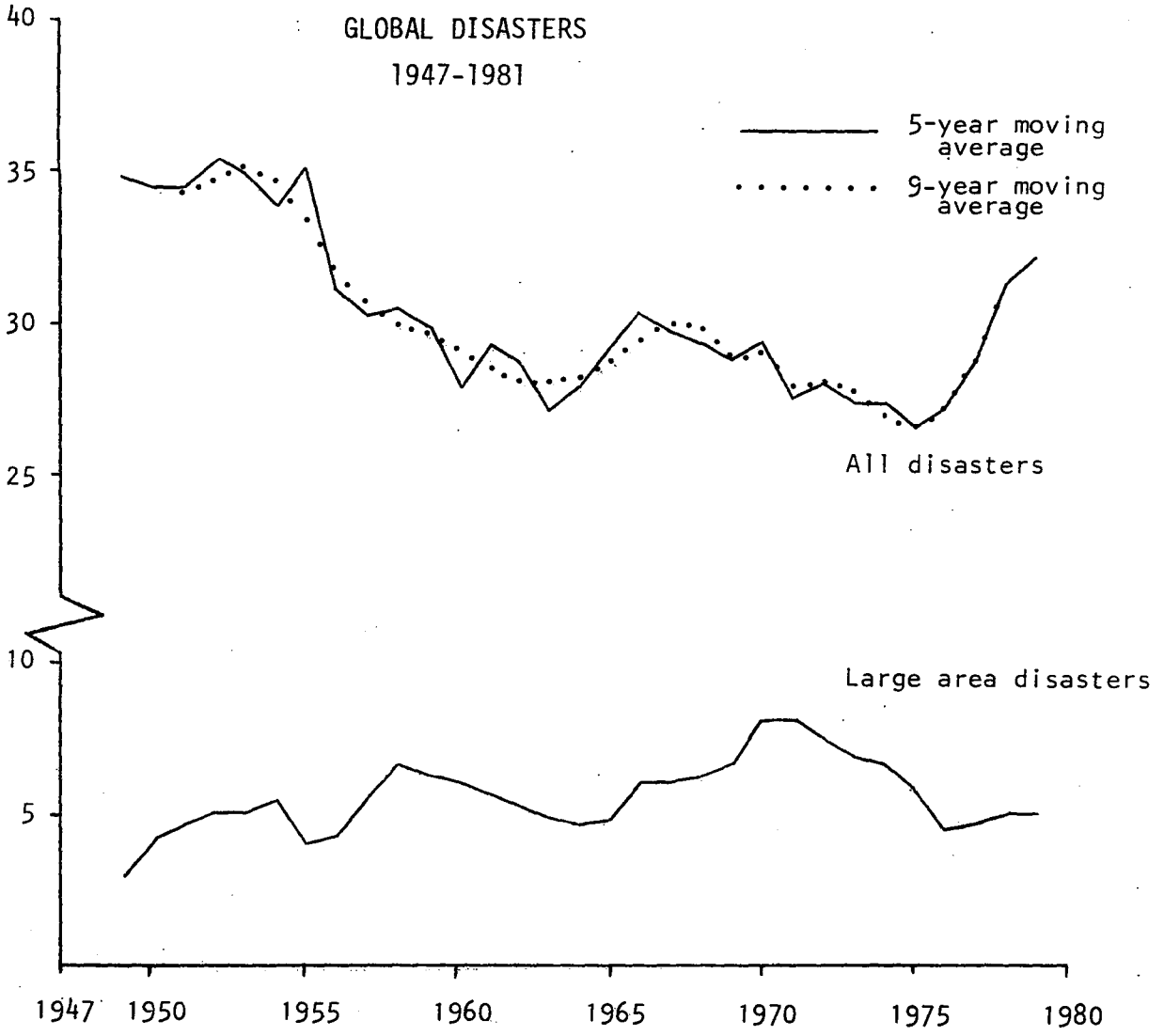
GLOBAL DISASTERS
1947-1981
5-year moving average
9-year moving average
All disasters
Large area disasters
40
35
30
25
10
5
1947
1950
1955
1960
1965
1970
1975
1980

TABLE 3

DISASTERS BY TYPE

Agent	Number of Disasters
Floods	343
Hurricanes, Typhoons, Cyclones, Tropical Storms	211
Earthquakes	161
Tornadoes	127
Snowstorms	40
Thunderstorms	36
Landslides	29
Rainstorms	29
Heatwaves	22
Volcanoes	18
Coldwaves	17
Avalanches	12
Tsunamis	10
Fog	3
Frost	2
Sand and Dust Storms	2

impacts by disaster type and shows that floods continue to dominate the list.

