

NOTES FOR REMARKS

BY

IVAN L. HEAD

to the

NATIONAL DEFENCE COLLEGE

KINGSTON, CANADA

September 10th, 1984.

ARCHIV
HEAD
no. 47

IDRC-doc 431

INTRODUCTION

September 10, 1984. Six days following the Canadian federal election; 57 days prior to the United States election. A day early in the National Defence College Course No. XXVIII. The day when you are introduced in a single session to the "State of the World" - a task about as possible of success as the Expos winning a one-run ball game. It is a task so daunting that only someone of enormous ego would even attempt it. Year after year the Directing Staff find that I am the only candidate.

A single morning, encompassing a single lecture, is wholly inadequate to cover the subject. I make no apology, therefore, for the necessarily subjective approach I take to this catalogue of the global condition. Your task, after all, in the months to come, is to conduct your own examination. Mine is simply to stimulate you and to encourage your awareness of global horizons - geographically and conceptually. There is no single message in what I'm about to say. There may be two. One is that no event of whatever origin or whatever location is unconnected from all others in today's world. The second is that humankind

is now balanced for the first time in its existence on the threshold of a number of irremediable errors; should we act unwisely, we may never have the chance to reverse the consequences. Not now; not in the foreseeable future.

If you are discontented with any of what I say, and past performances bear out that many of you may well be unhappy with much of this lecture, I shall be philosophic. After all, even that mighty six-day event at the beginning of time has not escaped criticism. Said Alfonso the Wise, King of Spain in the 13th century, "Had I been present at the creation, I would have given some useful hints for the better ordering of the universe."

Let's begin this morning by looking back at where we've been. Exactly 40 years ago today, at Dumbarton Oaks, allied statesmen were gathered to take the decision to create the United Nations organization. That decision had been anticipated three years earlier by the visionary actions of Prime Minister Churchill and President Roosevelt. Those two leaders, in the depths of World War II, anchored in Placentia Bay, Newfoundland, in August, 1941, issued the Atlantic Charter which called for post-war

political and economic objectives which, at San Francisco in 1945, were melded into the United Nations Charter: renunciation of force, political self-determination, economic collaboration, a system of general security, disarmament. In 1941 Churchill and Roosevelt spoke of a peace "which will afford assurance that all the men in all the lands may live out their lives in freedom from fear and want." The preamble of the U.N. Charter states in part: "to reaffirm faith in fundamental human rights, in the dignity and worth of the human person, in the equal rights of men and women and of nations large and small...."

Today the U.N. does not enjoy universal acclaim, and for good reason. Yet those who denounce most vocally its failures seldom recall its achievements in the work of the specialized agencies, its great treaty-creation triumphs, its peacekeeping accomplishments, its undoubted ability to identify issues and focus attention, its irreplaceable role as a forum for debate and negotiation no matter how sterile those sometimes are.

Forty years is not a long period in the millennia of recorded history, even if the tumult of those four

decades is as intense as has ever been experienced. A century is a fairer test. One hundred years ago there convened the infamous Berlin Conference which gave to itself the task, and the right, to draw boundaries between the African colonies of the several European powers. However advantageous this exercise may have been for imperial administrators, it had the effect of dividing tribes, splitting coherent geographic units, and ignoring local history, customs and tradition. One need only consider Uganda today to recognize the ill-will and incongruities which remain as a bitter legacy of the arrogance of the colonial period.

Other legacies of 1884 have proved more beneficial to the human spirit. Huckleberry Finn was published that year. Brahms's Symphony No. 3 in F major was completed and first performed.

Let's look back further yet. 150 years ago, in 1834, the English economist Thomas Robert Malthus died. His Malthusian theories were not far from the surface at the recently concluded Mexico City population conference. Another, one whose faith in human endeavours has made his

name a household word worldwide, took an important step in that same year 1834. Abraham Lincoln entered politics as an Assemblyman in the state legislature of Illinois.

Not all colonial ventures reaped anguish or made necessary the exploits of a Lincoln to eradicate some of the abuses they introduced. Exactly 300 years ago, in 1684, Bermuda became a crown colony - and today proudly retains that status. Bermuda's colonization followed by 100 years that of Virginia. Sir Walter Raleigh discovered that territory and annexed it to the Crown in 1584. The practice of slavery followed shortly thereafter, in 1619.

And 50 years earlier still, in 1534, as every Canadian this summer surely knows, Jacques Cartier sighted the coast of Labrador on his first voyage to North America. It was his second voyage a year later which brought the presence of France up the St. Lawrence to the present site of Quebec City and Montreal, opening up the heartland of North America to French influence two centuries prior to English penetration. It is well to note that at almost the same time - 1540, three quarters of a century before the landing of the Pilgrims in Massachusetts - a contemporary of

Cartier, Coronado, struck out from the Gulf of California and marched through what is now Arizona, New Mexico, Texas and Kansas, almost to the Nebraska border. The cultural and political impact of these non-English speaking men and their followers remains very much alive in each of Canada and the United States, enriching immeasurably our two societies.

No statesmen can ignore history, yet its lessons are seldom clear. "Time", said Carl Sandburg, "is a great teacher." "Time", said Oliver Wendell Holmes, "is a liar." "Time", said Henry Luce, "is not a Canadian magazine."

But back to 1984. A world of incredible contrasts, where some human beings enjoy health advantages and creature comforts of a degree not considered possible a few years ago. A world where others suffer to an extent unimaginable to us: life expectancies of less than 40 years as in Somalia or Guinea; infant mortality rates in excess of 100 per 100,000 as in Angola or Algeria (compared with 7 in Finland or 10 in Canada); per capita GNP of less than US\$200 per year as in Burma or Bangladesh (compared with US\$17 thousand in Switzerland or US\$13 thousand in the United States). A world of tumult and unrest, one which

promises much but betrays often. A period which has been compared to the 13th century when chivalry flowered even as the inquisition was introduced as a barbaric instrument of legal process. That century included Magna Carta, the Cologne Cathedral, and Genghis Khan. There is a major difference, however, between then and now. Armies in the 13th century were equipped with swords, not nuclear weapons.

Today, many parts of the globe flicker and flame with war and unrest. Sometimes civil, sometimes on frontiers, sometimes incited from without, always creating immeasurable human tragedies. U.N. peacekeeping or observer forces remain on duty in Cyprus, in Kashmir, in Palestine and in Lebanon. Lebanon remains a powder-keg of rivalries of peoples and of governments. The savage Iran-Iraq war enters this month its fifth year. Military activity continues in Ethiopia, in Sudan, in Chad, in Uganda, in Namibia and in the Western Sahara. The Punjab is uneasy, if not in revolt, while to the south, in Sri Lanka, Tamil separatists and government forces exchange barbarities, and in the west, Soviet forces continue their savage occupation of Afghanistan. Still in Asia, Vietnamese forces are active in

Kampuchea, and dissidents defy central authority in northern Burma.

The western hemisphere is scarcely more quiescent. Brutal "Shining Path" guerrillas operate in the Peruvian Andes. Repressive military dictatorships occupy office in Chile, Uruguay, Paraguay and Surinam. The El Salvador civil war continues to kill soldiers and civilians alike, while Nicaragua is the site of a confusing and perilous series of circumstances.

In Europe, Soviet repression in Poland and the denial of human rights in several countries is a testament to the contrasts in beliefs between Western and Eastern societies. In Northern Ireland, a remnant of centuries-old religious strife bedevils society.

Across all this lies the heavy shadow of the central-Europe confrontation between the forces of NATO and the Warsaw Pact, both armed with conventional and nuclear weapons and backed by strategic rocket systems of overwhelming destructive power.

Where does one begin to look at this confusing world? I invite you to view it with me from four different perspectives:

- I The Physical Environment,
- II The People Environment,
- III The Economic Environment, and
- IV The Security Environment.

If any of you are still in the room at the end of all that, I'll attempt some conclusions.

ITEM - THE PHYSICAL ENVIRONMENT

From the earth, from the oceans and lakes, from the atmosphere do we derive the elements which sustain human life. If these are not wisely husbanded, our own lives and those of future generations are placed in jeopardy. No state of the world examination can fail to look at the physical environment. Happily, since the United Nations Environmental Conference in Stockholm in 1972, awareness of environmental issues has become more widespread. It does not follow, however, that governments are wisely responding to the need.

One of the globe's most precious and most vital commodities is soil. It is disappearing at an alarming rate, making a mockery of the phrase "dirt-cheap". Several forces are at work leading to this result. One is drought - most evident in the Sahel region of Africa and, more recently, in vast tracts of South-West Africa. Another is the unceasing demand for firewood in developing countries which depletes forests and encourages soil erosion. These two phenomena together contribute to desertification. A third negative force takes the form of improper farming

practices, this as much in the industrialized countries as in the South. A fourth, again evident in both North and South, is urban sprawl. The President's Global 2000 Study projected that the world's arable land area, which in 1975 was 0.32 hectares per person, would decline by the year 2000 to 0.25 hectares per person.