Of the remaining items in the report, Table 4 is a breakdown of major disasters by continent and by type and needs no further explanation; Appendices 1 and 2 are continuations of similar appendices contained in the previous two reports and likewise are self-explanatory. Figures 2A and 2B are adapted from a graph given in Dworkin's paper. Dworkin's original graph (Graph 2) plotted countries by national income and deaths per million population. The two graphs here show (by arrow) the magnitude and direction (or vector) of change since 1973, the terminus of the arrow indicating the country's new position. To avoid a confusion of arrows, the countries of North America, South America, Central America,

TABLE 4

Loss of Life by Disaster Type

1947 - 1981

	Africa	Asia	Australasia	Caribbean & Central America	Europe	North America	South America
Avalanches	--	705	--	--	340	--	3840
Coldwave	--	1600	--	--	1440	600	--
Cyclone, Hurricane & Typhoon	950	476816	289	20481	250	2007	15
Earthquakes	16732	333623	133	30541	7324	75	38565
Floods	3962	171435	92	2355	11209	1680	5435
Fogs	--	--	--	--	3550	--	--
Heatwaves	--	4155	100	--	340	2190	135
Landslides	--	3576	--	260	300	--	1362
Rainstorms	--	1845	--	--	20	34	130
Sand and Dust Storms	--	--	--	--	--	10	--
Snowstorms	--	6403	17	200	1344	2157	--
Thunderstorms & Gales	--	20410	--	310	120	240	60
Tsunamis	--	7864	44	--	--	60	600
Tornadoes	548	4876	--	26	39	2726	--
Volcanoes	2000	2805	4000	151	--	61	440
Total	24192	1036113	4675	54324	26276	11840	50582

and Europe are plotted on 2A, while Asia, Africa and Australasia are plotted on 2B.*

Inspection of Figures 2A and 2B shows that the most obvious development has been the overwhelming shift from right to left, indicating the general rise in gross national product per capita (GNPpc). Only one country, India, experienced a decline in GNPpc. In Figure 2A, the general trend was for deaths per million population to remain fairly constant for North America and Europe, and for a number of countries in South and Central America. A few outstanding exceptions to the trend are Honduras, Guatemala, Rumania, and Albania, but it should be noted that Honduras and Guatemala had an order-of-magnitude increase in deaths per million population compared to the two European countries.** Put another way, a constant rate of change means that the number of deaths per disaster is increasing at about the same rate that population is growing. Deaths per million in the United States increased noticeably from 43 to 52, and Chile and Ecuador crossed into the high deaths/high income quadrant.

In Graph 2B the general tendency for the change vector is more downward and to the left, indicating that population is generally increasing

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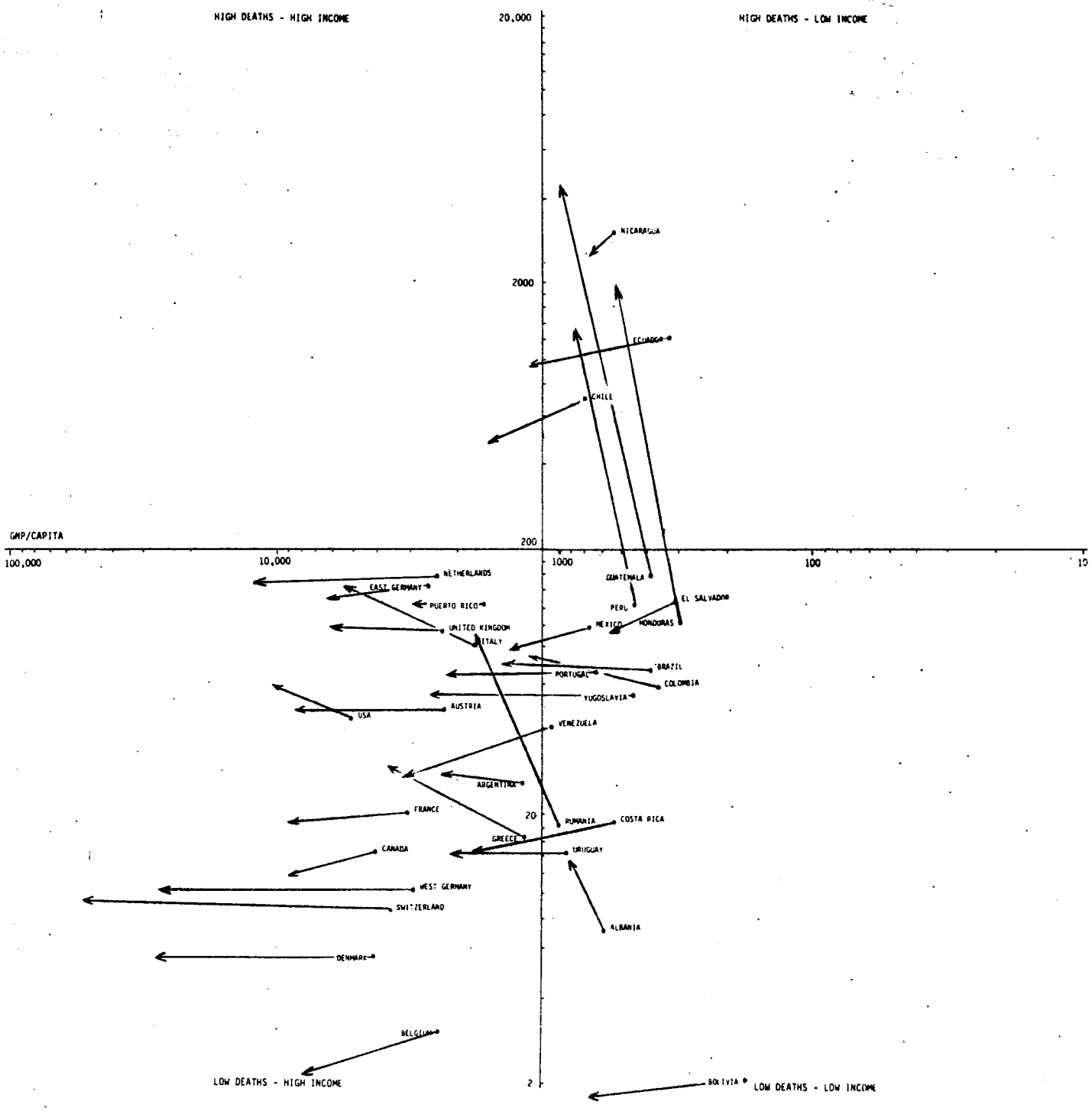
*It should be emphasized that the devision of countries (and continents) into Figures 2A and 2B was purely arbitrary and not based on any similarity in the change vectors of the individual countries. To make more precise statements than those in the following analysis regarding continental-scale changes would require calculating a continental change vector; such a vector could be calculated through the addition of the change vectors of the individual constituent countries.

**On Figure 2A Peru appears to have a large change vector but, in fact, Peru's initial position is improperly located and should have been in the upper right quadrant.