Let me endeavour to transform those statistics into more recognizable form. Canada occupies the second largest land mass of any country in the world and is one of the world's major agricultural producers. Yet the recently completed Canada Land Inventory reveals that only 11% of Canadian land is capable of any form of agriculture, less than 5% capable of producing crops, and less than one half of 1% categorized as Class One land with no agricultural limitations. How much is 5% - the crop land area? About the area of Sweden. How big is the Class One land area? About the size of Denmark. Dr. E.W. Manning of Environment Canada has calculated that on a clear day, a person standing on top of the C.N. Tower in Toronto is able to see 37% of Canada's Class One agricultural land.

In most instances, cities in Canada and the United States were sited in centuries past because of their proximity to prime agricultural land. Ironically, lands which are best for agriculture are often best for urbanization - flat, well-drained, easy to dig for foundations. The current growth of these cities is thus directly reducing the acreage of farm lands. Environment Canada has calculated that, between 1971 and 1976 irretrievable losses of prime agricultural lands owing to urbanization amounted to 38,000 hectares - most of it the most fertile and climatically advantageous areas: the Fraser Valley, southern Ontario, the Montreal triangle. In the United States, the U.S. Department of Agriculture calculates that 2.51 million hectares of prime crop land were converted to urban and related uses between 1967 and 1975.

Nor are these problems confined to the North. As the Population Conference informed us, Third World cities are growing at an alarming rate. It is forecast that, world-wide, the population will shift from 39% urban in 1975 to 50% urban in 2000.

These demographic shifts have two immediate effects. First, as farm labour departs for the cities, costs rise because of the need to mechanize. Second, as cities eliminate prime lands, the demand for food production shifts to less productive areas. Applications of water, of fertilizer, of pesticides and herbicides are costly. Marginal lands require massive capital investments and very costly annual inputs. In some cases the land itself is not capable of sustaining intensive agricultural practices, this because of salinization resulting from irrigation, acidification from fertilizer, contamination from pesticides, soil compaction or drifting from inappropriate tillage methods and with it the loss of precious organic materials.

Closely associated with rich soils in an organic and synergistic complex are forests and fresh water. Their continued health cannot be presumed. The Brandt Commission was one of the first to draw attention to the massive amounts of forest loss. It estimated that forest cover decreased from 25% to 20% of the earth's surface over the previous 20 years. Every year throughout the Third World an area of forest is destroyed equal to one half of the United Kingdom. Closed tropical forests are decreasing by 10 to 20

hectares a year according to the best available estimates, primarily as a result of poorly managed industrial logging. If these rates are not stopped by government actions, a U.S. Interagency Task Force predicted that by 2025 the world's closed tropical forests "will be nothing but scattered remnants, excluding sections of the Amazon Basin and central Africa." The atmospheric consequences of losses of this magnitude would be catastrophic with major shifts in rainfall patterns. The speed of forest depletion is staggering. Thailand lost one-fourth of its forest cover in a 10 year period. Costa Rica lost one-third in 10 years. Ivory Coast lost one-third in 8 years.

The rate of loss of open-forest areas in the Third World is almost as great. The reasons are conversion to agricultural use, often by primitive, shifting slash-and-burn techniques, fuelwood gathering, and over-grazing. It is estimated that close to one billion cubic metres of wood are harvested for fuel each year in the tropical zone. This rate will increase in lock-step with population increases because there is no economically advantageous fuel in sight for the foreseeable future. Nor is this wood being wasted.

In many places families have such limited access to fuelwood or charcoal that they are able to cook only one hot meal per day.

All told, FAO calculated in 1976, "over the past quarter century, world output and consumption of tropical broad-leafed industrial wood have increased rapidly more than four times". The operable natural forests being depleted have shrunk, again according to FAO, from 228 million hectares in 1970, to 180 in 1980, and are projected to decline to 146 by 1990.

Quite clearly, the world's forests cannot indefinitely sustain this onslaught upon them.

Fresh water is critical both to agricultural productivity and to forest growth. Natural phenomena such as drought or flood have for millennia led to tragic consequences. Drought is the primary cause of desertification in the Sahel and in Sudan. In the latter country, the desert has extended by a 90 to 100 kilometre belt across the entire country in just 15 years according to UNEP, the U.N. Environment Programme.

Water diversion techniques to overcome drought, either by canals or pumps, are not devoid of peril if not conducted sagaciously. The best example of over-pumping exists not in a developing country but in the United States. The U.S. Geological Survey has drawn attention to the demands made upon America's largest aquifer, the Ogallala, which lies beneath seven states in the plains area. In 1953, 2,000 wells tapped this source. By 1983, the number had increased to 70,000. Not surprisingly, water levels have dropped, and pumping costs have increased. In parts of Texas pumping costs which were \$1.50 per acre-foot increased to \$60.00 per acre-foot in less than 10 years.

Another, unnatural source of water despoilation is the emission into the atmosphere of toxic wastes from internal combustion engines and industrial smoke-stacks. The effect is the battle cry of millions in Eastern Canada and the North-East United States, as well as in Scandinavia and parts of central Europe: "Acid Rain". The acid-alkaline balance is measured as 7 on the pH scale. Because pH values are logarithmic, each drop of a point represents a tenfold increase in acidity. Clean, normal rain is slightly

acidic with a pH of about 5.6. The rain now falling in the Adirondacks averages 4.2 - an increase in acidity well more than 10 times the norm. Rainfalls in North America have been recorded with pH levels below 2 - more acidic than vinegar or lemon juice. The long-term effects of this phenomenon on lakes, rivers and forests are highly destructive. The short-term international political effects are almost as unpleasant.

I've not mentioned the oceans where over-exploitation and pollution have reduced many catches, and damaged many fish-stocks, some seriously. This is doubly tragic because population pressures will place increasing pressure on sea-food as a source of protein. FAO estimates that global annual growth rates have dropped in the 1970s from the earlier 5% to only 1%. On this basis, supplies will fall short of demand by as much as 10 to 15 million tons by the end of the century. Fortunately, the Law of the Sea Treaty and the implementation of 200 mile exclusive economic zones introduces a control feature of considerable potential. Unfortunately, however, that treaty has not been signed by a number of industrialized countries, including most notably the United States.

ITEM - POPULATION: THE HUMAN ENVIRONMENT

This item in my catalogue of indicators of the state of the world not only concerns people, it is people.

Last month in Mexico City the World Population Conference convened its second decennial meeting. That event had precipitated a number of studies and analyses of a current and a projected nature. A number of these studies attempted to penetrate raw population figures and relate them to such critical factors as land unit carrying capacity, food production, and urban services. Much of the data is interesting, a good deal of it is of vital importance. To quote the current and recently-released issue of the World Bank's World Development Report 1984, "Population growth does not provide the drama of financial crisis or political upheaval, but ... its significance for shaping the world of our children and grandchildren is at least as great."