FIGURE 2 A

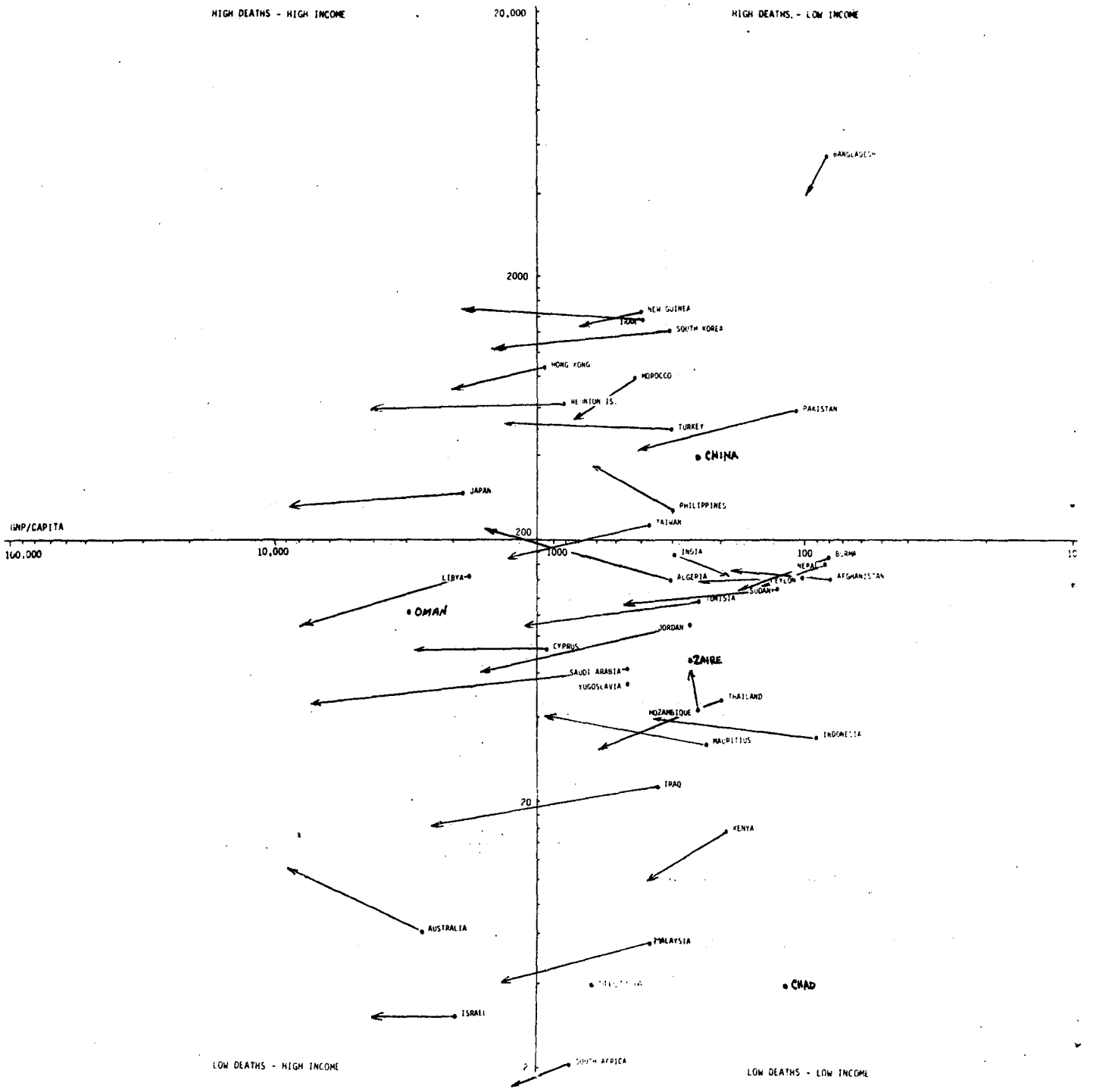
DEATHS PER MILLION BY NATIONAL INCOME [1]



[1] Income is expressed in GNP/Capita (U.S. dollars)for 1981. Population is also based on 1981 figures.

FIGURE 2 B

DEATHS PER MILLION BY NATIONAL INCOME [1]



[1] See footnote to Figure 2 B.

faster than the number of deaths per disaster. Mozambique, the Philippines, Algeria, and Australia are the only four countries to have experienced sharp increases in deaths per million. However, some countries, i.e., China, Nigeria, Oman, and Zaire, are plotted only as points since earlier positional data for these countries were unavailable, and, hence, their change vector is unknown. Six countries can be seen to have crossed over into the upper left hand quadrant, Japan having been previously the only country in this quadrant.