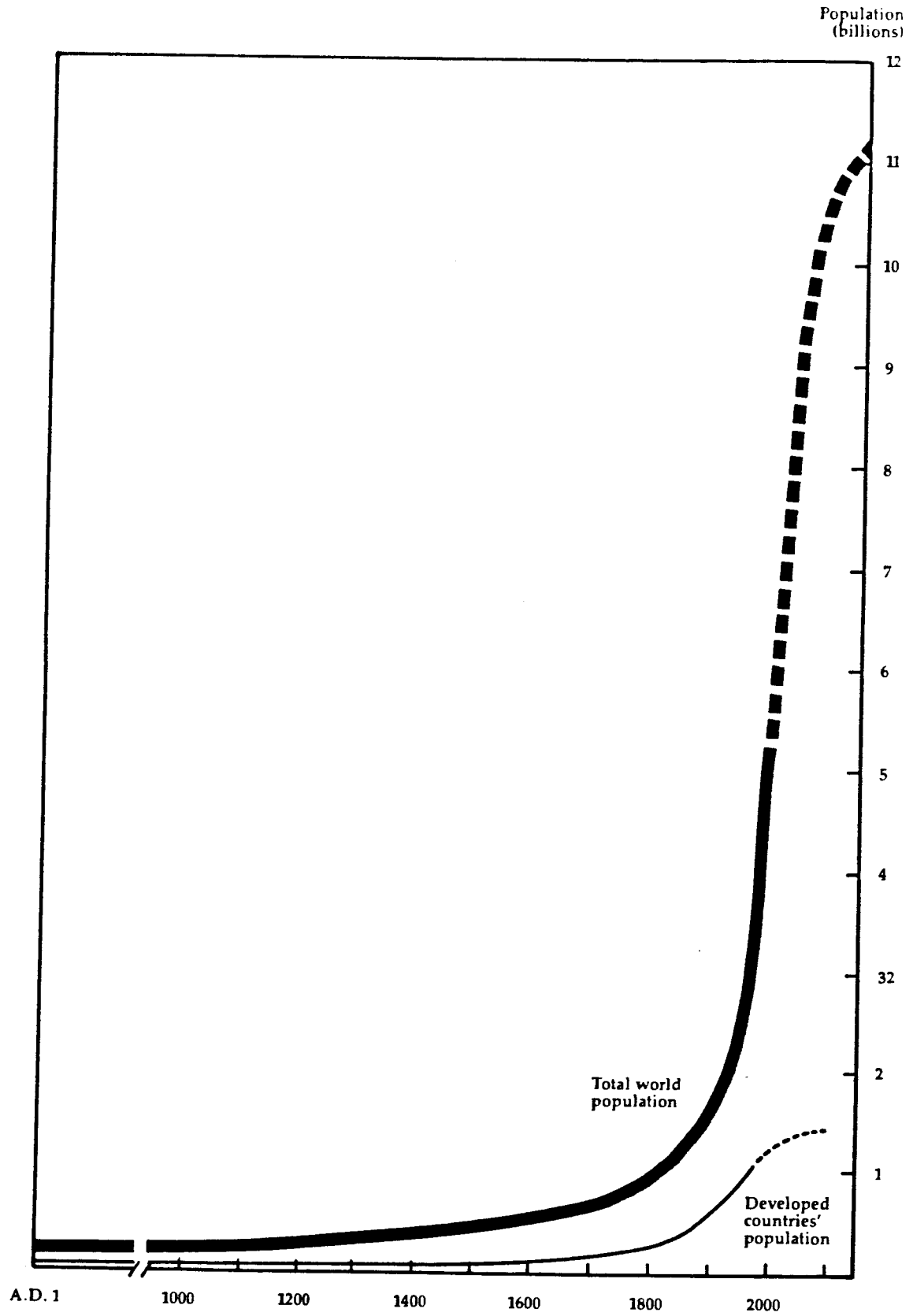
Demographic projections must be made with care; so, equally, should comments about the effects of population growth. I shall endeavour to be prudent in both respects.

Historic data, by contrast, is hard evidence and therefore doubly useful in interpreting change. Figure 1 contains something of the past as well as something of the future. The transition occurs at the beginning of the broken line.

From pre-history until about 1000 AD, the world's population did not increase by much. In earliest times, life was so precarious, and food supplies so unreliable, that a rough balance obtained between births and deaths notwithstanding an undoubtedly high fertility rate. The introduction of agricultural practices about 8000 BC lent a greater certainty to food supply but was for a long time largely offset by recurring crises of other natures - plague, war, etc. As the figure shows, population growth was modest for many centuries - from about 300 million at the time of the birth of Christ to some 800 million in the mid-eighteenth century. The doubling period was about 1,500 years. An equally important phenomenon is the fact that the rate of growth was approximately the same in all regions of the world.

From about 1850 onwards, growth accelerated immensely. Mortality decreased with the advent of science

Past and projected world population, A.D. 1-2150



Sources: Durand, 1977, UN, 1966

figure 1

and technology. The next doubling period was reduced by 90%, the world required only 150 years to grow from 800 million to 1.7 billion in 1900. That acceleration has continued. By 1950 the figure had reached 2.5 billion. By 1980, 4.8 billion. Doubling, that once had taken 1,500 years, had now been accomplished in 30.

Switching to projections, the World Bank states authoritatively that the best estimate for the year 2000 - scarcely more than 15 years from now - is another billion and a half, for a total world population at the close of the century of 6.2 billion.

Since 1950, an important distinction has become apparent. The longstanding, roughly parallel, growth rates between countries industrialized and developing ceased. From 1750 to 1850 the two groups were not that far apart: 0.6% annual growth rate for the nations of Europe, North America and Japan, 0.4% for Africa, Asia and Latin America. Each group eased upwards in the next century from 1850 to 1950: 0.9% and 0.6% respectively. From 1950 onwards the change has been startling. Between 1950 and 1970 the growth rates increased and reversed. The North grew at 1.1%

annually, the South at 2.2%. Some regions in the South were well ahead of the average. The states of Central America, for example, grew at an annual rate of 3.2% between 1955 and 1975, a rate that would increase the population by a factor of 24 if sustained for a century. Obviously, that rate is not sustainable. Nevertheless, accepted projections distribute the population for the year 2000 - 6.2 billion - as 4.9 billion for the developing countries, 1.3 billion for the industrialized countries.

As the developing countries share of world population grew, their share of production dropped: from 44% in 1800 to 19% a century later and to 17% in 1950. In 1980 the share had risen to 21%, but the population share was 75%.

The linkage between fertility and income is dramatic as illustrated in Figure 2, which emphasizes the clear drop in fertility as per capita incomes increase.

Another comparison between North and South is equally salient. The current size of those developing countries now at the threshold of industrialization and in

Fertility in relation to income: selected developing countries in South Asia, 1972 and 1982

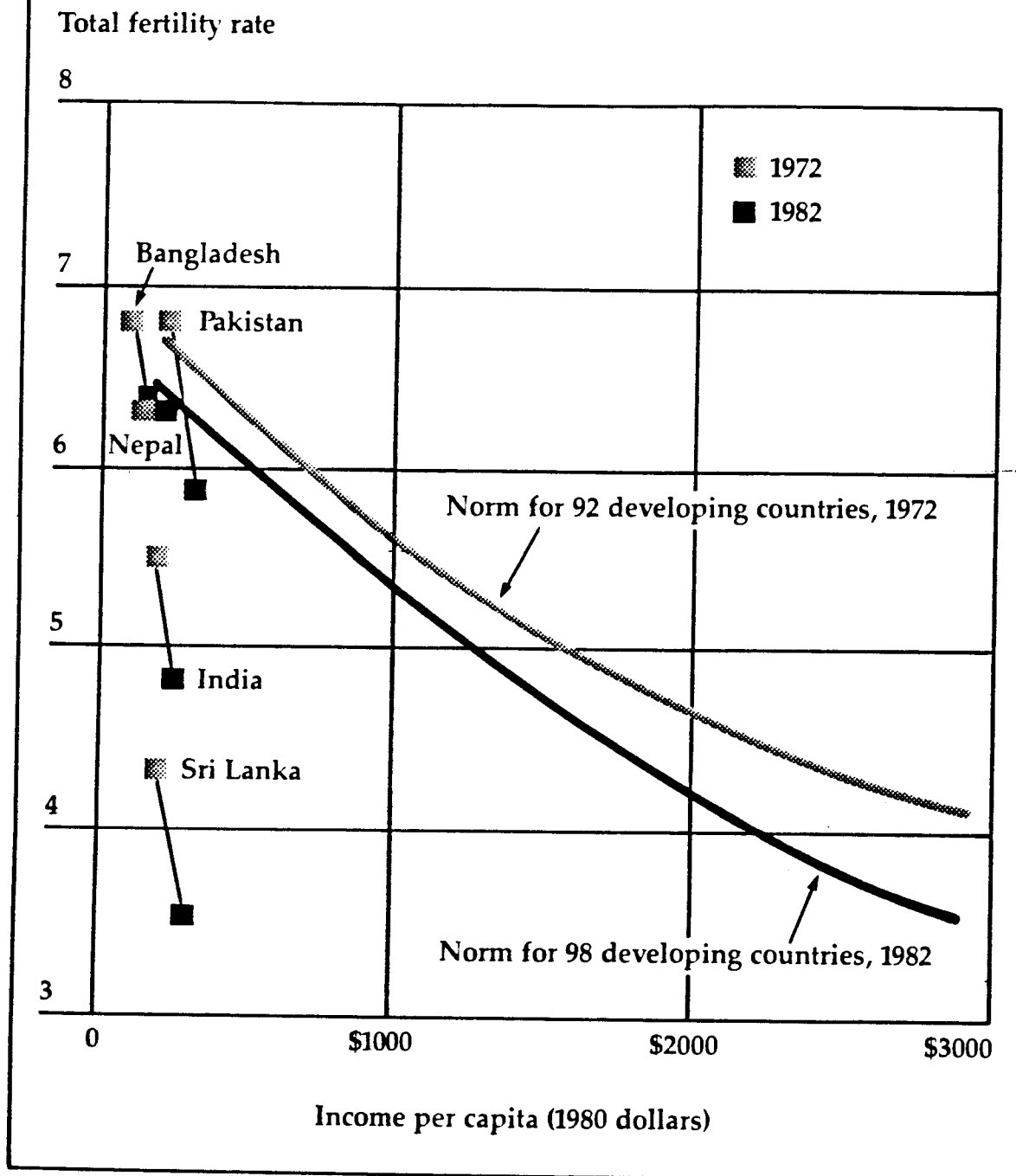


Figure 2

the infancy of self-government is immensely larger than was the case for the Northern countries at a comparative moment of their history. India is now 720 million, Indonesia - 155 million, Nigeria - 90 million, Mexico - 75 million. In 1800, by comparison, France was about 30 million, Britain 10 million. In 1850 the United States was about 24 million, Japan 30 million.