APPENDIX 1

LOSS OF LIFE FROM DISASTER IMPACTS 1947-1981

	Number of Disaster Impacts	Number of Lives Lost	Deaths/Million Population
North America			
Canada	11	298	12
USA	365	11,680	51
Caribbean and Central America			
Honduras	4	7,782	1,995
Caribbean Islands	5	286	92
Costa Rica	4	34	15
Cuba	11	1,378	138
Dominican Republic	3	1,041	186
El Salvador	3	430	88
Guatemala	5	23,803	3,174
Haiti	9	7,133	1,189
Jamaica	4	314	143
Mexico	24	5,236	76
Nicaragua	3	6,475	2,590
Puerto Rico	6	384	120
South America			
Argentina	9	721	26
Bolivia	2	8	1
Brazil	20	8,069	66
Chile	9	6,527	583
Columbia	12	1,959	70
Ecuador	3	8,060	983
Peru	12	23,684	1,309
Uruguay	1	40	14
Venezuela	4	445	29
Europe			
Albania	2	50	14
Austria	8	320	43
Azores	1	52	-
Belgium	3	22	2
Bulgaria	1	20	2
Czechoslovakia	3	10	0.6
Denmark	2	25	5
Eire	1	-	-
France	13	1,048	19
Germany, East	6	2,160	129
Germany, West	13	592	10
Great Britain	21	4,962	89
Greece	11	264	28

Appendix 1, cont.

	Number of Disaster Impacts	Number of Lives Lost	Deaths/Million Population
Europe (continued)			
Hungary	2	15	1
Italy	9	7,989	140
Netherlands	6	1,876	132
Poland	5	45	1
Portugal	4	636	64
Rumania	2	1,947	87
Spain	5	923	24
Switzerland	2	55	9
Yugoslavia	4	1,126	50
Africa			
Algeria	4	4,433	230
Chad	1	13	3
Ethiopia	1	2	-
French Somaliland	1	-	-
Kenya	1	170	10
Libya	1	260	84
Madagascar	2	750	85
Morocco	2	12,100	555
Mozambique	4	655	61
Mauritius	1	40	40
Nigeria	3	340	4
Reunion	2	300	600
Somalia	1	200	53
South Africa	1	35	1
Sudan	2	2,037	104
Tunisia	2	619	94
Zaire	1	2,000	66
Asia			
Afghanistan	5	2,432	153
Bangladesh	31	367,280	3,958
Burma	10	4,689	133
China	38	384,423	390
Cyprus	1	40	67
Hong Kong	7	3,865	773
India	77	112,450	163
Indonesia	14	5,893	40
Iran	35	61,259	1,539
Iraq	1	225	17
Israel	2	10	3
Japan	56	32,555	276
Jordan	1	220	67
Korea, South	16	39,733	1,021
Laos	1	30	8.3
Lebanon	4	490	153
Malaysia	2	51	4
Nepal	7	1,942	135

Appendix 1, cont.

	Number of Disaster Impacts	Number of Lives Lost	Deaths/Million Population
Asia (continued)			
Oman	1	100	111
Pakistan	14	37,048	417
Philippines	39	13,922	285
Ryukus	4	490	-
Saudi Arabia	1	500	48
Sri Lanka	5	2,125	139
Taiwan	11	3,123	172
Thailand	5	1,581	33
Tibet	3	-	-
Turkey	18	23,334	505
Vietnam	14	16,566	302
Australia & Oceania			
Australia	15	158	11
New Guinea	3	4,233	1,283
W. Somoa	1	-	-
Marshall Island	1	44	-

APPENDIX 2

LARGE-AREA DISASTERS
1947-1981

Year	Month	Natural Agent	Location	Number of 10° squares
1947	Apr-May	Flood	USA	2
1947	June-July	Flood	USA	2
1947	August	Heatwave	USA	2
1948		Flood	East Pakistan	2
1948	Jan-Feb	Cold Wave	S. USA	4
1948	May-June	Flood	N.W. USA	2
1949	Jan-Feb	Blizzards	N.W. USA	6
1949	June-July	Flood	China	2
1950	Feb	Flood	Mid-west USA	4
1950	Apr-May	Flood	Mid-west USA	2
1950	Nov	Flood	N.W. USA	2
1951	Jan-Feb	Cold Wave	USA	3
1951	Feb	Cold Wave	Mexico	3
1951	Apr-July	Flood	Mid-west USA	2
1951	Dec	Typhoon	Philippines	2
1952	Jan-Feb	Flood	Ohio R., USA	2
1952	Jan	Storms	W. USA	2
1952	Apr	Flood	Mississippi R., USA	2
1952	June	Flood	Australia	2
1952	June	Flood	S.W. USA	2
1952	July	Earthquake	W. USA	2
1952	Sept	Flood	Mexico	2
1952	Sept	Hurricane	Mexico	2
1952	Oct	Typhoon	Philippines & Indochina	2
1953	May	Tornado	S. USA	2
1953	Feb	Flood	N. Sea Area	2
1953	June	Flood	N.W. USA	2
1953	Aug	Flood	Chile	2
1953	Sept	Blizzards	Mexico	2
1954	Jan	Cold Wave	Europe	4
1954	Sept	Hurricane	N.E. USA	2
1954	Oct	Hurricane	USA, Haiti, Canada	3
1954	Oct	Floods	N.C. USA	2

Appendix 2, cont.