The challenges to contemporary developing country governments are thus incomparably greater than those to the now industrialized countries at an equivalent time in their history. Not only are populations several-fold larger but instant communications reveal to the poor the contrast of living standards with the better off. In all countries, North and South, governmentally-imposed curtailments of freedom have followed on population growth; zoning laws, emission standards, water and land use, are among those well known to everyone in this room. Authoritarian measures in countries with populations much greater than Canada's are not, therefore, entirely without precedent.

The carrying capacity of the planet earth is not of infinite proportions. The earth's ability to provide

food will be a critical control factor if population increases are not restrained in other ways. A recently-concluded major research project commissioned by the United Nations Fund for Population Activities (UNFPA) and carried out by the U.N. Food and Agriculture Organization (FAO) bears on this issue. It found that in 1975 there were 54 countries unable to feed their then existing populations from their own lands employing traditionally low level inputs of such items as fertilizer, mechanization, pesticides, etc. The 1975 population of those 54 countries was 1.072 billion. The researchers calculated that a quarter of these people were in excess of the land's then carrying capacity.

Projected to 2000, population increases will increase the number of countries unable to feed their populations at low inputs to 64. The affected population will be less, however, - 1.054 billion - mainly because of the completion in the interim of extensive irrigation projects in some countries. On the other hand, the percentage of people in excess of the carrying capacity will have doubled, from 25% to 50%, so that the net numbers of humans in misery will be much greater.

Such figures, of course, are subject to several cautionary remarks. First, circumstances vary considerably from region to region as could be expected from the distribution of arable soil. Second, enhanced agricultural inputs would have the effect of increasing production dramatically. For example, if inputs were increased from a low to an intermediate level, that list of 56 countries unable to feed their populations would drop to 24 and the affected population would drop from 25% to 4%. Third, a range of factors which has the effect of departing downwards from optimum productivity must be considered. The research study was based on the cultivation of 15 major food crops, primarily cereals. All land, however, cannot be dedicated to grain crops. Some is necessary for vegetables, more for fibres, a good deal for firewood (in agro-forestry applications), some for fallow, and an increasing percentage for fodder for animals. This latter figure is now in excess of 25% of the entire harvested area in developing countries. Each of these demands upon the land decreases the size of cereal yields.

However these statistics are interpreted, whether these studies prove accurate or otherwise, one conclusion is

beyond challenge. Rapid population growth - at rates above 2%, common in most developing countries today - is, in the words of the World Bank "a brake on development".

ITEM - THE ECONOMIC ENVIRONMENT

When the leaders of the seven major industrialized nations met at their annual summit in June, their declaration reflected pleasure at economic recovery in the North and concern that the condition of the South remained perilous. Just how perilous will be revealed in considerable detail at the annual meetings of the Commonwealth Finance Ministers next week and those of the World Bank and the International Monetary Fund which begins two weeks from today.

If the South is in trouble, there is a relatively recent but happily widening awareness that the North is inextricably affected. The immense debts owing by so many developing countries, for example, are in large measure owed to northern financial institutions. The profitability, even the stability, of some of these banks and financial houses will be in jeopardy in the event of default or suspension of payments. The major focus of concern is South America where foreign debt increased from 27 billion US dollars in 1970 to 350 billion in 1983. Some 14 billion of the debt is held by

Canadian banks. Worldwide LDC debt was estimated by the World Bank in 1983 to be US\$595.8 billion.

Because these debts are denominated for the most part in United States dollars or other foreign currencies, the debtor nations must generate funds for servicing them through the sales abroad of their manufactured goods and commodities. Their task is monumental, yet only one part of a complex of economic challenges.

Because of several factors - the fluctuating currency values which affect prices for such products as sugar and coffee, mounting protectionist pressures against manufactured imports in the industrialized countries, and in some instances, falling oil prices - exports from the Latin American and Caribbean region actually fell between 1981 and 1983, according to the U.N. Economic Commission for Latin America. An immense percentage of all foreign exchange earnings is thus required for debt servicing. Brazil and Mexico each employ 46% of export earnings simply to pay the interest on foreign debt - not amortize the capital, just pay interest. Similar figures for Argentina and Chile are 50%.

The deteriorating financial position of the developing countries is illustrated by the basic debt indicators compiled by the World Bank and listed in Figure 3.

A major factor in the precipitation of this debt crisis is the recent steep rise in interest rates, led by the United States. Those rates create a second category of problems for the developing countries; they effectively discourage any capital movements from anywhere in the world except those into the United States. Thus the vital flow of investment capital into the ECLA region dropped from US\$37.9 billion in 1981 to US\$16.7 in 1982 and to US\$3.2 billion in 1983. The Latin American region, like others, has become a net capital exporter as it grapples with its debt problem. Development in these circumstances drops away dramatically. Absent fresh infusions of capital from abroad, denied flexibility in the use of export earnings, dependent on wildly fluctuating commodity prices, harnessed to heavy interest payments - governments find themselves treading a perilous political tight-rope. Communal unrest is seldom absent as prices and unemployment both rise. Per capita incomes in Latin America have dropped 13% since 1980. In

Debt indicators for developing countries, 1970–83
(percent)

Indicators	1970	1980	1981	1982	1983 ^a
Ratio of debt to GNP	13.3	19.2	21.9	24.9	26.7
Ratio of debt to exports	99.4	76.1	90.8	108.7	121.4
Debt service ratio ^b	13.5	13.6	16.6	19.9	20.7
Ratio of interest service to GNP	0.5	1.5	1.9	2.2	2.2
Total debt outstanding and disbursed (billions of dollars)	68.4	424.8	482.6	538.0	595.8
Official	33.5	157.5	172.3	190.9	208.5
Private	34.9	267.3	310.3	347.1	387.3

Note: Calculations are based on a sample of ninety developing countries.

a. Estimated.

b. Ratio of interest payments plus amortization to exports.

those parts of the world where extended drought has led to massive agricultural failures, lack of foreign exchange inhibits the imports of food-stuffs. Food shortages are still a further contributing factor to political unrest.

The North has even more at stake in the South than debtor default and political instability, however, major though these are. Latin American imports dropped from US\$100 billion in 1981 to US\$56 billion in 1983, causing the undoubted loss of hundreds of thousands of jobs in the industrialized countries. (The U.S. Government estimates that each billion dollars of U.S. manufactured exports translates into 24,000 jobs.) This trend is continuing into 1984 according to figures released last week by the IMF. Developing countries imported goods of a value of US\$90.82 billion in the first quarter of 1984, compared with a figure of \$100.33 billion in the final quarter of 1983. Brazil's imports, which had been at the rate of \$6 billion per quarter in recent years dropped from \$4.4 billion to \$3.4 billion over those two quarters.

Those high American interest rates which are so attractive to foreign capital flows have led to historic

high values for the United States dollar measured against most foreign currencies. The Canadian dollar stands at near-record lows of 76 cents or so, but has retained its strength much better than a number of European currencies. These value fluctuations in turn are a significant factor affecting United States merchandise exports and imports. The U.S. trade deficit in 1983 was US\$75 billion; this year it is expected to exceed US\$100 billion. An unhealthy share of this deficit is represented by the Canadian bilateral surplus.

Canada-United States bilateral trade is far and away the largest in the world, exceeding Cdn\$118 billion last year (some US\$90 billion). This year's figures are up sharply again, revealing a 19 billion Canadian dollar increase in the first half. Until recently, this bilateral trade has shown a historical consistency, remaining for many years in rough balance, seldom out more than a few millions on tens of billions. For Canada to enjoy a merchandise surplus of more than 14 billion Canadian dollars last year is far from healthy and certainly not sustainable.