Year	Month	Natural Agent	Location	Number of 10° squares
1955	Aug-Sept	Flood	India, E. Pak. Assam	2
1955	Sept	Heatwave	W. USA	2
1955	Sept	Hurricane	Mexico, Caribbean	3
1956	Feb	Cold Wave	Europe	5
1956	Feb	Tornado	N. Cent. USA	2
1956	Apr	Cyclone	Mozambique	2
1956	June-July	Flood	Iran	2
1956		Flood	E. Pakistan	2
1956	Sept	Hurricane	S. USA	2
1957	Apr-May	Flood	S.W. USA	2
1957	July	Earthquake	Mexico	2
1958	Jan-Mar	Storms	W. USA	2
1958	June	Storms	Mexico	2
1958		Rains	W. USA	2
1958	Sept	Typhoon	Japan	2
1958	Oct	Typhoon	Philippines	2
1958	Nov	Storms	E. Pakistan	2
1959	Jan	Flood	N.W. USA	3
1959	Jan	Tornado	S.W. USA	2
1959	Mar-Apr	Flood	Madagascar	2
1959	Apr	Flood	Brazil, Uruguay, Argentina	2
1959	May	Flood	S. Africa	2
1959	Aug	Typhoon	Taiwan, China	2
1959	Sept	Typhoon	S. Korea and Japan	2
1959	Sept-Oct	Hurricane	E. USA	2
1959	Oct-Nov	Storms	E. Pakistan	2
1959	Dec	Typhoon	Philippines	2
1960	Jan	Heatwave	S.E. Australia	2
1960	Jan	Coldwave	Europe	4
1960	Mar-Apr	Flood	Mid-west USA	3
1960	May	Typhoon	Philippines & China	2
1960	June	Heatwave	N.W. India	2
1960	August	Tidal Wave	E. Pakistan	2
1960	Sept	Hurricane	Caribbean, S. USA	3
1960	Oct	Typhoon	Philippines	2
1960	Oct	Cyclone	E. Pakistan	2
1961	Mar	Typhoon	E. Pakistan	2
1961	May	Typhoon	E. Pakistan	2
1961	Sept	Hurricane	E. and S. USA	4
1961	Dec	Cold Wave	India	3

Appendix 2, cont.

Year	Month	Natural Agent	Location	Number of 10° squares
1962	Dec	Typhoon	Philippines	2
1963	Jan	Blizzards	W. Europe	4
1963	Feb	Earthquake	Libya	2
1963	Sept	Flood	India	2
1963	Oct	Hurricane	Cuba, Haiti	2
1964	Jan	Flood	Brazil	2
1964	Apr	Duststorms	USA	2
1964	July	Typhoon	Philippines	2
1964	June	Flood	E. Pakistan	2
1964	Aug	Hurricane	Caribbean, S. USA	3
1964	Sept	Hurricane	USA	2
1964	Dec	Flood	N.W. USA	2
1964	Dec	Cyclone	Ceylon, S.E. India	2
1965	April	Tornadoes	Mid-west USA	2
1965	May	Tornadoes	Mid-west USA	2
1965	May	Cyclone	E. Pakistan	2
1965	June	Heatwave	India	2
1965	August	Hail	Mid-west USA	2
1965	Sept	Hurricane	S. USA	2
1965	Dec	Cyclone	E. Pakistan	2
1966	Feb	Blizzards	S & E USA	2
1966	July	Heatwave	Mid-west USA	2
1966	Oct	Hurricane	Caribbean, Mexico, S. USA	4
1967	Sept	Hurricane	S. USA	2
1967		Typhoon	Philippines	2
1968	Aug	Earthquake	India, Celebes	2
1968	May	Earthquake	Japan	2
1968	May-June	Floods	E. & Mid-west USA	3
1968	October	Hurricane	S. USA	2
1968	May	Tornado	S. & Mid-west USA	3
1968	August	Heatwave	Australia	2
1968	March	Rain	N.E. USA	2
1968	June	Rainstorm	S. USA	2
1968		Typhoon	E. Pakistan	2
1968	Dec	Typhoon	Indonesia	2

Appendix 2, cont.

Year	Month	Natural Agent	Location	Number of 10° squares
1969	Mar	Flood	Brazil	2
1969	Aug-Sept	Floods	Mexico	2
1969	Apr	Floods	N. & Mid-west USA	4
1969	Aug	Hurricane	Caribbean & S. USA	4
1969	Sept	Hurricane	" & Cent. Amer.	2
1969	Feb	Snowstorm	N.E. USA	2
1969	May	Cyclone	India	2
1969		Flood	Algeria	2
1970	Jan	Floods	Argentina	2
1970	July-Sept	Flood	India	4
1970	Mar-Apr	Earthquakes	Turkey	2
1970	Aug	Hurricane	Caribbean & S. USA	2
1970		Flood	Philippines	2
1970	Oct	Cyclone	E. Pakistan	2
1970	Nov	Cyclone	E. Pakistan	2
1971	Nov	Cyclone	India	2
1971	Sept	Flood	India	2
1971	Feb	Tornado	S. USA	2
1971	Feb	Tornado	S. USA	2
1971	Nov	Rainstorm	Indonesia	2
1972	Apr	Tornado	E. Pakistan	2
1972	May	Flood	Mexico & S. USA	3
1972	May	Heatwave	India	2
1972	June	Flood	Caribbean & E. & S. USA	4
1972	June	Typhoon	Philippines	2
1972	July	Flood	Philippines	2
1972	Aug	Flood	Philippines	2
1972	Nov	Snowstorm	W. Mid-west, N.E. USA	5
1972	Dec	Rainstorm	Philippines	2
1973	Mar	Flood	S. USA	3
1973	Mar	Flood	N.E. USA	2
1973	Apr-May	Flood	Mississippi R., USA	4
1973	June	Flood	N.E. USA	2
1973	Aug	Flood	India, Pakistan, E. Pakistan	3
1973	Oct	Flood	Mid-west USA	3
1973	Oct	Flood	Spain	2
1973	Mar	Earthquake	Philippines	2
1973	Nov	Tornado	S. USA	2
1973	Apr	Tornado	E. Pakistan	2
1973	Apr	Hurricane	W. Europe	4

Appendix 2, cont.

Year	Month	Natural Agent	Location	Number of 10° squares
1974	Jan	Rain	USA	1
1974	Feb	Flood	Argentina	2
1974	March	Flood	Brazil	3
1974	April	Tornado	USA	2
1974	Aug	Flood	Bangladesh/India	2
1975	Jan	Snowstorm	USA	2
1975	Feb	Earthquake	China	2
1975	Aug	Typhoon	Japan	2
1975	Sept	Flood	India	1
1975	Sept	Hurricane	Caribbean/USA	4
1976	May	Typhoon	Philippines	3
1976	July	Tropical Storm	Mexico	2
1976	Aug	Hurricane	USA	2
1976	Sept	Tropical Storm	USA	2
1977	Jan	Snowstorm	USA	2
1977	March	Snowstorm	USA	2
1977	March	Earthquake	Bulgaria/Rumania	2
1977	April	Flood	USA	2
1977	Aug	Earthquake	Indonesia	2
1978	Jan	Snowstorm	USA	1
1978	Oct	Rain	S.E. Asia	1
1978	Nov	Flood	India	1
1979	Jan	Snowstorm	USA	2
1979	Feb	Flood	Brazil	2
1979	July	Tropical Storm	USA	3
1979	Aug	Hurricane	Caribbean	1
1979	Sept	Hurricane	USA	1
1979	Dec	Snowstorm	Europe	2
1980	April	Tornado	USA	1
1980	April	Tornado	USA	1
1980	May	Tornado	USA	1
1980	May	Volcano	USA	2
1980	July	Heat	USA	2
1980	Aug	Hurricane	Caribbean/USA	4
1980	Sept	Flood	Bangladesh/India	1
1981	Jan	Cold	USA	1
1981	July	Flood	China	1
1981	Aug	Typhoon	Far East	1
1981	Dec	Cyclone	India	1

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