The merchandise account is far from the whole story of course. When "invisibles" are added - interest, dividends, royalties, etc. - the total current account, i.e. non-capital account, is revealed. Here is where the Canada-U.S. relationship is turned around as a result of the dominant ownership of the Canadian economy by United States investors. While we enjoyed a trade surplus well in excess of 14 billion dollars last year (about 10.5 billion U.S.), our total current account surplus was much less, about 2 billion (1.5 billion U.S.).

How are the developing countries doing in these respects? Very poorly. The World Bank reveals a total current account deficit in 1982 of US\$188.2 billion. If you wish to compare this with total aid flows from north to south that year, the latter figure is US\$23.9 billion. In somewhat simplistic shorthand, it means that the industrialized nations are making money off the LDCs to the tune of more than US\$150 billion per year. If economic interdependence was a fuzzy term to any of you prior to this morning, that figure may sharpen the image somewhat - even reverse your conceptions of who depends on whom.

The dominant role of the United States in the world economy requires a lingering look. For many years the United States has been the world's largest creditor with capital investments in most regions. The unprecedented flip-flop of the United States economy in the past four years, however, has come close to reversing that position. The enormous US current account deficits, combined with the historically low savings rate in the United States (less than 4% of disposable personal income - which is less than half the West German rate and 1/3 that of Japan or Canada) are rapidly making the United States a net debtor nation, a phenomenon not experienced since World War I. Arthur Burns, Chairman of the United States Federal Reserve System from 1970 to 1978 has written recently: "... it is well to keep in mind that prior to last year, the biggest current account deficit that any country had ever experienced in a single year was \$15 billion. The \$70 to \$80 billion shortfall that the United States is headed for this year is awesomely different from anything experienced in the past."

Such figures quickly impact within a country, even one so large and resilient as the United States. The mid-

summer decision of the United States government to rescue the Continental Illinois Bank represents the largest single government bail-out of a private sector enterprise in history: US\$4.5 billion of public funds.

Personal economic health was a major factor in the recent Canadian election as it is in the United States election campaign. The question is posed: "Are individuals economically better or worse than they were four years ago?" The measurement is usually calculated on a basis of per capita consumption, and is subject to varying interpretations as politicians well know. Subject to that caution let's look again at the developing world and quote the World Bank: "During 1980-83 it (per capita consumption) fell by 2 to 10 per cent a year in countries as diverse as Argentina, Brazil, Chile, Ivory Coast, and Yugoslavia. In all these countries, per capita consumption had grown between 1970 and 1981."

ITEM - THE SECURITY ENVIRONMENT

The environment with the least accurate title in this state-of-the-world catalogue features weapons and weaponry. Ironically, this topic could equally qualify for consideration under the economics section. This for two reasons. First, an increasing number of experts concede that there exists no military purpose for nuclear weapons of any kind; that their role is political, including deterrence. Cost thus takes on a new importance. Second, the economic value of the defence industry and of international trade in weapons and weapons-systems is so large that it reduces to comparative unimportance most other sectoral activities. The Palme Commission stated that total military spending in 1982 exceeded US\$650 billion. That's more than one million dollars a minute.

A lucrative portion of this latter trade is from North to South. Modern, automatic-firing, small-calibre weapons are now so plentiful and so universally distributed that they have become a routine tool of trade for terrorists and common criminals alike. Uzis, Kalishnikovs, M-16s all abound. The value of arms transferred in commercial or

official inter-governmental trade, all of it in conventional armaments, in 1983 was US\$35 billion, with the United States continuing its long-held lead as the world's major arms exporter (45% of the total in the period 1970-79, compared to 27.5% for the USSR and 10% for France), though on a slightly lesser volume than in previous years. The value of the thriving underground trade in arms is impossible to calculate with any accuracy. The Third World's share of global military expenditures (which includes, of course, more than arms purchases) has risen from 3% in 1955 to 15.3% in 1979 according to SIPRI, the Swedish International Peace Research Institute.

The defence industry in the United States is now so large and so geographically widespread that it is a critically important and structural segment of the U.S. economy. A major cut-back in defence expenditures would have severe disruptive effects on the economy and contribute significantly to a rise in unemployment. The same general circumstances obtain in France, Israel, The Republic of South Africa and to a lesser extent in a number of other industrialized countries. Israel, for example, manufactures a good deal of its own weapons requirements. It engages as

well in a flourishing export trade. So much so that a recent Israeli study calls this a crucial factor in the country's economy. The value of Israeli arms exports is more than US\$1 billion a year, which represents nearly 20% of all Israeli manufactured exports, and some 10% of all exports.

Into the developing world from a number of Northern sources are sold sophisticated weapons and weapons systems which are not needed, which cannot be maintained, and which can't be used effectively. These are sold willingly and purchased eagerly, often on attractive credit terms and - in the case of the United States and the Soviet Union - often as part of aid programmes. Statistics provided by the United States' Department of Defence reveal that in the decade 1971 to 1980, U.S. weapons were sold and transferred to 130 different nations.

In the East-West dimension, the primary focus of attention is on nuclear issues. Technological advances have already placed in grave doubt the viability of the current NATO strategy of flexible response, and threaten shortly to strip it of any remaining intellectual credibility.

Flexible response rests on the concept of assured destruction; it is this concept which underlies the deterrent: the second-strike retaliatory competence. That second-strike competence is imperilled because technology is now providing to war-heads guidance systems so accurate and delivery vehicles with such short flight times, that counter-force targeting strategies threaten the survivability of land-based ICBMs - a major element in the United States strategic triad and the preponderant portion of the Soviet Union's strategic arsenal.

Strategic weapons which cannot survive a first strike are of no value. Weapons which are high value targets and which are not survivable are of negative value for they are, by definition, destabilizing. The planned introduction of new generations of ICBMs such as the MX, and the continued deployment of the SS-17 and 19 - all MIRV'd - are, by that definition, destabilizing. Destabilizing weapons reduce, not enhance, security.

Theatre nuclear weapons are also the product of newer technologies and now assume a number of sophisticated

forms which are designed to perform the same functions as a broad range of conventional munitions of both a projectile and a fixed-site (i.e. mines) type. They can be delivered by rockets such as the Pershing II and the SS-20, by aircraft, by cruise missile whether of an air, sea or ground variety, and by artillery.

These new theatre, or tactical, technologies have placed in issue in recent months a series of questions around which debate rages:

1. The command and control capabilities of forces armed and trained to employ conventional or nuclear weapons interchangeably.
2. The pre-siting close to the central European frontiers of nuclear mines which retain advantage only if detonated in the earliest minutes following any penetration by hostile forces. This is the "use them or lose them" syndrome.

3. The timely ability to detect and adequately respond to incoming, accurately-guided warheads with flight times of 10 to 12 minutes.
4. The severability of theatre nuclear usage from strategic retaliation. This is the result of announced Soviet doctrine to retaliate against any use of nuclear weaponry in Europe by a strategic strike against European and North American targets. Thus are welded together in reality the previously compartmentalized theories of "first use" and "second strike".

An added ingredient to the nuclear policy process is the evidence now flowing from the studies engaged in by scientists both East and West of the atmospheric effects of the surface explosion of nuclear weapons. The "nuclear winter" scenario which they describe as the likely result of the dissemination into the atmosphere of large quantities of dust and smoke is an effect to be added to the previously quantified consequences of blast, heat, radiation, and electro-magnetic pulse. The impact which these studies are making is derived in large part from the fact they are based

on a limited employment of nuclear weapons, not on a massive exchange.

A massive exchange employing a large percentage of the currently available firepower is, in any event, beyond any rational contemplation. Figure 4 conveys some sense of the reason why. The single dot in the centre square represents all the firepower expended in World War II, a grand total of 3 megatons. The other dots in their entirety represent the world's current nuclear arsenal. That arsenal is the equivalent of 6,000 World War IIs - 18,000 megatons. The top left circle of three dots - 9 megatons, or 3 World War IIs - represents the weapons deployed on one United States Poseiden submarine. The circle in the lower left hand corner represents 24 megatons, the firepower of a single U.S. Trident submarine. Any two squares on the chart contain 300 megatons - enough destructive capacity to destroy every large and medium size city in the entire world.

It is against this nuclear background that there must proceed a thorough re-consideration of NATO policy, of arms-control negotiations (including the issue of verifi-

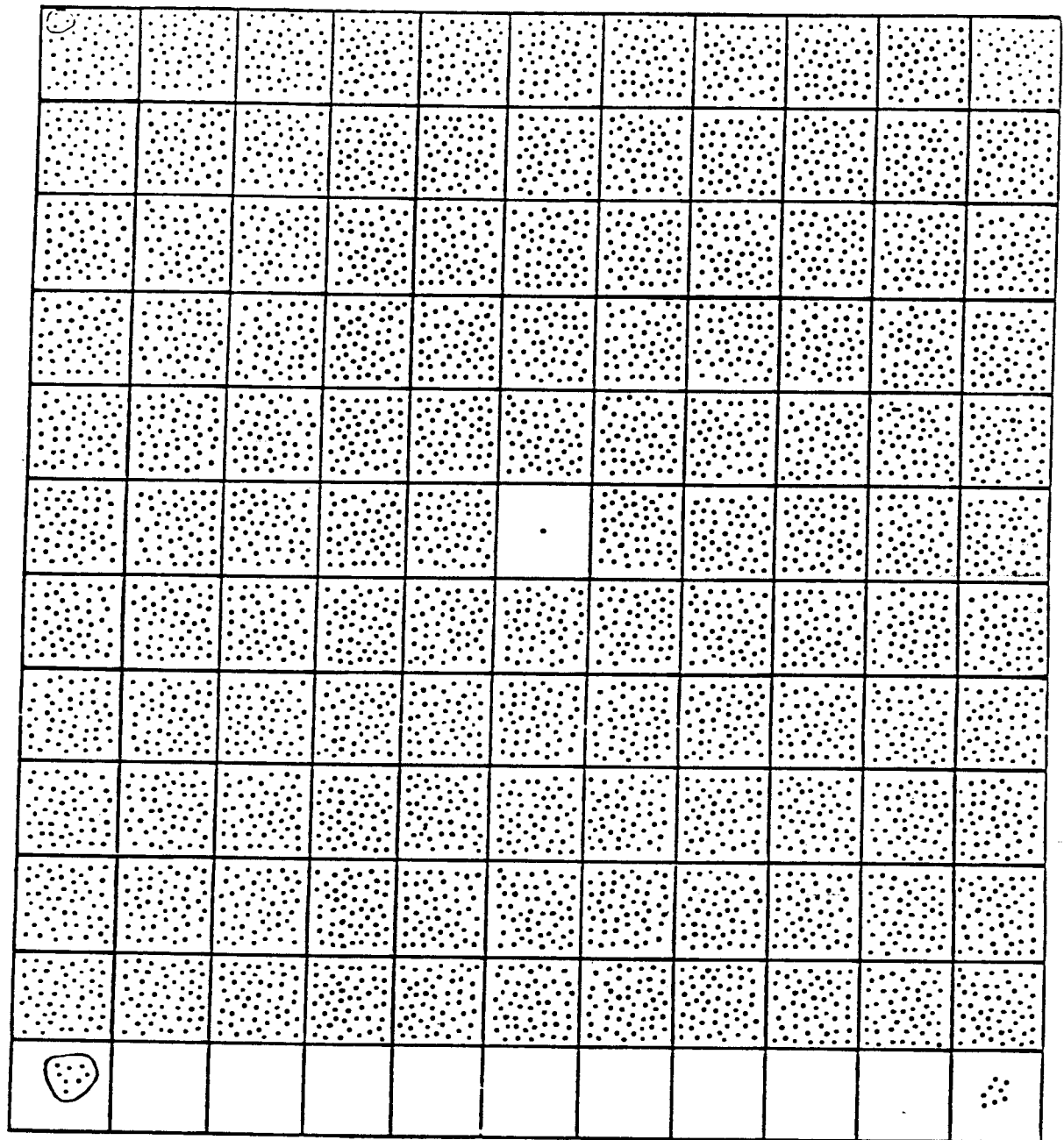


Figure 4

cation), of the nuclear threshold and MBFR (Mutual and Balanced Force Reductions), of the Non-Proliferation Treaty (NPT), and of the extension of nuclear activities into space in the form of anti-satellite weaponry or otherwise.

Nor can this category of military activity of all kinds be excluded from discussions about economic development both North and South, the preferred forms of social structure, issues of conflict resolution, and policies of resource allocation. It is a category too sophisticated to be governed by uninformed emotion; it is at the same time a category so critical to continued human existence that it cannot be left for decision only to technologists and think-tank participants.

CONCLUSION

What are the prospects for the human race? Will we be wafted off into glorious tomorrows on the buoyancy of micro-electronics or genetic engineering? Or will we sink into a stifling quagmire of contradictory political options, or worse? Are there normative ingredients for a preferred future of the kind against which we can design policy and measure progress? I believe that there are, indeed that there must be if we are to proceed towards a functioning, self-sustaining international community. By my calculation, they are five in number:

- 1) The existence and preservation of a wholesome natural environment.
- 2) Economically resilient and politically stable countries.
- 3) A strong and equitable international trading and monetary system.
- 4) Accepted and institutionalized mechanisms for the peaceful settlement of disputes.
- 5) A dedication on the part of all major actors to an enhancement of human dignity.

Pipe-dream? Far from it. Cold-blooded, hard-nosed realism. Never before has humanity toyed with circumstances leading to irreversible error. Nuclear error, environmental error, economic error. All are of a potential magnitude which makes them qualitatively different from any previous fault-lines.

Any one of these categories could be cataclysmic in itself. Unfortunately, each tends to inter-act with the others to make problem-solving more challenging, to make humility more necessary. Let me offer a disturbing example - disaster frequency. By disaster I refer to events causing human tragedy in five major categories: drought, flood, civil strife and/or conflict, tropical cyclone, earthquake. A catch-all, additional, category would include a host of disaster agents ranging from epidemics and volcanic eruptions to major mine collapses or airplane crashes. Figure 5 reveals the average number of people affected by disaster in each of the decades of the 60s and the 70s. Note the marked increase in numbers from the first decade to the second. This increase is even more apparent if the same events are measured in terms of persons killed, as in Figure 6. The inter-relationship between numbers affected and

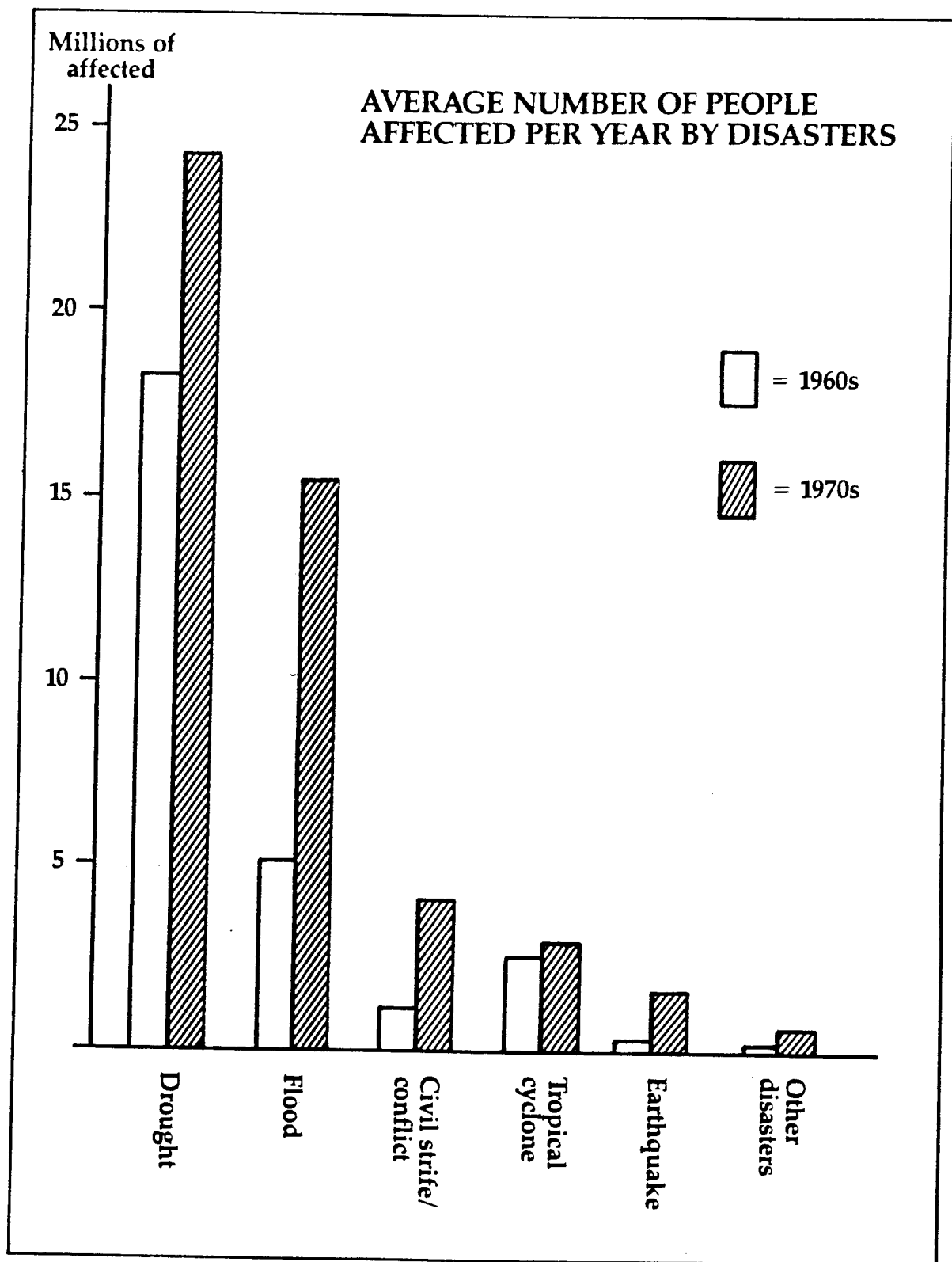


Figure 5

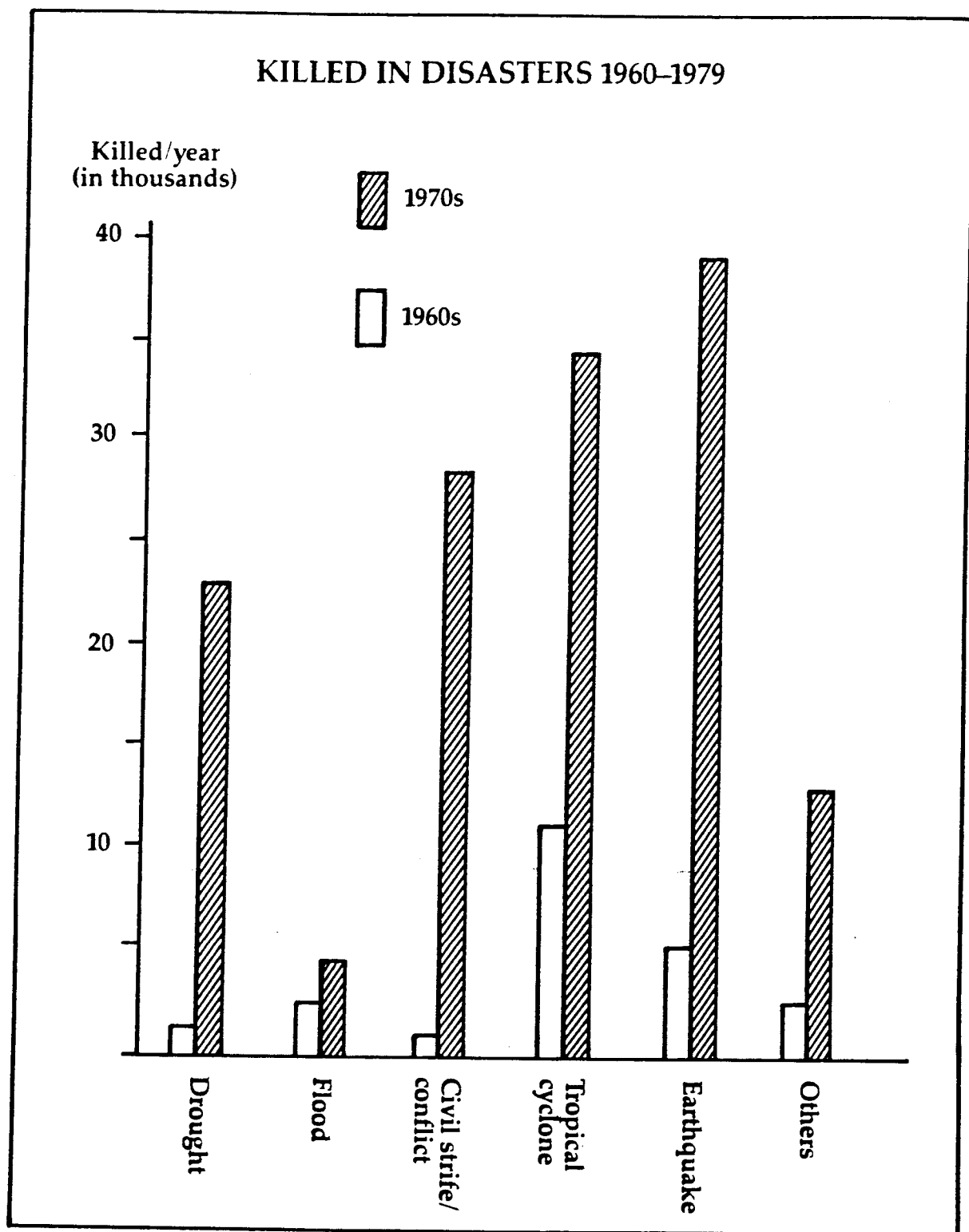


Figure 6

numbers killed is displayed in Figure 7. I don't pretend to understand the significance of these figures, or the reasons for the extraordinary increase decade over decade. I would like to emphasize, as Figure 8 illustrates, that the relationship between disaster and mortality is a derivative of national economic well-being. The poorest countries have the highest death rate per event, most casualties per 100,000 of population, and the largest number of people killed per unit of land area.

Where now in the world is there overt conflict? Where do we fear the outbreak of incidents that could feed a spreading conflagration? In every instance in developing regions - Central America, the Middle East, the Persian Gulf, Indo-China, South-West Africa.

Where now is occurring the most difficult to reverse ecological destruction? Desertification, soil degradation and erosion, forest disappearance? In almost every instance in the Third World.

In what countries are there activities which give rise to concern about the proliferation of nuclear

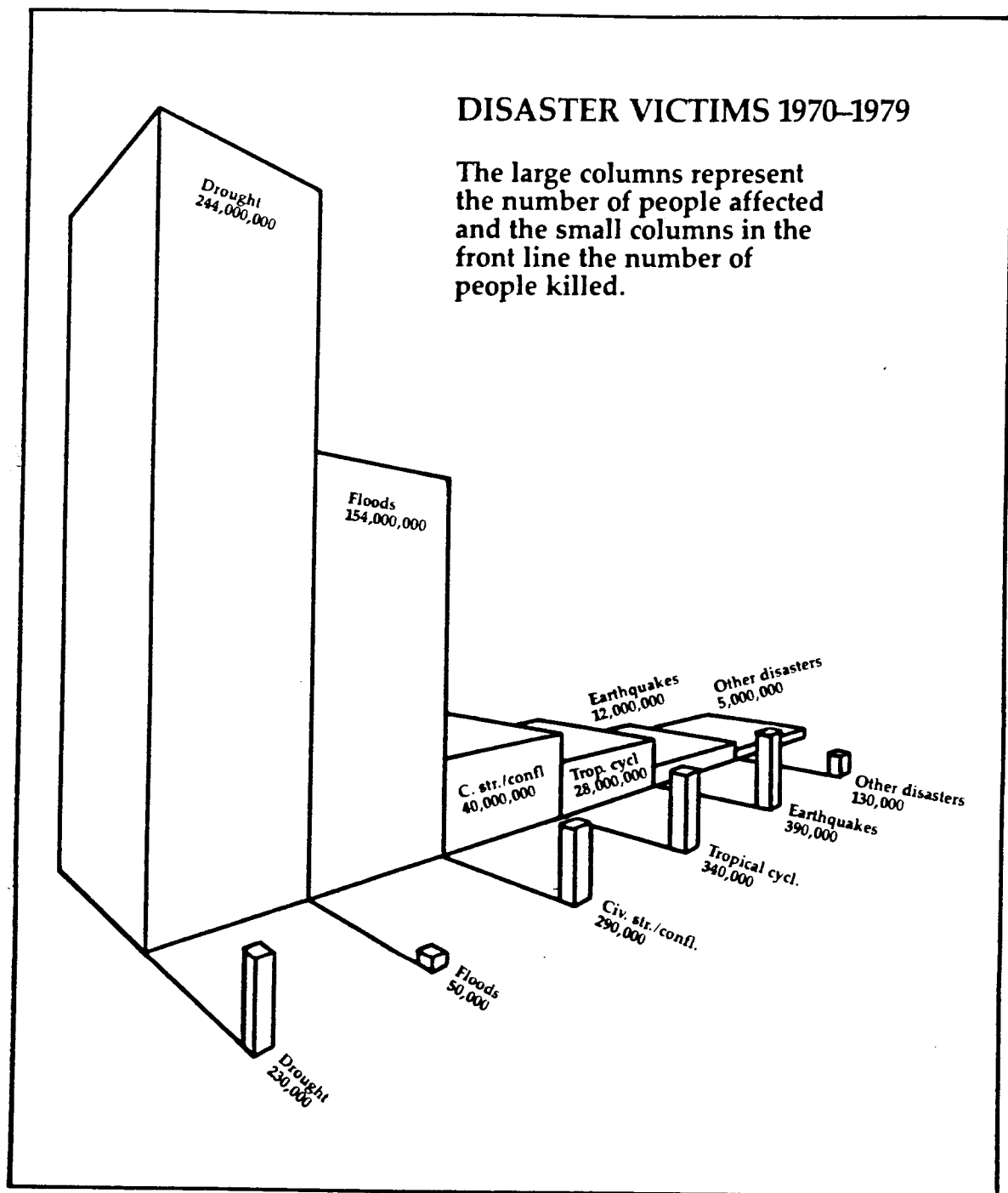


Figure 7

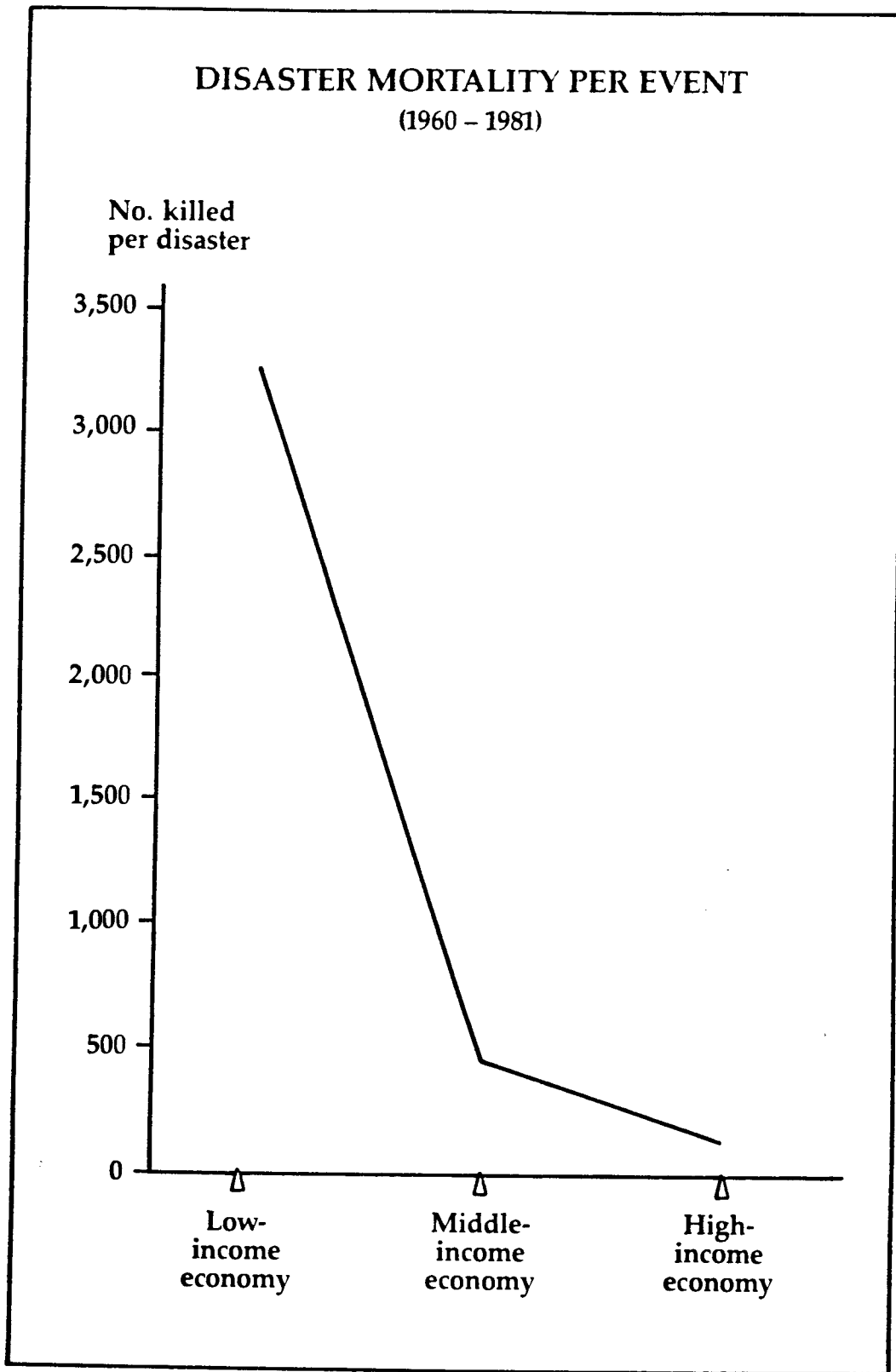


Figure 8

weaponry? In virtually all instances, developing countries: Argentina, Brazil, India, Iraq, Israel, Pakistan, South Korea, Taiwan. And which countries have followed the immensely profitable industrial strategies of the United States and Europe and now have flourishing arms-export industries responding not to morality but only to the market place? Many of the same - Brazil, Israel, India, South Korea, Taiwan but also Singapore and, more recently Chile, where the Pinochet regime manufactures and supplies anti-personnel cluster bombs to Iraq.

If we fail to heed and respond to these facts, we leave the impression that this planet is severable; that our biosphere, our economy, our security, and our human conscience are all capable of being compartmentalized. Haves and have-nots, neat and tidy. But we know that that cannot be.

Closeted as each of us is with an ever-increasing number of people on a planet of finite size, we must realize that the human race cannot survive if arrogant absolutes are to become national policies. The world is a pluralistic community. Concepts of religious or racial or nationalist

superiority are as dangerous as they are fallacious. Again, the economic structure of the world is a patchwork quilt. Clarion calls for purism are hypocritical and outrageous. So is any assumption that military force is a desirable substitute for negotiated settlement. It is in this sector more than any other that we in the North possess the ability to ensure our own salvation.

Virtually all of the world's great military strategists from the 4th century B.C. Chinese, Sun Tzu, onward have advocated the necessity of limiting the use of armed force, of inflicting the least possible casualties, and of engaging in force only if a state's objectives could not be achieved by other means. Yet the 20th century record is dismal. World War I introduced the concept of unconditional surrender. World War II employed the concept of total war. Today, neither solemnly-concluded international treaties nor the most respected of religious teachings stand in the way of military planners who have targeted nuclear warheads at centres of population, who demand ever more lethal weapons of mass and indiscriminate destructive capability. The closely-reasoned message of the United States Catholic Bishops has thus challenged the

concept of "just war", supported by the church since the rule of Constantine, and opted in the nuclear age for the more general Christian ethic of "non-violence".

In the nuclear age, security can only proceed from nuclear parity, not from an attempt at superiority. Past attempts at attaining superiority have led to nothing but instability and thus greater peril. There is not the slightest reason to doubt that the future will prove otherwise. Nothing is more important at the present time than that we back out of this insane nuclear posture in which both sides are fearfully dependent on weapons systems which are destabilizing.

It is essential that each side - the Warsaw Pact and NATO - accept that stable defence systems demand two ingredients: deterrence and reassurance. Deterrence is the effective discouragement of resort to war; the knowledge that the commencement of hostilities will result in a military response which would inflict unacceptable punishment. Reassurance is the maintenance of self-confidence within each alliance that one's own and one's adversary's military strength is adequate and intended to defend. If

that vital balance between deterrence and reassurance is lost - and we are close to losing it - then the necessary political foundation for NATO will collapse, as will our common security.

How shall I close this all-too-long lengthy lecture? With the same words I have used in the past.

The world we live in today is a much more complex place than yesterday's world. It is a world of dysfunction, disequilibrium, and discontinuity. Above all it is a world of inter-dependence in which no nation is able to withdraw or to act with impunity. The age of easy answers and grand designs is well behind us. The need carefully to balance avalanches of data, to assess the impact of a spectrum of alternatives, to consider the interests of a multitude of parties, this is the tedious but essential path through the minefields ahead. That path can be negotiated without question. But to do so we must look forward and abandon once and for all concepts of total victory and surrender, be they economic, political, or military. We exist today in a world where zero-sum games belong only in the computer arcades. In the real world, in every international field of

activity, we all win, or we all will perish. Peter Drucker once wrote:

"No one needs to be told that our age is an of infinite peril. No one needs to be told that the central question we face with respect to man's future is not what it shall be, but whether it shall be."

(emphasis added)

He then continues, and emphasizes that the requirements of our age are "tasks of today, and not tasks for the year 2000. But they are the tasks to which we have to address ourselves to deserve tomorrow."

As you set forth on your quest for the path to tomorrow, I wish you well. Yours are heavy responsibilities.

CREDITS

Figures 1,2,2 - The World Bank

Figure 4 - The Aspen Institute

Figures 5,6,7,8 - Office of United States Foreign Disaster
Assistance